



DRINKING WATER SYSTEM ANNUAL REPORT

Reporting Period: January 1st to December 31st, 2021 (year)

Water System Village of Cumberland

Water System Owner Village of Cumberland

Primary Contact Name (Operator or Manager) Gavin Murgatroyd

Phone Number (Operator or Manager) 250-792-1593

E-mail (Operator or Manager) gmurgatroyd@cumberland.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:

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) → UPON REQUEST

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):
 See attached.

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? 160
 What is the minimum required sampling frequency for this system? (#samples/month) 4/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, and 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
June 16, 2020	2.0 MPN/100mL	0.0 MPM/mL	Uncertain	Flush and re-sample



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

If yes, attach a list of the chemical results Attached.

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.

Next scheduled full chemical test (date) 2022

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 + TEMP.

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
See attached	See attached	See attached



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. **See attached**

Incident Date	Type of Operational Problem	Corrective Action Taken
See attached	See attached	See attached

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	WTP - H ₂ O
Purchase or install new equipment	
Equipment repair or replacement	
Annual maintenance of system	Watermain flushing program - completed Spring 2021
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
Relocate online turbidity meter and flow meter to WTP	2022

Click here to enter a date. DATE COMPLETED:	COMPLETED BY:
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Excellent health and care, for everyone,
everywhere, every time.



December 1, 2020

Village of Cumberland
2673 Dunsmuir Avenue
Cumberland, BC V0R 1S0

Dear Village of Cumberland:

Re: Notice of Proposed Changes to Terms and Conditions of Operating Permit No. 1414314 Village of Cumberland Water Supply

The Drinking Water Protection Act requires Drinking Water Officers (DWO) to exercise discretion in their oversight of drinking water systems. Specific requirements may be made of a water supplier to ensure that the system is operated in a manner that protects the health of water users. Permit Terms and Conditions can often help to clarify the expectations and responsibilities associated with being a water supplier.

Section 8(4) of the *Drinking Water Protection Act* (DWPA) states:

The drinking water officer or an issuing official may change the terms and conditions of an operating permit if the officer or issuing official considers this advisable, but must first consult with the water supplier respecting the proposed changes and must consider any comments of the water supplier in response.

As an issuing official, I propose to attach the following Terms and Conditions to your operating permit:

See Appendix A

Please respond in writing within **30 days** of receiving this notice if you wish to comment on the proposed changes to your permit. Your comments will be considered before a final decision is made.

Be advised that, short of judicial review, this is your only opportunity to influence the outcome of this process. Changes to the terms and conditions of an operating permit are not subject to reconsideration or review under Section 39.1 of the Drinking Water Protection Act.

Please contact the undersigned for further information.

Yours truly,

Ella Derby B.Sc, B.Tech, CPHI (C)
Environmental Health Officer
Island Health Authority
ella.derby@viha.ca

APPENDIX A

WATER SYSTEM OPERATING TERMS AND CONDITIONS FOR

VILLAGE OF CUMBERLAND WATER SUPPLY SYSTEM

2673 Dunsmuir Avenue

Cumberland, BC, V0R 1S0

The permit holder is advised of the following Terms and Conditions are in addition to other legislated responsibilities and obligations such as:

- The *Drinking Water Protection Act*, [SBC 2001] Chapter 9
- The *Drinking Water Protection Regulation* (B.C. Reg. 200/2003 O.C. 508/2003)

The specific terms and conditions of this operating permit are listed below:

Water Disinfection Facility (Henderson & Allen Lake)

The water supply system owner is authorized to operate the *disinfection facility* with a design flow rate of 112 L/s, and consisting of strainers, three Spektron 900e low pressure UV reactors (one dedicated reactor per source with a third reactor capable of treating either source to provide system redundancy), brine storage tank, an on-site sodium hypochlorite generator, liquid 0.8% sodium hypochlorite storage tanks, dosing pumps, injection ports, flow meters, pH, temperature and free chlorine analyzers, turbidity monitors, spill containment, hydrogen gas monitors and alarms, 2,500m³ steel bolted reservoir, back-up generator and other related appurtenances to serve existing and future development in the Village of Cumberland.

Water Supply Facility (Well #36245)

The water supply system owner is authorized to operate the *water supply facility* with a design flow rate of 15 L/s, and consisting of chlorine injection to provide secondary disinfection in the distribution system to serve existing and future development in the Village of Cumberland.

1. Performance Standards

The finished water leaving the water disinfection and supply facilities (surface water or well water) shall:

- Meet, or be lower than, the health related concentration limits for substances listed in the most recent version of the Health Canada's *Guidelines for Canadian Drinking Water Quality*,
- Contain no detectable *Escherichia coli* bacteria/100 mL; and

- Contain no detectible total coliform bacteria / 100 mL
- The maximum concentration of *free* chlorine leaving the facility shall not exceed 4.0 mg/L
- Comply with the maximum acceptable concentrations of disinfection by-products: Trihalomethanes (THMs) and Haloacetic acids (HAAs) are not to exceed .100 mg/l and 0.08 mg/l, respectively. This is based on a locational running annual average of a minimum of quarterly samples.

The performance standards for each specific source are as follows:

a) Henderson Lake and Allen Lake

The Water System Owner shall inspect the authorized waterworks regularly and maintain them in good working order to ensure the production and delivery of potable water.

The disinfection facility shall be operated in a manner to achieve the following:

- a minimum of 4-log reduction (99.99% inactivation) of viruses;
- a minimum of 3.0-log reduction (99.9% removal) in *Giardia Lamblia* cysts;
- a minimum of 3.0-log reduction (99.9 % removal) of *Cryptosporidium* oocysts
- a minimum of 2 forms of disinfection applied (UV and chlorination)
- a turbidity less than 1 NTU

b) Well #36245

The Water System Owner shall inspect the authorized waterworks regularly and maintain them in good working order to ensure the production and delivery of potable water.

The water supply facility shall be operated in a manner to achieve the following:

- a turbidity less than 1 NTU

2. Water Quality Monitoring

a. Henderson Lake and Allen Lake

i. Turbidity Monitoring

- The water supply system owner shall provide and maintain suitable sampling facilities and monitor the turbidity in both the raw water *sources* and finished treated water leaving the disinfection facility on a continuous basis.

ii. Contact Time

- The water supply system owner shall ensure the CT value is monitored on a daily basis where CT is the product of C and T, where C represents the *free* chlorine residual disinfectant concentration in mg/L and T represents the *contact time* in minutes.
- Once per day, at a maximum hourly flow, the water supply system owner shall monitor the temperature of the disinfected water, the residual disinfectant

concentration, C, and the pH at the sampling point. The sampling point should be located before the first customer. In addition, at the peak hourly flow, the water supply system owner shall determine the contact time, T, based on the time of travel that the water takes to reach the first customer within the pipelines and retention in the reservoir.

- Virus reduction will be based upon the CT tables listed in the document, “Guidelines for Canadian Drinking Water Quality; Guideline Technical Document – Enteric Viruses”, Water, Air and Climate Change Bureau. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario, (April 2019).

iii. UV Dose

- The water supply system owner shall determine the minimum dose for the ultraviolet disinfection units on a daily basis measured in mJ/cm².
- Protozoan reduction will be based upon the dose tables listed in the document “Guidelines for Canadian Drinking Water Quality; Guideline Technical Document – Enteric Protozoa: Giardia and Cryptosporidium”, Water, Air and Climate Change Bureau. Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario, (Catalogue No H129-23/2013E-PDF), 2012

b. Well #36245

i. Turbidity monitoring

- The water supply system owner shall provide and maintain suitable sampling facilities and monitor the turbidity in the well water leaving the disinfection facility on a continuous basis.

3. Bacteriological and Chemical Monitoring

The water supply system owner shall adhere to a sampling and monitoring program for chemical, physical, protozoan and bacterial monitoring parameters, sampling frequencies and sampling locations for the water disinfection facilities as approved by the Drinking Water Officer. The water quality data shall be suitably tabulated and submitted to the Drinking Water Officer on a regular basis as specified by the Drinking Water Officer.

4. Filtration Exemption (Surface Water Sources)

The water supply system owner shall adhere to a sampling and monitoring program as a condition of the filtration exemption, as set out in the *Drinking Water Treatment Objectives for Surface Water in British Columbia (most recent version)*. The program may contain chemical, physical, protozoan and bacterial monitoring parameters at sampling frequencies and sampling locations, watershed surveillance, and a watershed protection plan as approved by the Drinking Water Officer. The operator must provide annual written updates to the Drinking Water Officer (DWO) that outlines on-going review and update of the watershed protection plan, and compliance with the filtration deferral criteria.

5. Distribution System Maintenance, Disinfection By-Product Monitoring and Residual Monitoring

The water supply system owner shall provide a minimum of 0.2 mg/L of residual disinfectant measured as *free* chlorine, for the water at all points within the distribution system. This may be higher or lower as approved by the Drinking Water Officer.

The maximum residual disinfectant concentration, measured as *free* chlorine shall not exceed 4.0 mg/L anywhere in the distribution system. This does not apply in situations where water mains or reservoirs, or other appurtenances are being super-chlorinated during their installation, repair, or routine maintenance.

If the minimum level of chlorine is not detected during routine residual analysis in the distribution system, the water supplier is to refer to the Emergency Response Plan (ERP) for direction.

Disinfection by-products, trihalomethanes (THM), and haloacetic acids (HAA), are to be measured on a quarterly basis at locations within the distribution system as approved by the local Drinking Water Officer. The measured average of these results must comply with the MAC as outlined in the Guidelines for Canadian Drinking Water Quality (GCDWQ). If a MAC is exceeded, a written plan to decrease the formation of the DBPs or decrease the presence of precursors in the source water must be submitted for review by the DWO within 30 days of the exceedance. Monitoring sites are to be as outlined in an approved Sampling Program and include sites within the distribution system where potential disinfection by-product formation is at its highest.

6. Reporting

Prepare a monthly report outlining facilities operations as set by the DWO. Submit the monthly report for the previous month by the 15th day of the following month to the DWO.

7. Operating Training

The water supply system shall be operated and maintained by or under the supervision of persons certified within and according to the classification (treatment and distribution) of the water system by the Environmental Operators Certification Program (EOCP).

Date Collected	Water System	Total E. Coli	Total Coliform	Site Name
01/19/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	83.3	Village of Cumberland, ALLEN LAKE RAW Monthly
02/10/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	68.4	Village of Cumberland, ALLEN LAKE RAW Monthly
03/02/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	83.3	Village of Cumberland, ALLEN LAKE RAW Monthly
04/12/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	41.9	Village of Cumberland, ALLEN LAKE RAW Monthly
05/05/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	50.4	Village of Cumberland, ALLEN LAKE RAW Monthly
06/02/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	65.0	Village of Cumberland, ALLEN LAKE RAW Monthly
07/07/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	7.4	73.8	Village of Cumberland, ALLEN LAKE RAW Monthly
08/18/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	GR241	Village of Cumberland, ALLEN LAKE RAW Monthly
09/28/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	501.2	Village of Cumberland, ALLEN LAKE RAW Monthly
10/19/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	4.1	GR241	Village of Cumberland, ALLEN LAKE RAW Monthly
11/02/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	104.3	Village of Cumberland, ALLEN LAKE RAW Monthly
		1.0 CORRECTED ON 16/Dec AT 1359: PREVIOUSLY REPORTED AS: PREVIOUSLY REPORTED AS: less than 1	12.2 CORRECTED ON 16/Dec AT 1359: PREVIOUSLY REPORTED AS: less than 1	
12/14/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1		Village of Cumberland, ALLEN LAKE RAW Monthly
01/19/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, END OF LINDALE RD Monthly
02/08/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	L1	Village of Cumberland, END OF LINDALE RD Monthly
02/10/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, END OF LINDALE RD Monthly
03/02/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, END OF LINDALE RD Monthly
03/23/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	L1	L1	Village of Cumberland, END OF LINDALE RD Monthly
04/12/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, END OF LINDALE RD Monthly
05/05/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, END OF LINDALE RD Monthly
05/18/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	L1	L1	Village of Cumberland, END OF LINDALE RD Monthly
06/02/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, END OF LINDALE RD Monthly
07/07/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, END OF LINDALE RD Monthly
07/09/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	L1	L1	Village of Cumberland, END OF LINDALE RD Monthly
08/18/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, END OF LINDALE RD Monthly
08/24/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	L1	L1	Village of Cumberland, END OF LINDALE RD Monthly
10/04/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, END OF LINDALE RD Monthly
10/12/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	L1	L1	Village of Cumberland, END OF LINDALE RD Monthly
10/19/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, END OF LINDALE RD Monthly
11/02/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	L1	L1	Village of Cumberland, END OF LINDALE RD Monthly
12/14/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, END OF LINDALE RD Monthly

08/31/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	L1	L1	Village of Cumberland, SITE 7 2476 DUNSMUIR AVE Monthly
10/04/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 7 2476 DUNSMUIR AVE Monthly
10/18/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	L1	L1	Village of Cumberland, SITE 7 2476 DUNSMUIR AVE Monthly
10/19/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 7 2476 DUNSMUIR AVE Monthly
11/02/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 7 2476 DUNSMUIR AVE Monthly
12/01/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	L1	L1	Village of Cumberland, SITE 7 2476 DUNSMUIR AVE Monthly
12/14/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 7 2476 DUNSMUIR AVE Monthly
12/29/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	L1	L1	Village of Cumberland, SITE 7 2476 DUNSMUIR AVE Monthly
01/19/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 8 SOURCE WELL 36425 Monthly
02/10/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 8 SOURCE WELL 36425 Monthly
03/02/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 8 SOURCE WELL 36425 Monthly
04/12/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 8 SOURCE WELL 36425 Monthly
05/05/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 8 SOURCE WELL 36425 Monthly
06/02/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 8 SOURCE WELL 36425 Monthly
07/07/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 8 SOURCE WELL 36425 Monthly
08/18/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 8 SOURCE WELL 36425 Monthly
10/04/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 8 SOURCE WELL 36425 Monthly
10/19/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 8 SOURCE WELL 36425 Monthly
11/02/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 8 SOURCE WELL 36425 Monthly
12/14/2021	VILLAGE OF CUMBERLAND WATER SUPPLY	LT1	LT1	Village of Cumberland, SITE 8 SOURCE WELL 36425 Monthly



Your P.O. #: 2019-15
 Your Project #: DRINKING WATER
 Site Location: SITE # 1
 Your C.O.C. #: 08489410

Attention: Public Works
 VILLAGE OF CUMBERLAND
 PO BOX 340
 CUMBERLAND, BC
 CANADA V0R 1S0

Report Date: 2021/01/18
 Report #: R2977404
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C101372

Received: 2021/01/08, 11:20

Sample Matrix: Drinking Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Total Trihalomethanes Calculation (1)	1	N/A	2021/01/12	BBY WI-00033	Auto Calc
VOCs, VH, F1, LH in Water by HS GC/MS (1)	1	N/A	2021/01/12	BBY8SOP-00009 / BBY8SOP-00011 / BBY8SOP-00012	BCMOE BCLM Jul2017 m
Haloacetic Acids in Water (2)	1	2021/01/15	2021/01/16	CAM SOP-00954	EPA 552.2 m

Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by BV Labs Vancouver

(2) This test was performed by BV Labs Ontario (From Burnaby)



Your P.O. #: 2019-15
Your Project #: DRINKING WATER
Site Location: SITE # 1
Your C.O.C. #: 08489410

Attention: Public Works

VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2021/01/18
Report #: R2977404
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C101372

Received: 2021/01/08, 11:20

Encryption Key



AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas Laboratories

18 Jan 2021 12:09:39

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bureauveritas.com
Phone# (833) 282-5227

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BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



**BUREAU
VERITAS**

BV Labs Job #: C101372
Report Date: 2021/01/18

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE # 1
Your P.O. #: 2019-15

RESULTS OF CHEMICAL ANALYSES OF DRINKING WATER

BV Labs ID			ZD1968	
Sampling Date			2021/01/08 10:30	
COC Number			08489410	
	UNITS	MAC	SITE #1	RDL
MISCELLANEOUS				
Dalapon	ug/L	-	<5.0	5.0
Monochloroacetic Acid	ug/L	-	<5.0	5.0
Monobromoacetic Acid	ug/L	-	<5.0	5.0
Dichloroacetic Acid	ug/L	-	36	5.0
Trichloroacetic Acid	ug/L	-	41 (1)	25
Bromochloroacetic Acid	ug/L	-	<5.0	5.0
Dibromoacetic Acid	ug/L	-	<5.0	5.0
Total Haloacetic Acids	ug/L	80	77	25
Surrogate Recovery (%)				
2,3-Dibromopropionic Acid	%	-	81	
No Fill	No Exceedance			
Grey	Exceeds 1 criteria policy/level			
Black	Exceeds both criteria/levels			
RDL = Reportable Detection Limit				
(1) Due to high concentration of the target analyte, sample required dilution. Detection limit was adjusted accordingly.				



BUREAU VERITAS
LABORATORIES

BV Labs Job #: C101372
Report Date: 2021/01/18

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE # 1
Your P.O. #: 2019-15

TRIHALOMETHANES (THM) IN WATER

BV Labs ID			ZD1968	
Sampling Date			2021/01/08 10:30	
COC Number			08489410	
	UNITS	MAC	SITE #1	RDL
Volatiles				
Total Trihalomethanes	ug/L	100	67	1.0
Bromodichloromethane	ug/L	-	<1.0	1.0
Bromoform	ug/L	-	<1.0	1.0
Chlorodibromomethane	ug/L	-	<1.0	1.0
Chloroform	ug/L	-	67	1.0
n-Propylbenzene	ug/L	-	<20	20
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	-	102	
4-Bromofluorobenzene (sur.)	%	-	88	
D4-1,2-Dichloroethane (sur.)	%	-	98	
No Fill	No Exceedance			
Grey	Exceeds 1 criteria policy/level			
Black	Exceeds both criteria/levels			
RDL = Reportable Detection Limit				



BUREAU
VERITAS

BV Labs Job #: C101372
Report Date: 2021/01/18

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE # 1
Your P.O. #: 2019-15

GENERAL COMMENTS

MAC: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

MAC = Maximum Acceptable Concentration
AO = Aesthetic Objectives

It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: C101372
Report Date: 2021/01/18

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE # 1
Your P.O. #: 2019-15

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Brad Newman, Scientific Specialist

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.



Your P.O. #: 2019-15
 Site#: SITE # 1
 Site Location: SITE # 1
 Your C.O.C. #: 08489954

Attention: David Wing
 VILLAGE OF CUMBERLAND
 PO BOX 340
 CUMBERLAND, BC
 CANADA V0R 1S0

Report Date: 2021/04/12
 Report #: R3007241
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C121025

Received: 2021/04/01, 11:15

Sample Matrix: Drinking Water
 # Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Trihalomethanes Calculation (1)	1	N/A	2021/04/06	BBY WI-00033	Auto Calc
VOCs, VH, F1, LH in Water by HS GC/MS (1)	1	N/A	2021/04/05	BBY8SOP-00009 / BBY8SOP-00011 / BBY8SOP-00012	BCMOE BCLM Jul2017 m
Haloacetic Acids in Water (2)	1	2021/04/09	2021/04/10	ATL SOP-00129	EPA 552.2 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by BV Labs Vancouver

(2) This test was performed by BV Labs Bedford(From Burnaby)



Your P.O. #: 2019-15
Site#: SITE # 1
Site Location: SITE # 1
Your C.O.C. #: 08489954

Attention: David Wing

VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2021/04/12
Report #: R3007241
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C121025

Received: 2021/04/01, 11:15

Encryption Key



AUTHORIZED REPORT
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Bureau Veritas

12 Apr 2021 11:26:05

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Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bureauveritas.com
Phone# (833) 282-5227

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BUREAU
VERITAS

BV Labs Job #: C121025
Report Date: 2021/04/12

VILLAGE OF CUMBERLAND
Site Location: SITE # 1
Your P.O. #: 2019-15

RESULTS OF CHEMICAL ANALYSES OF DRINKING WATER

BV Labs ID			203687	
Sampling Date			2021/04/01 10:30	
COC Number			08489954	
	UNITS	MAC	SITE #1	RDL
MISCELLANEOUS				
Monochloroacetic Acid	ug/L	-	<5.0	5.0
Monobromoacetic Acid	ug/L	-	<5.0	5.0
Dichloroacetic Acid	ug/L	-	29	5.0
Trichloroacetic Acid	ug/L	-	27	5.0
Bromochloroacetic Acid	ug/L	-	<5.0	5.0
Dibromoacetic Acid	ug/L	-	<5.0	5.0
Total Haloacetic Acids	ug/L	80	56	5.0
Surrogate Recovery (%)				
2,3-Dibromopropionic Acid	%	-	92	
No Fill	No Exceedance			
Grey	Exceeds 1 criteria policy/level			
Black	Exceeds both criteria/levels			
RDL = Reportable Detection Limit				



BV Labs Job #: C121025
 Report Date: 2021/04/12

VILLAGE OF CUMBERLAND
 Site Location: SITE # 1
 Your P.O. #: 2019-15

TRIHALOMETHANES (THM) IN WATER

BV Labs ID			Z03687	
Sampling Date			2021/04/01 10:30	
COC Number			08489954	
	UNITS	MAC	SITE #1	RDL
Volatiles				
Total Trihalomethanes	ug/L	100	38	1.0
Bromodichloromethane	ug/L	-	<1.0	1.0
Bromoform	ug/L	-	<1.0	1.0
Chlorodibromomethane	ug/L	-	<1.0	1.0
Chloroform	ug/L	-	38	1.0
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	-	101	
4-Bromofluorobenzene (sur.)	%	-	99	
D4-1,2-Dichloroethane (sur.)	%	-	102	
No Fill	No Exceedance			
Grey	Exceeds 1 criteria policy/level			
Black	Exceeds both criteria/levels			
RDL = Reportable Detection Limit				



BUREAU
VERITAS

BV Labs Job #: C121025
Report Date: 2021/04/12

VILLAGE OF CUMBERLAND
Site Location: SITE # 1
Your P.O. #: 2019-15

GENERAL COMMENTS

Total haloacetic acids refers to the total of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid and dibromoacetic acid.

MAC: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)
It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: C121025
Report Date: 2021/04/12

VILLAGE OF CUMBERLAND
Site Location: SITE # 1
Your P.O. #: 2019-15

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Phil Deveau, Scientific Specialist (Organics)

Harry (Peng) Liang, Senior Analyst, B.Sc., QP

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports.
For Service Group specific validation please refer to the Validation Signature Page.



Your P.O. #: 2019-15
 Your Project #: DRINKING WATER
 Site Location: SITE# 1
 Your C.O.C. #: 08493302

Attention: Public Works
 VILLAGE OF CUMBERLAND
 PO BOX 340
 CUMBERLAND, BC
 CANADA VOR 1S0

Report Date: 2021/07/20
 Report #: R3047883
 Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C148371
Received: 2021/07/08, 12:07

Sample Matrix: Drinking Water
 # Samples Received: 1

Analyses	Quantity	Date	Date	Laboratory Method	Analytical Method
		Extracted	Analyzed		
Total Trihalomethanes Calculation (1)	1	N/A	2021/07/12	BBY WI-00033	Auto Calc
VOCs, VH, F1, LH in Water by HS GC/MS (1, 3)	1	N/A	2021/07/10	BBY8SOP-00009 / BBY8SOP-00011 / BBY8SOP-00012	BCMOE BCLM Jul2017 m
Haloacetic Acids in Water (2)	1	2021/07/15	2021/07/17	ATL SOP-00129	EPA 552.2 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested. This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Vancouver

(2) This test was performed by Bureau Veritas Bedford(From Burnaby)

(3) Dibromochloromethane = Chlorodibromomethane Change to correspond to BC CSR and CCME Canadian Environmental Quality Guidelines



Your P.O. #: 2019-15
Your Project #: DRINKING WATER
Site Location: SITE# 1
Your C.O.C. #: 08493302

Attention: Public Works
VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2021/07/20
Report #: R3047883
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C148371
Received: 2021/07/08, 12:07

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Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bureauveritas.com
Phone# (833) 282-5227

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BUREAU
VERITAS

BV Labs Job #: C148371
Report Date: 2021/07/20

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE# 1
Your P.O. #: 2019-15

RESULTS OF CHEMICAL ANALYSES OF DRINKING WATER

BV Labs ID			ABJ834	
Sampling Date			2021/07/08 11:40	
COC Number			08493302	
	UNITS	MAC	SITE #1	RDL
MISCELLANEOUS				
Monochloroacetic Acid	ug/L	-	<5.0	5.0
Monobromoacetic Acid	ug/L	-	<5.0	5.0
Dichloroacetic Acid	ug/L	-	28	5.0
Trichloroacetic Acid	ug/L	-	22	5.0
Bromochloroacetic Acid	ug/L	-	<5.0	5.0
Dibromoacetic Acid	ug/L	-	<5.0	5.0
Total Haloacetic Acids	ug/L	80	49	5.0
Surrogate Recovery (%)				
2,3-Dibromopropionic Acid	%	-	88	
No Fill	No Exceedance			
Grey	Exceeds 1 criteria policy/level			
Black	Exceeds both criteria/levels			
RDL = Reportable Detection Limit				



BV Labs Job #: C148371
 Report Date: 2021/07/20

VILLAGE OF CUMBERLAND
 Client Project #: DRINKING WATER
 Site Location: SITE# 1
 Your P.O. #: 2019-15

TRIHALOMETHANES (THM) IN WATER

BV Labs ID			ABJ834	
Sampling Date			2021/07/08 11:40	
COC Number			08493302	
	UNITS	MAC	SITE #1	RDL
Volatiles				
Total Trihalomethanes	ug/L	100	44	1.0
Bromodichloromethane	ug/L	-	2.0	1.0
Bromoform	ug/L	-	<1.0	1.0
Dibromochloromethane	ug/L	-	<1.0	1.0
Chloroform	ug/L	-	43	1.0
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	-	103	
4-Bromofluorobenzene (sur.)	%	-	91	
D4-1,2-Dichloroethane (sur.)	%	-	110	
No Fill	No Exceedance			
Grey	Exceeds 1 criteria policy/level			
Black	Exceeds both criteria/levels			
RDL = Reportable Detection Limit				



BUREAU
VERITAS

BV Labs Job #: C148371
Report Date: 2021/07/20

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE# 1
Your P.O. #: 2019-15

GENERAL COMMENTS

Total haloacetic acids refers to the total of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, monobromoacetic acid and dibromoacetic acid.

MAC: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

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Turbidity Guidelines:

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3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



NEW BRUNSWICK
VERITAS

BV Labs Job #: C148371
Report Date: 2021/07/20

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE# 1
Your P.O. #: 2019-15

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

Phil Deveau, Scientific Specialist (Organics)

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Your P.O. #: 2019-15
Your Project #: VILLAGE OF CUMBERLAND
Your C.O.C. #: 08496688

Attention: Public Works
VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2021/10/26
Report #: R3090400
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C178785

Received: 2021/10/15, 10:55

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
Total Trihalomethanes Calculation (1)	1	N/A	2021/10/21	BBY WI-00033	Auto Calc
VOCs, VH, F1, LH in Water by HS GC/MS (1)	1	N/A	2021/10/20	BBY8SOP-00009 / BBY8SOP-00011 / BBY8SOP-00012	BCMOC BCLM Jul2017 m
Haloacetic Acids in Water (2)	1	2021/10/23	2021/10/24	CAM SOP-00954	EPA 552.2 m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

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Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Vancouver, 4606 Canada Way, Burnaby, BC, V5G 1K5

(2) This test was performed by Bureau Veritas Campobello, 6740 Campobello Road, Mississauga, ON, L5N 2L8



Your P.O. #: 2019-15
Your Project #: VILLAGE OF CUMBERLAND
Your C.O.C. #: 08496688

Attention: Public Works
VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2021/10/26
Report #: R3090400
Version: 2 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C178785

Received: 2021/10/15, 10:55

Encryption Key



AUTHORIZED REPORT
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26 Oct 2021 15:37:50

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Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bureauveritas.com
Phone# (833) 282-5227

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BUREAU VERITAS

Bureau Veritas Job #: C178785

Report Date: 2021/10/26

VILLAGE OF CUMBERLAND

Client Project #: VILLAGE OF CUMBERLAND

Your P.O. #: 2019-15

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID			AIH660	
Sampling Date			2021/10/15 10:30	
COC Number			08496688	
	UNITS	MAC	SITE #1-HAA	RDL
MISCELLANEOUS				
Dalapon	ug/L	-	<5.0	5.0
Monochloroacetic Acid	ug/L	-	<5.0	5.0
Monobromoacetic Acid	ug/L	-	<5.0	5.0
Dichloroacetic Acid	ug/L	-	39	5.0
Trichloroacetic Acid	ug/L	-	70	25
Bromochloroacetic Acid	ug/L	-	<5.0	5.0
Dibromoacetic Acid	ug/L	-	<5.0	5.0
Total Haloacetic Acids	ug/L	80	110	25
Surrogate Recovery (%)				
2,3-Dibromopropionic Acid	%	-	129	
No Fill	No Exceedance			
Grey	Exceeds 1 criteria policy/level			
Black	Exceeds both criteria/levels			
RDL = Reportable Detection Limit				



BUREAU
VERITAS

Bureau Veritas Job #: C178785
Report Date: 2021/10/26

VILLAGE OF CUMBERLAND
Client Project #: VILLAGE OF CUMBERLAND
Your P.O. #: 2019-15

TRIHALOMETHANES (THM) IN WATER

Bureau Veritas ID			AIH661	
Sampling Date			2021/10/15 10:30	
COC Number			08496688	
	UNITS	MAC	SITE #1-THM	RDL
Volatiles				
Total Trihalomethanes	ug/L	100	75	1.0
Bromodichloromethane	ug/L	-	2.0	1.0
Bromoform	ug/L	-	<1.0	1.0
Dibromochloromethane	ug/L	-	<1.0	1.0
Chloroform	ug/L	-	73	1.0
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	-	102	
4-Bromofluorobenzene (sur.)	%	-	87	
D4-1,2-Dichloroethane (sur.)	%	-	100	
No Fill	No Exceedance			
Grey	Exceeds 1 criteria policy/level			
Black	Exceeds both criteria/levels			
RDL = Reportable Detection Limit				



BUREAU
VERITAS

Bureau Veritas Job #: C178785
Report Date: 2021/10/26

VILLAGE OF CUMBERLAND
Client Project #: VILLAGE OF CUMBERLAND
Your P.O. #: 2019-15

GENERAL COMMENTS

Version 2: Project name amended as per client request.

MAC: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)
It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

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2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



BUREAU VERITAS

Bureau Veritas Job #: C178785
Report Date: 2021/10/26

VILLAGE OF CUMBERLAND
Client Project #: VILLAGE OF CUMBERLAND
Your P.O. #: 2019-15

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Brad Newman, Scientific Specialist

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

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For Service Group specific validation please refer to the Validation Signature Page.



Your P.O. #: 2019-15
 Your Project #: DRINKING WATER
 Site Location: ALLEN LAKE
 Your C.O.C. #: 08493436

Attention: Public Works

VILLAGE OF CUMBERLAND
 PO BOX 340
 CUMBERLAND, BC
 CANADA V0R 1S0

Report Date: 2021/07/29
 Report #: R3052107
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C152724

Received: 2021/07/23, 11:30

Sample Matrix: Drinking Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH (1)	1	N/A	2021/07/26	BBY6SOP-00026	SM 23 2320 B m
Chloride/Sulphate by Auto Colourimetry (1)	1	N/A	2021/07/28	BBY6SOP-00011 / BBY6SOP-00017	SM23-4500-Cl/SO4-E m
Colour (True) by Kone Lab (1)	1	N/A	2021/07/24	BBY6SOP-00057	SM 23 2120 C m
Coliforms & E.coli by Quantitray (MPN)	1	N/A	2021/07/23	CTYSOP-00002	SM 23 9223
Conductivity @25C (1)	1	N/A	2021/07/26	BBY6SOP-00026	SM 23 2510 B m
Fluoride (1)	1	N/A	2021/07/27	BBY6SOP-00048	SM 23 4500-F C m
Hardness Total (calculated as CaCO ₃) (1, 2)	1	N/A	2021/07/28	BBY WI-00033	Auto Calc
Mercury (Total) by CV (1)	1	2021/07/26	2021/07/26	AB SOP-00084	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	1	N/A	2021/07/28	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total) (1)	1	N/A	2021/07/28	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Nitrate + Nitrite (N) (1)	1	N/A	2021/07/24	BBY6SOP-00010	SM 23 4500-NO3- I m
Nitrite (N) by CFA (1)	1	N/A	2021/07/24	BBY6SOP-00010	SM 23 4500-NO3- I m
Nitrogen - Nitrate (as N) (1)	1	N/A	2021/07/24	BBY WI-00033	Auto Calc
pH @25°C (1, 3)	1	N/A	2021/07/26	BBY6SOP-00026	SM 23 4500-H+ B m
Total Dissolved Solids (Filt. Residue) (1)	1	2021/07/28	2021/07/29	BBY6SOP-00033	SM 23 2540 C m
Turbidity (1)	1	N/A	2021/07/24	BBY6SOP-00027	SM 23 2130 B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.



Your P.O. #: 2019-15
 Your Project #: DRINKING WATER
 Site Location: ALLEN LAKE
 Your C.O.C. #: 08493436

Attention: Public Works
 VILLAGE OF CUMBERLAND
 PO BOX 340
 CUMBERLAND, BC
 CANADA V0R 1S0

Report Date: 2021/07/29
 Report #: R3052107
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C152724
Received: 2021/07/23, 11:30

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested. This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

- (1) This test was performed by Bureau Veritas Vancouver
- (2) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).
- (3) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.

Encryption Key



AUTHORIZED REPORT
 RAPPORT AUTORISÉ

Bureau Veritas
 29 Jul 2021 15:54:25

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
 Customer Solutions, Western Canada Customer Experience Team
 Email: customersolutionswest@bureauveritas.com
 Phone# (833) 282-5227

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BV Labs Job #: C152724
 Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
 Client Project #: DRINKING WATER
 Site Location: ALLEN LAKE
 Your P.O. #: 2019-15

DRINKING WATER SCAN - COURTENAY (DRINKING WATER)

BV Labs ID					ACJ355	
Sampling Date					2021/07/23 10:45	
COC Number					08493436	
	UNITS	MAC	AO	OG	ALLEN LAKE	RDL
ANIONS						
Nitrite (N)	mg/L	1	-	-	<0.0050	0.0050
Calculated Parameters						
Total Hardness (CaCO3)	mg/L	-	-	-	12.0	0.50
Nitrate (N)	mg/L	10	-	-	<0.020	0.020
Misc. Inorganics						
Conductivity	uS/cm	-	-	-	30	2.0
pH	pH	-	-	7.0:10.5	7.09	N/A
Total Dissolved Solids	mg/L	-	500	-	18	10
Anions						
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<1.0	1.0
Alkalinity (Total as CaCO3)	mg/L	-	-	-	13	1.0
Bicarbonate (HCO3)	mg/L	-	-	-	15	1.0
Carbonate (CO3)	mg/L	-	-	-	<1.0	1.0
Dissolved Fluoride (F)	mg/L	1.5	-	-	<0.050	0.050
Hydroxide (OH)	mg/L	-	-	-	<1.0	1.0
Dissolved Chloride (Cl)	mg/L	-	250	-	<1.0	1.0
Dissolved Sulphate (SO4)	mg/L	-	500	-	<1.0	1.0
MISCELLANEOUS						
True Colour	Col. Unit	-	15	-	6.6	5.0
Nutrients						
Nitrate plus Nitrite (N)	mg/L	-	-	-	<0.020	0.020
Physical Properties						
Turbidity	NTU	see remark	see remark	see remark	0.89	0.10
Elements						
Total Mercury (Hg)	ug/L	1	-	-	<0.0019	0.0019
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	-	-	100	4.1	3.0
Total Antimony (Sb)	ug/L	6	-	-	<0.50	0.50
Total Arsenic (As)	ug/L	10	-	-	<0.10	0.10
Total Barium (Ba)	ug/L	2000	-	-	<1.0	1.0
Total Beryllium (Be)	ug/L	-	-	-	<0.10	0.10
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						



BV Labs Job #: C152724
 Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
 Client Project #: DRINKING WATER
 Site Location: ALLEN LAKE
 Your P.O. #: 2019-15

DRINKING WATER SCAN - COURTENAY (DRINKING WATER)

BV Labs ID					ACJ355	
Sampling Date					2021/07/23 10:45	
COC Number					08493436	
	UNITS	MAC	AO	OG	ALLEN LAKE	RDL
Total Bismuth (Bi)	ug/L	-	-	-	<1.0	1.0
Total Boron (B)	ug/L	5000	-	-	<50	50
Total Cadmium (Cd)	ug/L	7	-	-	<0.010	0.010
Total Chromium (Cr)	ug/L	50	-	-	<1.0	1.0
Total Cobalt (Co)	ug/L	-	-	-	<0.20	0.20
Total Copper (Cu)	ug/L	2000	1000	-	12.4	0.20
Total Iron (Fe)	ug/L	-	300	-	285	5.0
Total Lead (Pb)	ug/L	5	-	-	0.28	0.20
Total Manganese (Mn)	ug/L	120	20	-	58.0	1.0
Total Molybdenum (Mo)	ug/L	-	-	-	<1.0	1.0
Total Nickel (Ni)	ug/L	-	-	-	<1.0	1.0
Total Selenium (Se)	ug/L	50	-	-	<0.10	0.10
Total Silicon (Si)	ug/L	-	-	-	2410	100
Total Silver (Ag)	ug/L	-	-	-	<0.020	0.020
Total Strontium (Sr)	ug/L	7000	-	-	7.4	1.0
Total Thallium (Tl)	ug/L	-	-	-	<0.010	0.010
Total Tin (Sn)	ug/L	-	-	-	<5.0	5.0
Total Titanium (Ti)	ug/L	-	-	-	<5.0	5.0
Total Uranium (U)	ug/L	20	-	-	<0.10	0.10
Total Vanadium (V)	ug/L	-	-	-	<5.0	5.0
Total Zinc (Zn)	ug/L	-	5000	-	7.4	5.0
Total Zirconium (Zr)	ug/L	-	-	-	<0.10	0.10
Total Calcium (Ca)	mg/L	-	-	-	3.20	0.050
Total Magnesium (Mg)	mg/L	-	-	-	0.975	0.050
Total Potassium (K)	mg/L	-	-	-	0.067	0.050
Total Sodium (Na)	mg/L	-	200	-	1.15	0.050
Total Sulphur (S)	mg/L	-	-	-	<3.0	3.0
Microbiological Param.						
Total Coliforms (QT)	MPN/100mL	0	-	-	200	N/A
E. coli (QT)	MPN/100mL	0	-	-	0	N/A
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						



BUREAU VERITAS
LABORATORIES

BV Labs Job #: C152724
Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: ALLEN LAKE
Your P.O. #: 2019-15

GENERAL COMMENTS

MAC,AO,OG: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)
It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: C152724
Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: ALLEN LAKE
Your P.O. #: 2019-15

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

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Your P.O. #: 2019-15
 Your Project #: DRINKING WATER
 Site Location: HENDERSON
 Your C.O.C. #: 08493432

Attention: Public Works
 VILLAGE OF CUMBERLAND
 PO BOX 340
 CUMBERLAND, BC
 CANADA V0R 1S0

Report Date: 2021/07/29
 Report #: R3052144
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C152714

Received: 2021/07/23, 11:30

Sample Matrix: Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH (1)	1	N/A	2021/07/26	BBY6SOP-00026	SM 23 2320 B m
Chloride/Sulphate by Auto Colourimetry (1)	1	N/A	2021/07/28	BBY6SOP-00011 / BBY6SOP-00017	SM23-4500-Cl/SO4-E m
Colour (True) by Kone Lab (1)	1	N/A	2021/07/24	BBY6SOP-00057	SM 23 2120 C m
Coliforms & E.coli by Quantitray (MPN)	1	N/A	2021/07/23	CTYSOP-00002	SM 23 9223
Conductivity @25C (1)	1	N/A	2021/07/26	BBY6SOP-00026	SM 23 2510 B m
Fluoride (1)	1	N/A	2021/07/27	BBY6SOP-00048	SM 23 4500-F C m
Hardness Total (calculated as CaCO ₃) (1, 2)	1	N/A	2021/07/28	BBY WI-00033	Auto Calc
Mercury (Total) by CV (1)	1	2021/07/26	2021/07/26	AB SOP-00084	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	1	N/A	2021/07/28	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total) (1)	1	N/A	2021/07/28	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Nitrate + Nitrite (N) (1)	1	N/A	2021/07/24	BBY6SOP-00010	SM 23 4500-NO ₃ - I m
Nitrite (N) by CFA (1)	1	N/A	2021/07/24	BBY6SOP-00010	SM 23 4500-NO ₃ - I m
Nitrogen - Nitrate (as N) (1)	1	N/A	2021/07/24	BBY WI-00033	Auto Calc
pH @25°C (1, 3)	1	N/A	2021/07/26	BBY6SOP-00026	SM 23 4500-H+ B m
Total Dissolved Solids (Filt. Residue) (1)	1	2021/07/28	2021/07/29	BBY6SOP-00033	SM 23 2540 C m
Turbidity (1)	1	N/A	2021/07/24	BBY6SOP-00027	SM 23 2130 B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.



Your P.O. #: 2019-15
Your Project #: DRINKING WATER
Site Location: HENDERSON
Your C.O.C. #: 08493432

Attention: Public Works
VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2021/07/29
Report #: R3052144
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C152714
Received: 2021/07/23, 11:30

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested. This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Vancouver

(2) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(3) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.

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29 Jul 2021 16:16:12

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Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bureauveritas.com
Phone# (833) 282-5227

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BV Labs Job #: C152714
 Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
 Client Project #: DRINKING WATER
 Site Location: HENDERSON
 Your P.O. #: 2019-15

DRINKING WATER SCAN - COURTENAY (WATER)

BV Labs ID					ACJ252	
Sampling Date					2021/07/23 10:45	
COC Number					08493432	
	UNITS	MAC	AO	OG	HENDERSON	RDL
ANIONS						
Nitrite (N)	mg/L	1	-	-	<0.0050	0.0050
Calculated Parameters						
Total Hardness (CaCO3)	mg/L	-	-	-	12.8	0.50
Nitrate (N)	mg/L	10	-	-	0.027	0.020
Misc. Inorganics						
Conductivity	uS/cm	-	-	-	29	2.0
pH	pH	-	-	7.0:10.5	7.10	N/A
Total Dissolved Solids	mg/L	-	500	-	30	10
Anions						
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<1.0	1.0
Alkalinity (Total as CaCO3)	mg/L	-	-	-	14	1.0
Bicarbonate (HCO3)	mg/L	-	-	-	17	1.0
Carbonate (CO3)	mg/L	-	-	-	<1.0	1.0
Dissolved Fluoride (F)	mg/L	1.5	-	-	<0.050	0.050
Hydroxide (OH)	mg/L	-	-	-	<1.0	1.0
Dissolved Chloride (Cl)	mg/L	-	250	-	<1.0	1.0
Dissolved Sulphate (SO4)	mg/L	-	500	-	<1.0	1.0
MISCELLANEOUS						
True Colour	Col. Unit	-	15	-	11.5	5.0
Nutrients						
Nitrate plus Nitrite (N)	mg/L	-	-	-	0.027	0.020
Physical Properties						
Turbidity	NTU	see remark	see remark	see remark	0.63	0.10
Elements						
Total Mercury (Hg)	ug/L	1	-	-	<0.0019	0.0019
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	-	-	100	15.4	3.0
Total Antimony (Sb)	ug/L	6	-	-	<0.50	0.50
Total Arsenic (As)	ug/L	10	-	-	<0.10	0.10
Total Barium (Ba)	ug/L	2000	-	-	<1.0	1.0
Total Beryllium (Be)	ug/L	-	-	-	<0.10	0.10
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						



BV Labs Job #: C152714
 Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
 Client Project #: DRINKING WATER
 Site Location: HENDERSON
 Your P.O. #: 2019-15

DRINKING WATER SCAN - COURTENAY (WATER)

BV Labs ID					ACJ252	
Sampling Date					2021/07/23 10:45	
COC Number					08493432	
	UNITS	MAC	AO	OG	HENDERSON	RDL
Total Bismuth (Bi)	ug/L	-	-	-	<1.0	1.0
Total Boron (B)	ug/L	5000	-	-	<50	50
Total Cadmium (Cd)	ug/L	7	-	-	<0.010	0.010
Total Chromium (Cr)	ug/L	50	-	-	<1.0	1.0
Total Cobalt (Co)	ug/L	-	-	-	<0.20	0.20
Total Copper (Cu)	ug/L	2000	1000	-	3.85	0.20
Total Iron (Fe)	ug/L	-	300	-	419	5.0
Total Lead (Pb)	ug/L	5	-	-	<0.20	0.20
Total Manganese (Mn)	ug/L	120	20	-	30.0	1.0
Total Molybdenum (Mo)	ug/L	-	-	-	<1.0	1.0
Total Nickel (Ni)	ug/L	-	-	-	<1.0	1.0
Total Selenium (Se)	ug/L	50	-	-	<0.10	0.10
Total Silicon (Si)	ug/L	-	-	-	1950	100
Total Silver (Ag)	ug/L	-	-	-	<0.020	0.020
Total Strontium (Sr)	ug/L	7000	-	-	7.6	1.0
Total Thallium (Tl)	ug/L	-	-	-	<0.010	0.010
Total Tin (Sn)	ug/L	-	-	-	<5.0	5.0
Total Titanium (Ti)	ug/L	-	-	-	<5.0	5.0
Total Uranium (U)	ug/L	20	-	-	<0.10	0.10
Total Vanadium (V)	ug/L	-	-	-	<5.0	5.0
Total Zinc (Zn)	ug/L	-	5000	-	<5.0	5.0
Total Zirconium (Zr)	ug/L	-	-	-	<0.10	0.10
Total Calcium (Ca)	mg/L	-	-	-	3.52	0.050
Total Magnesium (Mg)	mg/L	-	-	-	0.959	0.050
Total Potassium (K)	mg/L	-	-	-	<0.050	0.050
Total Sodium (Na)	mg/L	-	200	-	0.918	0.050
Total Sulphur (S)	mg/L	-	-	-	<3.0	3.0
Microbiological Param.						
Total Coliforms (QT)	MPN/100mL	0	-	-	>200	N/A
E. coli (QT)	MPN/100mL	0	-	-	22	N/A
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						



BV Labs Job #: C152714
Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: HENDERSON
Your P.O. #: 2019-15

GENERAL COMMENTS

MAC,AO,OG: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)
It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



BUREAU
VERITAS

BV Labs Job #: C152714
Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: HENDERSON
Your P.O. #: 2019-15

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

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For Service Group specific validation please refer to the Validation Signature Page.



Your P.O. #: 2019-15
 Your Project #: DRINKING WATER
 Site Location: SITE #8
 Your C.O.C. #: 08493427

Attention: Public Works
 VILLAGE OF CUMBERLAND
 PO BOX 340
 CUMBERLAND, BC
 CANADA V0R 1S0

Report Date: 2021/07/29
 Report #: R3052106
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C152726

Received: 2021/07/23, 11:30

Sample Matrix: Drinking Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH (1)	1	N/A	2021/07/26	BBY6SOP-00026	SM 23 2320 B m
Chloride/Sulphate by Auto Colourimetry (1)	1	N/A	2021/07/28	BBY6SOP-00011 / BBY6SOP-00017	SM23-4500-Cl/SO4-E m
Colour (True) by Kone Lab (1)	1	N/A	2021/07/24	BBY6SOP-00057	SM 23 2120 C m
Coliforms & E.coli by Quantitray (MPN)	1	N/A	2021/07/23	CTYSOP-00002	SM 23 9223
Conductivity @25C (1)	1	N/A	2021/07/26	BBY6SOP-00026	SM 23 2510 B m
Fluoride (1)	1	N/A	2021/07/27	BBY6SOP-00048	SM 23 4500-F C m
Hardness Total (calculated as CaCO ₃) (1, 2)	1	N/A	2021/07/28	BBY WI-00033	Auto Calc
Mercury (Total) by CV (1)	1	2021/07/26	2021/07/26	AB SOP-00084	BCM0E BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	1	N/A	2021/07/28	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total) (1)	1	N/A	2021/07/28	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Nitrate + Nitrite (N) (1)	1	N/A	2021/07/24	BBY6SOP-00010	SM 23 4500-NO3- I m
Nitrite (N) by CFA (1)	1	N/A	2021/07/24	BBY6SOP-00010	SM 23 4500-NO3- I m
Nitrogen - Nitrate (as N) (1)	1	N/A	2021/07/24	BBY WI-00033	Auto Calc
pH @25°C (1, 3)	1	N/A	2021/07/26	BBY6SOP-00026	SM 23 4500-H+ B m
Total Dissolved Solids (Filt. Residue) (1)	1	2021/07/28	2021/07/29	BBY6SOP-00033	SM 23 2540 C m
Turbidity (1)	1	N/A	2021/07/24	BBY6SOP-00027	SM 23 2130 B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.



Your P.O. #: 2019-15
Your Project #: DRINKING WATER
Site Location: SITE #8
Your C.O.C. #: 08493427

Attention: Public Works

VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2021/07/29
Report #: R3052106
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C152726

Received: 2021/07/23, 11:30

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Vancouver

(2) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(3) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.

Encryption Key



AUTHORIZED REPORT
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Bureau Veritas
29 Jul 2021 15:54:10

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Email: customersolutionswest@bureauveritas.com
Phone# (833) 282-5227

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BUREAU VERITAS

BV Labs Job #: C152726
Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #8
Your P.O. #: 2019-15

DRINKING WATER SCAN - COURTENAY (DRINKING WATER)

BV Labs ID					ACJ358	
Sampling Date					2021/07/23 11:00	
COC Number					08493427	
	UNITS	MAC	AO	OG	SITE #8 (WELL)	RDL
ANIONS						
Nitrite (N)	mg/L	1	-	-	<0.0050	0.0050
Calculated Parameters						
Total Hardness (CaCO3)	mg/L	-	-	-	34.8	0.50
Nitrate (N)	mg/L	10	-	-	0.034	0.020
Misc. Inorganics						
Conductivity	uS/cm	-	-	-	120	2.0
pH	pH	-	-	7.0:10.5	7.40	N/A
Total Dissolved Solids	mg/L	-	500	-	88	10
Anions						
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<1.0	1.0
Alkalinity (Total as CaCO3)	mg/L	-	-	-	38	1.0
Bicarbonate (HCO3)	mg/L	-	-	-	46	1.0
Carbonate (CO3)	mg/L	-	-	-	<1.0	1.0
Dissolved Fluoride (F)	mg/L	1.5	-	-	<0.050	0.050
Hydroxide (OH)	mg/L	-	-	-	<1.0	1.0
Dissolved Chloride (Cl)	mg/L	-	250	-	12	1.0
Dissolved Sulphate (SO4)	mg/L	-	500	-	4.6	1.0
MISCELLANEOUS						
True Colour	Col. Unit	-	15	-	<5.0	5.0
Nutrients						
Nitrate plus Nitrite (N)	mg/L	-	-	-	0.034	0.020
Physical Properties						
Turbidity	NTU	see remark	see remark	see remark	<0.10	0.10
Elements						
Total Mercury (Hg)	ug/L	1	-	-	<0.0019	0.0019
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	-	-	100	<3.0	3.0
Total Antimony (Sb)	ug/L	6	-	-	<0.50	0.50
Total Arsenic (As)	ug/L	10	-	-	<0.10	0.10
Total Barium (Ba)	ug/L	2000	-	-	1.5	1.0
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						



BUREAU OF VERITAS

BV Labs Job #: C152726
 Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
 Client Project #: DRINKING WATER
 Site Location: SITE #8
 Your P.O. #: 2019-15

DRINKING WATER SCAN - COURTENAY (DRINKING WATER)

BV Labs ID					ACJ358	
Sampling Date					2021/07/23 11:00	
COC Number					08493427	
	UNITS	MAC	AO	OG	SITE #8 (WELL)	RDL
Total Beryllium (Be)	ug/L	-	-	-	<0.10	0.10
Total Bismuth (Bi)	ug/L	-	-	-	<1.0	1.0
Total Boron (B)	ug/L	5000	-	-	200	50
Total Cadmium (Cd)	ug/L	7	-	-	<0.010	0.010
Total Chromium (Cr)	ug/L	50	-	-	<1.0	1.0
Total Cobalt (Co)	ug/L	-	-	-	<0.20	0.20
Total Copper (Cu)	ug/L	2000	1000	-	<0.20	0.20
Total Iron (Fe)	ug/L	-	300	-	<5.0	5.0
Total Lead (Pb)	ug/L	5	-	-	<0.20	0.20
Total Manganese (Mn)	ug/L	120	20	-	<1.0	1.0
Total Molybdenum (Mo)	ug/L	-	-	-	<1.0	1.0
Total Nickel (Ni)	ug/L	-	-	-	<1.0	1.0
Total Selenium (Se)	ug/L	50	-	-	<0.10	0.10
Total Silicon (Si)	ug/L	-	-	-	5360	100
Total Silver (Ag)	ug/L	-	-	-	<0.020	0.020
Total Strontium (Sr)	ug/L	7000	-	-	28.5	1.0
Total Thallium (Tl)	ug/L	-	-	-	<0.010	0.010
Total Tin (Sn)	ug/L	-	-	-	<5.0	5.0
Total Titanium (Ti)	ug/L	-	-	-	<5.0	5.0
Total Uranium (U)	ug/L	20	-	-	<0.10	0.10
Total Vanadium (V)	ug/L	-	-	-	<5.0	5.0
Total Zinc (Zn)	ug/L	-	5000	-	<5.0	5.0
Total Zirconium (Zr)	ug/L	-	-	-	<0.10	0.10
Total Calcium (Ca)	mg/L	-	-	-	9.78	0.050
Total Magnesium (Mg)	mg/L	-	-	-	2.51	0.050
Total Potassium (K)	mg/L	-	-	-	0.281	0.050
Total Sodium (Na)	mg/L	-	200	-	10.1	0.050
Total Sulphur (S)	mg/L	-	-	-	<3.0	3.0
Microbiological Param.						
Total Coliforms (QT)	MPN/100mL	0	-	-	0	N/A
E. coli (QT)	MPN/100mL	0	-	-	0	N/A
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						



BV Labs Job #: C152726
Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #8
Your P.O. #: 2019-15

GENERAL COMMENTS

MAC,AO,OG: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)
It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



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BV Labs Job #: C152726
Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #8
Your P.O. #: 2019-15

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

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Your P.O. #: 2019-15
 Your Project #: DRINKING WATER
 Site Location: SITE #1
 Your C.O.C. #: 08493428

Attention: Public Works
 VILLAGE OF CUMBERLAND
 PO BOX 340
 CUMBERLAND, BC
 CANADA V0R 1S0

Report Date: 2021/07/29
 Report #: R3052145
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C152708

Received: 2021/07/23, 11:30

Sample Matrix: Drinking Water
 # Samples Received: 1

Analyses	Quantity	Date		Laboratory Method	Analytical Method
		Extracted	Analyzed		
Alkalinity @25C (pp, total), CO ₃ ,HCO ₃ ,OH (1)	1	N/A	2021/07/26	BBY6SOP-00026	SM 23 2320 B m
Chloride/Sulphate by Auto Colourimetry (1)	1	N/A	2021/07/28	BBY6SOP-00011 / BBY6SOP-00017	SM23-4500-Cl/SO4-E m
Colour (True) by Kone Lab (1)	1	N/A	2021/07/24	BBY6SOP-00057	SM 23 2120 C m
Coliforms & E.coli by Quantitray (MPN)	1	N/A	2021/07/23	CTYSOP-00002	SM 23 9223
Conductivity @25C (1)	1	N/A	2021/07/26	BBY6SOP-00026	SM 23 2510 B m
Fluoride (1)	1	N/A	2021/07/27	BBY6SOP-00048	SM 23 4500-F C m
Hardness Total (calculated as CaCO ₃) (1, 2)	1	N/A	2021/07/28	BBY WI-00033	Auto Calc
Mercury (Total) by CV (1)	1	2021/07/26	2021/07/26	AB SOP-00084	BCMOE BCLM Oct2013 m
Na, K, Ca, Mg, S by CRC ICPMS (total) (1)	1	N/A	2021/07/28	BBY WI-00033	Auto Calc
Elements by CRC ICPMS (total) (1)	1	N/A	2021/07/28	BBY7SOP-00003 / BBY7SOP-00002	EPA 6020b R2 m
Nitrate + Nitrite (N) (1)	1	N/A	2021/07/24	BBY6SOP-00010	SM 23 4500-NO ₃ - I m
Nitrite (N) by CFA (1)	1	N/A	2021/07/24	BBY6SOP-00010	SM 23 4500-NO ₃ - I m
Nitrogen - Nitrate (as N) (1)	1	N/A	2021/07/24	BBY WI-00033	Auto Calc
pH @25°C (1, 3)	1	N/A	2021/07/26	BBY6SOP-00026	SM 23 4500-H+ B m
Total Dissolved Solids (Filt. Residue) (1)	1	2021/07/28	2021/07/29	BBY6SOP-00033	SM 23 2540 C m
Turbidity (1)	1	N/A	2021/07/24	BBY6SOP-00027	SM 23 2130 B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

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Your P.O. #: 2019-15
Your Project #: DRINKING WATER
Site Location: SITE #1
Your C.O.C. #: 08493428

Attention: Public Works

VILLAGE OF CUMBERLAND
PO BOX 340
CUMBERLAND, BC
CANADA V0R 1S0

Report Date: 2021/07/29
Report #: R3052145
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BV LABS JOB #: C152708

Received: 2021/07/23, 11:30

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Vancouver

(2) "Total Hardness" was calculated from Total Ca and Mg concentrations and may be biased high (Hardness, or Dissolved Hardness, calculated from Dissolved Ca and Mg, should be used for compliance if available).

(3) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Bureau Veritas Laboratories endeavours to analyze samples as soon as possible after receipt.

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Email: customersolutionswest@bureauveritas.com
Phone# (833) 282-5227

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BV Labs Job #: C152708
 Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
 Client Project #: DRINKING WATER
 Site Location: SITE #1
 Your P.O. #: 2019-15

DRINKING WATER SCAN - COURTENAY (DRINKING WATER)

BV Labs ID					ACJ231	
Sampling Date					2021/07/23 11:00	
COC Number					08493428	
	UNITS	MAC	AO	OG	SITE #1	RDL
ANIONS						
Nitrite (N)	mg/L	1	-	-	<0.0050	0.0050
Calculated Parameters						
Total Hardness (CaCO3)	mg/L	-	-	-	12.9	0.50
Nitrate (N)	mg/L	10	-	-	<0.020	0.020
Misc. Inorganics						
Conductivity	uS/cm	-	-	-	45	2.0
pH	pH	-	-	7.0:10.5	7.03	N/A
Total Dissolved Solids	mg/L	-	500	-	34	10
Anions						
Alkalinity (PP as CaCO3)	mg/L	-	-	-	<1.0	1.0
Alkalinity (Total as CaCO3)	mg/L	-	-	-	13	1.0
Bicarbonate (HCO3)	mg/L	-	-	-	16	1.0
Carbonate (CO3)	mg/L	-	-	-	<1.0	1.0
Dissolved Fluoride (F)	mg/L	1.5	-	-	<0.050	0.050
Hydroxide (OH)	mg/L	-	-	-	<1.0	1.0
Dissolved Chloride (Cl)	mg/L	-	250	-	3.8	1.0
Dissolved Sulphate (SO4)	mg/L	-	500	-	<1.0	1.0
MISCELLANEOUS						
True Colour	Col. Unit	-	15	-	6.6	5.0
Nutrients						
Nitrate plus Nitrite (N)	mg/L	-	-	-	<0.020	0.020
Physical Properties						
Turbidity	NTU	see remark	see remark	see remark	0.49	0.10
Elements						
Total Mercury (Hg)	ug/L	1	-	-	<0.0019	0.0019
Total Metals by ICPMS						
Total Aluminum (Al)	ug/L	-	-	100	9.0	3.0
Total Antimony (Sb)	ug/L	6	-	-	<0.50	0.50
Total Arsenic (As)	ug/L	10	-	-	<0.10	0.10
Total Barium (Ba)	ug/L	2000	-	-	<1.0	1.0
Total Beryllium (Be)	ug/L	-	-	-	<0.10	0.10
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						



BUREAU VERITAS

BV Labs Job #: C152708
Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #1
Your P.O. #: 2019-15

DRINKING WATER SCAN - COURTENAY (DRINKING WATER)

BV Labs ID					ACJ231	
Sampling Date					2021/07/23 11:00	
COC Number					08493428	
	UNITS	MAC	AO	OG	SITE #1	RDL
Total Bismuth (Bi)	ug/L	-	-	-	<1.0	1.0
Total Boron (B)	ug/L	5000	-	-	<50	50
Total Cadmium (Cd)	ug/L	7	-	-	<0.010	0.010
Total Chromium (Cr)	ug/L	50	-	-	<1.0	1.0
Total Cobalt (Co)	ug/L	-	-	-	<0.20	0.20
Total Copper (Cu)	ug/L	2000	1000	-	11.4	0.20
Total Iron (Fe)	ug/L	-	300	-	356	5.0
Total Lead (Pb)	ug/L	5	-	-	1.05	0.20
Total Manganese (Mn)	ug/L	120	20	-	11.4	1.0
Total Molybdenum (Mo)	ug/L	-	-	-	<1.0	1.0
Total Nickel (Ni)	ug/L	-	-	-	<1.0	1.0
Total Selenium (Se)	ug/L	50	-	-	<0.10	0.10
Total Silicon (Si)	ug/L	-	-	-	2150	100
Total Silver (Ag)	ug/L	-	-	-	<0.020	0.020
Total Strontium (Sr)	ug/L	7000	-	-	7.8	1.0
Total Thallium (Tl)	ug/L	-	-	-	<0.010	0.010
Total Tin (Sn)	ug/L	-	-	-	<5.0	5.0
Total Titanium (Ti)	ug/L	-	-	-	<5.0	5.0
Total Uranium (U)	ug/L	20	-	-	<0.10	0.10
Total Vanadium (V)	ug/L	-	-	-	<5.0	5.0
Total Zinc (Zn)	ug/L	-	5000	-	12.5	5.0
Total Zirconium (Zr)	ug/L	-	-	-	<0.10	0.10
Total Calcium (Ca)	mg/L	-	-	-	3.55	0.050
Total Magnesium (Mg)	mg/L	-	-	-	0.982	0.050
Total Potassium (K)	mg/L	-	-	-	0.053	0.050
Total Sodium (Na)	mg/L	-	200	-	3.30	0.050
Total Sulphur (S)	mg/L	-	-	-	<3.0	3.0
Microbiological Param.						
Total Coliforms (QT)	MPN/100mL	0	-	-	0	N/A
E. coli (QT)	MPN/100mL	0	-	-	0	N/A
No Fill	No Exceedance					
Grey	Exceeds 1 criteria policy/level					
Black	Exceeds both criteria/levels					
RDL = Reportable Detection Limit						
N/A = Not Applicable						



BUREAU
VERITAS

BV Labs Job #: C152708
Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #1
Your P.O. #: 2019-15

GENERAL COMMENTS

MAC,AO,OG: The guidelines that have been included in this report have been taken from the Canadian Drinking Water Quality Summary Table, September 2020.

Criteria A = Maximum Acceptable Concentration (MAC) / Criteria B = Aesthetic Objectives (AO) / Criteria C = Operational Guidance Values (OG)
It is recommended to consult these guidelines when interpreting your data since there are non-numerical guidelines that are not included on this report.

Turbidity Guidelines:

1. Chemically assisted filtration: less than or equal to 0.3 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 1.0 NTU at any time.
2. Slow sand / diatomaceous earth filtration: less than or equal to 1.0 NTU in 95% of the measurements or 95% of the time each month. Shall not exceed 3.0 NTU at any time.
3. Membrane filtration: less than or equal to 0.1 NTU in 99% of the measurements made or at least 99% of the time each calendar month. Shall not exceed 0.3 NTU at any time.
4. To ensure effectiveness of disinfection and for good operation of the distribution system, it is recommended that water entering the distribution system have turbidity levels of 1.0 NTU or less.

Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.



BUREAU VERITAS
LABORATORIES

BV Labs Job #: C152708
Report Date: 2021/07/29

VILLAGE OF CUMBERLAND
Client Project #: DRINKING WATER
Site Location: SITE #1
Your P.O. #: 2019-15

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

David Huang, M.Sc., P.Chem., QP, Scientific Services Manager

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

2021 Water Quality Complaints | Village of Cumberland

Date	Location	Complaint	Cause	Actions/Recommendations
2021-01-25	Bruce St.	Smell of chlorine in water	New water plant is producing stronger residuals in the distribution system	We are slowing adjusting the dosing rate on the hypo pumps
2021-02-03	Derwent Ave.	Yellow colour in water	Uncertain at this time / just moved in so perhaps not used to our water	GM on site @ ~2pm on Feb 3rd; flushed from outside hose bib and filled a clean white bucket. Water appeared normal. The resident is new to town so I explained our water system (including new WTP) and water testing that we do. DW and SP did a turbidity and UVT on a sample of their water. Result were 81% UVT and 0.70 NTU.
2021-02-08	Royston Road	Blue stain in toilet	Uncertain at this time	Clean toilet and monitor for future occurrence
2021-02-08	Westwood Road	Cloudy and metallic taste	Uncertain at this time	GM explained the water system as well as the improvements that have been made (WTP and reservoir) and the regular maintenance (flushing) and sampling that we do. Resident has a filter system installed in their home. Does regular filter maintenance.
2021-07-29	Sutton Place?	Turbidity in ice cube tray	Hydrant maintenance in the area / high flow rate	Flush until clear
2021-10-19	Westwood/Ulverston area	Discoloured water	Dead end flushing between upper and lower pressure zones	Flush until clear

Watermain/Service Leak Report | 2021 | Village of Cumberland

Date	Street	Address	Pipe Size	Pipe Type	Leak Type	Probable Cause	Repair Details
14-Jan-21	Maryport	2729	100	Steel	Hole in pipe	Age	SS Repair Clamp
21-Jan-21	Sixth	3253	100	CI	Leak at corp stop flare	Age	Cut out section and installed new service clamp
10-Feb-21	Penrith	2788	12.7	Copper	Hole in pipe	Age	Cut out section and installed new plastic piece
11-Feb-21	Maryport	2725	12.7	Copper	Hole in pipe	Age	Cut out section and installed coupling
07-May-21	9th Street	3302	19	Copper	Hole in pipe	Hot soil? Poor quality copper? Electrolysis?	Replace entire service line
26-Jul-21	Derwent	2731	100	Steel	Hole in pipe	Age	Cut out section installed new plastic piece
21-Sep-21	Maryport	Between 2nd and 3rd	100	Steel	Holes in pipe	Age	Cut out section installed new plastic piece

