island health

DRINKING WATER SYSTEM ANNUAL REPORT

Reporting Period: January 1st to December 31st, 2024 (year)

Water System Burnum Water System

Water System Owner Cowichan Valley Regional District

Primary Contact Name (Operator or Manager) Vanessa Thomson

Phone Number (Operator or Manager) 250-746-2535

E-mail (Operator or Manager) Vanessa.Thomson@cvrd.bc.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: Arsenic Treatment Ferric Oxide absorption on Wells 2 and 3

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) Radio, Social Media

Drinking Water System Annual Report

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

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

☐ Other (specify details)

COMPLIANCE WITH OPERATING PERMIT

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

Are you in compliance with your Operating Permit? ☒ Yes ☐ No

BACTERIOLOGICAL TESTING AND DRINKING WATER PROTECTION REGULATION WATER QUALITY STANDARDS

How many bacteriological samples were collected during this reporting period? 52

What is the minimum required sampling frequency for this system? (#samples/month) 4 samples/month

Additional sampling details:

Was the minimum required sampling frequency achieved? ☒ Yes ☐ No

Comments:

Bacteriological summary attached to this report? ☒ Yes ☐ No

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

WATER QUALITY STANDARDS FOR POTABLE WATER

Parameter:	***Standard:***	**Did this system meet standard?**	
Escherichia coli (for all samples)	No detectable *Escherichia coli* per 100ml	☒ Yes	☐ No
Total Coliform Bacteria *(if only 1 sample collected in a 30 day period)*	No detectable total coliform bacteria per 100ml	☒ Yes	☐ 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	☒ Yes	☐ No

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

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

CHEMICAL SAMPLING COMPLETED DURING THIS REPORTING PERIOD

Was any chemical sampling conducted during reporting period?	■ Yes	☐ No
If no, when were the last chemical samples conducted for this system? (date)		☐ Don't know
If yes, attach a list of the chemical results Full Spectrum Report for Source and Distribution - July and November 2024		
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) Source - July 2025; Distribution - November 2025		

Parameter	Result	Corrective Action / Treatment / Comments

ADDITIONAL TESTING

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

If yes, check all boxes that apply:

■ Chlorine ☐ Turbidity ☐ Other (details)

Are the results available on request? Yes

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

Additional Testing & Reason for Sampling	Corrective Action Taken
Arsenic testing semiannually	Within the MAC in the distribution - results attached

WATER QUALITY COMPLAINTS

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

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

Date	Water Quality Complaint	Corrective Action / Treatment

OPERATIONAL PROBLEMS

Were there any operational problems during this reporting period? (e.g. insufficient water supply, malfunction of disinfection equipment, line breaks, elevated turbidity etc.). ■ Yes ☐ No

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

Incident Date	Type of Operational Problem	Corrective Action Taken
Summer 2024	water shortage	Hauled water from SLNW Ingot Rd well during stage 3 restrictions.
		Stopped hauling upon implementation of stage 4 restrictions.
Summer 2024	water restrictions	

MAJOR UPGRADES/REPAIRS & EXPENSES

Were there any major upgrades/repairs or any major costs incurred during this reporting period? ■ Yes ☐ No

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

Major Upgrades/Expenses	Details
Improvements required by DWO	
Additions/changes to system	
Purchase or install new equipment	Northgate well (old) pump install
Equipment repair or replacement	
Annual maintenance of system	System flushing, hydrant maintenance, chlorine equipment servicing
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
New well tie in	Future - 2025

Click here to enter a date. February 18, 2025 **DATE COMPLETED:**	Tyler Sousa **COMPLETED BY:**

BURNUM WATER SYSTEM

Facility Information

Location 175 Ingram Street Duncan

Type 15 - 300 Connections

Facility Sampling History

Location	Date	Total Coliform	E. Coli/Enterococci
S1 1866 Burnham Road	16-Dec-2024	LT1	LT1
S2 1785 Empress Road	16-Dec-2024	LT1	LT1
S1 1866 Burnham Road	09-Dec-2024	LT1	LT1
S2 1785 Empress Road	03-Dec-2024	LT1	LT1
S1 1866 Burnham Road	26-Nov-2024	LT1	LT1
S2 1785 Empress Road	18-Nov-2024	LT1	LT1
S1 1866 Burnham Road	12-Nov-2024	QRWRT	QRWRT
S2 1785 Empress Road	05-Nov-2024	LT1	LT1
S1 1866 Burnham Road	28-Oct-2024	LT1	LT1
S2 1785 Empress Road	21-Oct-2024	LT1	LT1
S1 1866 Burnham Road	15-Oct-2024	LT1	LT1
S2 1785 Empress Road	07-Oct-2024	LT1	LT1
S1 1866 Burnham Road	02-Oct-2024	LT1	LT1
S2 1785 Empress Road	23-Sep-2024	LT1	LT1
S1 1866 Burnham Road	17-Sep-2024	LT1	LT1
S2 1785 Empress Road	09-Sep-2024	LT1	LT1
S1 1866 Burnham Road	03-Sep-2024	LT1	LT1
S2 1785 Empress Road	26-Aug-2024	LT1	LT1
S1 1866 Burnham Road	19-Aug-2024	LT1	LT1
S2 1785 Empress Road	13-Aug-2024	LT1	LT1
S1 1866 Burnham Road	07-Aug-2024	LT1	LT1
S2 1785 Empress Road	30-Jul-2024	LT1	LT1
S1 1866 Burnham Road	23-Jul-2024	LT1	LT1
S2 1785 Empress Road	15-Jul-2024	LT1	LT1
S1 1866 Burnham Road	08-Jul-2024	LT1	LT1
S2 1785 Empress Road	02-Jul-2024	LT1	LT1
S1 1866 Burnham Road	24-Jun-2024	LT1	LT1
S2 1785 Empress Road	17-Jun-2024	QRWRT	QRWRT
S1 1866 Burnham Road	12-Jun-2024	LT1	LT1
S2 1785 Empress Road	03-Jun-2024	LT1	LT1
S1 1866 Burnham Road	28-May-2024	LT1	LT1
S2 1785 Empress Road	21-May-2024	LT1	LT1
S1 1866 Burnham Road	13-May-2024	LT1	LT1
S2 1785 Empress Road	06-May-2024	LT1	LT1
S1 1866 Burnham Road	29-Apr-2024	LT1	LT1
S2 1785 Empress Road	22-Apr-2024	LT1	LT1
S1 1866 Burnham Road	15-Apr-2024	LT1	LT1
S2 1785 Empress Road	08-Apr-2024	LT1	LT1
S1 1866 Burnham Road	02-Apr-2024	LT1	LT1
S2 1785 Empress Road	25-Mar-2024	LT1	LT1
S1 1866 Burnham Road	18-Mar-2024	LT1	LT1
S2 1785 Empress Road	11-Mar-2024	LT1	LT1

BURNUM WATER SYSTEM

Facility Information

Location 175 Ingram Street Duncan

Type 15 - 300 Connections

Facility Sampling History

Location	Date	Total Coliform	E. Coli/Enterococci
S1 1866 Burnham Road	05-Mar-2024	LT1	LT1
S2 1785 Empress Road	26-Feb-2024	LT1	LT1
S1 1866 Burnham Road	20-Feb-2024	LT1	LT1
S2 1785 Empress Road	13-Feb-2024	LT1	LT1
S1 1866 Burnham Road	05-Feb-2024	LT1	LT1
S2 1785 Empress Road	30-Jan-2024	LT1	LT1
S1 1866 Burnham Road	23-Jan-2024	LT1	LT1
S2 1785 Empress Road	15-Jan-2024	LT1	LT1
S1 1866 Burnham Road	08-Jan-2024	LT1	LT1
S2 1785 Empress Road	02-Jan-2024	LT1	LT1

BURNUM

SOURCE - Well 1 and Well 3

DISTRIBUTION - S1

			Sample ID	WELL 3 (WTX 32862)	WELL 1 (WTX 32860)	S1-1866 BURNHAM ROAD (WTX 2F4F4)
			Sampling Date	07/11/24	07/11/24	11/27/24
			Sampling Time	11:00 AM	11:10 AM	12:45 PM
Parameter Name	***MAC***	***AO***	***Units***	***Result***	***Result2***	***Result3***
Nitrite (N)	1		mg/L	<0.0050	<0.0050	<0.0050
Nitrate (N)	10		mg/L	0.124	<0.020	0.916
Conductivity			uS/cm	330	130	320
pH			pH	8.01	9.11	7.8
Total Dissolved Solids		500	mg/L	180	90	200
Alkalinity (PP as CaCO3)			mg/L	<1.0	9.9	<1.0
Alkalinity (Total as CaCO3)			mg/L	130	42	120
Bicarbonate (HCO3)			mg/L	150	27	140
Carbonate (CO3)			mg/L	<1.0	12	<1.0
Hydroxide (OH)			mg/L	<1.0	<1.0	<1.0
Chloride (Cl)		250	mg/L	9.4	4	11
Sulphate (SO4)		500	mg/L	20	9.2	27
True Colour		15	Col. Unit	<2.0	<2.0	<2.0
Nitrate plus Nitrite (N)			mg/L	0.124	<0.020	0.916
Langelier Index (@ 20C)			N/A	0.379	-0.063	0.101
Langelier Index (@ 4C)			N/A	0.13	-0.293	-0.148
Saturation pH (@ 20C)			N/A	7.64	9.18	7.7
Saturation pH (@ 4C)			N/A	7.88	9.41	7.95
Dissolved Fluoride (F)	1.5		mg/L	0.064	0.31	0.13
Tannins and Lignins			mg/L	<0.2	<0.2	<0.2
Turbidity	see remark	see remark	NTU	0.23	0.3	0.19
Total Hardness (CaCO3)			mg/L	143	9.88	130
Total Aluminum (Al)	2900		ug/L	3.2	<6.0	<3.0
Total Antimony (Sb)	6		ug/L	0.6	<1.0	<0.50
Total Arsenic (As)	10		ug/L	**19.6**	5.83	8.6
Total Barium (Ba)	2000		ug/L	6.3	<2.0	22.6
Total Beryllium (Be)			ug/L	<0.10	<0.20	<0.10
Total Bismuth (Bi)			ug/L	<1.0	<2.0	<1.0
Total Boron (B)	5000		ug/L	676	1810	826
Total Cadmium (Cd)	7		ug/L	<0.010	<0.020	<0.010
Total Chromium (Cr)	50		ug/L	<1.0	<2.0	<1.0
Total Cobalt (Co)			ug/L	<0.20	<0.40	<0.20
Total Copper (Cu)	2000	1000	ug/L	2.2	<0.40	5.55
Total Iron (Fe)		300	ug/L	<5.0	<10	<5.0
Total Lead (Pb)	5		ug/L	<0.20	<0.40	0.31
Total Manganese (Mn)	120	20	ug/L	1.8	<2.0	<1.0
Total Molybdenum (Mo)			ug/L	4.2	2.2	6.1
Total Nickel (Ni)			ug/L	<1.0	<2.0	<1.0
Total Selenium (Se)	50		ug/L	0.86	0.86	0.48
Total Silicon (Si)			ug/L	11200	15500	11300
Total Silver (Ag)			ug/L	<0.020	<0.040	<0.020
Total Strontium (Sr)	7000		ug/L	388	56.6	390
Total Thallium (Tl)			ug/L	<0.010	<0.020	<0.010
Total Tin (Sn)			ug/L	<5.0	<10	<5.0
Total Titanium (Ti)			ug/L	<5.0	<10	<5.0
Total Uranium (U)	20		ug/L	0.11	<0.20	<0.10
Total Vanadium (V)			ug/L	6.2	<10	<5.0
Total Zinc (Zn)		5000	ug/L	5.2	<10	8.4

BURNUM

SOURCE - Well 1 and Well 3

DISTRIBUTION - S1

			Sample ID	WELL 3 (WTX 32862)	WELL 1 (WTX 32860)	S1-1866 BURNHAM ROAD (WTX 2F4F4)
			Sampling Date	07/11/24	07/11/24	11/27/24
			Sampling Time	11:00 AM	11:10 AM	12:45 PM
Parameter Name	***MAC***	***AO***	***Units***	***Result***	***Result2***	***Result3***
Total Zirconium (Zr)			ug/L	<0.10	<0.20	<0.10
Total Calcium (Ca)			mg/L	44.8	3.96	41.5
Total Magnesium (Mg)			mg/L	7.51	<0.10	6.32
Total Potassium (K)			mg/L	0.067	<0.10	0.243
Total Sodium (Na)		200	mg/L	8.39	23.4	13.7
Total Sulphur (S)			mg/L	6.5	<6.0	7.8
Total Mercury (Hg)	1		ug/L	<0.0019	<0.0019	<0.0019
Total Total Kjeldahl Nitrogen (Calc)			mg/L	0.032	<0.020	<0.020
Total Organic Carbon (C)			mg/L	<0.50	<0.50	<0.50
Total Nitrogen (N)			mg/L	0.156	<0.020	0.922
Total Ammonia (N)			mg/L	<0.015	<0.015	<0.015
Sulphide (as H2S)		0.05	mg/L	0.0043	**0.2**	0.0029
Total Sulphide		0.05	mg/L	0.004	**0.19**	0.0027
Total Coliforms	0		CFU/100mL	0	0	0
E. coli	0		CFU/100mL	0	0	0
Heterotrophic Plate Count			CFU/mL	<1	<1	<1.0
Fecal Coliforms			CFU/100mL	<1	<1	0
Non-Coliform (Background)			CFU/100mL	<1	<1	<1
Iron Bacteria			CFU/mL	25	<25	<25
Sulphate reducing bacteria			CFU/mL	<75	<75	<75
Total Trihalomethanes	100		ug/L			6.9
Bromodichloromethane			ug/L			2.1
Bromoform			ug/L			1.1
Dibromochloromethane			ug/L			2.3
Chloroform			ug/L			1.3
Dalapon			ug/L			<5.0
Monochloroacetic Acid			ug/L			<5.0
Monobromoacetic Acid			ug/L			<5.0
Dichloroacetic Acid			ug/L			<5.0
Trichloroacetic Acid			ug/L			<5.0
Bromochloroacetic Acid			ug/L			<5.0
Dibromoacetic Acid			ug/L			<5.0
Total Haloacetic Acids	80		ug/L			<5.0

BURNUM - Arsenic

SOURCE - Well 3 & Blended

DISTRIBUTION - Reservoir & S1

			Sample ID	RESERVOIR OUTLET FOR TOTAL ARSENIC (WTX 3FDC3)	RESERVOIR OUTLET FOR TOTAL ARSENIC (WTX 3FDC3)	WELL 3 (WTX 32862) PRE-FILTER	WELL 3 (WTX 32862) POST-FILTER	BLENDED WELLS (WTX46EE6)	S1-1866 BURNHAM RD (WTX2F4F4)
			Sampling Date	02/08/24	08/13/24	08/22/24	08/22/24	08/28/24	08/28/24
			Sampling Time	10:10 AM	12:35 PM	9:30 AM	9:30 AM	10:40 AM	10:50 AM
Parameter Name	***MAC***	***AO***	***Units***	***Result***	***Result2***	***Result3***	***Result4***	***Result5***	***Result6***
Total Arsenic (As)	10		ug/L	6.63	**11.6**	**27.3**	**24.9**	4.11	6.07