island health

DRINKING WATER SYSTEM ANNUAL REPORT

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

Water System Douglas Hill 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:

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 - March 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)	Distribution - June 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?

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

Additional Testing & Reason for Sampling	Corrective Action Taken

WATER QUALITY COMPLAINTS

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

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

Date	Water Quality Complaint	Corrective Action / Treatment

OPERATIONAL PROBLEMS

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

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

Incident Date	Type of Operational Problem	Corrective Action Taken

MAJOR UPGRADES/REPAIRS & EXPENSES

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

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

Major Upgrades/Expenses	Details
Improvements required by DWO	
Additions/changes to system	
Purchase or install new equipment	
Equipment repair or replacement	
Annual maintenance of system	System flushing, hydrant maintenance, servicing fire pump, genset and chlorination equip
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
Meter replacement program	Ongoing

Click here to enter a date. February 19, 2025 **DATE COMPLETED:**	Tyler Sousa **COMPLETED BY:**

DOUGLAS HILL WATER SYSTEM

Facility Information

Location 175 Ingram Street Duncan

Type 15 - 300 Connections

Facility Sampling History

Location	Date	Total Coliform	E. Coli/Enterococci
S1 easement behind 4373 Jims Crescent	18-Dec-2024	LT1	LT1
S2 4224 Douglas Vale	18-Dec-2024	LT1	LT1
S3 4171 Judge Drive	11-Dec-2024	LT1	LT1
S2 4224 Douglas Vale	03-Dec-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	26-Nov-2024	LT1	LT1
S2 4224 Douglas Vale	19-Nov-2024	LT1	LT1
S3 4171 Judge Drive	12-Nov-2024	QRWRT	QRWRT
S2 4224 Douglas Vale	05-Nov-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	28-Oct-2024	LT1	LT1
S2 4224 Douglas Vale	22-Oct-2024	LT1	LT1
S3 4171 Judge Drive	15-Oct-2024	LT1	LT1
S2 4224 Douglas Vale	07-Oct-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	02-Oct-2024	LT1	LT1
S2 4224 Douglas Vale	23-Sep-2024	LT1	LT1
S3 4171 Judge Drive	17-Sep-2024	LT1	LT1
S2 4224 Douglas Vale	09-Sep-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	03-Sep-2024	LT1	LT1
S2 4224 Douglas Vale	26-Aug-2024	LT1	LT1
S3 4171 Judge Drive	19-Aug-2024	LT1	LT1
S2 4224 Douglas Vale	13-Aug-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	07-Aug-2024	LT1	LT1
S2 4224 Douglas Vale	31-Jul-2024	LT1	LT1
S3 4171 Judge Drive	24-Jul-2024	LT1	LT1
S2 4224 Douglas Vale	15-Jul-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	08-Jul-2024	LT1	LT1
S2 4224 Douglas Vale	03-Jul-2024	LT1	LT1
S3 4171 Judge Drive	24-Jun-2024	LT1	LT1
S2 4224 Douglas Vale	19-Jun-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	11-Jun-2024	LT1	LT1
S2 4224 Douglas Vale	03-Jun-2024	LT1	LT1
S3 4171 Judge Drive	28-May-2024	LT1	LT1
S2 4224 Douglas Vale	21-May-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	13-May-2024	LT1	LT1
S2 4224 Douglas Vale	06-May-2024	LT1	LT1
S3 4171 Judge Drive	29-Apr-2024	LT1	LT1
S2 4224 Douglas Vale	22-Apr-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	15-Apr-2024	LT1	LT1
S2 4224 Douglas Vale	08-Apr-2024	LT1	LT1
S3 4171 Judge Drive	02-Apr-2024	LT1	LT1
S2 4224 Douglas Vale	25-Mar-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	18-Mar-2024	LT1	LT1
S2 4224 Douglas Vale	11-Mar-2024	LT1	LT1

DOUGLAS HILL WATER SYSTEM

Facility Information

Location 175 Ingram Street Duncan

Type 15 - 300 Connections

Facility Sampling History

Location	Date	Total Coliform	E. Coli/Enterococci
S3 4171 Judge Drive	05-Mar-2024	LT1	LT1
S2 4224 Douglas Vale	26-Feb-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	20-Feb-2024	LT1	LT1
S2 4224 Douglas Vale	13-Feb-2024	LT1	LT1
S3 4171 Judge Drive	05-Feb-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	30-Jan-2024	LT1	LT1
S2 4224 Douglas Vale	15-Jan-2024	LT1	LT1
S3 4171 Judge Drive	15-Jan-2024	LT1	LT1
S1 easement behind 4373 Jims Crescent	08-Jan-2024	LT1	LT1
S2 4224 Douglas Vale	02-Jan-2024	LT1	LT1

DOUGLAS HILL WATER SYSTEM

SOURCE - Well 1 & Well 2

			Sample ID	WELL 1 (WTX 27ACF)	WELL 2 (WTX 2D115)
			Sampling Date	03/27/24	03/27/24
			Sampling Time	10:13 AM	10:20 AM
Parameter Name	***MAC***	***AO***	***Units***	***Result***	***Result2***
Nitrite (N)	1		mg/L	<0.0050	<0.0050
Nitrate (N)	10		mg/L	1.82	1.89
Conductivity			uS/cm	210	220
pH			pH	7.88	7.91
Total Dissolved Solids		500	mg/L	100	120
Alkalinity (PP as CaCO3)			mg/L	<1.0	<1.0
Alkalinity (Total as CaCO3)			mg/L	77	72
Bicarbonate (HCO3)			mg/L	94	88
Carbonate (CO3)			mg/L	<1.0	<1.0
Hydroxide (OH)			mg/L	<1.0	<1.0
Chloride (Cl)		250	mg/L	7.1	13
Sulphate (SO4)		500	mg/L	5.1	5.8
True Colour		15	Col. Unit	<2.0	<2.0
Nitrate plus Nitrite (N)			mg/L	1.82	1.89
Langelier Index (@ 20C)			N/A	-0.317	-0.28
Langelier Index (@ 4C)			N/A	-0.567	-0.53
Saturation pH (@ 20C)			N/A	8.2	8.19
Saturation pH (@ 4C)			N/A	8.45	8.44
Dissolved Fluoride (F)	1.5		mg/L	<0.050	<0.050
Tannins and Lignins			mg/L	<0.2	<0.2
Turbidity	see remark	see remark	NTU	0.15	0.26
Total Hardness (CaCO3)			mg/L	92.2	96.2
Total Aluminum (Al)	2900		ug/L	<3.0	<3.0
Total Antimony (Sb)	6		ug/L	<0.50	<0.50
Total Arsenic (As)	10		ug/L	1.05	1.03
Total Barium (Ba)	2000		ug/L	3.4	4
Total Beryllium (Be)			ug/L	<0.10	<0.10
Total Bismuth (Bi)			ug/L	<1.0	<1.0
Total Boron (B)	5000		ug/L	<50	<50
Total Cadmium (Cd)	7		ug/L	<0.010	<0.010
Total Chromium (Cr)	50		ug/L	2.3	2.2
Total Cobalt (Co)			ug/L	<0.20	<0.20
Total Copper (Cu)	2000	1000	ug/L	0.51	0.47
Total Iron (Fe)		300	ug/L	<5.0	<5.0
Total Lead (Pb)	5		ug/L	<0.20	<0.20
Total Manganese (Mn)	120	20	ug/L	<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)	50		ug/L	0.41	0.44
Total Silicon (Si)			ug/L	11400	10100
Total Silver (Ag)			ug/L	<0.020	<0.020
Total Strontium (Sr)	7000		ug/L	60.7	77.7
Total Thallium (Tl)			ug/L	<0.010	<0.010
Total Tin (Sn)			ug/L	<5.0	<5.0

DOUGLAS HILL WATER SYSTEM

SOURCE - Well 1 & Well 2

			Sample ID	WELL 1 (WTX 27ACF)	WELL 2 (WTX 2D115)
			Sampling Date	03/27/24	03/27/24
			Sampling Time	10:13 AM	10:20 AM
Parameter Name	***MAC***	***AO***	***Units***	***Result***	***Result2***
Total Titanium (Ti)			ug/L	<5.0	<5.0
Total Uranium (U)	20		ug/L	0.3	0.36
Total Vanadium (V)			ug/L	<5.0	5.1
Total Zinc (Zn)		5000	ug/L	<5.0	<5.0
Total Zirconium (Zr)			ug/L	<0.10	<0.10
Total Calcium (Ca)			mg/L	18.3	20.3
Total Magnesium (Mg)			mg/L	11.3	11.1
Total Potassium (K)			mg/L	0.726	0.788
Total Sodium (Na)		200	mg/L	6.2	6.46
Total Sulphur (S)			mg/L	<3.0	<3.0
Total Mercury (Hg)	1		ug/L	<0.030	<0.030
Total Total Kjeldahl Nitrogen (Calc)			mg/L	<0.020	0.13
Total Organic Carbon (C)			mg/L	<0.50	<0.50
Total Nitrogen (N)			mg/L	1.81	2.03
Total Ammonia (N)			mg/L	<0.015	<0.015
Sulphide (as H2S)		0.05	mg/L	<0.0020	<0.0020
Total Sulphide		0.05	mg/L	<0.0018	<0.0018
Total Coliforms	0		CFU/100mL	0	0
E. coli	0		CFU/100mL	0	0
Heterotrophic Plate Count			CFU/mL	<1	<1
Fecal Coliforms			CFU/100mL	<1	<1
Non-Coliform (Background)			CFU/100mL	<1	<1
Iron Bacteria			CFU/mL	<25	150
Sulphate reducing bacteria			CFU/mL	<75	<75