



DRINKING WATER SYSTEM ANNUAL REPORT

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

Water System

Water System Owner

Primary Contact Name (Operator or Manager)

Phone Number (Operator or Manager)

E-mail (Operator or Manager)

DESCRIBE YOUR WATER SUPPLY SYSTEM

What is the Source(s) of Raw Water?

- Deep Well, Shallow Well, Surface Water, Other

If other, specify details:

Does the Drinking Water System have Primary Disinfection? Yes No

- Chlorination, Ultraviolet Light, Ozone, Other

If other, specify details:

Does the Drinking Water System have Secondary Disinfection? Yes No

- Chlorination, Other

If other, specify details:

Does the Drinking Water System have Filtration? Yes No

Check all boxes that apply

- Cartridge Filter(s), Carbon Filter, Sand Filtration, Reverse Osmosis, Other

If other, specify details:

PUBLIC REPORTING

Emergency Response & Contingency Plan (ERCP)

Is your ERCP up to Date? Yes No

How do you Inform the System Users of the ERCP?

- Hand Delivered, Bulletin Board, Newspaper, Utility Bill Insert, Website, Other (specify details) 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? _____

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

Additional sampling details:

Was the minimum required sampling frequency achieved? Yes No

Comments:

Bacteriological summary attached to this report? Yes No

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

WATER QUALITY STANDARDS FOR POTABLE WATER

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

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

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

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)

Parameter	Result	Corrective Action / Treatment / Comments

ADDITIONAL TESTING

Does the system have analyzers for continuous monitoring? Yes No

If yes, check all boxes that apply:

Chlorine Turbidity Other (details)

Are the results available on request?

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

Additional Testing & Reason for Sampling	Corrective Action Taken

WATER QUALITY COMPLAINTS

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

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

Date	Water Quality Complaint	Corrective Action / Treatment

OPERATIONAL PROBLEMS

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

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

Incident Date	Type of Operational Problem	Corrective Action Taken

MAJOR UPGRADES/REPAIRS & EXPENSES

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

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

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

FUTURE IMPROVEMENTS

Are there any plans for future improvements? Yes No

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

Future Upgrades or Improvements	Estimated Date of Completion

<p>Click here to enter a date.</p> <p>DATE COMPLETED:</p>	<p>COMPLETED BY:</p>
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MESACHIE LAKE WATER SYSTEM

Facility Information

Location 175 Ingram Street Duncan
 Type 15 - 300 Connections

Facility Sampling History

Location	Date	Total Coliform	E. Coli/Enterococci
S2 Pump House	19-Dec-2023	LT1	LT1
S1 9490 South Shore Road	11-Dec-2023	LT1	LT1
S3 6829 Forestry Road	05-Dec-2023	LT1	LT1
S1 9490 South Shore Road	27-Nov-2023	LT1	LT1
S2 Pump House	22-Nov-2023	LT1	LT1
S1 9490 South Shore Road	15-Nov-2023	LT1	LT1
S3 6829 Forestry Road	06-Nov-2023	LT1	LT1
S1 9490 South Shore Road	31- Oct-2023	LT1	LT1
S2 Pump House	24- Oct-2023	LT1	LT1
S1 9490 South Shore Road	17- Oct-2023	LT1	LT1
S3 6829 Forestry Road	10- Oct-2023	LT1	LT1
S1 9490 South Shore Road	03- Oct-2023	LT1	LT1
S2 Pump House	26-Sep-2023	LT1	LT1
S1 9490 South Shore Road	18-Sep-2023	LT1	LT1
S3 6829 Forestry Road	12-Sep-2023	LT1	LT1
S1 9490 South Shore Road	05-Sep-2023	94.5	LT1
S2 Pump House	29-Aug-2023	LT1	LT1
S1 9490 South Shore Road	21-Aug-2023	LT1 GTR200	LT1 GTR200
S3 6829 Forestry Road	15-Aug-2023	LT1	LT1
S1 9490 South Shore Road	09-Aug-2023	1.0	LT1
S2 Pump House	31-Jul-2023	LT1	LT1
S1 9490 South Shore Road	24-Jul-2023	LT1	LT1
S1 9490 South Shore Road	10-Jul-2023	LT1	LT1
S2 Pump House	05-Jul-2023	LT1	LT1
S1 9490 South Shore Road	26-Jun-2023	LT1	LT1
S3 6829 Forestry Road	19-Jun-2023	QRWRT	QRWRT
S1 9490 South Shore Road	13-Jun-2023	1.0	LT1
S2 Pump House	06-Jun-2023	QRWRT	QRWRT
S1 9490 South Shore Road	30-May-2023	LT1	LT1
S3 6829 Forestry Road	24-May-2023	LT1	LT1
S1 9490 South Shore Road	16-May-2023	LT1	LT1
S2 Pump House	08-May-2023	LT1	LT1
S1 9490 South Shore Road	02-May-2023	LT1	LT1
S3 6829 Forestry Road	24-Apr-2023	LT1	LT1
S1 9490 South Shore Road	18-Apr-2023	LT1	LT1
S2 Pump House	11-Apr-2023	LT1	LT1
S1 9490 South Shore Road	04-Apr-2023	LT1	LT1
S3 6829 Forestry Road	28-Mar-2023	QRWRT	QRWRT
S1 9490 South Shore Road	21-Mar-2023	LT1	LT1
S3 6829 Forestry Road	13-Mar-2023	LT1	LT1
S1 9490 South Shore Road	06-Mar-2023	LT1	LT1
S2 Pump House	01-Mar-2023	LT1	LT1
S2 Pump House	27-Feb-2023	QRWRT	QRWRT

MESACHIE LAKE WATER SYSTEM

Facility Information

Location 175 Ingram Street Duncan
Type 15 - 300 Connections

Facility Sampling History

Location	Date	Total Coliform	E. Coli/Enterococci
S2 Pump House	14-Feb-2023	LT1	LT1
S1 9490 South Shore Road	06-Feb-2023	LT1	LT1
S3 6829 Forestry Road	30-Jan-2023	LT1	LT1
S1 9490 South Shore Road	23-Jan-2023	LT1	LT1
S2 Pump House	16-Jan-2023	LT1	LT1
S1 9490 South Shore Road	09-Jan-2023	LT1	LT1
S3 6829 Forestry Road	04-Jan-2023	LT1	LT1

MESACHIE LAKE WATER SYSTEM

DISTRIBUTION - S1

			Sample ID	S1-9490 SOUTH SHORE RD (WTX 27C3D)
			Sampling Date	05/17/23
			Sampling Time	12:30 PM
Parameter Name	MAC	AO	Units	Result
Nitrite (N)	1		mg/L	<0.0050
Nitrate (N)	10		mg/L	0.122
Conductivity			uS/cm	90
pH			pH	6.94
Total Dissolved Solids		500	mg/L	48
Alkalinity (PP as CaCO3)			mg/L	<1.0
Alkalinity (Total as CaCO3)			mg/L	35
Bicarbonate (HCO3)			mg/L	43
Carbonate (CO3)			mg/L	<1.0
Hydroxide (OH)			mg/L	<1.0
Chloride (Cl)		250	mg/L	4.4
Sulphate (SO4)		500	mg/L	1.8
True Colour		15	Col. Unit	<5.0
Nitrate plus Nitrite (N)			mg/L	0.122
Langelier Index (@ 20C)			N/A	-1.73
Langelier Index (@ 4C)			N/A	-1.99
Saturation pH (@ 20C)			N/A	8.67
Saturation pH (@ 4C)			N/A	8.93
Dissolved Fluoride (F)	1.5		mg/L	<0.050
Tannins and Lignins			mg/L	<0.2
Turbidity	see remark	see remark	NTU	0.4
Total Hardness (CaCO3)			mg/L	36.1
Total Aluminum (Al)	2900		ug/L	<3.0
Total Antimony (Sb)	6		ug/L	<0.50
Total Arsenic (As)	10		ug/L	<0.10
Total Barium (Ba)	2000		ug/L	2
Total Beryllium (Be)			ug/L	<0.10
Total Bismuth (Bi)			ug/L	<1.0
Total Boron (B)	5000		ug/L	<50
Total Cadmium (Cd)	7		ug/L	<0.010
Total Chromium (Cr)	50		ug/L	<1.0
Total Cobalt (Co)			ug/L	<0.20
Total Copper (Cu)	2000	1000	ug/L	8.51
Total Iron (Fe)		300	ug/L	13
Total Lead (Pb)	5		ug/L	<0.20
Total Manganese (Mn)	120	20	ug/L	<1.0

Total Molybdenum (Mo)			ug/L	<1.0
Total Nickel (Ni)			ug/L	<1.0
Total Selenium (Se)	50		ug/L	<0.10
Total Silicon (Si)			ug/L	5060
Total Silver (Ag)			ug/L	<0.020
Total Strontium (Sr)	7000		ug/L	26.8
Total Thallium (Tl)			ug/L	<0.010
Total Tin (Sn)			ug/L	<5.0
Total Titanium (Ti)			ug/L	<5.0
Total Uranium (U)	20		ug/L	<0.10
Total Vanadium (V)			ug/L	<5.0
Total Zinc (Zn)		5000	ug/L	<5.0
Total Zirconium (Zr)			ug/L	<0.10
Total Calcium (Ca)			mg/L	12.1
Total Magnesium (Mg)			mg/L	1.42
Total Potassium (K)			mg/L	0.176
Total Sodium (Na)		200	mg/L	2.4
Total Sulphur (S)			mg/L	<3.0
Total Mercury (Hg)	1		ug/L	<0.0019
Total Total Kjeldahl Nitrogen (Calc)			mg/L	<0.020
Total Organic Carbon (C)			mg/L	<0.50
Total Nitrogen (N)			mg/L	0.121
Total Ammonia (N)			mg/L	<0.015
Sulphide (as H ₂ S)		0.05	mg/L	<0.0020
Total Sulphide		0.05	mg/L	<0.0018
Total Coliforms	0		CFU/100mL	0
E. coli	0		CFU/100mL	0
Heterotrophic Plate Count			CFU/mL	<1.0
Fecal Coliforms			CFU/100mL	0
Non-Coliform (Background)			CFU/100mL	<1
Iron Bacteria			CFU/mL	<25
Sulphate reducing bacteria			CFU/mL	<75
Total Trihalomethanes	100		ug/L	<1.0
Bromodichloromethane			ug/L	<1.0
Bromoform			ug/L	<1.0
Dibromochloromethane			ug/L	<1.0
Chloroform			ug/L	<1.0
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

Cowichan Valley Reg. Dist. - E
*A PO 23-223 (2023)
*A 175 Ingram Street
Duncan, BC
V9L 1N8

TEL: (250) 746-2530
, Group

24Aug23 2:38p
Source: FWS
Type of Sample: Water
No. of Samples: 1

W176256

Arrival temp.: 9.0C
*RUSH CALL TODD

Sample: Mesachie Lake Water

<u>Site Code</u>	<u>Date</u>	<u>Time</u>	<u>CFU/100 ml</u>		<u>CFU/100 ml</u>		<u>CFU/100 mL</u>
			<u>TC</u>	<u>T-NC</u>	<u>FC</u>	<u>F-NC</u>	<u>E.coli</u>
S1-9490 S.Shore RD	24Aug23	11:20a	0	449	0	0	0

TC = total coliform bacteria

FC = fecal coliform bacteria (aka thermotolerant coliforms)


NC = non-coliform bacteria

CFU/100 ml = colony forming units per 100 milli-litres

Results may be adversely affected if samples are submitted to the laboratory more than 24 to 30 hours after collection.

E. coli = Escherichia coli, FDA/BAM 9th ed, Oct 2020

Bergey's Manual of Systematic Bacteriology vol 1, AOAC 1984; J.Clin.Micro.,
J.Intern.System.Bact.



W. Riggs
Sr. Microbiologist

M.B. LABS LTD
T: 250 656-1334

E: info@mblabs.com

W: www.mblabs.com

Cowichan Valley Reg. Dist. - E
*A PO 23-223 (2023)
*A 175 Ingram Street
Duncan, BC
V9L 1N8

11Sep23 3:24p
FWS
water
1

W176529

TEL: (250) 746-2530
group

Arrival temp.: 4.0C
*RUSH


Sample: Mesachie Lake

<u>Site Code</u>	<u>Date</u>	<u>Time</u>	<u>CFU/100 ml</u>		<u>CFU/100 ml</u>		<u>CFU/100 mL</u>
			<u>TC</u>	<u>T-NC</u>	<u>FC</u>	<u>F-NC</u>	<u>E.coli</u>
Mesachie Lake S-1	11Sep23		0	4	0	0	0

TC = total coliform bacteria
FC = fecal coliform bacteria (aka thermotolerant coliforms)
NC = non-coliform bacteria
CFU/100 ml = colony forming units per 100 milli-litres

Results may be adversely affected if samples are submitted to the laboratory more than 24 to 30 hours after collection.

E. coli = Escherichia coli, FDA/BAM 9th ed, Oct 2020
Bergey's Manual of Systematic Bacteriology vol 1, AOAC 1984; J.Clin.Micro.,
J.Intern.Systm.Bact.



W. Riggs
Sr. Microbiologist

M.B. LABS LTD
T: 250 656-1334

E: info@mblabs.com

W: www.mblabs.com

Cowichan Valley Reg. Dist. -E
*A PO 23-223 (2023)
*A 175 Ingram Street
Duncan, BC
V9L 1W8

TEL: 250 746-2530
Email: Group

12Sep23 4:09p W176568
Source: FWS
Type of Sample: Water
No. of Samples: 1
Arrival temp.: 19.0C
*RUSH

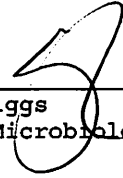
Sample: 9490 S.Shore Rd

<u>Site Code</u>	<u>Date</u>	<u>Time</u>	<u>CFU/100 ml</u>		<u>CFU/100 ml</u>		<u>CFU/100 mL</u>
			<u>TC</u>	<u>T-NC</u>	<u>FC</u>	<u>F-NC</u>	<u>E.coli</u>
1 Mesachie Lake S-1	12Sep23		0	12	0	0	0

TC = total coliform bacteria
FC = fecal coliform bacteria (aka thermotolerant coliforms)
NC = non-coliform bacteria
CFU/100 ml = colony forming units per 100 milli-litres

Results may be adversely affected if samples are submitted to the laboratory more than 24 to 30 hours after collection.

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