

Delcliffe Water Utility - Water Quality Report for March 2023

On March 30, 2023, an immediate Water Restriction Notice was issued for the Delcliffe Water Utility due to a blockage at the water system intake; this restriction was rescinded on March 31, 2023 due to completion of repair work.

1. Source

The Delcliffe water utility pumps raw water from Okanagan Lake through a screened intake line to a covered reservoir. The water is chlorinated with sodium hypochlorite as it enters the baffled reservoir. The reservoir provides chlorine contact time and the system is then fed from a booster station located at the reservoir. A raw (untreated) water sample is taken at the lake pump station at least once a month. Table 1 summarize the results for bacterial and turbidity for the untreated water.

Table 1 Delcliffe Intake (source)

Parameter	Laboratory		# of Samples	# of Deviations	Result	Min	Max	Average
E.coli ²	Caro	MPN/100 mL	1	-----	<1	-----	-----	-----
E.coli ²	RDNO Lab	MPN/100 mL	1	-----	<1	-----	-----	-----
Total Coliform	Caro	MPN/100 mL	1	-----	<1	-----	-----	-----
Total Coliform	RDNO Lab	MPN/100 mL	1	-----	1	-----	-----	-----
Turbidity ¹	Operator Grab Sample	NTU	1	-----	0.47	-----	-----	-----

¹Operation Guideline: As outlined in Deviation Response Plan, turbidity < 1 NTU

²Drinking Water Treatment Objectives_ BC (Sec 4.3):

The number of E. coli in raw water should not exceed 20/100 mL in at least 90% of the weekly samples from the previous six months.

³The turbidity readings are grab samples. Turbidity is monitored continuously online for turbidity and will go to moderate deviation if the 24 hour average is >1 NTU.

2. Treatment Plant

The Delcliffe water utility utilizes chlorine disinfection only. Table 2 summarizes chlorine and turbidity levels at the point the water enters the distribution system.

Table 2 Delcliffe Water Treatment SCADA Data

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average
Free Chlorine ²	SCADA ¹ Daily Average	mg/L	31	-----	1.17	2.00	1.64
Turbidity ²	SCADA ¹ Daily Average	NTU	31	-----	0.21	2.28	0.39

¹SCADA: Supervisory Control and Data Acquisition.

²WQ Deviation Response Plan - free chlorine < 0.20 mg/L or > 2.20 mg/L; turbidity > 1.0 NTU.

3. Distribution

The Delcliffe water utility provides potable water to 30 residential connections. The majority of connected residents are seasonally occupied, with approximately 11 connections considered year-round or permanent. The population increases to an estimated one hundred and eighty (180) persons during peak summer months. Table 3 summarizes the results for chlorine, turbidity, and bacteria for the distribution system. Table 4 summarizes the daily flow rates for this month.

Table 3 Delcliffe Distribution Parameters

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average
Free Chlorine¹	Operator Grab Sample	mg/L	4	-----	1.51	1.78	1.67
Total Chlorine¹	Operator Grab Sample	mg/L	4	-----	1.74	1.99	1.88
E.coli	Caro	CFU/100 mL	4	-----	<1	<1	<1
Total Coliform	Caro	CFU/100 mL	4	-----	<1	<1	<1
Turbidity¹	Operator Grab Sample	NTU	4	-----	0.34	0.38	0.37

¹WQ Deviation Response Plan - free chlorine < 0.20 mg/L turbidity > 1.0 NTU.

Table 4 Volumes for Delcliffe Distribution System over the Month

Volumes	Delcliffe
Min (ML/Day)	0.06
Max (ML/Day)	0.09
Average (ML/Day)	0.08
Monthly Total (ML)	2.29

4. Water Quality customer Calls

Water quality customer calls within the Delcliffe service area are tracked and recorded. There were no customer calls this month.