



REGIONAL DISTRICT NORTH OKANAGAN

Mabel Lake Water (MLW) Utility Water Quality Report for July 2023

The following is the water quality summary for the Mabel Lake Water Utility (MLW).

On July 27, 2023, the Water Quality Advisory (WQA) issued on June 22, 2023 was rescinded due to turbidity levels returning to < 1 NTU. An update on Outdoor Watering Restrictions was also issued, stating that MLW was now in Stage 2 outdoor watering restrictions due to the provincial declaration of a Level 4 drought for the South Thompson watershed.

1. Source

The MLW system draws raw water from Mabel Lake through a screened intake line to a clear well. Water from the clear well is chlorinated and pumped into a 526 meter long pipe which provides chlorine contact time. Water then flows into the distribution system. Table 1 summarizes the results for bacterial and turbidity for the untreated water at the treatment plant.

Table 1 Mabel Lake Intake

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average
E.coli ³	Caro	MPN/100 mL	4	-----	<1	<1	<1
Total Coliform	Caro	MPN/100 mL	4	-----	<1	17	7
Turbidity ²	SCADA ¹ Daily Average	NTU	31 Days	12⁴	0.62	1.64	0.97
Turbidity ²	Operator Grab Sample	NTU	13	6⁵	0.51	1.44	0.95
UVT (unfiltered)	RDNO Lab	%	4	-----	82.9	87.4	85.38

¹SCADA: Supervisory Control and Data Acquisition.

²Operation Guideline: As outlined in Deviation Response Plan, turbidity < 1 NTU

³Drinking Water Treatment Objectives_ BC (Sec 4.3): Determine number of raw water samples with E. coli >20 CFU. The number of E. coli in raw water does not exceed 20/100 mL in at least 90% of the weekly samples from the previous six months.

⁴Twelve days in July had an average daily turbidity > 1 NTU but the water utility was on a Water Quality Advisory at that time.

⁵Six grab samples in July were > 1 NTU but the water utility was on a Water Quality Advisory at that time.

2. Treatment Plant

MLW utilizes chlorine disinfection only. Table 2 summarizes chlorine and turbidity levels from the pipe that flow into the distribution system.

Table 2 Mabel Lake Water Treatment

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average
Free Chlorine ²	SCADA ¹ Daily Average	mg/L	31 Days	-----	1.64	1.75	1.71

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

MLW provides potable water to 3 commercial and 338 residential connections. The majority of connected residents and all 3 commercial connections are seasonally occupied, with approximately 20 connections considered year-round or permanent. The population increases to an estimated one thousand three hundred and fifty (1350) persons during peak summer months.

Table 3 summarizes the results for chlorine, turbidity, and bacteria for the distribution system. The monthly water volume used at Mabel Lake this month was 19,342 m³.

Table 3 Mabel Lake Distribution Parameters

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average
Free Chlorine	Operator Grab Sample	mg/L	44	-----	0.47	1.52	1.00
Total Chlorine	Operator Grab Sample	mg/L	44	-----	0.59	1.65	1.10
Turbidity	Operator Grab Sample	NTU	44	22¹	0.49	4.41	1.12
E.coli	Caro	CFU/100 mL	9	1²	<1	1 ²	<1
E.coli	RDNO Lab	MPN/100 mL	1	-----	<1	<1	<1
Total Coliform	Caro	CFU/100 mL	9	1²	<1	23 ²	3
Total Coliform	RDNO Lab	MPN/100 mL	1	-----	<1	<1	<1

¹Twenty-two grab samples in July were > 1 NTU but the water utility was on a Water Quality Advisory at that time.

²One sample on July 25, 2023 at Mabel Lake PS had 1 E. coli and 23 Total Coliforms reported. The site was re-sampled on July 27, 2023 and all bacterial results were < 1 E. coli and Total Coliforms.

4. Water Quality Customer Calls and Notifications

Customer calls within the Mabel Lake Water Utility service area are tracked and recorded.

There was one customer call this month.

Table 4 Water Quality Customer Calls for the month

# of Calls	Type of Call	Issue/Inquiry	Investigation	Comments
1	Water Leaking	Water Leaking Near Curb Stop	Operator Visit	Operator investigated and determined leak was on customer's portion of water service and private property. No further work required.

5. Operational or Maintenance Activity

Operational activities within the Mabel Lake Water service area are tracked and recorded.

There were no distribution operational activities this month.

Table 5 outlines the distribution operational and maintenance activities during the month.

Table 5 Monthly Operational Work and Maintenance

NUMBER OF LOCATIONS	TYPE OF WORK
0	Standpipe Maintenance
0	Water Service Locate
0	Water Main Break Repair
0	Water Meter Inspection
0	Water Meter Maintenance
0	Water Service Install
0	Water Service Repair
0	Water Turn On/Off
0	Water Curb Stop Repair
0	Water Investigation