

Grindrod Water (GRW) Water Quality Report for December 2022

The following is the water quality summary for the Grindrod Water (GRW) Utility.

On December 1, 2022, the Precautionary Boil Water Notice issued on November 24, 2022 was rescinded due to bacterial testing results being within normal drinking water standards. A Precautionary Boil Water Notice was issued on December 28, 2022 due to a power outage, which was rescinded January 4, 2023.

1. Source

The GRW system draws raw water from the Shuswap River through a screened intake line to a wet well. The raw water is pumped from the wet well through a small treatment plant referred to as a package treatment plant and into a below ground storage reservoir. There is no elevated storage in the whole system and as a result pumps run continuously to maintain pressure. This also means there is no way of supplying water during a power outage. Table 1 summarizes the bacterial and turbidity results for the untreated water at the treatment plant.

Table 1 Grindrod Water Treatment Plant – Untreated

Parameter	Laboratory		# of Samples	# of Deviations	Result	Min	Max	Average
E.coli ¹	Caro	MPN/100 mL	1	-----	2	-----	-----	-----
Total Coliform	Caro	MPN/100 mL	1	-----	219	-----	-----	-----
Turbidity	Operator Grab Sample	NTU	13	-----	-----	0.52	1.34	0.81
Turbidity	SCADA ² Daily Average	NTU	31 Days	-----	-----	0.33	0.64	0.44

¹Drinking 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.

²SCADA: Supervisory Control and Data Acquisition.

2. Treatment Plant

The Grindrod package water treatment plant was designed for a filter flow rate of 66 U.S. gpm (4.2 litres per second), but is operated at about 53 U.S. gpm (3.3 Lps). The flow rate is determined by the operating speed of the pump in the wet well, and meeting the turbidity guidelines. The treatment plant consists of a hydraulic flocculation chamber, a tube settler/clarifier and a mixed media filter. The plant discharge turbidity is typically below 0.2 NTU. Table 2 summarizes the results for chlorine and turbidity for the treated water at the treatment plant.

Table 2 Grindrod Water Treatment Plant - Treated

Parameter	Laboratory		# of Samples	# of Deviations	Result	Min	Max	Average
Free Chlorine ²	SCADA ¹ Daily Average	mg/L	31 Days	-----	-----	1.10	2.00	1.68
Free Chlorine	Operator Grab Sample	mg/L	13	-----	-----	0.97	2.20	1.53
Total Chlorine	Operator Grab Sample	mg/L	13	-----	-----	1.05	2.20	1.62
E.coli	Caro	CFU/100 mL	3 ³	-----	-----	<1	<1	<1
Total Coliform	Caro	CFU/100 mL	3 ³	-----	-----	<1	<1	<1
Turbidity ²	SCADA ¹ Daily Average	NTU	31 Days	-----	-----	0.03	0.08	0.05
Turbidity	Operator Grab Sample	NTU	13	-----	-----	0.08	0.18	0.12

¹SCADA: Supervisory Control and Data Acquisition.

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

³Additional bacterial testing was completed due to the power outage and subsequent Precautionary Boil Water Notice.

3. Distribution

GRW provides potable water to 4 commercial, 3 institutional, 1 industrial, 1 recreational park, and 46 residential connections. The population served is approximately one hundred thirty eight (138). Table 3 summarizes the results for chlorine and turbidity for the distribution system from the following sample station locations: Fourth Ave, Mayberry and James St. The monthly water volume used at Grindrod was 2,328 m³.

Table 3 Grindrod Distribution Parameters

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average
Free Chlorine ¹	Operator Grab Sample	mg/L	13	-----	1.05	1.76	1.26
Total Chlorine	Operator Grab Sample	mg/L	13	-----	1.14	2.16	1.48
E.coli	Caro ²	CFU/100 mL	4 ³	-----	<1	<1	<1
Total Coliform	Caro ²	CFU/100 mL	4 ³	-----	<1	<1	<1
Turbidity ¹	Operator Grab Sample	NTU	13	-----	0.09	0.39	0.21

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

²Treatment Plant bacterial samples are included in the required monthly bacterial sampling amounts as per Drinking Water Protection Regulations Schedule B.

³Additional bacterial testing was completed due to the power outage and subsequent Precautionary Boil Water Notice.

4. Customer Calls and Notifications

Customer calls within the Grindrod Water Utility service area are tracked and recorded. There was 1 customer call this month.

Table 4 Customer calls for the month

# of Calls	Type of Call	Issue/Inquiry	Investigation	Comments
1	Inquiry	Back-up generator	No	Email response to customer with updates on project

5. Operational or Maintenance Activity

Operational activities within the Grindrod Water service area are tracked and recorded. There was 1 distribution operational activity 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 Service Install
0	Water Turn On/Off
0	Water Curb Stop Repair
0	Water Meter Inspection
0	Water Meter Maintenance
0	Water Meter Replacement
1	Water Meter Manual Read
0	Water Investigation