



REGIONAL DISTRICT of NORTH OKANAGAN

Grindrod Water (GRW) Water Quality Report for March 2018

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

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 package treatment plant into a below ground treated water storage reservoir. As there is no elevated storage the distribution pumps run continuously to maintain pressure in the distribution system. Table 1 summarize the results for bacterial and turbidity for the untreated water at the treatment plant.

Table 1 Grindrod Water Treatment Plant – Untreated

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average
E.coli ¹	RDNO	MPN/100 mL	1	-----	>6	>6	>6
Total Coliform	RDNO	MPN/100 mL	1	-----	>100	>100	>100
Turbidity	Operator Grab Sample	NTU	1	-----	1.61	1.61	1.61
Turbidity	SCADA ² Daily Average	NTU	30 Days	-----	0.78	14.08	2.11

¹Drinking 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.

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 package 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 summarize the results for Chlorine and turbidity for the untreated water at the treatment plant.

Table 2 Grindrod Water Treatment Plant - Treated

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average
Free Chlorine	RDNO Grab Sample	mg/L	1	-----	1.17	1.17	1.17
Free Chlorine ²	SCADA ¹ Daily Average	mg/L	30 Days	-----	0.87	1.67	1.27
Total Chlorine	RDNO Grab Sample	mg/L	1	-----	1.25	1.25	1.25
E.coli	Caro	CFU/100 mL	1	-----	<1	<1	<1
Total Coliform	Caro	CFU/100 mL	1	-----	<1	<1	<1
Turbidity	Operator Grab Sample	NTU	1	-----	0.28	0.28	0.28
Turbidity ²	SCADA ¹ Daily Average	NTU	30 Days ³	-----	0.03	0.06	0.03

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

³One day of data could not be recovered from SCADA.

3. Distribution

GRW provides potable water to 4 commercial, 4 institutional, 1 industrial, 1 recreational park, and 47 residential connections. The population served is approximately one hundred thirty eight (138). Table 3 summarize the results for chlorine and turbidity for the distribution system.

Table 3 Grindrod Distribution Parameters

Parameter	Laboratory		# of Samples	# of Deviations	Min	Max	Average
Free Chlorine	RDNO Grab Sample	mg/L	4	-----	1.07	1.31	1.18
Total Chlorine	RDNO Grab Sample	mg/L	4	-----	1.13	1.37	1.27
E.coli	Caro	CFU/100 mL	4	-----	<1	<1	<1
Total Coliform	Caro	CFU/100 mL	4	-----	<1	<1	<1
Turbidity	RDNO Grab Sample	NTU	4	-----	0.17	0.38	0.31