



REGIONAL DISTRICT NORTH OKANAGAN

Silver Star Water (SSW) Water Quality Report for April 2022

The following is the water quality summary for the Silver Star Water (SSW) Utility.

1. Sources

Not all of Silver Star's water sources are utilized year round; the system is constructed so that the sources can be brought on line based on demand. As Silver Star is primarily a winter resort, the highest water demands occur during November to March. SSW has nine water sources used for domestic use: Well 1, Well 2, Well 3, Well 4, Well 5, Well 10, Well 12, Paradise Reservoir and Vance Reservoir.

The surface water sources, Paradise and Vance Reservoirs, are metered in the Mid T water treatment plant as one volume; it is not possible to separate the volumes of each reservoir. The surface water sources were in use for the month of April.

Table 1 summarizes the results of the raw water entering the treatment process. This is a blend of sources depending on demands in the system. This results in data variation throughout the year. Tables 2 and 3 summarize the results for the untreated water of the wells and the surface sources. Wells 4, 5, 10, and 12 have not been used this season.

Table 1 Mid T Raw Water Monitoring

Parameter	Laboratory		# of Samples	# of Deviations ¹	Min	Max	Average
E.coli	Caro	MPN/100 mL	3	-----	<1	<1	<1
Total Coliform	Caro	MPN/100 mL	3	-----	<1	<1	<1
Turbidity	Grab sample	NTU	12	-----	0.10	0.88	0.56
Turbidity	SCADA ² Daily Average	NTU	30	-----	0.42	0.59	0.51

¹SSW WQ Deviation Response Plan – Free Chlorine <0.20 mg/L Turbidity >1.0 NTU

²SCADA: Supervisory Control and Data Acquisition.

Table 2 Mid T Raw Water Monitoring – Wells

Parameter	Laboratory		# of Samples	# of Deviations ¹	Min	Max	Average
Turbidity	SCADA ² Daily Average	NTU	30	-----	0.41	0.66	0.52

Table 3 Mid T Raw Water Monitoring – Surface Sources

Parameter	Laboratory		# of Samples	# of Deviations ¹	Min	Max	Average
E.coli	Caro	MPN/100 mL	4	-----	<1	<1	<1
Total Coliform	Caro	MPN/100 mL	4	-----	<1	<1	<1
Turbidity	Grab sample	NTU	4	-----	0.65	1.36	0.91
Turbidity	SCADA ² Daily Average	NTU	30	-----	0.61	0.99	0.76
UVT - Unfiltered	RDNO Lab	%	4	-----	95.7	96.1	95.9

¹SSW WQ Deviation Response Plan – Free Chlorine <0.20 mg/L Turbidity >1.0 NTU

²SCADA: Supervisory Control and Data Acquisition.

2. Treatment Plant

SSW has a treatment plant, the Mid T Water Treatment Plant (MTWTP). The MTWTP uses a dual disinfection process of Ultra-violet (UV) disinfection and chlorine. Chlorine is added after UV treatment to ensure contact time for the removal of viruses. Tables 4, 5 and 6 summarize the results for chlorine, bacterial, turbidity, calculated contact time, and UV transmittance (UVT).

Table 4 Mid T Water Treatment Plant

Parameter	Laboratory		# of Samples	# of Deviations ¹	Min	Max	Average
Free Chlorine	SCADA ² Daily Average	mg/L	30	-----	1.36	1.52	1.44
Free Chlorine	Grab sample	mg/L	8	-----	1.49	1.67	1.58
Total Chlorine	Grab sample	mg/L	8	-----	1.58	1.80	1.67
E.coli	Caro	CFU/100 mL	8	-----	<1	<1	<1
Total Coliform	Caro	CFU/100 mL	8	-----	<1	<1	<1
Turbidity	SCADA ² Daily Average	NTU	30	-----	0.43	0.55	0.51
Turbidity	Grab sample	NTU	8	-----	0.54	0.86	0.63

¹SSW WQ Deviation Response Plan – Free Chlorine <0.20 mg/L Turbidity >1.0 NTU

²SCADA: Supervisory Control and Data Acquisition.

Table 5 Contact Time (CT)

Parameter	Days Monitored	Min	Max	Average
Days 99.9% achieved	17	100%	100%	100%

99.9% is 3-log removal for Giardia

Table 6 Ultra-violet (UV) Disinfection

Parameter	Laboratory	Days Monitored	Min	Max	Average
UVT	SCADA ¹ Daily Average	30	95%	103%	99%

¹SCADA: Supervisory Control and Data Acquisition.

3. Distribution

Table 7 summarizes the results for chlorine, turbidity and bacterial for the distribution system from the following sites: Pinnacles, Grandview, Firehall, and Maintenance Building. The monthly water volume used at Silver Star was 6,216 m³.

Table 7 Distribution

Parameter	Laboratory		# of Samples	# of Deviations ¹	Min	Max	Average
Free Chlorine	Grab sample	mg/L	37	-----	0.35	1.47	1.32
Total Chlorine	Grab sample	mg/L	37	-----	0.44	1.56	1.41
E.coli	Caro	CFU/100 mL	8 ²	-----	<1	<1	<1
Total Coliform	Caro	CFU/100 mL	8 ²	-----	<1	<1	<1
Turbidity	Grab sample	NTU	37	-----	0.10	1.46	0.49

¹SSW WQ 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.

4. Customer Calls and Notifications

Customer calls within the Silver Star Water Utility service area are tracked and recorded. There were no customer calls in April.

5. Operational or Maintenance Activity

Operational activities within the Silver Star Water service area are tracked and recorded. There were no distribution operational activities in April.