



REGIONAL DISTRICT of NORTH OKANAGAN

Water Quality Report for August 2016

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. Paradise and Vance Reservoirs are metered in the Mid-Tee station as one volume; it is not possible to separate the volumes of each reservoir. Table 1 shows the daily volumes used at each source. Well 4 and Well 10 has not been used this season.

Table 1 Daily Volume used at each Source

DATE	WELL #1	WELL #2	WELL #3	WELL #5	PARADISE and VANCE	TOTAL
1	135	243		101		479
2	322	104		76		502
3	84	195		78		357
4	96	199		85		380
5	237	89		41		367
6	140	291		118		549
7	298	196		77		571
8	264	190		74		381
9	109	186		74		369
10	90	195		77		362
11	108	194		78		380
12	113	191		75		379
13	97	216		84		397
14	184	168		67		419
15	187	99		42		328
16	40	118		53		211
17	49	128		57		234
18	70	128		58		256
19	67	163		74		304
20	98	159		70		327
21	96	153		68		317
22	185	82		38		305
23	50	136		64		250
24	88	126		59		273
25	78	120		57		255
26	73	115		55		243
27	180	36		17		233
28	80	147		76		303
29	100	158		69		327

30	88	160		75		323
31	161	106		56		323

Distribution

SSW monitors contact time. Table 2 shows the chlorine residuals for the five sites that are monitored within the distribution system. Table 3 summarizes the calculated contact time. Table 4 summarizes the results for chlorine and bacterial for the distribution system.

Table 2 Free Chlorine Residuals within the Distribution

Date	Firehall	Grandview	Pinnacles	Mid Tee	Maintenance
1					
2	1.48	1.34	1.59	1.97	1.14
3		1.29	1.66		
4					
5		1.37	1.72		
6					
7					
8	1.95	1.34	1.98	1.81	1.11
9					
10		1.37	1.82		
11					
12		1.44	1.88		
13					
14					
15	1.88	1.64	2.05	1.74	1.05
16					
17		1.56	1.97		
18					
19		1.52	1.84		
20					
21					
22	1.61	1.53	1.76	1.74	1.21
23					
24		1.58	1.69		
25					
26		1.61	1.72		
27					
28					

29	1.82	1.75	1.82	1.17	1.35
30					
31		1.69	1.74		

Table 3 SSW – Contact Time (CT) 3-log removal for Giardia

Parameter	Days Monitored	Min	Max	Average
Days 99.9% achieved	14 Days	100%	100%	100%

99.9% is 3-log removal for Giardia

Table 4 SSW Distribution

Parameter	Laboratory		# of Samples	# of Exceedance	Min	Max	Average
Free Chlorine	grab sample	mg/L	25	-----	1.05	2.05	1.59
Total Chlorine	grab sample	mg/L	25	-----	1.11	2.20	1.78
E.coli	Caro	MPN/100 mL	25	-----	<1	<1	<1
Total Coliform	Caro	CFU/100 mL	25	-----	<1	<1	<1
Turbidity	grab sample	NTU	25	-----	0.19	0.78	0.37

Table 5 Mid-T UV Transmissivity

Parameter	Laboratory		# of Samples	# of Exceedance	Min	Max	Average
UVT (filtered)	grab sample	%	5	-----	98.4	99.7	99.2
UVT (unfiltered)	grab sample	%	5	-----	98.3	99.5	99.0
UVT (online)	Online	%	2	-----	90.3	93.9	92.1

The UVT online analyzer was out of service for part of the month of August. The analyzer was repaired and put back into service August 15. The UVT of well water at SSW historically measures above 90%. The reactor was set manually to treat water with a UVT of only 85%. The water was still being treated with UV and grab samples were still being analyzed for UVT weekly. The grab sample analysis' showed UVT was within the normal operating parameters.

Table 6 Mid-T Raw Water Monitoring

Parameter	Laboratory		# of Samples	# of Exceedance	Min	Max	Average
E.coli	Caro	Counts/100mL	3	-----	<1	48	n/a
Total Coliform	Caro	CFU/100 mL	3	-----	<1	>48	n/a
Turbidity	grab sample	NTU	3	-----	0.18	1.54	0.67