



TOWN OF LAKE COWICHAN WATER TREATMENT PLANT



July 2021 Operations Performance Report



Permit to Operate

Operated water treatment plant under Operate Permit dated September 21, 2020.

Timeline

Tuesday, July 6 – Quarterly sampling for aluminum, nitrogen, phosphorus, microcystin, THM and HAA.

Wednesday, July 7 – UV bulb for TrojanUV Optiview burned out. Request for quote sent. Recording UVT readings manually.

Thursday, July 8 – Adjusted backwash setpoints. Lowered FTW time and Exit Turbidity.

Sunday, July 11 – Mixer for Soda Ash System #1 failed (overcurrent). Set System #1 to OFF and opened discharge valve to treat holding tank as common to System #2. Request for new mixer sent.

Tuesday, July 13 – Annual water testing for metals completed.

Thursday, July 15 – Cleaned area surrounding reservoir of weeds.

Thursday, July 29 – Replaced UV bulb in the Optiview. Electrician installed new mixer for Soda Ash System #1. Both units back in normal service.

Performance Standards

The Operating Permit for the Town of Lake Cowichan Water System dated October 21, 2020 stipulates the following performance requirements:

PARAMETER	GUIDELINE
Turbidity	≤ 0.3 NTU in ≥ 95% of samples
	Never to exceed 1 NTU
<i>Giardia</i> and <i>Cryptosporidium</i>	2.5-Log (99.7%) removal coagulation, flocculation and filtration
	1-Log (90%) inactivation via UV
Viruses	1-Log (90%) removal coagulation, flocculation and filtration
	3-Log (99.9%) inactivation via UV
Free Available Chlorine	Sufficient for CT _{CALC} and not to exceed 4.0 mg/L
Trihalomethane (THM)	≤ 0.100 mg/L
Haloacetic Acid (HAA)	≤ 0.080 mg/L
Total Aluminum	≤ 0.1 mg/L
pH	Be between 7.0 and 10.5
Microcystin-LR	≤ 1.5 µg/L



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Annual Testing Results

Element	Symbol	Sample	Units	Maximum Allowable Limit (MAC)
Aluminum	Al	0.238	mg/L	no limit listed
Antimony	Sb	<0.500	ug/L	6.00
Arsenic	As	<0.500	ug/L	10.0
Barium	Ba	<0.009	mg/L	1.00
Beryllium	Be	<0.003	mg/L	no limit listed
Boron	B	0.106	mg/L	5.00
Cadmium	Cd	<0.010	ug/L	5.00
Calcium	Ca	11.1	mg/L	200
Chromium	Cr	<0.003	mg/L	0.050
Cobalt	Co	<0.005	mg/L	no limit listed
Copper	Cu	<0.008	mg/L	1.00
Gold	Au	<0.040	mg/L	no limit listed
Iron	Fe	<0.010	mg/L	0.300
Lanthanum	La	<0.020	mg/L	no limit listed
Lead	Pb	<0.500	ug/L	5.00
Magnesium	Mg	0.700	mg/L	50.0
Manganese	Mn	0.004	mg/L	0.120 MAC / 0.020 AO
Mercury	Hg	<0.010	ug/L	1.00
Molybdenum	Mo	<0.005	mg/L	no limit listed
Nickel	Ni	<0.004	mg/L	no limit listed
Phosphorus	Pb	<0.010	mg/L	no limit listed
Potassium	K	0.110	mg/L	no limit listed
Scandium	Sc	<0.050	mg/L	no limit listed
Selenium	Se	<0.500	ug/L	5.0
Silicon	Si	1.24	mg/L	no limit listed
Silver	Ag	<0.010	mg/L	no limit listed
Sodium	Na	2.72	mg/L	200
Strontium	Sr	0.02	mg/L	no limit listed
Tin	Sn	<0.020	mg/L	no limit listed
Titanium	Ti	<0.010	mg/L	no limit listed
Tungsten	W	<0.050	mg/L	no limit listed



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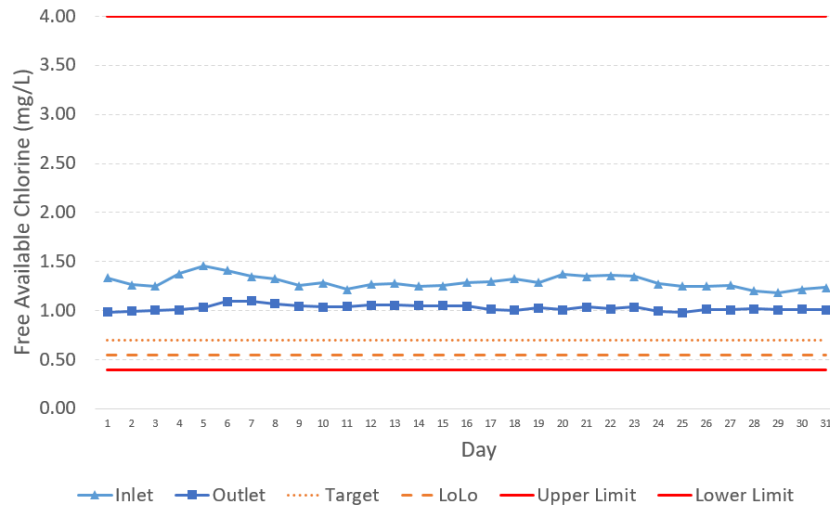
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Element	Symbol	Sample	Units	Maximum Allowable Limit (MAC)
Vanadium	V	<0.010	mg/L	no limit listed
Zinc	Zn	0.021	mg/L	5.00

AO – Aesthetic Objective

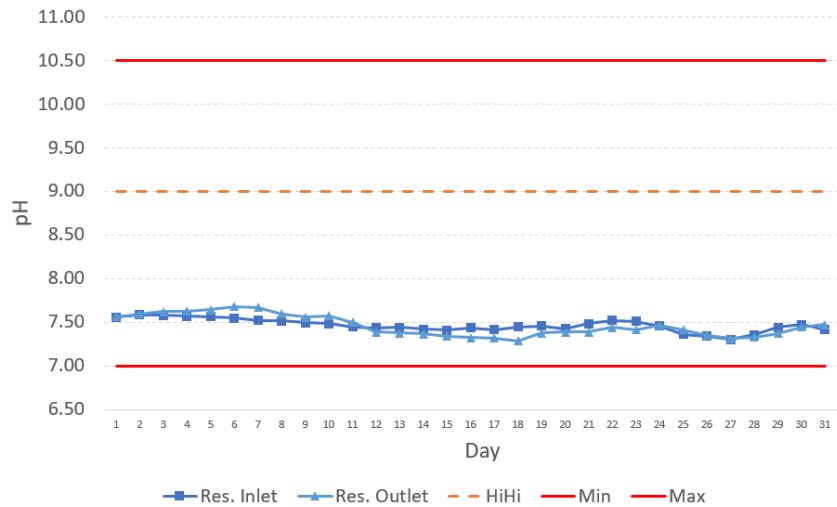
Individual Parameter Charts

Free Available Chlorine (Jul 2021)
Source: SCADA Daily Averages



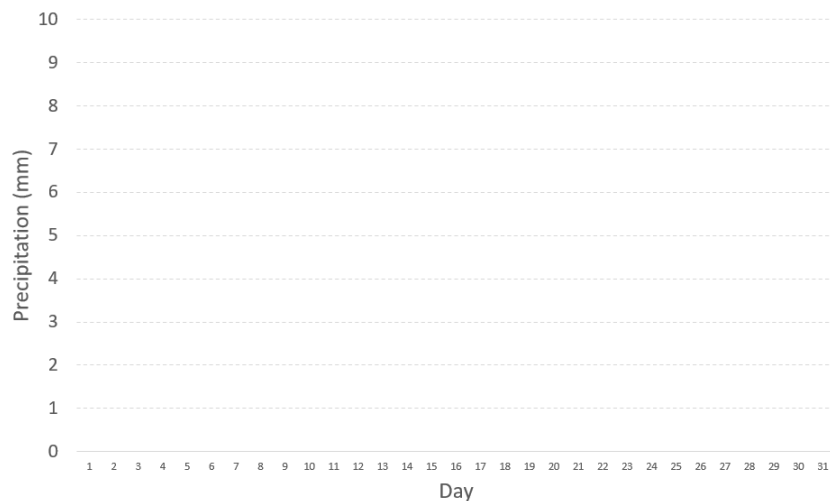


Reservoir pH (Jul 2021) Source: SCADA Daily Averages



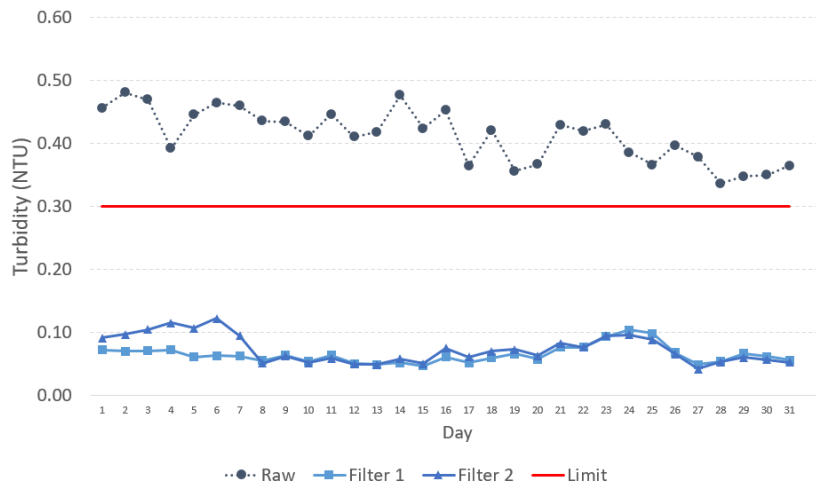
Total Precipitation (Jul 2021)

Source: Environment Canada - North Cowichan Station

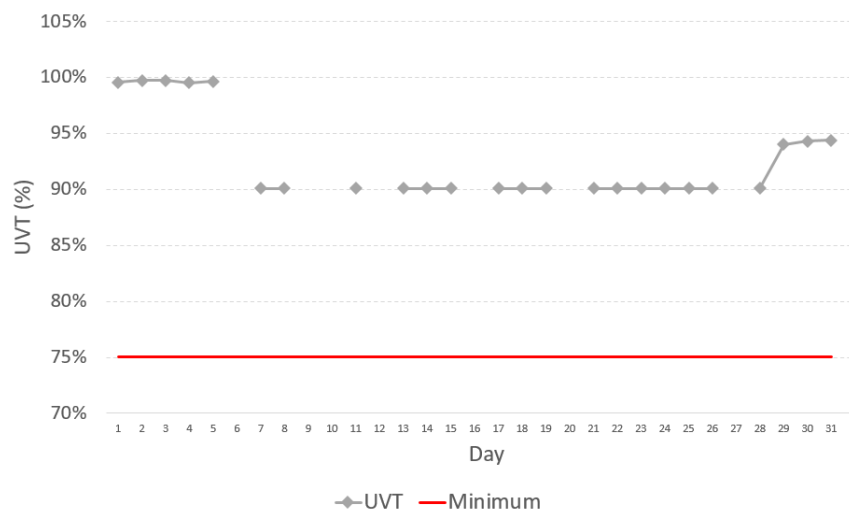




Turbidity (Jul 2021) Source: SCADA Daily Averages



UV Transmittance (Jul 2021) Source: Manual and SCADA Averages



Note: Manually recorded UVT values from July 7 to July 28.



UV Dosage (Jul 2021)
Source: SCADA Daily Averages

