

Memo

To: Chief Administrative Officer

Subject: Water Treatment Plant Update

Date: October 10, 2021

From: Superintendent, Public Works, and Engineering Services

The Lake Cowichan Water Treatment Plant (WTP) is operating according to requirements established under the Operating Permit. The relevant report is attached.

We have received results from our second water sample taken from the raw water source, for the month of September. Which shows significantly lower levels of aluminum then the first sample taken in September. Everything seems to back to normal.

No water quality warnings or advisories are currently in place for the Lake Cowichan water supply. The following link is the Island Health website for up-to-date advisories or notices pertaining to water systems under its authority.

https://www.healthspace.ca/Clients/VIHA/VIHA_Website.nsf/Water-List-Boil?OpenView&count=100

All water suppliers in British Columbia are required to monitor water that reaches the consumer for total coliform bacteria and Escherichia coli (E. coli) regularly. The monitoring is a part of the requirement to ensure safe drinking water.

If you are on the Lake Cowichan water system, water samples are collected from various locations for testing, and you may review the results on the following Island Health site:

https://www.healthspace.ca/Clients/VIHA/VIHA_Website.nsf/Water-Samples-FacilityHistory?OpenView&RestrictToCategory=1310821&Count=30&FacilityDocumentID=MVVE-55LV9Z



Jas Sandhu



TOWN OF LAKE COWICHAN WATER TREATMENT PLANT



October 2021 Operations Performance Report



Timelines

Tuesday, October 12 – Monthly sampling. Flushed polymer system lines.

Thursday, October 14 – Cleared airlock on soda ash pump 631.

Friday, October 15 – Clean filter effluent turbidity analyzers.

Monday, October 18 – Cleared P522 coagulant pump airlock.

Tuesday, October 19 – Cleared P522 coagulant pump airlock. Tightened all fittings.

Wednesday, October 20 – Increased coagulant from 8 mg/L to 10 mg/L in preparation of winter rains. Increased soda ash correction factor from 0.9 to 1.1 to compensate pH from increased PAC. Cleaned filter effluent turbidity analyzers.

Thursday, October 21 – Increased coagulant from 10 mg/L to 12 mg/L in preparation of winter rains. Increased soda ash correction factor from 1.1 to 1.3 to compensate pH from increased PAC.

Friday, October 22 – Increased coagulant from 12 mg/L to 13 mg/L in preparation of winter rains. Increased soda ash correction factor from 1.3 to 1.35 to compensate pH from increased PAC.

Monday, October 25 – Cleared P522 coagulant pump airlock.

Sunday, October 31 – Filled coagulant (PAC) day tank. Cleaned filter #2 filter effluent turbidity analyzer.

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 and 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



**TOWN OF LAKE COWICHAN
WATER TREATMENT REPORT**

OCTOBER 2021

Water Quality Results

Monthly Testing Results

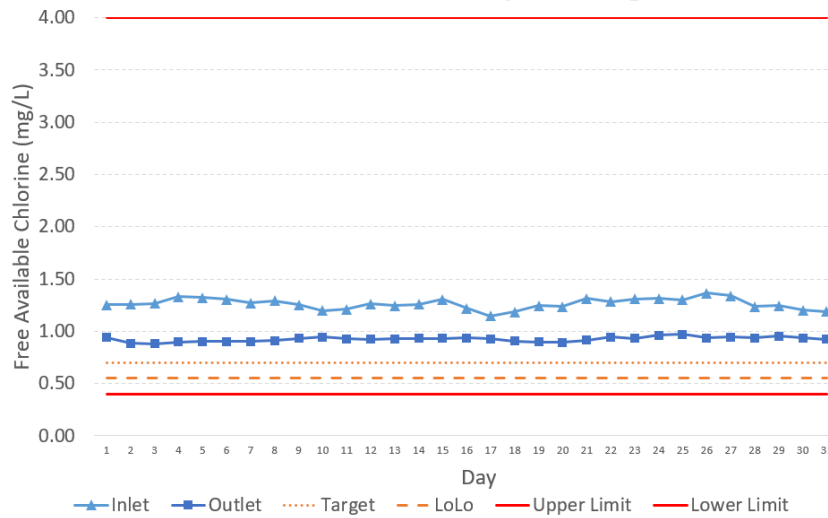
	Raw Al (mg/L)	Treated Al (mg/L)	TN (mg/L)	TP (µg/L)	Microcystin (µg/L)	THM (µg/L)	HAA (µg/L)
OG/MAC		0.10*				100	80.0
Oct 27, 2020	-	0.049	0.047	4.70	0.06	20.4	10.71
Nov 24, 2020	-	0.157	-	-	-	-	-
Dec 08, 2020	-	0.264	0.380	2.47	-	-	-
Jan 05, 2021	0.190	0.196	0.175	3.70	0.00	27.3	10.9
Jan 19, 2021	0.104	0.129	-	-	-	-	-
Feb 16, 2021	0.095	0.136	0.111	4.50	0.00	-	-
Mar 02, 2021	0.136	0.242	0.069	23.50	0.00	29.6	2.29
Mar 16, 2021	0.129	0.171	-	-	-	-	-
Mar 31, 2021	0.125	0.352	-	-	-	-	-
Apr 13, 2021	0.130	0.255	0.011	8.00	0.00	<0.100	<0.100
May 11, 2021	0.119	0.171	0.034	-	-	-	-
Jun 8, 2021	0.074	0.150	0.030	6.00	ND**	ND	ND
Jul 6, 2021	0.074	0.065	ND	12.6	-	-	-
Aug 3, 2021	0.087	0.181	0.028	0.022	ND		
Sep 14, 2021	3.01	0.541	2.00	2.00	ND	16.1	11.4
Oct 12, 2021	<0.010	0.117	0.09	4.10	ND		

*AO – Aesthetic Objective; **ND – Not detected

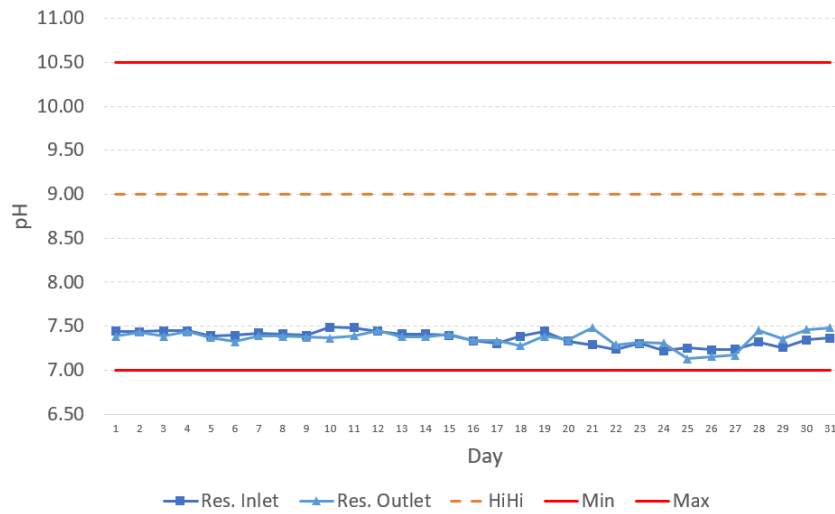


Individual Parameter Charts

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



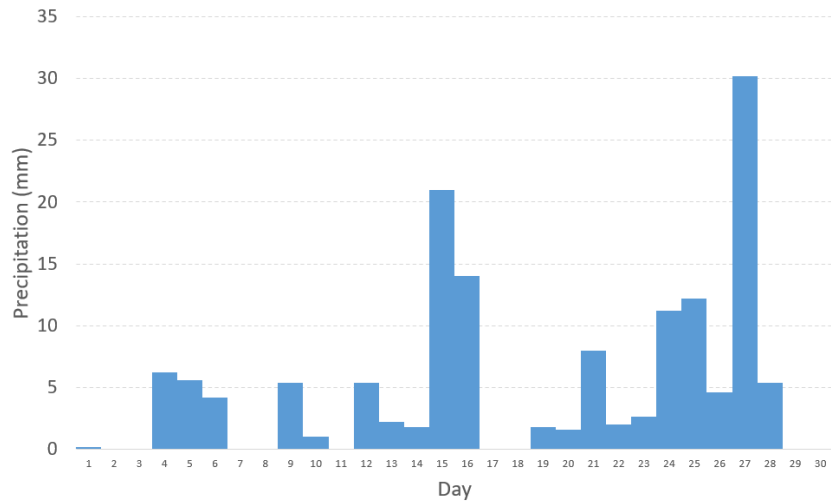
Reservoir pH (Oct 2021)
Source: SCADA Daily Averages





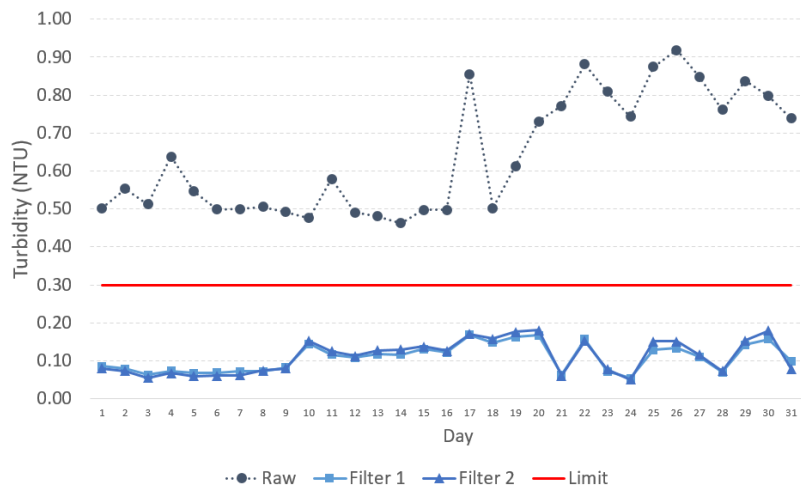
Total Precipitation (Oct 2021)

Source: Environment Canada - North Cowichan Station



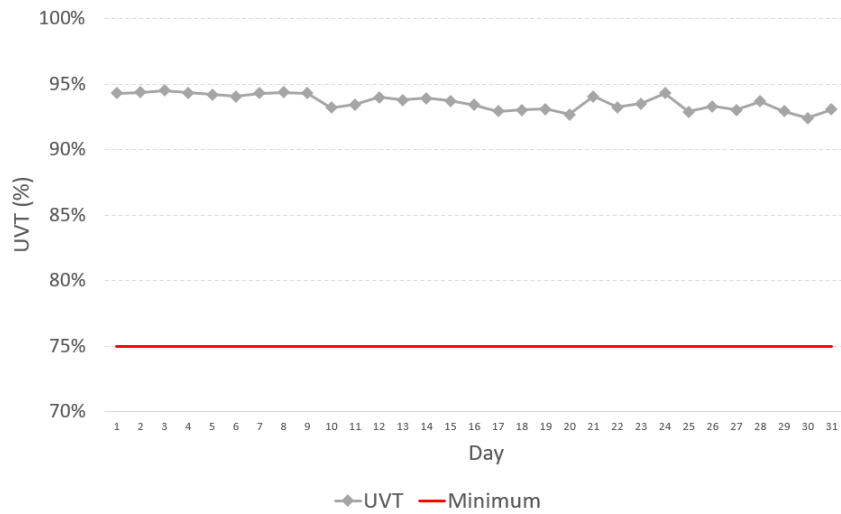
Turbidity (Oct 2021)

Source: SCADA Daily Averages





UV Transmittance (Oct 2021) Source: SCADA Averages



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

UV Dosage (Oct 2021) Source: SCADA Daily Averages

