

**Appleton Water Treatment Plant
Operations Synopsis
October, November, and December 2021**

Performance Summary

The table below presents selected water production and quality performance metrics for the current and previous reporting periods.

Treated Water Quality. All compliance parameters met or exceeded regulatory requirements.

Water Production. Compared with Q3 of 2021 (Q/Q) average production decreased by over 12% consistent with seasonal demand variation. Compared with Q4 of 2020 (Y/Y), average water production increased by almost 1%.

Raw Water Quality. Average Q/Q lake turbidity declined by 40% consistent with seasonal change. Y/Y levels also declined by 18%.

Energy Efficiency. Applied electrical energy efficiency Q/Q and Y/Y declined by about 4% consistent with increased plant discharge pressure.

WATER PLANT PARAMETERS	Previous (Q3 2021)			Current (Q4 2021)		
	July	August	September	October	November	December
Water Treated						
Finished (million gallons), total	302.1	310.0	283.6	268.9	252.7	260.3
Finished (million gallons / day), average	9.7	10.0	9.45	8.7	8.4	8.4
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	549.1	564.2	527.6	511.5	486.7	498.4
MWH / million gallons produced	1.82	1.82	1.86	1.90	1.93	1.91
Lake Turbidity (NTU), average	8.02	30.11	32.93	9.12	18.84	13.47
Water System Microbial Quality						
Total Coliform Samples	81	81	81	81	81	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
Finished Water Quality						
Water Temperature (Degrees F)	75.7	76.9	69.3	61.6	42.6	33.6
Turbidity (NTU), average	0.02	0.02	0.02	0.02	0.02	0.02
%<0.15 NTU standard	100	100	100	100	100	100
pH (SU), average	8.7	8.6	8.7	8.7	8.89	8.9
Total Chlorine (mg/L)	1.82	1.83	1.90	1.94	2.03	2.07
Fluoride (mg/L)	0.67	0.68	0.69	0.69	0.72	0.70
Orthophosphate (mg/L)	0.72	0.75	0.75	0.68	0.68	0.58

Laboratory

- In support of plant operations, staff conducted analyses according to method protocols for pH, turbidity, alkalinity, hardness, free/total chlorine, ammonia, phosphorus, potassium permanganate, and fluoride.
- In support of distribution operations, staff performed required 81+ monthly Coliform bacteria analyses along with heterotrophic plate count (HPC) testing.
- Staff collected and processed raw and finished water samples to comply with Disinfection By-Products Rule (DBPR) sampling requirements. Provided support to consecutive customers with shipping of DBPR2 samples.
- In support of OCCT demonstration project, completed daily samples and orthophosphate analyses along with stagnant / flowing samples and related water quality analyses.

Safety

- Maintained WTF Safety programs by completing scheduled safety inspections, fire prevention inspections, and monthly meetings. No significant incidents to report.
- Applied appropriate COVID-19 countermeasures as directed by city policy.

Operations

- Operated two UV Disinfection reactors continuously during the quarter. Completed lamp replacements as scheduled.
- Completed construction phase for the Lake Station mechanical/electrical rehabilitation.
- Completed triennial Sanitary Survey in cooperation with WDNR.
- Completed testing phase for Optimized Corrosion Control Treatment (OCCT) pipe loop testing apparatus.
- Completed annual cathodic protection maintenance. Observed evidence of partial icing of north face of Glendale Tower.
- Placed #4 Softener into service and began cleaning #1 Softener.
- Experienced icing event at Lake Station intake requiring operation of new “water door” and temporary deployment of portable pumps.

Staffing & Training

- Operations staffing levels were occasionally reduced by appropriately applied COVID-19 emergency leave instances.
- Welcomed replacement Instrument Technician in anticipation of incumbent retirement.
- Completed annual performance evaluation for all staff.