

**Appleton Water Treatment Plant
Operations Synopsis
October, November and December 2020**

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 2020 (quarter over quarter or Q/Q), average water production decreased by nearly 13% consistent with seasonal change. However, compared with Q4 of 2019 (year over year or Y/Y), average water production was unchanged.

Raw Water Quality. Average Q/Q lake turbidity declined by about 13% consistent with seasonal change in lake conditions, yet Y/Y average raw water turbidity increased by 13% due to extended warm weather conditions.

Energy Efficiency. Applied electrical energy Q/Q efficiency declined by approximately 3% and Y/Y efficiency declined by nearly 8%. These efficiency changes are likely due to increased gravity filter backwashing, slightly lower average transmissivity of UV disinfection influent, and increased finished water discharge pressure.

WATER PLANT PARAMETERS	Previous (Q3 2020)			Current (Q4 2020)		
	July	August	September	October	November	December
Water Treated						
Finished (million gallons), total	297.3	313.6	267.1	262.2	262.2	259.9
Finished (million gallons / day), average	9.6	10.1	8.9	8.5	8.4	8.4
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	532.2	536.5	473.5	473.6	454.1	481.1
MWH / million gallons produced	1.79	1.71	1.77	1.81	1.80	1.85
Lake Turbidity (NTU), average	21.9	17.88	17.3	13.9	30.87	5.63
Water System Microbial Quality						
Total Coliform Samples	81	81	81	82	82	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
Finished Water Quality						
Water Temperature (Degrees F)	79.6	76.1	65.5	51.7	41.2	34.6
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	8.8	8.8	8.7	8.8	8.7	8.8
Total Chlorine (mg/L)	1.91	1.92	1.91	2.01	2.01	1.99
Fluoride (mg/L)	0.72	0.74	0.73	0.75	0.69	0.73
Orthophosphate (mg/L)	0.79	0.77	0.68	0.82	0.60	0.63

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.
- Re-coated the floor of laboratory areas deploying temporary sampling sinks and analytical work areas to complete the work without interruption of normal compliance and process performance monitoring activities.

Safety

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

Operations

- Operated two UV Disinfection reactors continuously during the quarter.
- Completed maintenance and required upgrades project for the Ridgeway Tower including 5-year regulatory inspection.
- Completed 5-year regulatory inspection of the North Tower.
- Continued construction phase for the Lake Station mechanical/electrical rehabilitation. Major work completed includes replacement of the intake sluice gate, shore well cleaning, construction of the process water well, and construction of the new chamber and piping for the second travelling screen.
- Completed the conditioning phase and began the testing phase for Optimized Corrosion Control Treatment (OCCT) pipe loop testing apparatus. Began feeding blended phosphate to the finished water discharge headers rather than the Gravity Filter influent.
- Paused for the winter months gradual Main Pressure Zone pressure increases as recommended by Water Distribution System Master Plan.
- Completed annual hoist inspections.

Staffing & Training

- Maintained staff schedules and work areas to limit group sizes and face-to-face contact among employees.
- Completed annual performance evaluations for all staff.