

**Appleton Water Treatment Plant
Operations Synopsis
July, August, and September 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 Q2 of 2020 (quarter over quarter or Q/Q), average water production increased by nearly 12%, however compared with Q3 of 2019 (year over year or Y/Y), average water production decreased slightly by about 1%.

Raw Water Quality. Q/Q lake turbidity more than doubled consistent with late summer and early fall lake conditions. Y/Y average raw water turbidity data were similar with substantial late September real-time turbidity spikes over 75 NTU from increased algae production and die-off.

Energy Efficiency. In terms of applied electrical energy, Q/Q efficiency declined by approximately 3% and Y/Y efficiencies declined by nearly 5% likely due to increased gravity filter backwashing in response to increased raw water turbidities.

WATER PLANT PARAMETERS	Previous (Q2 2020)			Current (Q3 2020)		
	April	May	June	July	August	September
Water Treated						
Finished (million gallons), total	236.6	271.2	271.2	297.3	313.6	267.1
Finished (million gallons / day), average	7.9	8.7	9.0	9.6	10.1	8.9
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	422.2	439.0	470.0	532.2	536.5	473.5
MWH / million gallons produced	1.78	1.62	1.73	1.79	1.71	1.77
Lake Turbidity (NTU), average	7.4	5.4	8.6	21.9	17.88	17.3
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)	43.2	55.6	71.5	79.6	76.1	65.5
Turbidity (NTU), average	0.02	0.02	0.02	0.02	0.02	0.03
%<0.15 NTU standard	100	100	100	100	100	100
pH (SU), average	8.9	8.8	8.8	8.8	8.8	8.7
Total Chlorine (mg/L)	1.98	1.98	1.94	1.91	1.92	1.91
Fluoride (mg/L)	0.68	0.75	0.73	0.72	0.74	0.73
Orthophosphate (mg/L)	0.73	0.84	0.84	0.79	0.77	0.68

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.

Safety

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

Operations

- Operated two UV Disinfection reactors continuously during the quarter.
- Switched to North Recarbonation basin in preparation to clean the South basin next quarter.
- Commenced construction phase for the Lake Station mechanical/electrical rehabilitation.
- Commenced maintenance and required upgrades project for the Ridgeway Tower.
- Commenced contract for Optimized Corrosion Control Treatment (OCCT) pipe loop testing apparatus and related plant sampling and supply water modifications.
- Continued gradual Main Pressure Zone pressure increase as recommended by Water Distribution System Master Plan.
- Completed final workshop of compliance project for America's Water Infrastructure Act (AWIA).

Staffing & Training

- Adjusted staff schedules and work areas to limit group sizes and face-to-face contact among employees.