

**Appleton Water Treatment Plant
Operations Synopsis
January, February, March 2018**

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 Q4 of 2017 (quarter over quarter or Q/Q), average water production decreased by about 2% consistent with seasonal demand. However, compared with Q1 of 2017 (year over year or Y/Y), average water production increased by about 2%.

Raw Water Quality. Average raw water turbidity decreased Q/Q by about 90% as expected due to Lake Winnebago ice over. Average raw water turbidity also decreased Y/Y by 14%.

Energy Efficiency. In terms of applied electrical energy efficiency, performance Q/Q decreased slightly by about 2.5% but improved Y/Y by 1.1%.

WATER PLANT PARAMETERS	Previous (Q4 2017)			Current (Q1 2018)		
	October	November	December	January	February	March
Water Treated						
Finished (million gallons)	274.7	259.1	266.7	275.9	242.4	268.1
Finished (million gallons / day)	8.9	8.6	6.2	8.9	8.7	8.6
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	467.5	437.7	460.5	480.4	426.0	472.5
MWH / million gallons produced	1.70	1.69	1.73	1.74	1.76	1.76
Turbidity						
Lake (NTU)	42.3	26.7	24.7	3.8	3.1	2.5
Finished (NTU)	0.02	0.03	0.02	0.03	0.02	0.02
Finished (<0.15 NTU standard)	100%	100%	100%	100%	100%	100%
Water System Microbial Quality						
Total Coliform Samples	81	81	82	85	81	82
Compliance with Standard	100%	100%	100%	100%	100%	100%
Disinfectant Contact Time						
Minimum CT Ratio Provided	2.4	1.2	1.3	1.2	1.3	1.8
Hardness						
Lake Total / Calcium (mg/L)	171/89	184/104	191/106	206/113	208/114	204/111
Finished Total / Calcium (mg/L)	82/19	93/24	97/30	98/35	100/38	98/36
Finished Water Quality						
Total Chlorine (mg/L)	1.95	1.91	1.77	1.58	1.63	1.63
pH (SU) Min/Max	8.3/8.9	8.7/8.9	8.5/8.9	8.5/8.7	8.5/8.8	8.2/8.7
Water Temperature (Degrees F)	59.9	39.9	34.0	35.2	37.4	39.9
Fluoride (mg/L)	0.67	0.67	0.67	0.65	0.67	0.70
Orthophosphate (mg/L)	0.61	0.63	0.61	0.56	0.59	0.59

Laboratory

- In support of plant operations, staff conducted analyses according to method protocols for pH, turbidity, alkalinity, hardness, free/total chlorine, ammonia, phosphorus, 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 DBPR2 sampling requirements. Provided support to consecutive customers with shipping of DBPR2 samples.
- Began Unregulated Contaminant Monitoring Round 4 (UCMR4) sampling.
- Identified and reviewed six (6) Laboratory Standard Operating Procedures for update.

Safety

- Maintained WTF Safety programs by completing scheduled safety inspections and monthly meetings. No significant incidents to report.
- Conducted two Utility Department Safety Days for most employees.

Operations

- Operated two UV Disinfection reactors continuously during the quarter.
- Cleaned #3 Softener and conducted the coating warranty inspection.
- Successfully completed the annual generator capacity test in coordination with WPPI.
- Replaced the Uninterruptible Power Supply for the plant SCADA system.
- Submitted the Chemical Systems Upgrades plans and specifications to WDNR for approval.
- Cleaned and inspected the raw water intake bells and pipe. Identified no major issues.
- Continued database development for the implementation of the new plant data management and reporting system (Hach WIMS).

RUPIP

- Concluded the Merrick lime systems warranty phase with the supplier providing 12 replacement flushing system valves and 3 dissolver level transmitters at no charge.
- Resolved and corrected CFE Wet Well interstitial space leakage issue through installation of absent expansion joint in wall at no charge.

Staffing & Training

- Most staff have completed annual mandatory department and City safety and employee training planned for the quarter.
- Two Water Plant Operators attended water chemistry training at UW Madison Department of Engineering.