

**Appleton Water Treatment Plant
Operations Synopsis
January, February, March 2015**

Summary

The following table summarizes selected water production and quality performance metrics for the current and previous reporting periods. All compliance parameters met or exceeded regulatory requirements. During the quarter, average water production increased slightly by about 1.2% consistent with reduced winter demand. Average raw water turbidity remained low due to Lake Winnebago ice cover. CT ratios were lower as expected due to lower raw water temperatures and interim limited CT basin operations due to RUIP.

WATER PLANT PARAMETERS	Previous (Q4 2014)			Current (Q1 2015)		
	October	November	December	January	February	March
Water Treated						
Finished (million gallons)	251	246	249	258	234	262
Finished (million gallons / day)	8.1	8.2	8.0	8.3	8.4	8.4
Electrical Energy (WTF)						
Consumption (Megawatt-hours)	516.8	513.2	544.9	549.8	496.8	553.6
MWH / million gallons produced	2.06	2.08	2.19	2.13	2.12	2.12
Turbidity						
Lake (NTU)	24.4	28.1	5.5	2.5	2.1	4.6
Finished (NTU)	0.03	0.04	0.03	0.02	0.02	0.03
Finished (<0.15 NTU standard)	100%	100%	100%	100%	100%	100%
Water System Microbial Quality						
Total Coliform Samples	81	81	81	81	81	81
Compliance with Standard	100%	100%	100%	100%	100%	100%
Disinfectant Contact Time						
Minimum CT Ratio Required	1.0	1.0	1.0	1.0	1.0	1.0
Minimum CT Ratio Achieved	2.30	1.29	1.28	1.49	1.47	1.00
Hardness						
Lake Total / Calcium (mg/L)	180/96	193/95	195/103	199/111	205/103	220/119
Finished Total / Calcium (mg/L)	94/13	106/26	109/28	111/27	110/29	108/32
Finished Water Quality						
Total Chlorine (mg/L)	1.93	2.16	2.14	2.22	2.21	2.18
pH	8.4/9.0	8.3/9.2	8.4/8.8	8.6/8.9	8.6/8.9	8.8/9.1
Water Temperature (Degrees F)	54.7	38.7	34.2	33.6	34.2	37.2
Fluoride (mg/L)	0.79	0.78	0.78	0.78	0.72	0.64
Orthophosphate (mg/L)	0.70	0.64	0.73	0.84	0.64	0.66

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 completed another round of Disinfection Byproducts Rule 2 (DBPR2) sampling and provided technical support to wholesale water customers sampling activities.
- Staff continued Unregulated Contaminant Monitoring – Round 3 sampling.
- The Technical Services Manager continued development of the Long Term 2 Enhanced Surface Water Treatment Rule (LT2) monitoring plan. Monitoring will commence in the fourth quarter of 2015 and continue monthly for 2 years.

Safety

WTF Safety programs were maintained by completing scheduled safety meetings and all inspections. There were no significant incidents to report.

Operations

- Maintenance staff completed adjustment of Contactor Waste valves to reduce recycle stream volumes (and associated electrical energy and chemicals) by approximately 15%.
- The first quarter membrane cartridge warranty claim was submitted for 136 cartridges for delivery in the second quarter. Per the warranty agreement, future claims will be honored using a 5-year pro-ration method based date of installation.
- The annual stand-by generator capacity testing was successfully completed in March.

Water Plant Projects

RUPIP: The Regulatory Upgrade and Process Improvement Project made the following major progress during the quarter:

- The High Density Lime Systems (3 & 4) were modified by the supplier to include modified mixer impellers and density meter auto-flushing equipment and software at no addition expense to the project. Systems 1 & 2 will be installed in the second quarter.
- The Filter-to-Waste Pumps and Polymer Filter Aid Pumps were functionally tested.
- The UV reactors were prepared by supplier personnel for performance testing to be conducted in the second quarter.
- The Aqua Ammonia system construction and testing was completed. This system is now fully operational and in active use.
- SCADA system control software associated with completed unit process systems was successfully tested.

PAC Fire Suppression: Construction activities have been completed and the system has been commissioned. The installation of a bag house differential pressure transmitter is pending.

Distribution System Projects

Glendale Water Tower: Review of 90% plans and specifications was completed. Construction is expected to be complete in 2016.

Lindbergh Mixer: The Gridbee mixer has been purchased and will be installed in the second quarter.

#3 PRV: The PRV station has been fully tested and is available for service. It will likely be used in second quarter to support the 5-year cleaning and inspection of the Ridgeway and North Towers.

Staffing & Training

- Water Plant Operator Tim Hillsberg retired during the quarter. His position was filled by Relief Operator John George. Stephanie Lee transferred from the Wastewater Utility to fill John George's position. All Water Treatment Facility vacancies have been filled.
- A second Utilities Safety Day was held in January for those staff unable to participate in November 2014.
- Several staff members attended annual City safety training, CPR/First Aid training, and water utility professional training in February and March. Training sessions were conducted to familiarize staff with the operations of #3 PRV and the PAC Fire Suppression System.