

**Appleton Wastewater Treatment Plant  
Operations Synopsis  
July 2021 – September 2021**

**Wastewater Treatment Program**

- The Appleton Wastewater Treatment Plant (AWWTP) final effluent met Wisconsin Department of Natural Resources (WDNR) discharge monitoring reporting limits for carbonaceous biochemical oxygen demand (CBOD), total suspended solids (TSS), phosphorous, and ammonia. The plant maintained good treatment and a healthy microbiological population with a sludge retention time of 10.5 days. Dewatering processes functioned well and converted 19.2 million gallons (MG) of primary digested sludge to biosolids.

**Summary of Treatment**

<b>Parameter</b>	<b>July</b>	<b>August</b>	<b>September</b>	<b>Average</b>
Industrial Flow (MG)	27.3	29.2	26.6	27.7
Domestic Flow (MG)	437.9	384.3	260.6	360.9
Total Flow (MG)	465.1	413.5	287.2	388.6
Influent CBOD Load (Avg Daily lbs)	26,539	22,959	24,272	24,590
Influent TSS Load (Avg Daily lbs)	47,126	47,116	43,176	45,806
Influent Phosphorous Load (Avg Daily lbs)	513	460	498	490
Influent Ammonia Load (Avg Daily lbs)	1,861	1,620	1,966	1,816
Effluent CBOD Load (Avg Daily lbs)	557	430	296	428
Effluent TSS Load (Avg Daily lbs)	382	260	90	244
Effluent Phosphorous Load (Avg Daily lbs)	22	23	15	20
Effluent Ammonia Load (Avg Daily lbs)	74	28	9	37
% Treatment Removal of CBOD	97.9	98.1	98.8	98.3
% Treatment Removal of TSS	99.2	99.4	99.8	99.5
% Treatment Removal of Phosphorous	95.7	95.0	97.0	95.9
% Treatment Removal of Ammonia	96.0	98.3	99.5	97.9

**Work in Progress:**

- 2019 Appleton Wastewater Plant Improvement Projects: The project includes replacement of the Return Activated Sludge (RAS) pumps, process piping modifications (e.g., blended sludge, filtrate, waste gas flare), outside secondary chemical offloading containment repairs, primary clarifiers #5 & #6 drive replacements (2020 CIP), and H-Building effluent pump replacements (2020 CIP). Staab Construction (Staab) proceeded with construction activities during the reporting period. Although work has advanced, ongoing supply chain disruptions have impeded progress on the replacement of the primary clarifier drives and RAS pumps. Staab believes they can still meet the final project completion date of March 2022 if suppliers can deliver major equipment and parts during the early half of the final quarter of this year.
- Appleton Wastewater Plant Sludge Storage Building Addition: Applied Technologies, Inc. (ATI) advanced preliminary design work on the concept selected by Project Team staff which best met the needs of the AWWTP from a regulatory, functionality, reliability, efficiency, and capital cost standpoint. ATI is to present 30% design plans for review during the final quarter of 2021. The public bidding phase is projected to occur during the 1<sup>st</sup> quarter of 2022.

- 2021 Appleton Wastewater Plant Solids Dewatering Equipment Upgrades: McMahon Associates, Inc. (McMahon) continued engineering services as part of the Solids Dewatering Equipment Upgrades project. McMahon has continued to advance preliminary design work associated with the replacement and upgrade of the belt filter presses (BFP). The AWWTP will be adding one additional BFP (for a total of four new) which will provide the required dewatering capacity based on future growth projections and redundancy to facilitate critical maintenance events. McMahon is to present 30% design plans for review during the final quarter of 2021. The public bidding phase is projected to occur during the 1st quarter of 2022.
- 2021 Secondary Clarifier Drive Rebuild Project: On June 2, 2021, Common Council approved contract award for the removal, rebuilding, and reinstallation of drive equipment on Secondary Clarifiers #1 through #6 to Sabel Mechanical. Common Council also approved the sole source purchase of the associated rebuild parts through the original equipment manufacturer, Evoqua. Work was anticipated to commence during the current reporting period. Unfortunately, supply chain disruptions contributed to significant delays with delivery of major parts and equipment. Complete shipments were finally received late in September which allowed Sabel to commence with the removal of drives on Secondary Clarifiers #3 and #6 on October 5, 2021. Final project completion is not anticipated to occur until the spring of 2022.

### **Regulatory Summary**

- Monthly Discharge Monitoring reports for July, August, and September were filed electronically on time for regulatory compliance.

### **Laboratory**

- All sampling and laboratory testing procedures were performed in accordance with requirements outlined in the AWWTP Wisconsin Pollutant Discharge Elimination System (WPDES) permit.
- Discharge Monitoring Report (DMR) and Health Department testing program objectives associated with sampling and analysis were met during the reporting period.
- Analysis of Single-Blind Proficiency samples for laboratory recertification occurred during the reporting period.
- Sampling of influent in support of Wisconsin State Lab of Hygiene COVID Sewage Surveillance continued during the reporting period.
- Analytical testing schedule was reviewed by Laboratory Staff and Supervisors. Changes were implemented in August 2021 and will be reviewed in the fourth quarter.

### **Staffing & Training**

- The hiring process to fill the vacancy left by Liquids Operator Elizabeth Martin concluded with the hiring of Liquids Operator Travis Squires on July 19<sup>th</sup>.