

**Appleton Wastewater Treatment Plant
Synopsis
July 2013 - September 2013**

Wastewater Treatment Program

- The Appleton Wastewater Treatment Plant (AWWTP) final effluent met all Wisconsin Department of Natural Resources (WDNR) discharge monitoring reporting limits including carbonaceous biochemical oxygen demand (CBOD), total suspended solids (TSS), pH, phosphorous, and ammonia. (See Table 1). The plant maintained good treatment and a healthy microbiological population with a sludge retention time of nine days. Dewatering processes functioned well and converted 11.04 Million Gallons (MG) of primary digested sludge to biosolids.

Table 1 – Wastewater Influent / Effluent Treatment Data

Characteristic	July 2013			August 2013			September 2013		
	Influent		Percent	Influent		Percent	Influent		Percent
AWWTP Flows (MG)									
Industrial Flow	53.1		15.4	54.6		21.4	62.2		24.0
Domestic Flow	291.1		84.6	200.9		78.6	196.9		76.0
Total Flow	344.2			255.5			259.1		
Pollutant Loadings (lbs)	Influent	Effluent	Removal	Influent	Effluent	Removal	Influent	Effluent	Removal
CBOD	760,516	10,195	98.7	888,453	6,426	99.3	833,946	6,985	99.2
TSS	2,130,895	4,947	98.7	1,588,319	5,142	99.3	1,445,131	5,441	99.2
Phosphorous	17,506	1,229	99.8	17,206	1,284	99.7	15,175	1,227	99.6
Ammonia	46,111	1,570	93.0	55,598	1,313	92.5	57,302	3,818	91.9

Work Completed:

- 37,840 gallons of spent sulfuric acid (i.e. ferrous sulfate) was used for phosphorus removal during the reporting period. The chemical cost savings for using ferrous sulfate was approximately \$28,380. To meet phosphorous discharge limits, 6,815 gallons of ferrous chloride was purchased and fed during the reporting period at a cost of \$5,110.
- Monthly effluent ammonia removal averaged 96.0% . The monthly average concentration for the three months was 0.90 mg/l. These concentration results are in compliance with the ammonia limit 4.4 mg/L for the three month period.
- Chlorination and dechlorination processes performed well through the 3 month period and were terminated on September 30th. The process goals of reducing the population of fecal coliforms in the plant effluent below the permit limit of 400 CFU/100 mls and maintaining a chlorine concentration below 38 parts per billion (ppb) were realized while chemical feeds were reduced significantly.

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Work in Progress:

- The Fine Screen Replacement Project Study report by Strand Associates engineers is due to be delivered in early October. The report will lay out equipment and installation options for WWTP staff to consider. Staff attended the Water Environment Federation annual conference and gained first-hand knowledge of the equipment expected to be presented in the Strand report. A design meeting with the engineers and AWWTP staff will be held soon after the report is delivered.
- The Pretreatment Program Local Limit Evaluation (LLE) Project kick-off meeting was held July 11th with engineers from Strand and Associates. Work completed during the period includes review of historic treatment data, regulatory code and industrial permit review, and evaluation of the collection sewers. A preliminary monitoring plan was developed with samplers located at various locations throughout the city sewer system. Monitoring is anticipated to begin by late October.
- The AWWTP Evaluation of Phosphorus Treatment Optimization and TMDL Compliance Project kick-off meeting was held on August 7 with engineers from CH2M Hill & McMahon. Initial efforts are centered around the analysis of historic treatment documents and data and flowstream sampling and testing. These results will later be incorporated into computer modeling that will help to determine optimal process control for the plant
- The Air Emissions Control Project for the Water Treatment Plant and the WWTP kick-off meeting was held on August 14. The project involves an evaluation of plant emissions, alternatives to control those emissions, and permitting to meet state and federal requirements. Work completed during the review period includes a review and inventory of air emissions sources, dispersion modeling, and an initial assessment.

Biosolids Program

- Land application activities commenced in late August and continued through the month of September. A total of 10,000 wet tons of biosolids were land applied to agricultural fields.
- Biosolids hauling to the pilot compost site at the Outagamie landfill is anticipated to begin in mid October along with windrow construction. WWTP staff will be monitoring compost on a regular basis to ensure biological processes are sustaining required temperatures and that window turning events are coordinated as needed.
- Biosolids compost was utilized on the various City terrace restoration projects (i.e. Ballard Road) during the reporting period. In late September compost was made available to residents at the Glendale Avenue Municipal Services residential drop-off site. Thus far, the resident's response has been positive with limited quantities disappearing quickly.

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Personnel

- Staffing changes were the result of an AWWTP Liquids Operator accepting a position as a Relief Operator at the AWTF. Training and evaluations for the newly hired liquids operator, Ryan Prellwitz, continued through the period. It should be noted that new employee training is reliant on the existing staff to complete on the job training. Operational staffing levels were maintained through the period.

Regulatory Summary

- Monthly Discharge Monitoring reports for July, August and September were filed electronically and on time for regulatory compliance.
- The third quarter short form was also completed and submitted on time.

Laboratory Program

- Program objectives for regulatory and process sampling and analyses were met including results for the Discharge Monitoring Report (DMR) and Health Department pool testing program.
- A second set of Pretreatment samples is scheduled for the 4th quarter. Sampling for Whole Effluent Toxicity (WET) monitoring will also be conducted in October.

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EFFLUENT QUALITY SUMMARY

July 2012 – September 2013

<i>Effluent Parameter:</i>	<i>CBOD mg/L</i>	<i>TSS mg/L</i>	<i>Total Phosphorus mg/L</i>	<i>Ammonia-Nitrogen mg/L</i>	<i>Chlorine Residual mg/L</i>	<i>Fecal Coliform Colonies/100 ml</i>	<i>pH s.u.</i>
<i>WPDES LIMITS:</i>	<i>25 mg/L monthly avg.</i>	<i>30 mg/L monthly avg.</i>	<i>1 mg/L monthly avg.</i>	<i>4.4 mg/L monthly avg.</i>	<i>0.037 mg/L daily limit</i>	<i>400 col/100ml geom. mean</i>	<i>6.0 - 9.0 daily limit</i>

2012

July	1	1	0.54	0.25	<0.01	6	6.8/7.3
August	3	2	0.83	0.36	<0.01	24	7.1/7.4
September	3	3	0.81	0.20	<0.01	70	7.1/7.5
October	2	3	0.57	0.17	NA	NA	7.1/7.5
November	3	4	0.70	0.10	NA	NA	7.2/7.5
December	5	10	0.73	0.39	NA	NA	7.1/7.5

2013

January	6	6	0.60	0.73	NA	NA	7.1/7.4
February	7	5	0.54	0.43	NA	NA	7.1/7.3
March	7	8	0.56	0.51	NA	NA	6.9/7.3
April	3	4	0.18	0.85	NA	NA	7.0/7.3
May	4	3	0.33	0.89	<0.01	9	7.2/7.1
June	4	3	0.35	1.85	<0.01	9	7.1/7.3
July	3	1	0.43	0.33	<0.01	21	7.3/7.6
August	3	2	0.60	0.58	<0.01	7	7.2/7.6
September	3	3	0.57	1.79	<0.01	22	7.3/7.6

YEAR 2013 RECEIVING STATION REVENUE

Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Y-T-D Total
A & B Leist Trucking	\$ 1,423.16	\$ 13,577.59	\$ 13,692.12	\$ 19,334.07	\$ 15,189.99	\$ 9,810.38	\$ 13,286.86	\$ 12,274.69	\$ 13,076.27				\$ 111,665.13
CSR & Sons*	\$ 185.33	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ 185.33
Den-Bec Inc.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ -
Hickory Meadows	\$ 13,533.61	\$ 9,904.51	\$ 21,369.30	\$ 47,757.74	\$ 17,311.90	\$ 21,191.41	\$ 16,772.54	\$ 14,014.97	\$ 17,744.91				\$ 179,600.89
Jeff Waldvogel Trke.	\$ 14,062.23	\$ 12,620.09	\$ 12,404.72	\$ 11,619.37	\$ 12,857.59	\$ 14,647.31	\$ 15,621.80	\$ 13,527.03	\$ 12,361.07				\$ 119,721.21
KA Services *							\$ -	\$ 2,125.11	\$ 2,222.62				
Sanimax	\$ 525.29	\$ 97.02	\$ -	\$ 264.20	\$ 246.58	\$ -	\$ -	\$ -	\$ -				\$ 1,133.09
Schwind Trucking	\$ 2,682.83	\$ 2,391.01	\$ 3,961.01	\$ 2,895.05	\$ 1,892.05	\$ 1,590.95	\$ -	\$ -	\$ -				\$ 15,412.90
Van's Septic Service	\$ 11,210.00	\$ 5,657.20	\$ 11,133.60	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ 28,000.80
Veolia	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -				\$ -
Waldvogel Trucking	\$ 2,870.14	\$ 2,921.09	\$ 3,183.71	\$ 3,066.43	\$ 3,043.66	\$ 4,901.56	\$ 3,900.20	\$ 3,549.81	\$ 3,604.99				\$ 31,041.59
2013 Total	\$ 46,492.59	\$ 47,168.51	\$ 65,744.46	\$ 84,936.86	\$ 50,541.77	\$ 52,141.61	\$ 49,581.40	\$ 45,491.61	\$ 49,009.86	\$ -	\$ -	\$ -	\$ 491,108.67
2012 Total	\$ 55,782.69	\$ 36,509.44	\$ 56,782.88	\$ 45,246.16	\$ 68,295.22	\$ 48,075.42	\$ 52,208.50	\$ 56,132.02	\$ 44,427.19	\$ 104,378.71	\$ 67,703.78	\$ 51,357.71	\$ 666,899.72

*New Hauler for 2013

Date: November 5, 2013
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Utilities Committee