

**Appleton Wastewater Treatment Plant  
Synopsis  
October 2014 - December 2014**

**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), pH, phosphorous, and ammonia. (See Table 1). The treatment plant effluent failed to meet criteria for a Whole Effluent Toxicity (WET) test in December, and is re-testing. The plant maintained good treatment and a healthy microbiological population with a sludge retention time of seven days. Dewatering processes functioned well and converted 12.46 Million Gallons (MG) of primary digested sludge to biosolids.

**Table 1 – Wastewater Influent / Effluent Treatment Data**

Characteristic	October 2014			November 2014			December 2014		
	Influent		Percent	Influent		Percent	Influent		Percent
AWWTP Flows (MG)									
Industrial Flow	54.6		15.8%	49.6		15.8%	51.2		12.6%
Domestic Flow	289.9		84.2%	264.5		84.2%	355.1		87.4%
Total Flow	344.5			314.1			406.3		
Pollutant Loadings (lbs)	Influent	Effluent	Removal	Influent	Effluent	Removal	Influent	Effluent	Removal
CBOD	991,872	9,957	99.0%	908,950	10,230	98.8%	1,064,801	12,440	98.8%
TSS	1,507,796	11,007	99.3%	1,401,642	13,601	99.0%	1,366,433	13,238	99.0%
Phosphorous	17,514	1,140	93.5%	16,757	770	95.8%	19,549	579	97.0%
Ammonia	58,845	3,400	94.2%	59,972	1,192	98.0%	49,387	5,063	89.7%

**Work Completed:**

- 10,020 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 \$7,215.00. 2,570 gallons of ferrous chloride purchased chemical needed to be fed during the three month period to meet phosphorus discharge requirements.
- Monthly effluent ammonia removal averaged 94.0% for the three month period. The effluent ammonia concentration averaged 0.99 mg/L. The effluent limit for the time period was 18.0 mg/L.

**Work in Progress:**

- **Fine Screen Replacement Project:** Strand Associates engineers, along with staff from AWWTP staff and August Winter & Sons Inc. attended a pre-construction meeting in mid-October. The meeting overviews project requirements and owner expectations. Project construction is tentatively scheduled to start in late January.

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- **AWWTP Evaluation of Phosphorus Treatment Optimization and TMDL Compliance Project:** The full scale chemical testing demonstration was delayed until the new chemical dosing pumps system arrives and is installed. The anticipated startup of the chemical demonstration is expected in late January or early February 2015. The information obtained from this demonstration is critical to completing the remaining project tasks in the multi-year study being lead by the engineering firm CH2M Hill.
- **Digester Improvements Project:** AWWTP staff reviewed and evaluated engineering proposals for this project. McMahon Engineers was awarded the contract for design services to complete the upgrades. Project goals include reducing electrical costs to this process by approximately \$30,000 a year. Other project elements address the age and wear and tear of equipment.
- **Everett Street Lift Station Improvement Project:** McMahon Engineers evaluated the lift station operations data and location and met with AWWTP staff to assist in developing plans and estimates for project options. Subsequent meetings between the engineers and staff resulted in agreement over the best alternative. The contractor pre-bid meeting was held in early October.
- **Personnel:** AWWTP operations and maintenance staff worked through the resignation of a Maintenance Specialist/Millwright in early October. With the Human Resources Department, management staff interviewed and evaluated qualified candidates. A new Maintenance Specialist/Millwright started employment in late December.

**Regulatory Summary**

- Monthly Discharge Monitoring reports for October, November and December were filed electronically on time for regulatory compliance. The 2014 3rd quarter short form was also submitted.

**Laboratory Program**

- Program objectives for regulatory and process sampling and analysis were met including results for the Discharge Monitoring Report (DMR) and Health Department pool testing program.
- Lab personnel completed the analysis of Single Blind Proficiency samples for laboratory recertification.
- Lab staff conducted compliance monitoring sampling and pretreatment monitoring sampling to comply with 2014 requirements.
  - Note: A corrective action is in process for Whole Effluent Toxicity Testing
- The newly hired Utility Worker was trained in BOD testing procedures and passed the Initial Demonstration of Capability (IDOC).

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**EFFLUENT QUALITY SUMMARY**

**October 2013 – December 2014**

<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>

**2013**

<b>October</b>	3	4	0.65	1.21	NA	NA	7.2/7.8
<b>November</b>	4	2	0.28	0.62	NA	NA	7.5/7.7
<b>December</b>	6	4	0.57	3.38	NA	NA	7.2/7.5

**2014**

<b>January</b>	8	5	0.63	20.08	NA	NA	7.5/7.6
<b>February</b>	5	5	0.58	9.56	NA	NA	7.1/7.4
<b>March</b>	4	3	0.34	2.21	NA	NA	6.9/7.1
<b>April</b>	2	1	0.10	0.68	NA	NA	7.3/7.5
<b>May</b>	4	1	0.11	0.63	<0.01	17	7.1/7.4
<b>June</b>	3	2	0.29	0.42	<0.01	27	7.2/7.6
<b>July</b>	3	1	0.43	0.14	<0.01	11	7.4/7.6
<b>August</b>	4	4	0.39	0.40	<0.01	64	7.2/7.4
<b>September</b>	3	1	0.37	0.33	<0.01	14	7.2/7.5
<b>October</b>	3	4	0.38	1.09	NA	NA	7.3/7.5
<b>November</b>	4	5	0.29	0.46	NA	NA	7.2/7.3
<b>December</b>	4	4	0.18	1.41	NA	NA	7.1/7.2

**YEAR 2014 RECEIVING STATION REVENUE**

Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Y-T-D Total
A & B Leist Trucking	\$ 14,313.06	\$ 14,872.60	\$ 57,727.42	\$ 82,647.36	\$ 91,913.49	\$ 64,171.69	\$ 19,283.58	\$ 52,587.89	\$ 63,504.47	\$ 62,627.87	\$ 42,684.23	\$ 50,242.78	\$ 616,376.44
CSR & Sons	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Den-Bee Inc.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Hickory Meadows	\$ 9,439.68	\$ 5,582.53	\$ 10,391.43	\$ 28,865.13	\$ 23,326.25	\$ 24,193.41	\$ 6,858.91	\$ 9,712.71	\$ 8,301.62	\$ 14,640.45	\$ 16,801.08	\$ 32,465.35	\$ 190,578.55
Jeff Waldvogel Trkg.	\$ 12,124.46	\$ 12,509.84	\$ 15,168.38	\$ 15,368.10	\$ 17,300.98	\$ 18,154.82	\$ 18,841.15	\$ 16,686.38	\$ 17,724.17	\$ 19,210.42	\$ 16,802.84	\$ 18,280.42	\$ 198,171.96
KA Services	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 255.49	\$ 1,105.37	\$ 235.42	\$ -	\$ 1,596.28
Sanimax	\$ -	\$ -	\$ -	\$ 152.33	\$ -	\$ 83.42	\$ -	\$ -	\$ 247.90	\$ 107.45	\$ -	\$ -	\$ 591.10
Schwind Trucking	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,273.44	\$ 493.28	\$ 1,659.31	\$ -	\$ -	\$ -	\$ 4,426.03
Van's Septic Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Veolia	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Waldvogel Trucking	\$ 3,345.74	\$ 3,190.94	\$ 3,209.25	\$ 3,340.99	\$ 3,037.06	\$ 3,235.91	\$ 3,103.58	\$ 2,703.16	\$ 3,548.62	\$ 3,133.68	\$ 3,390.49	\$ 3,071.18	\$ 38,310.60
<b>2014 Total</b>	\$ 39,222.94	\$ 36,155.91	\$ 86,496.48	\$ 130,373.91	\$ 135,577.78	\$ 109,839.25	\$ 50,360.66	\$ 82,183.42	\$ 95,241.58	\$ 100,825.24	\$ 79,914.06	#####	\$ 1,050,250.96
<b>2013 Total</b>	\$ 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	\$ 60,183.00	\$ 57,203.91	\$ 35,438.28	\$ 643,933.86

Date: January 16, 2015  
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