

**Appleton Wastewater Treatment Plant
Synopsis
April 2015 - June 2015**

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 13.44 Million Gallons (MG) of primary digested sludge to biosolids.

Table 1 – Wastewater Influent / Effluent Treatment Data

Characteristic	April 2015			May 2015			June 2015		
	Influent		Percent	Influent		Percent	Influent		Percent
AWWTP Flows (MG)									
Industrial Flow	47.6		11.3%	50.0		13.5%	48.5		10.6%
Domestic Flow	373.0		88.7%	320.6		86.5%	411.0		89.4%
Total Flow	420.6			370.6			459.5		
Pollutant Loadings (lbs)	Influent	Effluent	Removal	Influent	Effluent	Removal	Influent	Effluent	Removal
CBOD	980,720	11,364	98.8%	865,429	10,580	98.8%	846,294	14,735	98.3%
TSS	1,427,314	12,916	99.1%	1,550,341	5,535	99.6%	1,543,132	10,751	99.3%
Phosphorous	17,939	371	97.9%	17,877	651	96.4%	15,472	631	95.9%
Ammonia	53,165	1,998	96.2%	56,576	1,038	98.2%	46,785	2,342	95.0%

Work Completed:

- 51,700 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 \$37,200. 6,500 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 96.5% for the three month period. The effluent ammonia concentration averaged 0.41 mg/L. The effluent limit for the period changes from 11.0 mg/L for the months of April & May, to 4.4 mg/L for June.

Work in Progress:

- Fine Screen Replacement Project:** Construction and new equipment installation continued through the period with some delays due to weather. The new Bar Screen #2, screenings conveyor and screenings wash press were installed and operational by the end of June. Final completion is anticipated by the end of July.
- AWWTP Evaluation of Phosphorus Treatment Optimization and TMDL Compliance Project:** Engineers from CH2M Hill & McMahon and plant staff continued to evaluate chemical dose rates and refine chemical feed procedures and protocols. A workshop is planned for late July to present and discuss evaluation results and treatment alternatives.

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- **Digester Improvements Project:** WWTP staff and managers worked with McMahon engineering to devise methods for purging and cleaning the methane gas lines. August Winter and Sons Construction Co. and Mid Valley Industrial Services were selected to complete the work including new gas flow equipment installation and piping system inspection and cleaning. Work is anticipated to be done in early July.
- **Everett Street Lift Station Improvement Project:** Construction and equipment installation continued, although somewhat hampered by weather conditions. WWTP staff and managers have worked diligently to maintain lift station operations during this period.
- **Personnel:** Two new Liquids Operators were hired and began their training regimens in early June. May saw the resignation of one mechanic/millwright. WWTP and HR staff members have worked together to fill this vacancy in a timely manner.

Regulatory Summary

- Monthly Discharge Monitoring reports for April, May and June were filed electronically on time for regulatory compliance. The 2015 2nd 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 2015 requirements.
- Lab and operations staff prepared reagents and testing equipment for chlorine residual testing during the disinfection season.
- Lab and operations staff collected and prepared samples for WPDES permit renewal testing.
- Lab training for the two new Liquids Operators will continue into the next quarter.

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EFFLUENT QUALITY SUMMARY

April 2014 – June 2015

<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>4.4/11.0 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>

2014

April	2	1	0.10	0.68	NA	NA	7.3/7.5
May	4	1	0.11	0.63	<0.01	17	7.1/7.4
June	3	2	0.29	0.42	<0.01	27	7.2/7.6
July	3	1	0.43	0.14	<0.01	11	7.4/7.6
August	4	4	0.39	0.40	<0.01	64	7.2/7.4
September	3	1	0.37	0.33	<0.01	14	7.2/7.5
October	3	4	0.38	1.09	NA	NA	7.3/7.5
November	4	5	0.29	0.46	NA	NA	7.2/7.3
December	4	4	0.18	1.41	NA	NA	7.1/7.2

2015

January	5	5	0.35	5.25	NA	NA	7.0/7.2
February	3	4	0.25	0.90	NA	NA	7.2/7.3
March	4	3	0.18	1.02	NA	NA	7.1/7.3
April	3	4	0.11	0.51	NA	NA	7.0/7.2
May	3	2	0.19	0.31	<0.01	11	7.1/7.4
June	3	2	0.15	0.42	<0.01	17	7.1/7.6

YEAR 2015 RECEIVING STATION REVENUE

Hauler	January	February	March	April	May	June	July	August	September	October	November	December	Y-T-D Total
A & B Leist Trucking	\$ 39,566.92	\$ 35,959.36	\$ 84,277.27	\$ 91,270.68	\$ 83,037.64	\$ 105,415.80							\$ 439,327.67
CSR & Sons	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -							\$ -
Den-Bec Inc.	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -							\$ -
Hickory Meadows	\$ 12,606.17	\$ 5,873.47	\$ 8,714.07	\$ 12,742.21	\$ 9,936.05	\$ 15,198.43							\$ 65,070.40
Jeff Waldvogel Trkg.	\$ 16,277.78	\$ 14,065.92	\$ 18,248.87	\$ 17,863.76	\$ 20,869.40	\$ 21,886.52							\$ 109,212.25
KA Services	\$ -	\$ -	\$ 651.22	\$ 970.13	\$ 295.68	\$ 90.02							\$ 2,007.05
Sanimax	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -							\$ -
Schwind Trucking	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -							\$ -
Van's Septic Service	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -							\$ -
Veolia	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -							\$ -
Waldvogel Trucking	\$ 6,027.05	\$ 3,846.88	\$ 3,211.82	\$ 2,726.33	\$ 2,234.76	\$ 2,486.81							\$ 20,333.65
2015 Total	\$ 74,477.92	\$ 59,745.63	\$ 115,103.25	\$ 125,573.11	\$ 116,373.53	\$ 145,077.58	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 636,351.02
2014 Total	\$ 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	\$ 104,059.73	\$ 1,050,250.96

* Tier Rate Structure increase effective July 1, 2015.

Date: July 13, 2015
Copies: K. Rindt (via email)
C. Shaw (via email)
B. Kreski
Utilities Committee