

Operations Update

Plant operations and treatment were good during the month of February. The disc filters ran continuously throughout the month without chemicals and provided good results.

Maintenance Update

Atad Transfer Valve: This valve started to allow sludge flow to slowly continue even when it was showing closed. A new valve was ordered and installed to correct the issue. The total price of the valve was \$970.

Biostyr Blower #8: The Aertronic controller on the blower lost the program after a battery fault alarm would not clear. Trying a different controller that we had didn't work either. A new controller was ordered and programmed from Aerzen at a cost of \$1,225.07 to get the blower back online.

Digested Sludge Transfer Pump #2: The discharge pressure switch assembly failed to shut down the pump when the system ran too high of pressure causing a fault. It didn't damage the pump but the pressure switch needed to be replaced so we can run the pump with confidence that it will shut down if it hits a high discharge pressure. We ordered an exchange pressure switch assembly from LW Allen at a cost of \$1,136.

Tunnel A Rewire: The light switches, outlets, and conduit in tunnel A were noted in our safety audit completed by Fox Valley Safety back in January. This was a safety concern and needed to be addressed; Sargent Electric was already onsite for other projects so they fixed the issues. The total cost was \$19,477 to replace all the conduit, outlets, and switches in tunnel A.

Project Updates

Blower #7: Blower is fully installed with startup completed on 3/5/2025.

Disc Filter Polymer Pumps and Tank: The new pumps and tank are installed and awaiting startup on March 18th.

MCC Upgrade: Solids building and biostyr blower buildings will be completed by the end of this week.

Sodium Hypochlorite Ventilation Upgrade: We received 3 quotes for an upgrade ranging from \$74,890 to \$137,000. We selected the bid from Baumgart Mechanical which came in at \$74,890.

Dustin Jerabek
Director of Operations & Maintenance

Chemical Use Report for 2024

The attached chemical use report shows the amount of chemicals used in gallons and dollars for 2024. The cost and quantity to treat a million gallons of wastewater for each chemical is also included in this report on page 1. The gas, electric, and water consumption is on page 2 for the plant. The last page is total pounds removed and removal efficiency of solids, phosphorus, ammonia, and BOD.

The total cost for chemicals is significantly lower considering we added the disc filters in 2024 and added chemical treatment before the disc filters for 5 months out of the year. The major savings came from the switch from Ferric Sulfate to Alum Sulfate in Actiflo. We purchased 10 loads of Ferric Sulfate for a total of 37,015 gallons and the cost was \$89,759 from January to April. We then switched to Alum Sulfate for Actiflo since it was selected as the phosphorus removal chemical for the disc filters. We received 42 loads of Alum for a total of 181,784 gallons and the cost was \$181,291 for Actiflo.

We had a reduction in total cost per million gallons treated with the addition of disc filters which shows that the operations are continually being optimized by the plant crew and the plant is doing well overall with an increase in total flow through the treatment plant.

Dustin Jerabek
Director of Operations and Maintenance

2024 CHEMICAL USE REPORT

GALLONS	2017	2018	2019	2020	2021	2022	2023	2024
TOTAL INFLUENT FLOW	2,094,199,000	2,127,692,000	2,493,211,300	2,170,385,000	2,302,155,000	2,324,470,000	2,454,679,000	2,645,961,085
**FLOW, MAY - SEPTEMBER	902,376,000	923,535,000	1,015,345,000	911,676,000	1,101,997,000	1,028,457,000	919,199,000	1,207,242,260

TOTAL \$ COST OF PURCHASES

TREATMENT CHEMICAL	2017	2018	2019	2020	2021	2022	2023	2024
FERRIC/ALUM - ACTIFLO/ DISC FILTER	271,749.00	\$250,405.00	\$327,298.00	\$379,168.00	\$329,078.00	\$416,948.00	\$ 422,127.66	\$ 271,049.94
POLYMER - ACTIFLO	41,528.00	46,772.00	39,909.00	44,871.00	\$49,107.00	\$44,965.00	\$ 51,520.00	\$ 64,400.00
ALUM- DISC FILTER								\$ 71,478.00
POLYMER- DISC FILTER								\$ 16,100.00
POLYMER - DAF	26,910.00	39,184.00	30,997.00	37,257.00	\$41,034.00	\$41,561.00	\$ 46,805.00	\$ 42,550.00
SULFURIC ACID - BIOFILTER	26,291.00	26,159.00	36,122.00	31,631.00	\$57,259.00	\$50,078.00	\$ 44,563.81	\$ 42,817.53
MURIATIC ACID-DISC FILTER								\$ 4,754.00
SODIUM HYPOCHLORITE**	19,726.00	21,049.00	29,565.00	35,922.00	\$31,117.00	\$47,538.00	\$ 45,472.60	\$ 60,860.32
SODIUM BISULFATE**	2902.00	4682.00	5455.00	5641.00	\$10,466.00	\$9,520.00	\$ 7,471.26	\$ 13,070.70
TOTAL	\$389,106.00	\$388,251.00	\$469,346.00	\$534,490.00	\$518,061.00	\$610,610.00	\$ 617,960.33	\$ 587,080.49

\$ COST / MGD TREATED

TREATMENT CHEMICAL	2017	2018	2019	2020	2021	2022	2023	2024
FERRIC/ALUM - ACTIFLO/ DISC FILTER	\$129.76	\$117.00	\$131.28	\$174.70	\$142.94	\$179.37	\$ 171.97	\$ 102.44
POLYMER - ACTIFLO	19.83	22.00	16.01	20.67	\$21.33	\$19.34	\$ 20.99	\$ 24.34
ALUM- DISC FILTER								\$ 27.01
POLYMER- DISC FILTER								\$ 6.08
POLYMER - DAF	12.84	18.00	12.43	17.17	\$17.82	\$17.87	\$ 19.07	\$ 16.08
SULFURIC ACID - BIOFILTER	12.55	12.00	14.49	14.57	\$24.87	\$21.54	\$ 18.15	\$ 16.18
MURIATIC ACID-DISC FILTER								\$ 1.80
SODIUM HYPOCHLORITE**	21.86	22.80	29.12	39.40	\$28.24	\$46.22	\$ 49.47	\$ 50.41
SODIUM BISULFATE**	3.22	5.10	5.37	6.19	\$9.50	\$9.26	\$ 8.13	\$ 10.83
TOTAL	\$200.06	\$196.90	\$208.70	\$272.70	\$244.70	\$293.60	\$ 287.78	\$ 255.18

TOTAL GALLONS PURCHASED

TREATMENT CHEMICAL	2017	2018	2019	2020	2021	2022	2023	2024
FERRIC/ALUM - ACTIFLO	179,228	178,333	217,049	205,853	173,953	178,525	183,815	218,799
POLYMER - ACTIFLO	4,731	5,225	4,402	4,952	5,225	4,677	4,125	5,500
ALUM- DISC FILTER								56,184
POLYMER- DISC FILTER								1,375
POLYMER - DAF	2,476	3,575	2,751	3,301	3,575	3,577	3,025	2,750

MURIATIC ACID-DISC FILTER								648
SULFURIC ACID - BIOFILTER	10,062	10,062	13,336	11,729	15,022	13,497	11,730	12,030
SODIUM HYPOCHLORITE**	12,360	13,156	16,628	18,360	13,816	14,726	13,580	18,176
SODIUM BISULFATE**	1,754	2,838	3,078	3,051	4,486	3,205	2,492	4,387

2024 CHEMICAL USE REPORT

GALLONS OF CHEMICAL / MGD TREATED

TREATMENT CHEMICAL	2017	2018	2019	2020	2021	2022	2023	2024
FERRIC/ALUM - ACTIFLO	85.61	85.2	87.1	94.8	75.6	76.80	74.88	82.69
POLYMER - ACTIFLO	2.26	2.5	1.77	2.28	2.27	2.01	1.68	2.08
ALUM- DISC FILTER								21.23
POLYMER- DISC FILTER								0.52
POLYMER - DAF	1.18	1.7	1.10	1.52	1.55	1.54	1.23	1.04
MURIATIC ACID-DISC FILTER								0.24
SULFURIC ACID - BIOFILTER	4.80	4.7	5.36	5.4	6.53	5.81	4.78	4.55
SODIUM HYPOCHLORITE**	13.69	14.2	16.38	20.14	12.54	14.32	14.77	15.06
SODIUM BISULFATE**	1.94	3.0	3.03	3.35	4.07	3.12	2.71	3.63

** May through September chemical use only

GAS, ELECTRIC AND WATER CONSUMPTION

NATURAL GAS	2017	2018	2019	2020	2021	2022	2023	2024
Therms	76,013	89,690	82,885	200,826	200,641	141,855	120,523	141,284
Cost \$	\$44,583.71	\$47,502.00	\$42,814.71	\$36,413.73	\$35,034.20	\$49,789	\$ 56,136	\$ 59,606
\$ Cost / MGD Treated	-	\$22.33	\$17.00	\$16.78	\$15.22	\$21.42	\$ 22.87	\$ 22.53
Therms / MGD Treated	-	-	-	92.53	87.15	61.03	49.10	53.40

POTABLE WATER	2017	2018	2019	2020	2021	2022	2023	2024
Cubic Feet	458,500	476,500	491,400	464,900	502,581.00	359,324	617,433	415,951
Cost \$	\$22,278.74	\$22,655.00	\$24,437.90	\$21,920.54	\$24,462.34	\$19,996	\$ 28,407	\$ 30,512
\$ Cost / MGD Treated	-	\$10.65	\$9.80	\$10.10	\$10.63	\$8.60	\$ 11.57	\$ 11.53
Cubic Feet / MGD Treated	-	224	197	214	218	155	251	157.20

ELECTRICAL POWER	2017	2018	2019	2020	2021	2022	2023	2024
KWH	7,468,201	7,682,476	8,051,500	7,957,863	8,189,111	8,307,941	8,358,112	8,397,829
COST \$	\$509,871.00	\$508,330.00	\$504,393.43	\$494,540.75	\$537,709.43	\$598,456	\$ 626,120	\$ 606,409
KWH / MGD Treated	3,566.14	3,610	3,229.38	3,664.85	3,557.08	3,574.08	3,405	3,174
\$ Cost / MGD Treated	-	\$238.91	\$202.31	\$227.86	\$233.56	\$257.46	\$ 255.07	\$ 229.18

2024 CHEMICAL USE REPORT

REMOVAL EFFICIENCY

<u>SOLIDS</u>			2019	2020	2021	2022	2023	2024
Raw Influent			-	-	3,792,868	3,702,791	3,875,276	3,915,077
Final Effluent			-	-	131,927	179,960	208,640	91,131
Total Pounds Removed			-	-	3,660,941	3,522,831	3,666,576	3,823,946
Percent Removed			-	-	97%	95%	95%	98%

<u>PHOSPHORUS</u>			2019	2020	2021	2022	2023	2024
Raw Influent			75,998	84,460	91,720	88,454	96,111	89,911
Final Effluent			3,648	5,006	3,434	3,695	4,818	3,022
Total Pounds Removed			72,350	79,454	88,286	84,759	91,293	86,889
Percent Removed			95%	94%	96%	96%	95%	97%

<u>AMMONIA</u>			2019	2020	2021	2022	2023	2024
Raw Influent			-	-	705,049	653,175	673,897	592,437
Final Effluent			-	-	4,789	7,348	8,103	3,924
Total Pounds Removed			-	-	700,260	645,827	665,794	588,513
Percent Removed			-	-	99%	99%	99%	99%

<u>BOD</u>			2019	2020	2021	2022	2023	2024
Raw Influent			-	-	5,006,411	5,129,073	4,922,443	4,384,831
Final Effluent			-	-	110,270	130,962	130,231	78,603
Total Pounds Removed			-	-	4,896,141	4,998,111	4,792,212	4,306,228
Percent Removed			-	-	98%	97%	97%	98%