

Director of Compliance and Innovation Report

April 17, 2024

Plant Loading, CSO Report, and Director's Notes

Plant Influent Report:

Biochemical Oxygen Demand, 5-Day (Avg. 41442 lbs/day)	65 percent of design
Total Suspended Solids (Avg. 62688 lbs/day)	58 percent of design
Average Daily Flow (31.45 million gallons/day)	77 percent of design
Maximum Daily Flow (60.40 million gallons/day)	48 percent of design
Plant Influent Total Monthly Flow (million gallons) for February	909.21
Estimated Unbilled Total Monthly Flow (million gallons)	243.20
Total Monthly Precipitation (inches)	0.46

Plant Effluent Report:

Parameter	Report Frequency	Permit Limits	Reported Values	Violations
CBOD ₅ , mg/L	Mo./Wk. Avg	20/40	2/2	0
TSS, mg/L	Mo./Wk. Avg	25/45	4/6	0
NH ₃ -N, mg/L	Mo. Avg/Daily Max	1.5/3.0	0.12/0.12	0
DO, mg/L	Wk. Avg/Daily Min	6.25/5.0	8.12/7.88	0
pH, S.U.	Daily Min/Max	6.0/9.0	7.58/8.01	0
Total Nickel, mg/L	Mo. Avg	0.0381	0.013	0
Cl ₂ Residual, mg/L	Daily Max	0.05	NA	NA
Fecal Coliform CFU/100mL	Daily Max	400	NA	NA

CSO Report:

Location	Events	Est. Total Duration of Discharges (hrs.)	Discharge (million gallons)
Oakland Avenue (Outfall 003)	2	9.14	2.46
Lincoln Park (Outfall 004)	0	0	0
McKinley Avenue (Outfall 007)	1	5.30	8.22
Seventh Ward (Outfall 008)	0	0	0

Director's Notes:

Compliance Reporting:

In accordance with the requirements of our NPDES permit the SDD has submitted all monthly, quarterly, semi-annual and/or annual reports to the appropriate entities. These include the semi-annual NARP Progress Report, the annual PDOP Progress Report, the semi-annual Feasibility Progress Report, the monthly CSO reports, monthly DMRs, the quarterly Sludge DMRs and the Annual Pretreatment Report.

2024 Chemical, Fuel and Polymer Bids:

A request for bids for chemicals, fuel and polymer that are used at the Sanitary District was posted in the newspaper February 15th and the District's website on February 12, 2023. All bids except one were opened and read on April 3, 2024. One more bid was opened on April 5, 2024 due to a delivery error by USPS.

The purchase periods offered on all chemicals, fuel and polymer (when applicable) was up to a three-year submission again this year, therefore the period included within the bid sheet covers the period May 1, 2024 – April 30, 2027. The choice to accept or deny any extended bid period remains solely with the District. The District is recommending to the Board the acceptance of a three-year bid submitted this year by SNF-Polydyne for polymer, Evergreen FS for fuel, and PVS Chemical Solutions for Sodium Bisulfite and one year bid submitted by PVS Technologies for Ferrous Chloride, Hawkins for Sodium Hypochlorite and Brandt for 28% UAN.

A motion for the acceptance of the following bids will be presented to the Boards during this month's Board meeting.

A summary of the low bids and previous year accepted bids are as follows:

2024 Tentative Winning Chemical Bids

2024 Tentative Winning Bidder	Chemical	Unit	2019	2020	2021	2022	2023	2024	2025	2026
PVS Technologies	Ferrous Chloride	lbs	\$0.511	\$0.522	\$0.70	\$0.729	\$0.876	\$0.87		
Evergreen FS	Gas & Fuel	gal	\$0.154	\$0.154	\$0.157	\$0.159	\$0.214	\$0.224	\$0.234	\$0.245
PVS Chemical Solutions	Sodium Bisulfite	100 lbs	\$12.50	\$13.00	\$13.50	\$18.00	\$23.90	\$16.94	\$20.24	\$23.24
Hawkins	Sodium Hypochlorite	gal	\$0.760	\$0.746	\$0.746	\$1.49	\$1.63	\$1.90		
Brandt	28% UAN	ton	\$244.00	\$209.00	\$236.25	\$625.00	\$317.00	\$354.00		
SNF-Polydyne	Polymer Flocculant	lbs.	\$1.05	\$1.14	\$1.30	\$1.35	\$1.40	\$1.36	\$1.40	\$1.44

Notes:

- 1 **Multi-year Price Locked In** These bids have been previously accepted for multiple years.
- 2 All bids are tentative until they are approved by the District Board.
- 3 **Multi-year Price Bid** These are recommended to the Board to be accepted for multiple years.
- 4 **These entries indicate single year bids that are recommend to be accepted by the Board for 2024.**

Staff Training Activities:

Operator Lewis Feltes has successfully passed the IEPA Class IV test and will receive his certification once he completes the required continuing education hours.

Keith Richards, Austin Gruber, and Matt Patricio attended the Illinois Association of Water Pollution Control Operations (IWAPCO) conference for Illinois wastewater professionals from March 18-20, 2024, for the conferences first year to be held in Peoria rather than Springfield. The conference included presentations on case studies, emerging issues of concern, wastewater technologies, and a variety of other topics.

IU NOV Compliance Meetings:

Industrial Users, ADM and Primient, came to the District for required meetings based on Notice of Violations issued to each user for various issues. Both Primient and ADM discussed actions taken already to comply with the violation given and went into further detail of future plans for infrastructure upgrades to help their facilities to get back into compliance with their permit limits.

Operations, Laboratory, and Pretreatment Activity Reports – March/April 2024

Operations Activities:

Normal operational activities were conducted as prescribed by standard procedures or in response to conditions within the plant. These include operating, monitoring, and adjusting facility equipment, performing process control testing, records keeping, and coordination with the other departments to realize optimal performance of the Plant.

- 1) Digester #2- Operators have removed all the sludge that they can. Maintenance will finish pumping sludge but have experienced high methane levels in the attic space creating a safety concern. We will pump the remaining sludge out as soon as possible.
- 2) Digester #3- Heat Exchanger and Mixer have been trouble free since repairs were made.
- 3) Operations staff have been monitoring the operation of the Frac Tank.
- 4) Operations staff continue to actively address PMs as time, workload, and staff levels allow.
- 5) Operator Lewis Feltes has passed the IEPA Class IV exam.
- 6) Operations has switched to the East Primary. The new Grit system, #5 clarifier and scopes are running without any problems.
- 7) Operations are gearing up for disinfection season. Leak checking and ordering of chemicals should be complete next week.
- 8) We will have a department meeting to go over chemical safety and procedures.

Laboratory Activities:

Routine:

A total of 2,120 analyses were performed in the laboratory during the month of March 2024.

Monitoring of treatment plant, industrial users, and receiving stream samples for compliance purposes and process monitoring continued. Laboratory personnel continued to perform additional background nutrient monitoring to help fully characterize the nutrient loading on the plant.

Non-Routine:

- 1) The SDD laboratory continued to send samples of raw influent twice a week throughout the month of March 2024 for the "COVID-19 in Wastewater" study funded by the Illinois Department of Public Health. A Zoom call was held on March 1, 2024, with the study participants and the researchers to discuss the results of the study thus far.
- 2) Lab staff continued to analyze samples weekly from the frac tank pilot study throughout the month of March 2024.

- 3) The SDD laboratory analyzed seven stormwater samples during March 2024 for the Lake Decatur Watershed monitoring study. The SDD is providing in-kind laboratory analysis of samples collected at the study's three monitoring sites after significant storm events.
- 4) Keith Richard and Matthew Patricio attended the Illinois Wastewater Professionals Conference (IWPC) in East Peoria on March 18-20, 2024. On Monday, Keith co-presented with Kevin Johnson from the SDD and Meghan Drew from Black & Veatch about the frac tank pilot study. On Tuesday, Keith ran the Laboratory Challenge portion of the Operations Challenge. On Wednesday, Keith was the Moderator for the Laboratory Track of lab-related presentations. Keith continues to serve as the chair of the IWEA Laboratory Committee and is responsible for organizing all lab-related events at the IWPC conference.

Pretreatment Activities:

Pretreatment - General Activities:

- 1) Pretreatment personnel monitored 8 commercial and industrial users (IU) during March 2024. There was one industry site inspection that took place at **ADM**.
- 2) The USEPA Region 5, represented by Jennifer Bush and Newton Ellens, completed a Pretreatment Compliance Inspection from March 11th through March 13th. The USEPA reviewed routine monitoring data, inspection reports, and records of the SDD's responses to IU noncompliance for **Primient** and **ADM** dating back to March 1, 2021. Following document review, the USEPA and representatives from the IEPA accompanied SDD personnel on a routine inspection of **ADM**. Following the inspection in the morning, the USEPA completed their document review, and the closing conference took place at the end of the day on Wednesday. The USEPA had minor findings regarding wording in IU permits, the calculation of Zinc discharge limits, the lack of documentation of the methods used in the lab on chain of custodies, and other small findings. The USEPA representatives are drafting an inspection report, which will be shared with the SDD upon its completion. Upon receiving the report, the SDD will have 30 days to respond and address any deficiencies, though an extension will be requested and likely granted.
- 3) Austin Gruber attended the Illinois Wastewater Professionals Conference (IWPC) in East Peoria on March 18-20th. A wide variety of topics were covered, with the first day being dedicated to pretreatment, and the second and third day a mix of NARP and case study presentations from wastewater professionals from around Illinois.
- 4) **ADM** completed their compliance meeting required by NOV 24-001. During this meeting, **ADM** detailed a three-phase plan for the West Plant that included the rehabilitation of previously utilized infrastructure, as well as the installation of new infrastructure to better utilize existing infrastructure at the plant. This will allow them to treat their wastewater in such a way as to not allow oil or grease to leave the plant and continue to have adverse effects on the Lakeshore Lift Station. SDD personnel are evaluating an executive order in regard to this matter for the purpose of instituting a penalty structure and potential completion dates for phase of the project, or the project as a whole.
- 5) **Primient** completed their compliance meeting required by NOV 24-002. During this meeting, **Primient** laid out all of the planned infrastructural and technological upgrades that would allow them to better treat and control their wastewater in the plant. They also provided updates to projects that are in progress that will help to address their past TSS and BOD issues. As part of the meeting, they also detailed their plans to prevent future polymer discharges to the SDD. A renewed focus on employee and contractor training and awareness, as well as a new permitting system for vac trucks at the site will be instituted. At the request of the SDD, **Primient** will evaluate a way to add a layer of protection to drains that bypass their treatment system, be it signage, color coordination, or physical protection of the drains.

6) **Primient** continued to operate under their revised penalty structure. They had 2 violations in the month of March, both sulfide violations that were caused by an upset. **Primient** has now completed 2 of the 3 consecutive months with 3 or less violations required to get out of their current penalty structure. Following successful completion of the consecutive 3-month period, their penalty structure will revert back to the structure set in EO 18-003.

Pretreatment Ordinance - Verbal Notices:

The SDD issued a total of 3 Verbal Notices to **Primient** and **Mueller #4** in March 2024:

- 3/4/2024 – **Mueller #4** was issued a verbal warning for violating their TSS, Copper, and Zinc daily max concentration limits on 3/4/2024. This violation was likely caused by a rain event, and subsequent sampling showed **Mueller #4** to be in compliance.
- 3/22/2024 – **Primient** was issued a verbal notice and a \$1,000 fine for violating their sulfide daily max concentration limit.
- 3/26/2024 – **Primient** was issued a verbal notice and a \$7,500 fine for violating their sulfide daily max concentration limit. Subsequent sampling showed a decrease in sulfides and they have not violated that parameter since.

Pretreatment Ordinance - Warning Notices (WN):

There were no Warning Notices issued during March 2024.

Pretreatment Ordinance - Notices of Violation (NOV):

There were no NOV's issued during March 2024.

Pretreatment Ordinance - Executive Orders:

No Executive Orders were issued during March 2024.

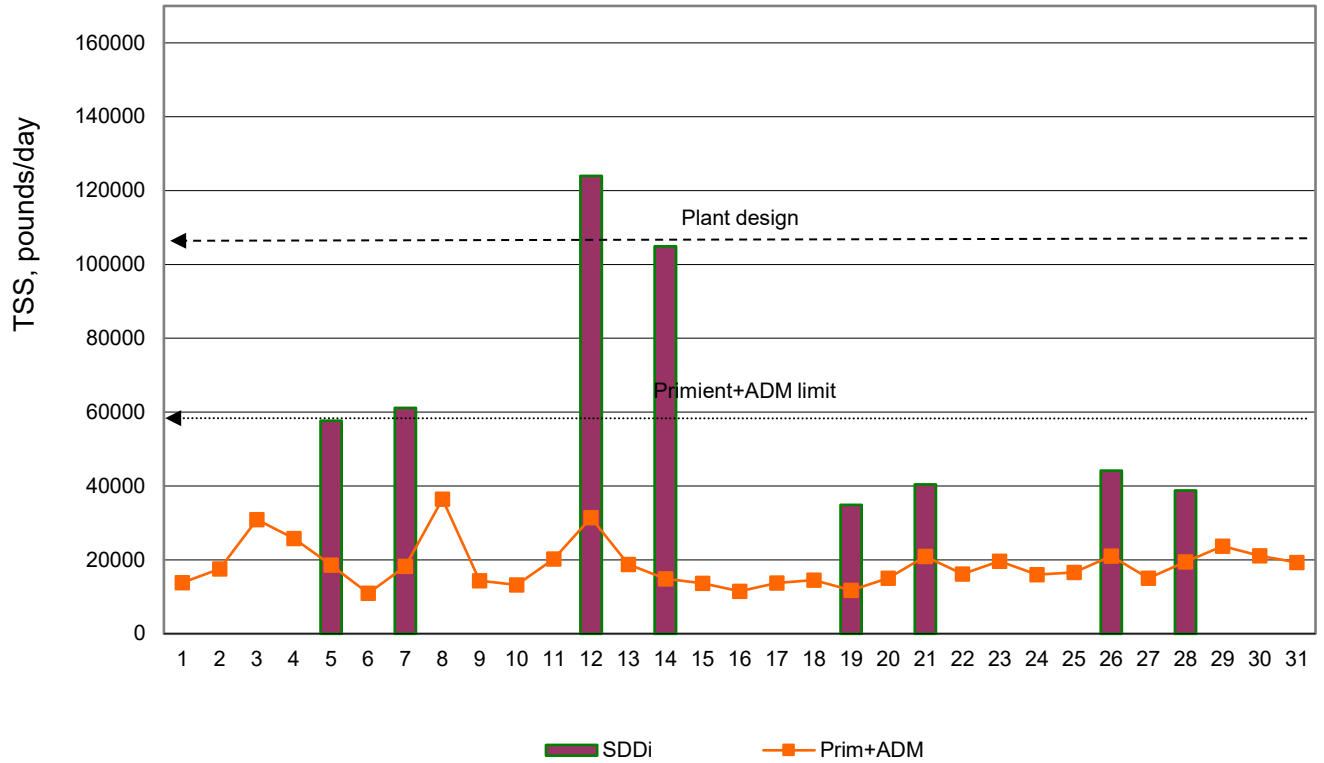
Pretreatment Ordinance - Penalty Assessments:

The following industrial penalties were assessed for March 2024:

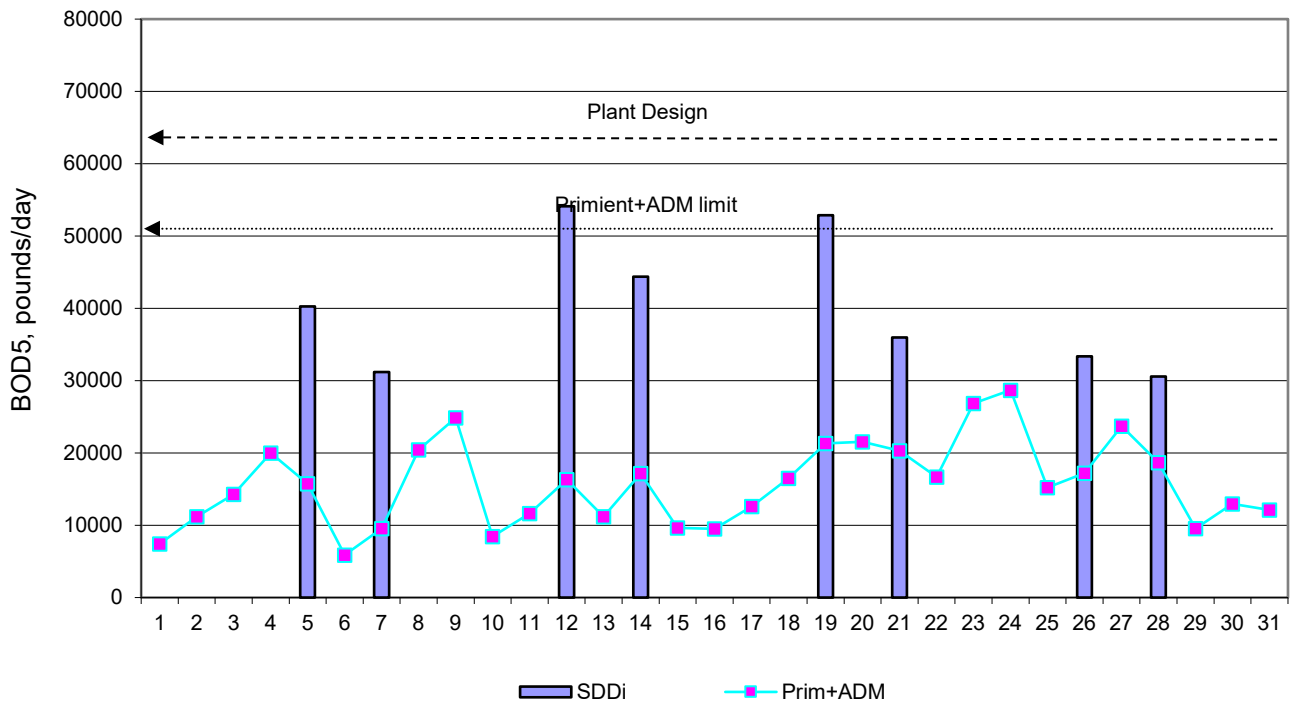
1) Primient	\$8,500
--------------------	----------------

Plant Operating Graphs:

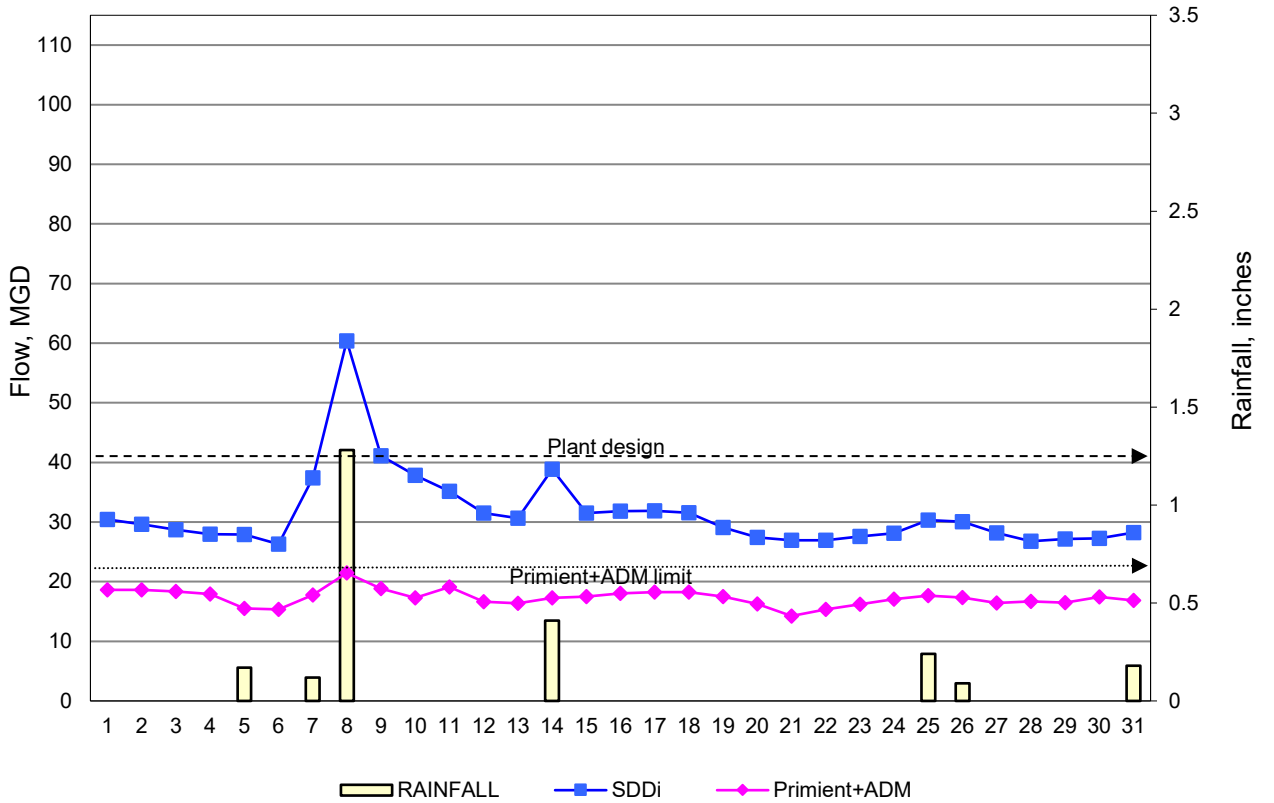
TSS Comparison: SDD Inf Primient+ADM Discharges



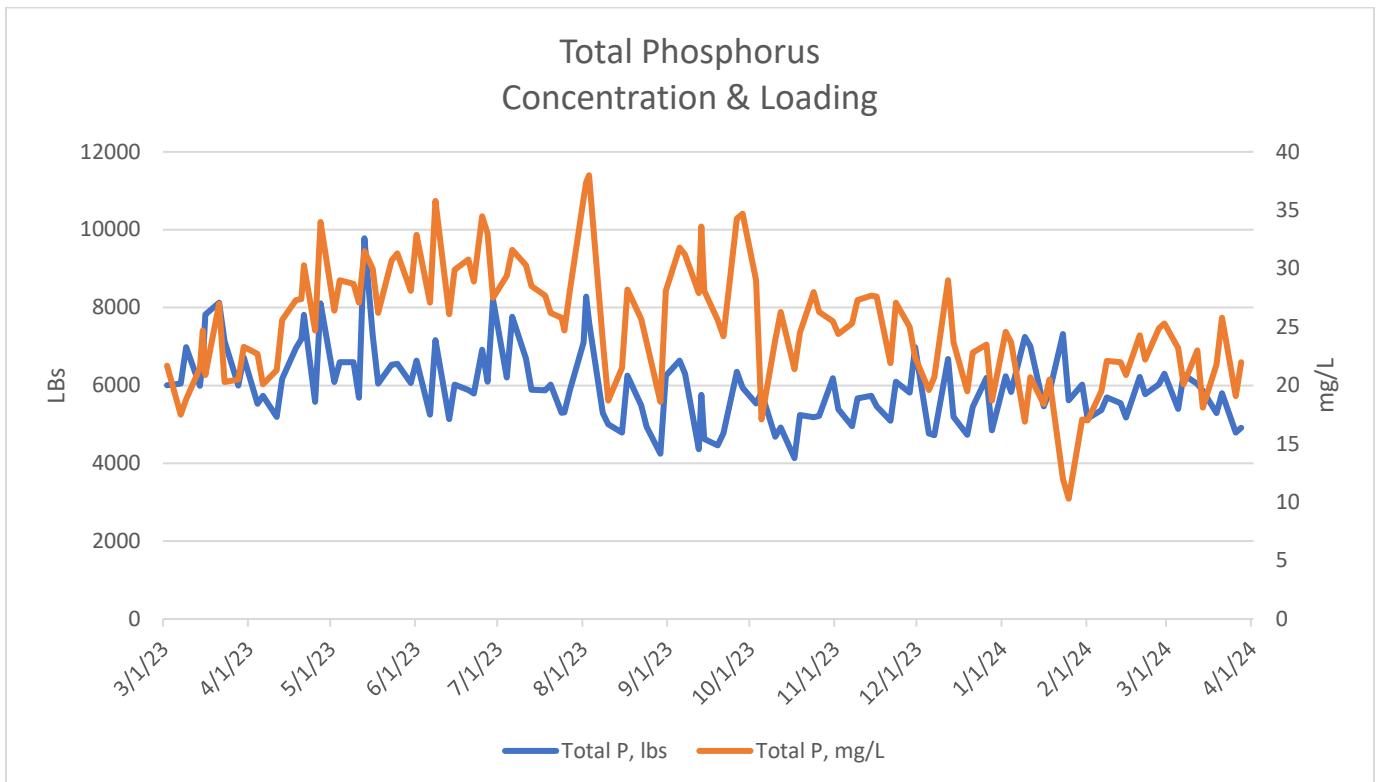
BOD Comparison: BOD Inf vs. Primient + ADM Discharges



Flow Comparison: SDD vs. Primient + ADM Discharges and Rainfall

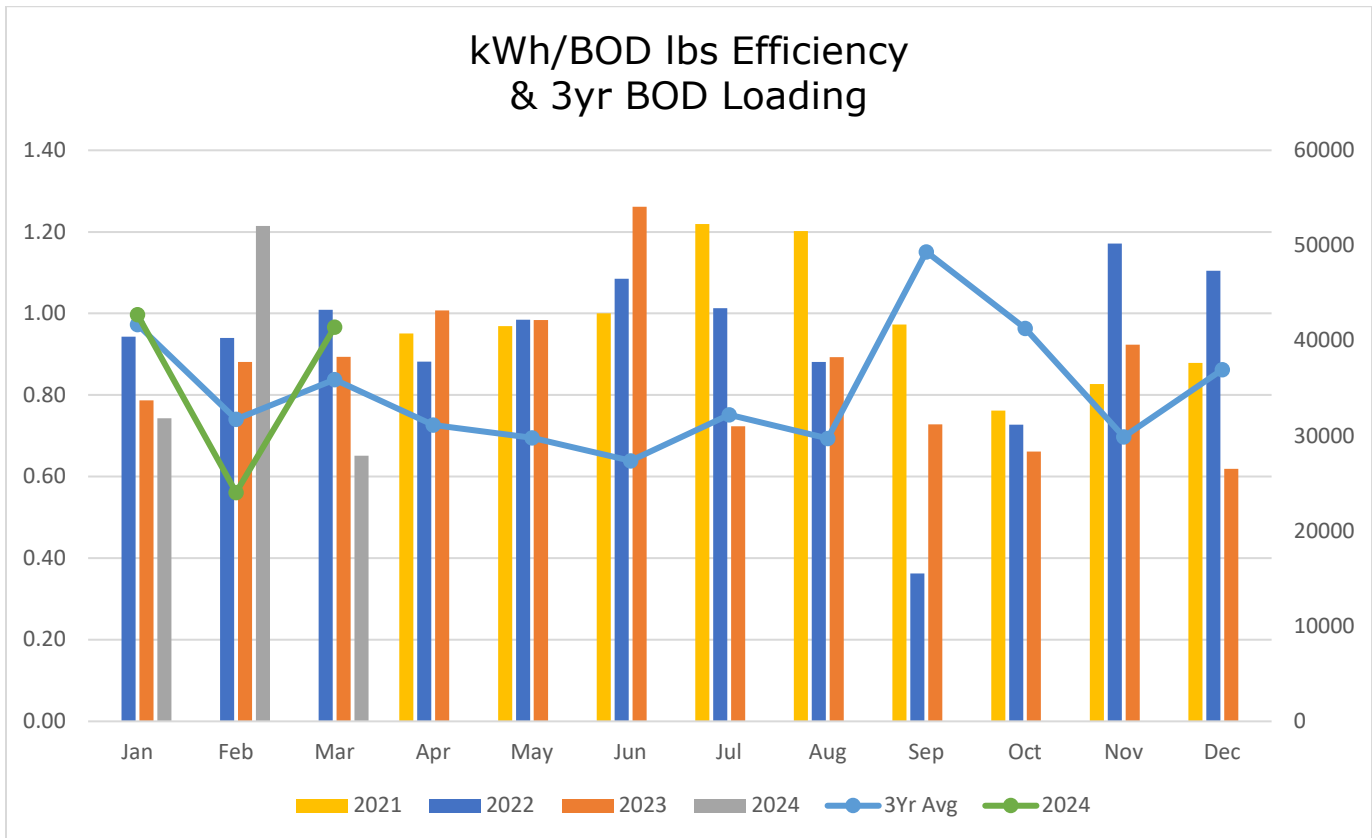
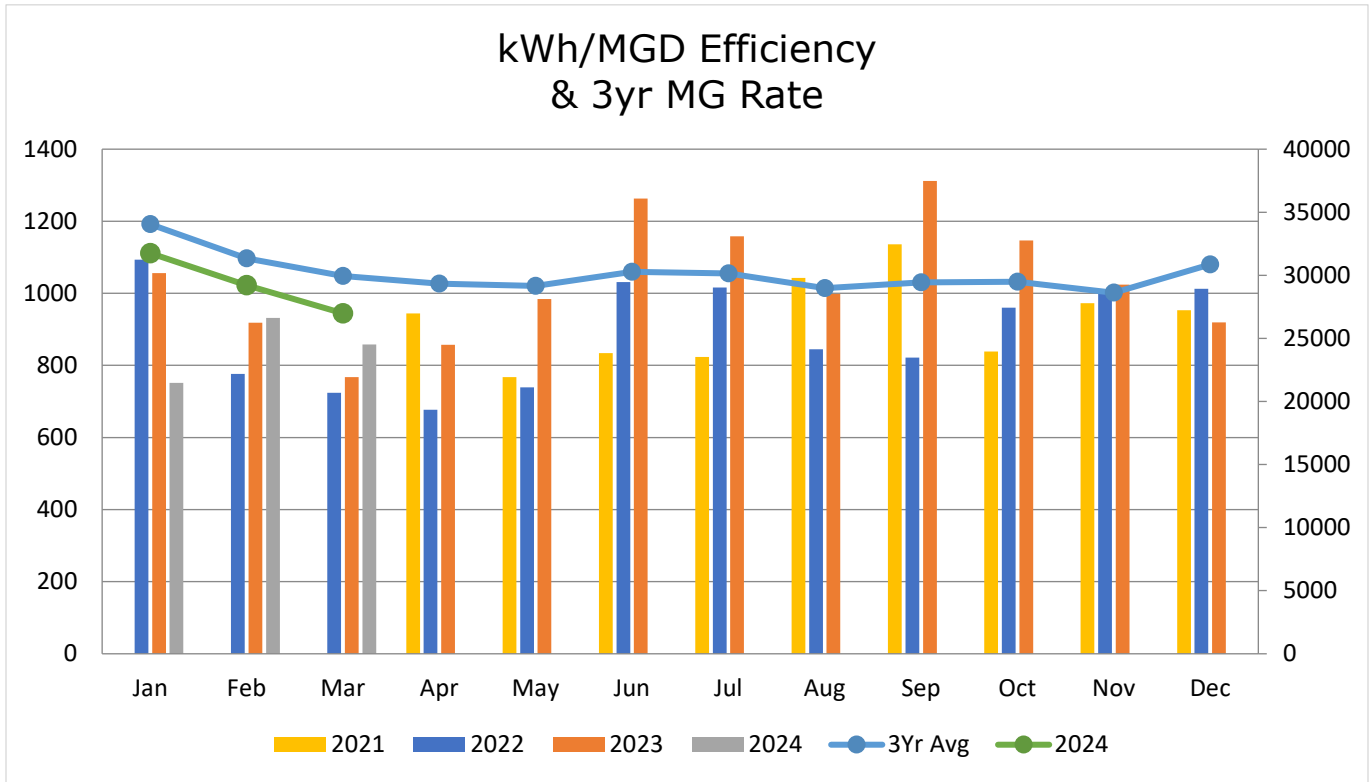


Phosphorus Tracking Graph:



Plant Efficiency Graphs:

March 2024



**Sanitary District of Decatur
Nutrient Program Management Report**

April 10, 2024

During the period March 3, 2024 through March 30, 2024 District personnel attended meetings with members of the Black & Veatch (B&V) team to affect progress in nutrient reduction planning and activities.

The District has provided plant performance data to B&V for inclusion in the Power BI dashboards. Additionally, the District has continued to support the Fermentation Pilot to gather performance data on the proposed biological phosphorus removal process.

B&V has continued the development of their full facility model, continued to develop aged infrastructure evaluation, and evaluation of alternatives for upgrades to the Water Resource Recovery Facility (WRRF). In addition, B&V continued its' assistance with operation of the Fermentation Pilot.

Below you will find a list of meetings conducted. The information covers the subject, date, and agenda items of each meeting. Additional information related to any of these meetings or specific agenda items can be supplied to the Board upon request including meeting minutes and documentation used during the meeting as it is all being stored as part of the permanent record.

Nutrient Reduction Program Meetings conducted from March 3, 2024 through March 30, 2024

<u>Subject</u>	<u>Date</u>	<u>Agenda Items</u>
Nutrient Program Management Bi-weekly Meetings	3/13/24, and 3/27/24	<i>Objective:</i> Provided Status Update on Program Tasks Frac Tank Pilot Power BI Pretreatment Program Update PDOP/Annual Progress Report Watershed Services Aging Infrastructure WRRF Upgrade Plan
Fermentation Reactor Pilot Operations Review meetings	3/15/2024, 3/29/2024	<i>Objective:</i> Review operation of Frac Tank pilot Review previous two weeks <ul style="list-style-type: none"> ○ Alarms/issues ○ Missed/rescheduled samples ○ Odor and scum observations ○ Bench scale results Review upcoming scenario <ul style="list-style-type: none"> ○ Set points ○ Sampling schedule ○ Odor sampling, if applicable Summarize results from previous weeks

**Sanitary District of Decatur
Watershed Management Report**

April 10, 2024

During the period March 3, 2024 through March 30, 2024 District personnel attended meetings with members of the Black & Veatch and Geosyntec Teams to affect progress in meeting the NARP requirements as listed in the NPDES permit as well as moving forward on the formation of a future watershed workgroup for the Middle Sangamon River.

Recent activities pertained to items necessary to complete the NARP Study. Foremost in these efforts included Geosyntec applying the calibrated instream model to evaluation management scenarios to address impairments in the Sangamon River. This period focused on the review of the results of the alternative scenarios while receiving District feedback.

Below you will find a list of the meetings conducted. The information covers the subject, date, and agenda items of each meeting. Black & Veatch provided a written summary. Additional information related to any of these items can be supplied to the Board upon request including meeting minutes and documentation used during the meeting as it is all being stored as part of the permanent record.

Watershed Management Meetings Conducted during March 3, 2024 through March 30, 2024.

<u>Subject</u>	<u>Date</u>	<u>Agenda Items</u>
Instream Model Scenario Discussions	3/6/24 and 3/20/24	<i>Objective:</i> Geosyntec discussed elements of the Nutrient Assessment Reduction Plan. Also discussed steps for initiating an Integrated Planning approach to nutrient management.

April 10, 2024

Sanitary District of Decatur (SDD)
501 Dipper Lane
Decatur, IL 62522

Nutrient Program Manager
BV Project No. 411502

Attention: Don Miller, P.E., Director of Engineering

Subject: SDD Nutrient Program Management
Progress Update (March 3, 2024 – March 30, 2024)

Dear Mr. Miller:

This letter summarizes the work associated to the SDD Nutrient Program Management project for services from March 3, 2024, through March 30, 2024.

1. Program Management, Administration, and Coordination
 - Conducted bi-weekly program conference calls to update progress and discuss key issues.
 - Provided Monthly Project Update.
 - Provided ongoing management of the project including program management, preparation/monitoring of the program schedule and budget as well as program administrative duties.
 - Updated Power BI dashboard with most recent plant monitoring data.
2. Pretreatment Program Update
 - Met with ADM and SDD March 7, 2024 to discuss WRRF treatment alternatives and impacts from ADM to WRRF treatment improvements.
 - Discussed with SDD the importance of receiving data from ADM following the March 7 meeting to further evaluate treatment alternatives to reduce WRRF capital improvements.
3. Phosphorus Discharge and Optimization Plan (PDOP)
 - No Services were completed this period.
4. Watershed Support Services
 - Conducted bi-weekly progress update meeting.
 - Continued initial planning efforts for the Watershed Group formation development.
 - Discussed elements of the Nutrient Reduction Assessment Plan, specifically the potential to implement an Integrated Plan approach.
5. WRRF Upgrade Plan
 - Aged Infrastructure Evaluation
 - i. Evaluated RAS pump station modifications.
 - ii. Discussed improvements to Building 210.
 - Plant Facility Evaluation

- i. Evaluated additional WRRF Model alternatives in response to March 7 meeting with ADM.
6. Capital Improvement Plan Development
 - Provided capital improvement plan for Fiscal Year 2025.
7. Pilot and Demonstration Testing
 - Continued to support operation of Frac Tank.

Please feel free to contact me with any questions, comments or if you need additional information.
Sincerely,

Todd Archer, P.E.
Engineering Manager, Black & Veatch

Enclosure(s): SDD Nutrient Program Manager Schedule and Anticipated Cost Forecast