

Director of Operations and Compliance Report

June 16, 2021

Plant Loading, CSO Report, and Director's Notes

Plant Influent Report

Biochemical Oxygen Demand, 5-Day (Avg. 32247 lbs/day)	51 percent of design
Total Suspended Solids (Avg. 50237 lbs/day)	46 percent of design
Average Daily Flow (40.70 million gallons/day)	99 percent of design
Maximum Daily Flow (76.21 million gallons/day)	61 percent of design

Plant Effluent Report

<u>Parameter</u>	<u>Report Frequency</u>	<u>Permit Limits</u>	<u>Reported Values</u>	<u>Violations</u>
CBOD ₅ , mg/L	Mo. Avg/Wk. Avg	20/40	3/4	0
TSS, mg/L	Mo. Avg/Wk. Avg	25/45	2/2	0
NH ₃ -N, mg/L	Wk. Avg/Daily Max	1.5/3.0	0.27/0.41	0
DO, mg/L	Daily Min	6.0	7.91	0
pH, S.U.	Daily Min/Max	6.0/9.0	7.80/8.15	0
Total Nickel, mg/L	Mo. Avg	0.015	0.046	1
Total Zinc, mg/L	Mo. Avg	0.075/0.416	0.016/0.031	0
CL ₂ Residual, mg/L	Daily Max	0.05*	0.011	0
Fecal Coliform CFU/100mL	Daily Max	400*	13	0

*Effluent disinfection is required May 1 through October 31.

CSO Report

<u>Location</u>	<u>Events</u>	<u>Est. Total Duration of Discharges (hrs.)</u>	<u>Discharge (million gallons)</u>
Oakland Avenue (Outfall 003)	4	14.3	4.68
Lincoln Park (Outfall 004)	1	0.5	0.6
McKinley Avenue (Outfall 007)	4	16.9	11.28
Seventh Ward (Outfall 008)	3	13.7	7.91

Director's Notes:

NPDES Permit:

The District Staff is currently awaiting any response from IEPA in regard to a new permit. The Agency is in receipt of the District's responses to proposed changes to the previous NPDES permit draft. It is not currently known if a new draft revision will be issued or if the Agency will wish to further discuss their topics of concern.

USEPA Fecal Testing Changes:

The USEPA has introduced additional steps that require labs to report improved qualitative results for the mFC test which is the method used by the District Lab to determine and report fecal coliform in its discharge.

The mFC test normally displays spots on a membrane in a Petrie dish, these spots indicate a bacterial colony. Bright blue spots will indicate the presence of a fecal colony, however often the spots might be pale blue to grey, and these previously were considered non-fecal colonies and referred to as "confluent growth". These additional new quality tests will test some of the confluent growth colonies to see if they show the presence of any fecal. If they do indicate some fecal growth no matter how weak they must be added to the test results as positive fecal colonies when performing the count of the dish. *A photo showing a comparison of the two types of colonies can be found below on the Photos Page, see Figure 2.*

Operations may need to increase both the disinfection and neutralization chemical dosage levels to assure that the plant discharge will meet these new standards.

ADM Pretreatment Permit Violation:

A report of an ADM discharge violation can be found below in the Pretreatment Section of this report. The violation was related to nickel discharges and caused a pass-through exceedance event with the district's discharge permit. During a portion of the days of the event the discharges from our effluent were above even the limits set by the new Site-Specific Rule.

Wyckles Facility East Lagoon Project:

Christy-Foltz (CF) has begun work on the discharge chutes on the East Lagoon. They have recently completed cutting out the old material and are forming up the areas for the concrete work. J. Oros Environmental Inc. is currently holding off on the remainder of their cleaning work to allow both for CF to perform the repairs on the chutes and for drier weather to allow the remaining material to dry and make transporting for final disposal easier.

Operations, Laboratory, and Pretreatment Activity Reports – May/June 2021

Operations Activities:

Normal operational activities were conducted as prescribed by standard procedures or in response to conditions within the plant related to the new measures being employed due to Covid-19.

- 1) The Disinfection system is on-line and operating well. There were no exceedances during the month of May, and none to-date as of the writing of this report. The operators as usual are being very diligent with the monitoring of these systems as is required because the control parameters are tight, and variations in flow, loading, nutrients, etc. could adversely impact them in very short notice.
- 2) The Operators completed pumping down the digester units #2 and #3 and handed them over to the contractors for the cover replacement and brick replacement work projects. They are currently operating the facility with the digesters #1 and #4 only.
- 3) Drum thickener operations remains heavy still and has been since the T&L heavy loading release more than a month ago.
- 4) The Operators coordinated with maintenance staff and outside welding crews to affect emergency repairs on a grit classifier auger on the East Headworks.

5) Operations staff continue to actively address PMs as time, workload, and staff levels allow.

Laboratory Activities:

Routine:

A total of 1,813 analyses were performed in the laboratory during the month of May 2021.

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 annual NPDES sampling of the influent, effluent, and sludge was conducted during the first week of May 2021. The annual sampling includes the normal quarterly NPDES analyses as well as testing for one hundred and ten (110) organic priority pollutants.
- 2) Greg Garbs from the Illinois Water Environment Association (IWEA) came to the District on May 27, 2021, to present Keith Richard with a certificate and a "golden shovel" pin to announce his membership into the Illinois Select Society of Sanitary Sludge Shovelers (I5S). The I5S is a program of the IWEA to recognize members that show dedicated service and support of IWEA goals and programs. I5S members are nominated and approved by the standing group of "shovelers". Keith has served as the Chair of the IWEA Laboratory Committee since April 2017. *A photo of Keith receiving the award can be found on the "Photos" sheet below, see Figure 1.*
- 3) Keith Richard worked throughout the month of May 2021 to evaluate the MicroSnap test for fecal coliform detection which is a new testing system that is being deployed at the District this year. This system uses a luminosity-based detection method that can give quantitative fecal coliform results in just 6 hours, as opposed to the 18-24 hours required for other methods. The results of the evaluation were very promising with fecal coliform counts that correlated well with our mFC fecal coliform results. The system is not approved for NPDES testing, but we foresee using it as a process control tool to verify the effectiveness of our disinfection process. A sample could be analyzed during each shift due to the six-hour analysis time.

Pretreatment Activities:

General Activities:

- 1) Pretreatment personnel monitored nine commercial and industrial users (IU) during May 2021 and conducted ten industrial site inspections.
- 2) The SDD submitted the required corrections of our draft pretreatment ordinance and legal authority statement to USEPA ahead of schedule. We are now waiting for USEPA to complete their second review of the document.
- 3) There are no updates to the USEPA desk audit.
- 4) The SDD sent, and subsequently received, a waste hauler permit application from **Gulliford's**.
- 5) The SDD issued a discharge permit to **DMH**.
- 6) Matt Nihiser attended the virtual NACWA Pretreatment Conference. This conference included discussions on planned updates to the Pretreatment Program from USEPA as well as case studies on pretreatment issues from around the country.

Pretreatment Ordinance - Verbal Notices:

- 1) A Verbal Notice was issued to **ADM** on May 7, 2021, for discharging wastewater above their daily maximum nickel limit.
- 2) A Verbal Notice was issued to **TCCI** on May 24, 2021, for discharging wastewater that contained total FOG and non-polar FOG above the ordinance limit. TCCI inspected their pretreatment system and found that a screen was torn, which allowed a higher-than-normal concentration of oil to pass through. The screen was immediately replaced. Sample results taken after the corrective action are pending.
- 3) A Verbal Notice was issued to **Heinkel's Packing** on May 24, 2021, for discharging wastewater that contained total FOG above the ordinance limit. Heinkel's was unaware of any issues with their grease interceptors, however they had them pumped the next day. Sample results taken after the corrective action are pending.
- 4) A Verbal Notice was issued to **ADM Railcar Repair** on May 28, 2021, for violating their daily maximum and monthly average nickel limits. The nickel limits in ADM Railcar Repair's permit are directly tied to the limits in ADM's East and West Complex permit (Permit #200), so the nickel violations at ADM's Plant caused ADM Railcar Repair to also violate their discharge permit.

Pretreatment Ordinance - Warning Notices:

The SDD issued Warning Notice 21-005 to **ADM** for discharging wastewater above their daily maximum nickel limit. ADM had a loss from their Corn Plant Ion Exchange Dirty Backwash Tank in early May, which has caused ADM to violate their daily maximum nickel limit. The response to the warning notice detailed how the incident happened and what actions ADM has taken to minimize the impact to the SDD. During the investigation, ADM discovered that the high nickel loading correlated with ADM personnel neutralizing a load of hydrochloric acid in their grits chamber. The low pH in the grits chamber caused the ion exchange resin to release the nickel that it had previously captured. After the nickel was released, it became suspended in ADM's wastewater and was eventually conveyed to the SDD. ADM has reduced D.O. in their aeration basins to reduce the amount of nickel that is solubilized, as well as cleaned out their grits chamber. Daily sampling by ADM is ongoing.

Pretreatment Ordinance - Notices of Violation (NOV):

No Notices of Violation were issued during May 2021.

Pretreatment Ordinance - Executive Orders:

No Executive Orders were issued during May 2021.

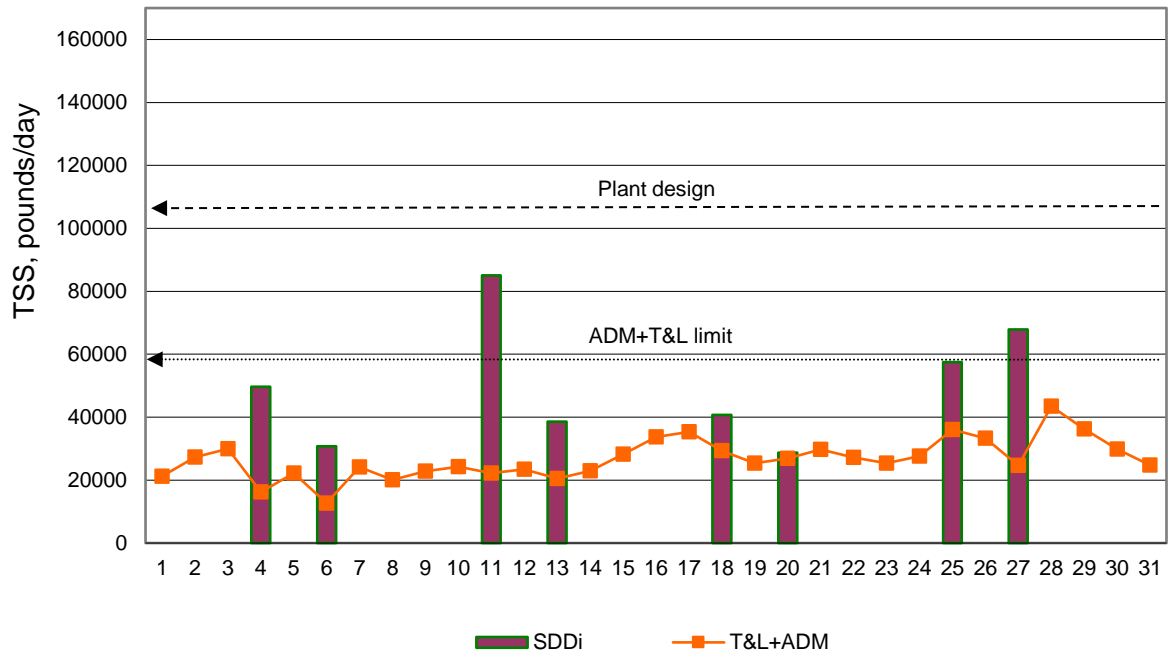
Pretreatment Ordinance - Penalty Assessments:

The following industrial penalties were assessed for May 2021:

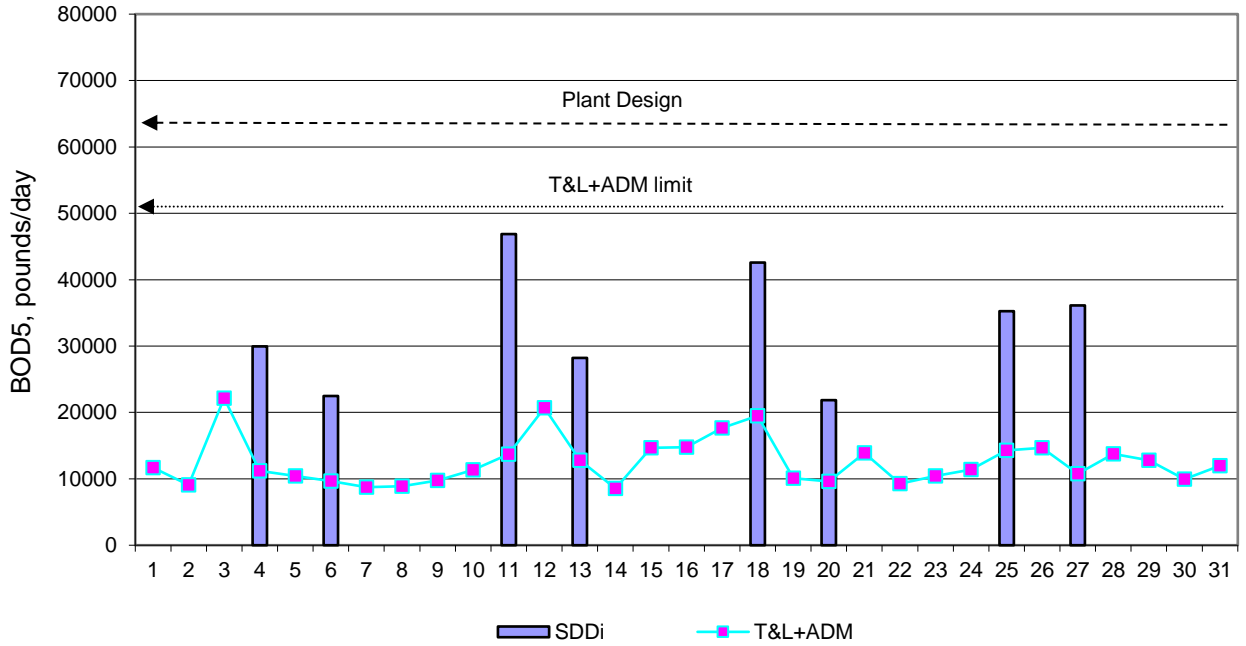
- | | |
|---------------|---------------------------|
| 1) ADM | \$ pending results |
|---------------|---------------------------|

Plant Operating Graphs:

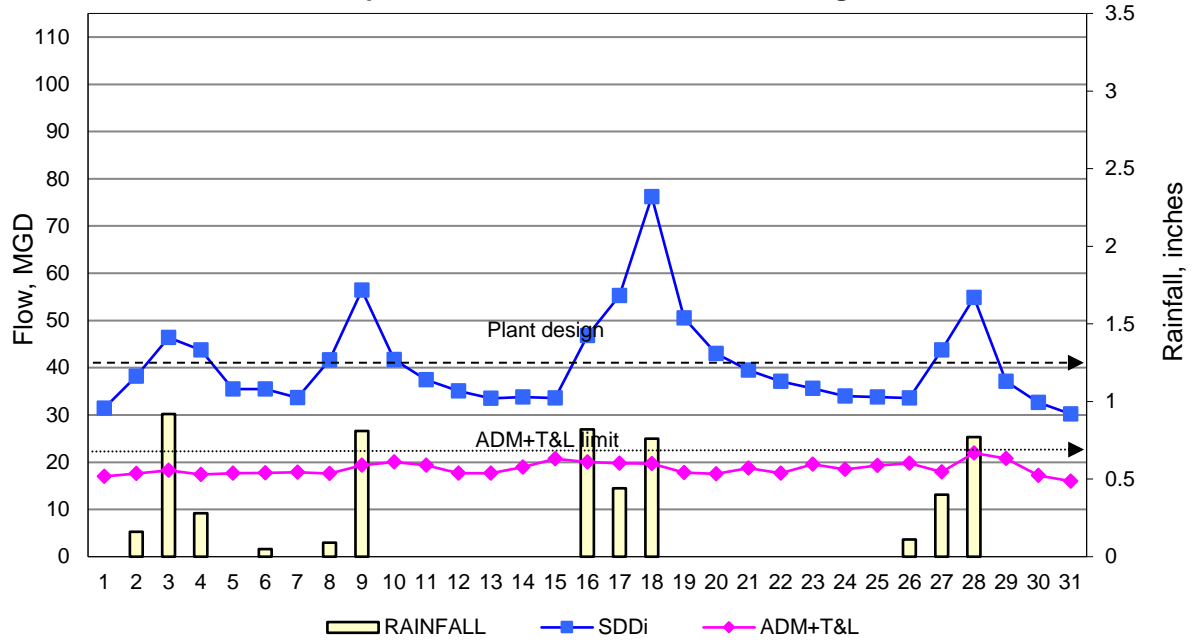
TSS Comparison: SDD Inf T&L+ADM Discharges



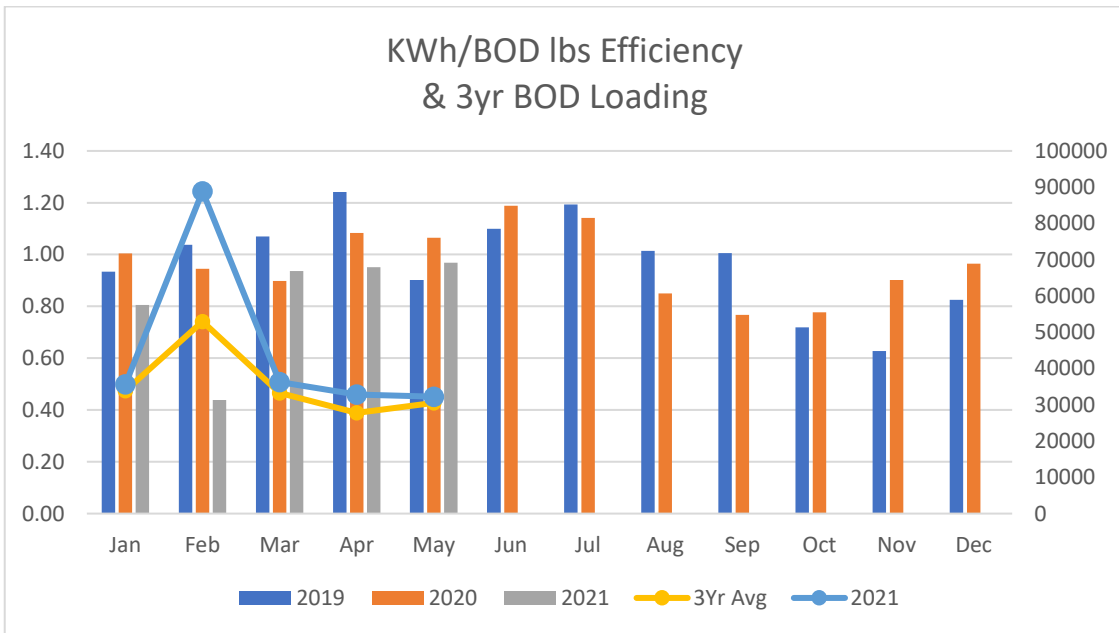
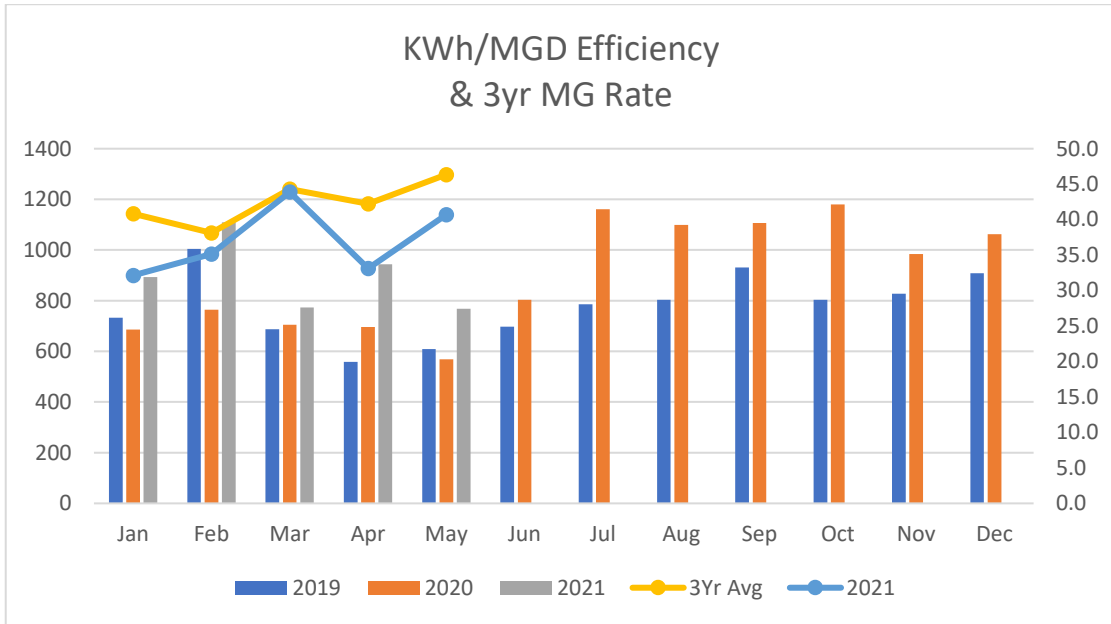
BOD Comparison: BOD Inf vs. T&L + ADM Discharges



Flow Comparison: SDD vs. ADM + T&L Discharges and Rainfall



Plant Efficiency Graphs:



Photos:

Figure 1



Keith Richard receiving his Gold Shovel Award/Membership

Figure 2

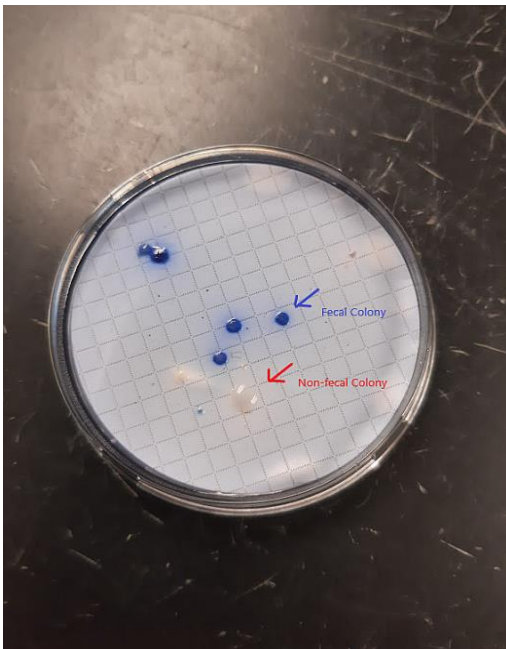


Photo indicating comparison of previously categorized Fecal vs Non-fecal Colonies.