

Technical Director's Report

December 17, 2014

Plant Loading and Operations Summary – November 2014

Biochemical Oxygen Demand, 5-Day (Avg. 19,500 lb./day)	29 percent of design
Total Suspended Solids (Avg. 33,400 lb./day)	30 percent of design
Average Daily Flow (27.23 million gallons/day)	66 percent of design
Maximum Daily Flow (43.49 million gallons/day)	35 percent of design

	Permit Limits (avg./max.)	Reported Values	Violations
CBOD ₅ , mg/L	20/40	2/3	0
TSS, mg/L	25/45	5/8	0
NH ₃ -N, mg/L	1.5/3.0	0.31/1.27	0
Fecal coliform per 100 mL	400*		
Chlorine Residual, mg/L	0.05*		
Dissolved Oxygen, mg/L	6.0 (minimum)	8.48	0
Total Nickel, mg/L	0.015	0.022	1

*Effluent disinfection is required May 1 through October 31.

The District's nickel variance expired at the end of June and due to opposition from U.S. EPA, was not extended. No other exceedences of NPDES permit limits occurred during November.

The total amount of stabilized sludge sent to storage at the Wyckles Road Land Application Facility last month was 294 dry tons. Rain limited land application of sludge to thirteen days in November. The volume of sludge hauled through the end of November is 16.7 million gallons.

Activities

The state's draft Nutrient Loss Reduction Strategy was released for public comment on November 25. The portion of the plan describing immediate permit actions is unchanged from earlier drafts, and requires dischargers to complete a report regarding technology-based treatment alternatives for nutrients. Among other items, the report is to include optimizing operations to achieve the lowest effluent levels possible with existing equipment, an evaluation of possible levels of reduction, and a timeline for implementation. A significant addition since earlier drafts is designation of the Upper Sangamon River (the portion of the river upstream from Riverton) as a priority watershed for point sources. The strategy states that "organizations" in priority watersheds "will be notified of their status and of the need to develop a watershed-based plan that will guide the implementation of nutrient loss reduction practices."

Black & Veatch led the third workshop for the nutrient project on December 10 for District staff and personnel from ADM and Tate & Lyle. A highlight of the meeting was participation by Dr. James Barnard, one of the pioneers in developing biological nutrient removal processes beginning in the 1980s. Black & Veatch presented possible scenarios deemed most feasible from their treatment facility and process modeling work, and led a discussion for further

development of the scenarios. The next step is taking the scenarios to conceptual design and development of budgetary estimates.

Since our November 3 meeting with Black & Veatch on the diffuser replacement project, we have had several followup conversations on design concepts and details. We are now very close to a final basis of design and layout. We are expecting design documents to be complete in late January, bidding to occur in February, and award of a construction contract in March.

On October 6, we received a violation notice letter from Illinois EPA regarding nickel permit limit exceedences in July and August. We met with IEPA on November 20 to discuss incorporating our pursuit of a site-specific water quality standard into a compliance plan. On December 11, we submitted a compliance plan for IEPA review. Monte Cherry and I have a meeting scheduled with U.S. EPA in Chicago on January 8 to emphasize our need for them to complete their review process and enable us to pursue our site-specific water quality standard proposal.

We met with Red Oak Consulting on December 9 to work toward finalizing the IT Strategic Plan project. The primary purpose of this meeting was to further discuss IT governance, or the District's process for ranking possible IT projects and managing active projects. Final reports from Red Oak are expected by the end of December.

CSO Summary

Location	Events	Discharge (million gallons)	Estimated Total Duration of Discharges
Oakland Avenue (Outfall 003)	1	0.05	0.6 hours
Lincoln Park (Outfall 004)	0		
McKinley Avenue (Outfall 007)	1	1.27	5.1 hours
Seventh Ward (Outfall 008)	0		

If there are any questions or comments concerning this report, please contact me at 217/422-6931 x214 or by email at timk@sddcleanwater.org.

SANITARY DISTRICT OF DECATUR

501 DIPPER LANE, DECATUR, IL 62522

MEMORANDUM

TO: Tim Kluge

DATE: 12/01/14

FROM: Larry Arnold

SUBJECT: Laboratory activities for November 2014

Routine :

Monitoring of treatment plant, industrial users, and receiving stream samples for compliance purposes and process monitoring continued. Sampling and analysis of influent, effluent, and sludge for quarterly NPDES requirements was conducted. Laboratory personnel continued to perform additional background nutrient monitoring in preparation for anticipated permit limits to assist with process design. Safety meetings have continued and there was no first report of injury in the laboratory during this period.

Non-Routine :

- 1) The laboratory continues to investigate the potential role of amounts of incoming Total Kjeldahl Nitrogen (Ammonia plus forms of Organic Nitrogen) in affecting the plant's nitrification ability. Effluent NH₃-N levels for the month were all below permit limits.
- 2) Personnel have finished up their Personal Development Plans for 2014-2015 fiscal year and meetings to discuss these were held in the first week of June. Ongoing personnel shortage continuing during August prevented any activities related to these plans from being conducted. Two newly hired lab technicians, Alyssa Harper and Markesha Davis started work beginning September 2 and after they are adequately trained, we will resume catalytic coaching activities. Efforts were initiated to train Alyssa and Markesha in the other half of the work they will be performing as part of the laboratory rotation schedule which ensures that individuals are cross trained and not performing the same repetitive tasks all the time. As part of the transition process, Jeff Runyon and Latishia Greve continued leadership training with Mark Sturgell of PDN during November.
- 3) Work continues on a laboratory manager position standard operating procedure. A generic calendar was setup indicating at what time of year certain actions need to be taken in relation to infrequent events and also indicates primary daily activities. This effort is related to transition planning for the laboratory. During 2014, this calendar will be reviewed again on a daily basis to ensure that no activities are overlooked or new ones have been added. Transition documents prepared to date are stored on the laboratory intranet.

As part of the laboratory manager's personal development plan, a document has been prepared and submitted for review indicating general characteristics needed for to fill the Laboratory Manager position.

- 4) Laboratory management continued updating the district lab data handling manual as part of the transition effort and we continued in house training for all interested laboratory personnel in some of the laboratory data handling functions. In House Excel training commenced with the two lab manager succession candidates and involved the waste hauler manifest billing procedure. This included introduction to the Visual Basic for Applications (VBA) programming code developed by the lab manager to automate this function. Comprehensive documentation prepared to accompany this training included detailed procedure, explanation of formulas and command buttons included in the spreadsheet, and explanation of VBA code used to prepare report. This approach will continue in a similar manner for all key laboratory/pretreatment reports that have been developed to date in house.

Pretreatment Activity during November 2014

Verbal Notices

We issued Verbal Notices to **Decatur Memorial Hospital (DMH)** on November 11, 2014 because they exceeded their daily maximum limits for BOD on November 3, 2014 and they exceeded their monthly average limit for BOD from November 3 through November 7, 2014.

We issued a number of Verbal Notices (VN) to **Tate and Lyle (T&L)** during November because they exceeded several of their discharge limits during November. On November 14, 2014, we issued a VN because **T&L** discharged wastewater from their discharge point D in excess of the daily maximum discharge flow limit on November 11, 2014. On November 17, 2014, we issued another VN because **T&L** exceeded their daily maximum limit for total dissolved sulfides at point C on 11/17/2014. On November 21, 2014, we issued a VN because **T&L** discharged wastewater with a pH above their maximum limit on November 21, 2014 and another VN because **T&L** exceeded their daily maximum discharge flow limit for the entire plant on November 14 and November 15, 2014.

We issued a Verbal Notice to **Prairie Farms Dairy (PFD)** on November 19, 2014 because a self-monitoring report submitted by **PFD** showed that **PFD** had exceeded their daily maximum limits for total Fats, Oils, and Grease (FOG-T) and ammonia nitrogen (NH₃-N) on October 31, 2014.

We issued a Verbal Notice to **Bulkmatic Transport Company** on November 21, 2014 because wastewater discharged by **Bulkmatic** had a pH below 6.0 on November 18, 2014.

Warning Notice

We issued a Warning Notice to **T&L** on November 21, 2014 because **T&L** exceeded their daily maximum permit limit for total water discharged on November 14, 15, and 20, 2014.

Notice of Violation

We did not issue any Notices of Violation during November 2014.

Executive Orders

We did not issue any Executive Orders during November 2014.

Penalty Assessment

We assessed the following industrial penalties for November 2014:

Prairie Farms Dairy	\$1,000.00
T&L	\$13,000.00

General Activity

1. We monitored twelve industrial users (IU) and we performed four industrial user inspections during November 2014.
2. **USEPA** sent us a letter during October 2014 detailing their findings following the pretreatment compliance inspection they performed in July. We spent a couple of weeks preparing a response to letter.

SANITARY DISTRICT OF DECATUR

501 Dipper Lane Decatur, Illinois (217) 422-6931

TO: Tim Kluge

FROM: J. D. Malone, I&C Manager

DATE: 12/9/2014

SUBJECT: I&C Shop Monthly Activity Report for November 2014

Work Orders Completed:

29 Corrective
2 Improvement / New
172 PM
1 Process
1 Project
1 Safety
0 Training
0 Asset Management

I&C Tech Monthly Activity:

Final design and layout for the Wyckles motor control center upgrade is being worked through. We had initially designed as a direct replacement. We are now working on adding additional capacity for additional mixers and pumps for possible future expansion.

Updates to SCADA and process control are under way. We are working in conjunction with operations to improve operational efficiency and verify accuracy of data displayed on the screens. (Ongoing project)

We winterized the Chlorine analyzer system. New parts order for refurbishing the units in the offseason is being put together. The units will be serviced and ready for operation next season. An upgrade to improve the pumps was received from Ressler and Associates. The installation of the new pump motors should reduce system failures and increase reliability.

As part of the bleach building expansion, new conduits have been run to the ammonia building. This will allow for the running of network cabling between the bleach and ammonia buildings. After installation of the network cabling, automation work can begin. This work should be completed and tested prior to next disinfection season.

The St. Louis Bridge upgraded motor control center is functioning well. The wiring has been cleaned up and the new touch screen has been installed. Programming improvement will be made as time passes to optimize station operation.

Installed heat trace and controllers in the 314 and 231 buildings. Insulation to be installed by Sprinkmann in December 2014.

Attended the AFE (Association for Facilities Engineering) Certified Professional Maintenance Manager review course in Boston, MA. The two day review was followed by a 200 question / 4 hour test for certification. Certification confirmation was received early December 2014.

Installation of new soft starts for the Lincoln Park interceptor pumps is under way. The soft starts have been mounted and the conduit has been run. Installation to be completed late December / early January.

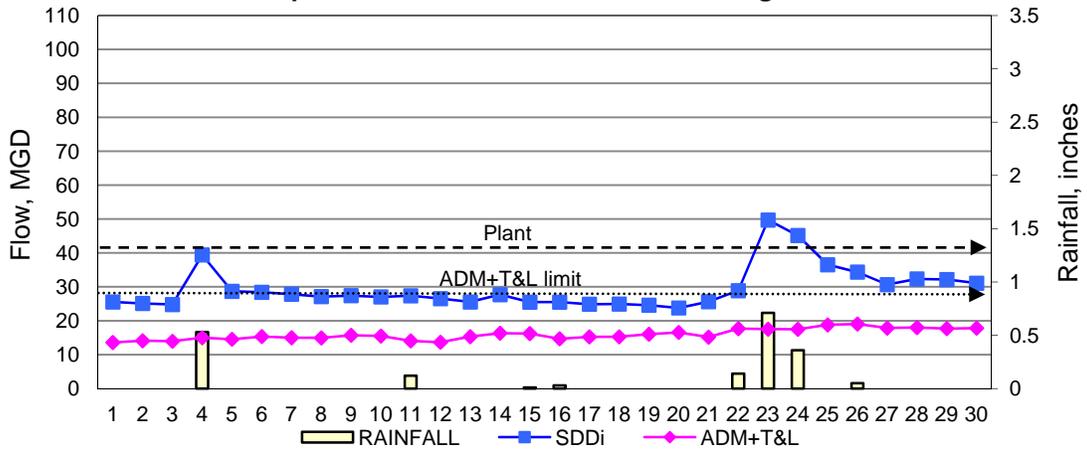
Obtaining quotes for replacement bleach pumps for next disinfection season. Pumps should be ordered January 2015.

MIS Monthly Activity Report:

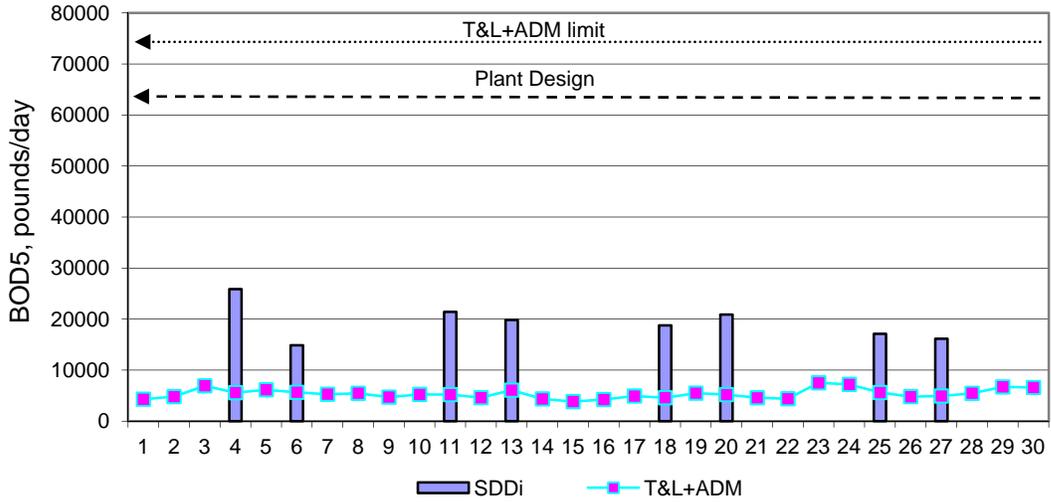
1. Ongoing SDD Server Virtualization Project
2. Network Administration, Helpdesk, Troubleshooting and Repair
3. Issued a purchase order for the new phone system. Installation in December 2014
4. Issued a purchase order for the set up of our WorkFlow system. Work to begin January 2015.

Respectfully,
J. D. Malone, CPMM

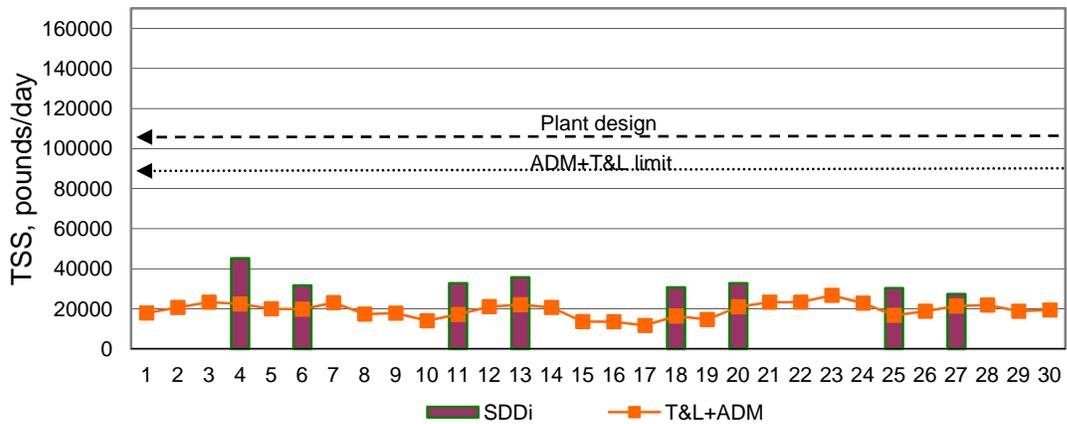
Flow Comparison: SDD vs. ADM + T&L Discharges and Rainfall



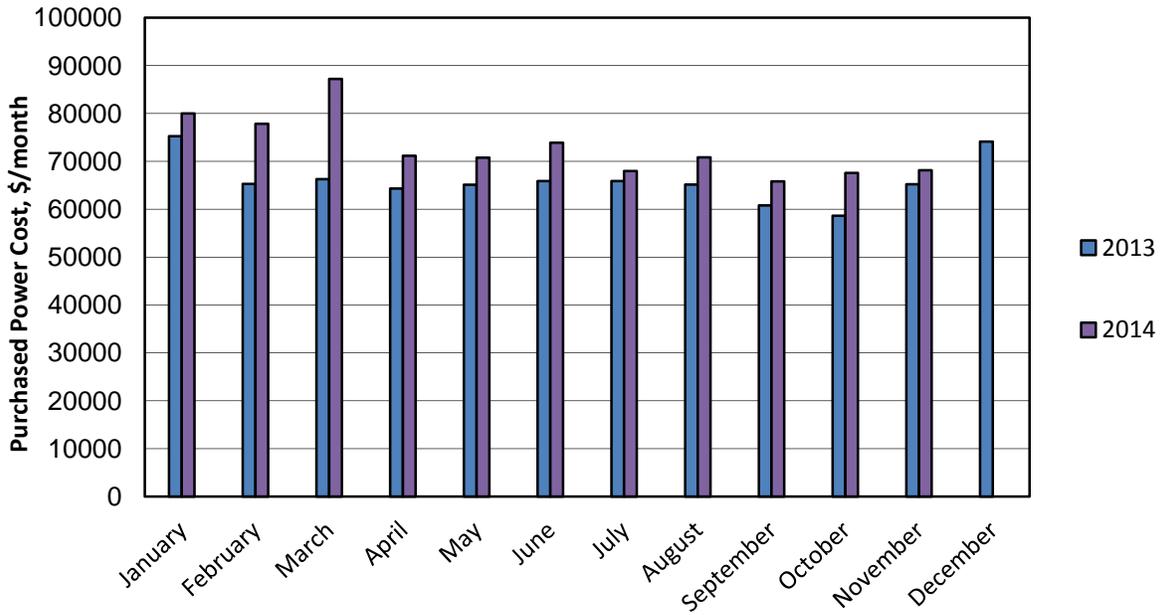
BOD Comparison: BOD Inf vs. T&L + ADM Discharges



TSS Comparison: SDD Inf T&L+ADM Discharges



ELECTRIC POWER COST: 2013, 2014



ELECTRIC POWER USE: 2012, 2013, 2014

