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November 9, 2009

Township Supervisor
Attn: Frank Force
12050 Old Belding Road
Belding, MI 48809-9318


*Grattan Township and Grattan/Vergennes Sewer Systems Monthly Report
October 2009*

Dear Frank,

Attached please find the Grattan Township Wastewater Utilities Report and the Preventative/Corrective Maintenance Report for September 2009.

As always I would be happy to elaborate on any of the submitted information or provide any additional information that would assist the township board. If there are any questions or concerns please do not hesitate in contacting me.

Sincerely,



John Rydbeck
(616) 890-5768
Infrastructure Alternatives
Grattan Township Sewer System Operator

Attachments: October 2009 Preventative/Corrective Maintenance Report

Grattan Township Sewer System

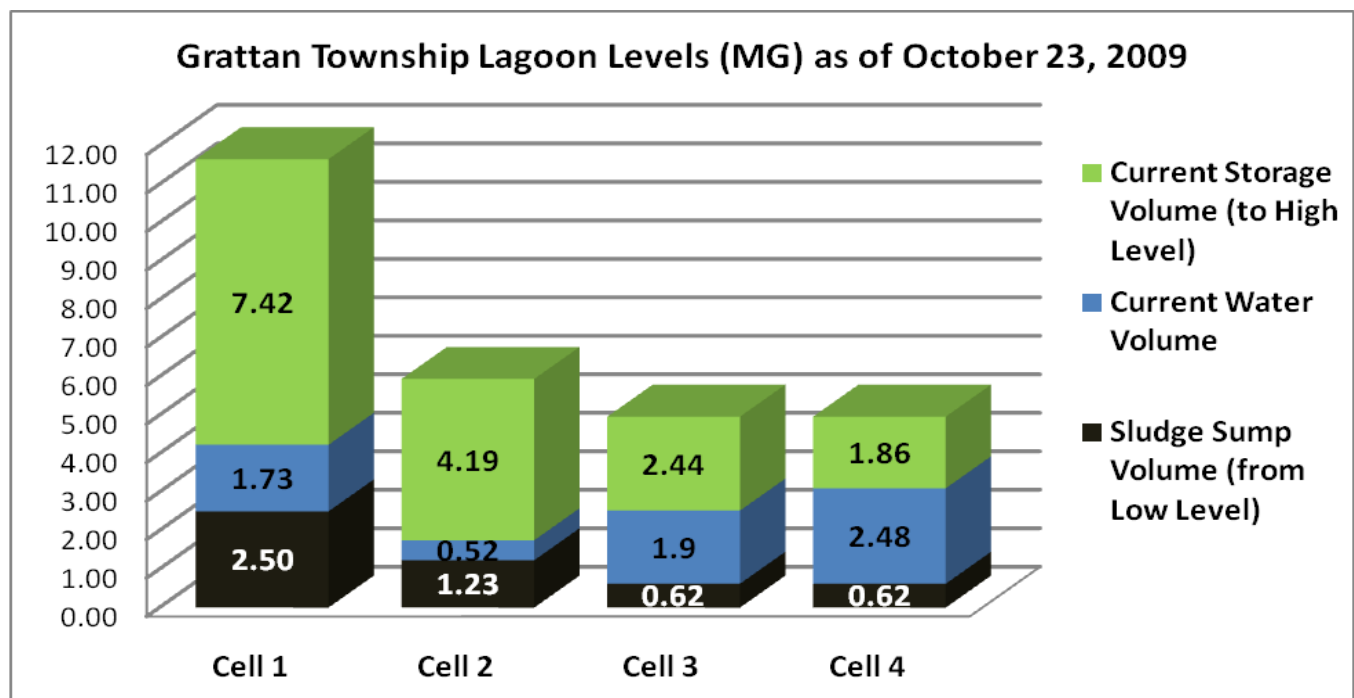
Executive Summary:

A total of 5.241MG was discharged through the Grattan Township WWTF Irrigation system. This is 83% of the possible 6.286MG for the month of permitted irrigation (which includes the increase to 2.35"/week and Old Orchard Irrigation for 2009). There were a total of six rain days for the month which were unable to be made up due to application rate limitations in the NPDES permit.

A snapshot of the individual and total lagoon volume and storage for October 23, 2009 are shown below. More detailed weekly data can be prepared on request.

Two grab samples were collected from the discharge lagoon were collected and analyzed per the requirements in the NPDES permit.

October 23, 2009 Lagoon Levels	Feet Below Transfer/Pumping Structure Grating	Elevation	Current Volume*	Current Storage Volume*	Total Current Volume	Current Total Storage Volume to High Water Level
Cell 1	7.67'	897.83 ft	4.25 MG	7.42 MG	11.62 MG	15.91 MG
Cell 2	8.17'	897.33 ft	1.75 MG	4.19 MG		
Cell 3	8.46'	897.04 ft	2.52 MG	2.44 MG		
Cell 4	9.93'	895.57 ft	3.10 MG	1.86 MG		



*Data obtained from Prein&Newhof Lagoon Volume Calculator.

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Emergency Call-Outs:

- Sunday October 4, 2009 @ 4:30 p.m. – 6:00 p.m. WWTP HIGH PRESSURE: High pressure alarm call from Sensaphone dialer. Arrived on-site to find a gun failed to turn on, likely due to the cold temperatures. The system was shut down for the remainder of the day and then returned to normal operation the following day.
- Saturday October 10, 2009 @ 2:00 p.m. – 6:30 p.m. POWER OUTAGE BPI-PS #3; BPI-PS #4: Power outage on Big Pine Island Lake Pump Stations #3 and #4. Stations were serviced with a portable generator to provide uninterruptable
- Tuesday October 20, 2009 @ 11:30 a.m. – 12:30 p.m. LOW LEVEL BPI-PS #2: Low level alarm from Big Pine Island Pump Station #2 from dialer. Arrived on-site to find a grease mass pressing on the low level float. The grease was removed and the station continued normal operation.
- Friday October 23, 2009 @ 1:15 a.m. – 7:45 a.m. POWER OUTAGE BPI-PS #3A, PS #5, and PS#6: Power outage on Big Pine Island Lake Pump Stations #3A (intermittently), PS #5 and PS #6. Both portable generators were used to provide uninterrupted sewer service and the prevention of any sewer overflows and/or back-ups.

General Operation Information / Housekeeping:

- A new 3 Phase 480VAC heater was installed in the filter room of the Grattan Township WWTP. The previous heater had failed last winter which resulted in the freezing and rupture of the copper water supply line. The plant will simply maintain above freezing temperatures for occasional cycling of the well, as the well pump/motor had seized sometime last winter from inactivity.

Preventative Maintenance:

- The preventative maintenance tasks have been completed for October 2009 and summarized in the attached report.

Corrective Action / Significant Tasks Completed:

- Monday October 26, 2009: Lillie Excavating made some berm repairs in the Grattan Township Lagoons which included filling in a muskrat tunnel on the east side of Cell #2, filling in erosion under the transfer chamber from Cell #2, and filling in some erosion at the northwest corner of Cell #3. Some fescue grass seed was used to re-establish vegetation to prevent future erosion and secure the new clay soils.

Pending Projects:

- Two (2) failed gate valves from Cell #4 to the pumping structure will be replaced this fall.

Grattan/Vergennes Township Wastewater System

Executive Summary:

The Grattan/Vergennes WWTP discharged 9.787 MG for the month of October. The end of October also ended the 2009 Irrigation Season for the Grattan/Vergennes WWTP with a total of 49.0 MG discharged throughout the year. This aggressive irrigation emptied Cell #1 to expose the amount of accumulated sludge in the Cell. An estimate is being prepared on the cost for removal of the accumulated sludge to ensure for adequate storage and treatment time in the future years.

The discharge lagoon was also sampled and analyzed twice during the month of October according to the requirements in the NPDES permit.

Emergency Call-Outs:

- Saturday October 3, 2009 @ 4:30 a.m. – 8:00 a.m. ML-PS #4 CONTROLS FAILURE: Power loss alarm call from Murray Lake Pump Station from control voltage loss. Found to be a blown fuse in the 240-120VAC transformer. Replaced fuse from inventory and the station continued normal operation.
- Saturday October 3, 2009 @ 8:00 p.m. – 10:00 p.m. RL-PS #16 HIGH LEVEL: High level alarm call from Ratigan Lake Pump Station #16 Mission dialer due to suspected slug flow. Arrived on-site to find the station in normal condition. Now overflow or sewer back-up occurred.
- Sunday October 4, 2009 @ 12:00 p.m. – 12:30 p.m. ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using the Mission software. The station quickly returned to normal operation.
- Sunday October 4, 2009 @ 9:30 p.m. – 10:00 p.m. BCL-PS #14 HIGH LEVEL: High level alarm call from Big Crooked Lake Pump Station #14 Mission dialer. Arrived on-site to find the station in normal operation. Both pumps and the controls were checked and found to be good.
- Monday October 5, 2009 @ 8:00 a.m. – 8:30 a.m. ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using the Mission software. The station quickly returned to normal operation.
- Wednesday October 7, 2009 @ 6:30 pm - 7:00 pm ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using the Mission software. The station quickly returned to normal operation.
- Wednesday October 7, 2009 @ 11:30 pm – 12:00 am ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using Mission. Station quickly returned to normal operation.
- Friday October 9, 2009 @ 1:30 a.m. – 2:00 a.m. ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using the Mission software. The station quickly returned to normal operation.
- Friday October 9, 2009 @ 8:00 a.m. – 8:30 a.m. ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using the Mission software. The station quickly returned to normal operation.
- Saturday October 10, 2009 @ 4:00 p.m. – 4:30 p.m. ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using the Mission software. The station quickly returned to normal operation.
- Saturday October 10, 2009 @ 9:30 pm – 10:00 pm ML-PS #11 HIGH LEVEL: High level alarm

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- call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using the Mission software. The station quickly returned to normal operation.
 - Sunday October 11, 2009 @ 8:30 a.m. – 9:00 a.m. ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using the Mission software. The station quickly returned to normal operation.
 - Sunday October 11, 2009 @ 1:00 p.m. – 1:30 p.m. ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using the Mission software. The station quickly returned to normal operation.
 - Sunday October 11, 2009 @ 6:00 p.m. – 6:30 p.m. ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using the Mission software. The station quickly returned to normal operation.
 - Wednesday October 14, 2009 @ 2:30 am – 3:00 am ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using the Mission software. The station quickly returned to normal operation.
 - Wednesday October 14, 2009 @ 9:30 pm - 10:00 pm ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using Mission. The station quickly returned to normal operation.
 - Thursday October 15, 2009 @ 7:00 a.m. – 7:30 a.m. ML-PS #11 HIGH LEVEL: High level alarm call from Murray Lake Pump Station #11 Mission dialer due to suspected slug flow. Monitored the station remotely using the Mission software. The station quickly returned to normal operation.
 - Wednesday October 23, 2009 @ 4:00 p.m. – 5:00 p.m. BCL-PS #17 HIGH LEVEL: High level alarm call from Big Crooked Lake Pump Station #17 Sensaphone dialer. Arrived on-site to find a pump #2 plugged. The station was placed in alternate override mode and the pump was pulled and removed from the station the next day. The culprit of the plug was found to be excessively worn cutters. New cutters have been ordered for replacement in early November.
 - Thursday October 29, 2009 @ 9:30 p.m – 2:00 a.m. ML-PS #4 HIGH & LOW LEVEL: High and low level call from Murray Lake Pump Station #4 Sensaphone dialer. Arrived on-site to find the station working properly. The station was monitored to find that the pump was not cycling from the programmed on and off levels. Recommendation from JC VanHarn based on the provided conditions was to eliminate a possibly faulty low level float. However, the problem continued and was found to be indicative of a wire-short. All of the wiring in the panel was checked and a loose ground wire (connecting to the Low Level ISR) was identified and tightened. A Low Level alarm would keep the pumps from running and result in a High Level alarm. The wire-short allowed for intermittent cycling of the pump(s). There were no sewer back-up or overflows before or during the troubleshooting and repair of the pump station controls.

General Operation Information / Housekeeping:

- October 21, 2009: IAI staff, along with Frank Force and Jim Fues of Grattan Township, observed the amount of sludge accumulation in Cell #1. Pictures were taken for the other board members. The level of sludge is encroaching upon the allotted 2’ sump designed for holding sludge (based on 30 years of design operation). Estimates for sludge removal are being gathered for budgeting.
- A GFCI protected outlet was installed in the G/V WWTP bathroom to install a small inexpensive heater. The over-sized 480VAC heater had previously failed and had been taken off-line.
- No Trespassing signs were installed along the infiltration zone of the Grattan/Vergennes WWTP at the township board’s request.

Preventative Maintenance:

- The preventative maintenance tasks have been completed for the month October 2009 and summarized in the attached report.

Corrective Action / Significant Tasks Completed:

- Monday October 5, 2009: The spare 3HP Hydromatic Grinder Pump and the spare rotophase motor (for three phase power conversion) were brought to Fixall for evaluation. The 3HP pump will be placed in ML-PS #11 to increase the pumping capacity from the station. The rotophase motor will be verified for emergency replacement of any of the four stations that generate three phase power using a rotophase motor.
- Thursday October 15, 2009: The 3HP Hydromatic Grinder Pump (verified by Fixall Electric) was installed at Murray Lake Pump Station #11. This pump replaced the previously installed, unverified pump. The verified 3HP pump did not perform any better than the previous 3HP pump. The existing 2HP pump and the new 3HP pump were swapped and draw down tests confirmed that there was no an issue in the discharge forcemain from the pump mounts.
- Friday October 16, 2009: The High Level Alarm float was raised to 6” above the gravity sewer lateral in Murray Lake Pump Station #11. Although this is not a long-term solution, it does prevent high level alarm nuisance calls from the station will other solutions are being investigated.
- Tuesday October 20, 2009: Installed re-built Pump #2 at ML-PS #5 (new impeller, new wear plate, and new power cord). Pump capacity increased from 42gpm to 188gpm.
- Tuesday October 20, 2009: Installed re-built Pump #1 at 5MILE-PS #15 (new volute, cutter impeller, and shredding ring). Pump capacity was increased from 15gpm to 27gpm.
- Wednesday October 28, 2009: The grinder basin at the Grattan/Vergennes WWTP was placed in service through the use of re-routing the gravity sewer to the existing basin. A new 110V 4/10 HP submersible pump was installed with a draining force-main to the lagoon. A GFCI outlet and a sealed pump on/off locking relay float system was installed for pump controls. Historically the gravity sewer line would freeze during the winter due to reverse fall of the gravity sewer line.
- Thursday October 29, 2009: JC VanHarn of Grandtech assessed the controls at the ML-PS #4 pump station. A “noise interference” from the over-temp switch on Pump #2 was re-wired from the pump controller. The overloads from Pump #2 were investigated for possible upsizing, but identification of a bad winding in the pump’s motor was found to be the culprit for the several false tripping of the pump overloads. The pump was removed from the station and brought to Fixall Electric to be re-wound and evaluated.
- Thursday October 29, 2009: JC VanHarn of Grandtech assessed the pump operation at ML-PS #11 for possible upgrading the pumps to maintain the periodic excessive slug flows entering the station.

Pending Projects:

- The pumps at ML-PS #11 and RL-PS #15 will be evaluated for increasing the pumping capacity of the station to maintain normal operation levels during spike flows.
- A new swing-check valve being re-built by Al Evink of Maintech for Irrigation Pump #2 at the Grattan/Vergennes Plant. The weighted portion of the swing check had fallen apart within the valve body periodically constricting flow from the irrigation pump.