

February 8, 2010

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

***Grattan Township and Grattan/Vergennes Sewer Systems Monthly
Operations Report***

January 2010

Dear Frank,

Attached please find the Grattan Township Wastewater Utilities Report and the Preventative/Corrective Maintenance Report for January 2010.

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

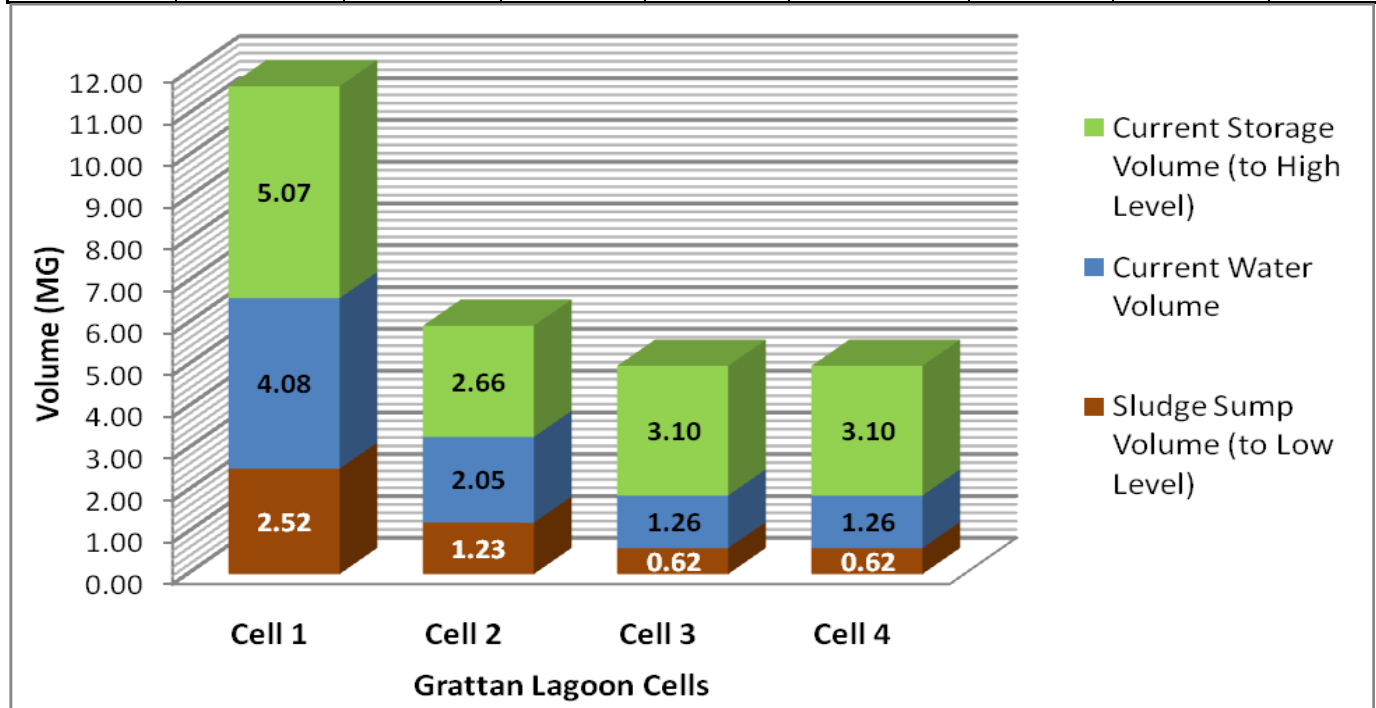
Attachments: January 2010 Preventative/Corrective Maintenance Report
Grattan Township Collection System I&I Study October 2009 – January 2010
Grattan/Vergennes Collection System I&I Study October 2009 – January 2010

Grattan Township Sewer System

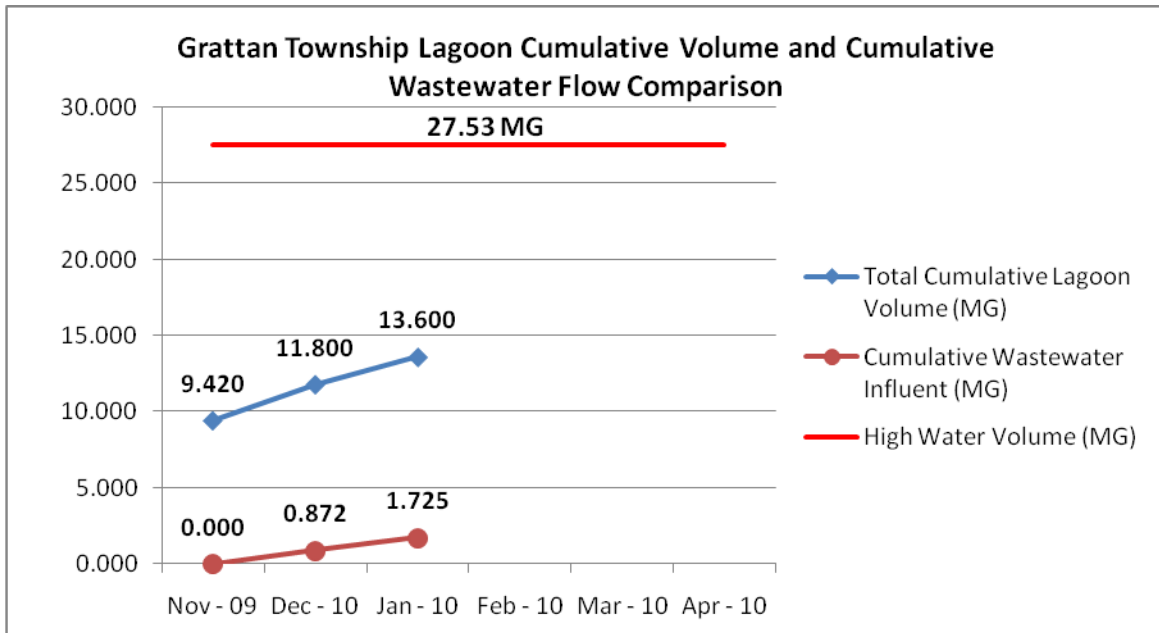
Executive Summary:

A snapshot of the individual and total lagoon volume and storage for February 1, 2010 are shown below. The last graph will show the monthly total lagoons' volume with monthly wastewater flow totals. More detailed weekly data can be prepared on request.

February 1, 2010 Lagoon Levels	Feet Below Transfer / Pumping Structure Grating	Water Elevation (Top Structure Grating= 905.5')	Current Total Volume	Low Water Volume (Sludge Sump)	Current Water Volume (Current Volume Minus Sump Volume)	Current Storage Volume (To High Water Level)	Total WWTF Current Volume	Total WWTF Storage Volume (to High Water Level)
Cell 1	6.13 ft	899.37 ft	6.60 MG	2.52 MG	4.08 MG	5.07 MG	13.60 MG	13.93 MG
Cell 2	6.13 ft	899.37 ft	3.28 MG	1.23 MG	2.05 MG	2.66 MG		
Cell 3	10.10 ft	895.40 ft	1.86 MG	0.62 MG	1.26 MG	3.10 MG		
Cell 4	10.10 ft	895.40 ft	1.86 MG	0.62 MG	1.26 MG	3.10 MG		



*Data obtained from Prein&Newhof Lagoon Volume Calculator.



Once again there is a difference of approximately 1MG from precipitation in the lagoons. Monthly wastewater flow for January was approximately 0.853MG and the Lagoon volume increased 1.800MG. There were a couple of thaws in January which released earlier precipitation into the lagoons. However, the lagoon volume trend that is developing is assuring.

Emergency Call-Outs:

- Friday January 22, 2010 3:00 p.m. – 4:30 p.m. BPI-PS #3 REDUNDANT CONTROL ALARM: Received an alarm call-out from BPI-PS #3 Sensaphone dialer regarding the bypassing of the normal Motor Pump Controller (MPC) controls with the redundant controls (i.e. floats and relays). This was a new alarm condition that was established during the installation of the new MPC controls. However, this alarm event itself was a false alarm from the redundant control float being positioned to high. The float length was adjusted to eliminate future alarm call-outs.

General Operation Information / Housekeeping:

- The grinder pump stations had their quarterly inspection this month.
- The beginning of an Inflow & Infiltration (I&I) study for the overview of the Grattan Township Collection system is attached. Data was collected from the BPI-PS #1 (from the Mission Dialer runtime data logging and pump drawdown information) and combined with the daily rainfall data from the airport from October 1, 2009 to December 30, 2009. The data shows the impact on the entire collection system to gauge the overall impact of rain in the system. More discrete data from sectionalized areas in the collection system would be needed to identify the sources of the I&I into the system.

Preventative Maintenance:

- The preventative maintenance tasks have been completed for January 2010 and summarized in the attached report.

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Corrective Action / Significant Tasks Completed:

- Tuesday January 19, 2010 BPI-PS #1: IAI performed a Confined Space Entry (CSE) into the pump station to document the pump station mount/base due to historical excessive pump blow-by (discharge from the pump which sprays back into the station). However, at the time the station was entered, neither pump had any blow-by. There was some concern of one pump base not secured to the floor of the station, which could cause failure of the force-main piping structure. Pictures from within the station will be used to prepare pump mount and base replacement specifications as well as establish current conditions. Pictures from the CSE can be made available upon request.
- Tuesday January 19, 2010 BPI-PS #5: IAI performed a Confined Space Entry (CSE) into the pump station to document the pump station mount/base due to excessive pump blow-by from each pump (discharge from the pump which sprays back into the station). Upon inspection, some galvanized chain “quick” links were found to be used in the retrieval of the pump from the station. Due to the station’s corrosive environment, all materials should be stainless steel or non-corrosive metal equivalent. A failure of these links during retrieval could cause excessive damage to the pump mount, base, piping, and pump itself. All “quick” links were replaced. Pictures from within the station will be used to prepare pump mount and base replacement specifications as well as establish current conditions. Pictures from the CSE can be made available upon request.

Pending Projects:

- Begin correspondence for determining requirements for permanent use of the Old Orchard Irrigation System.

Grattan/Vergennes Township Wastewater System

Executive Summary:

The 4th Quarter Compliance Monitoring Report for the Grattan/Vergennes WWTP was completed and submitted to the MDEQ.

Emergency Call-Outs:

- Wednesday January 6, 2010 3:00 p.m. – 6:00 p.m. ML-PS #8 PHASE (ROTOPHASE) LOSS: During routine inspection of the station, the Rotophase motor (which generates the third phase for the 240VAC station) tripped the circuit breaker in the control panel. The circuit breaker was reset and the Rotophase motor continued to trip the breaker. IAI personnel purchased twenty-five feet of 8-3 gauge wire to run the pumps directly from the 240VAC 3 Phase [green] generator. JC VanHarn of Grandtech was also notified and was able to arrive at the station within an hour. The motor, controls, capacitors, and wiring were all inspected and found to be in good operation. The Rotophase motor was energized again and began running without any faults. The wiring will be kept at the Grattan/Vergennes WWTF garage in the event that this happens again. In addition, there is a spare Rotophase motor which was recently re-wired and certified by FixAll Electric.
- Sunday January 31, 2010 10:00 a.m. – 1:30 p.m. G/V GPS-17 ALARM CALLOUT: Received a phone call from resident regarding the alarm light being on at the grinder station. Arrived on-site to find that the mechanical-switch pump-on float had difficulty being responsive to the level in the grinder basin in order to initiate the lead-on grinder pump. The floats were replaced with standard mercury switch floats with neoprene cords to increase the responsiveness and reliability of the grinder station controls. No sewer overflow was experienced before and during the repairs.

General Operation Information / Housekeeping:

- The grinder pump stations had their quarterly inspection this month.
- Williams & Works is preparing a draft Irrigation Management Plan for the Grattan/Vergennes WWTF.
- The beginning of an Inflow & Infiltration (I&I) study for the overview of the Grattan Township Collection system is attached. Data was collected from the BPI-PS #1 (from the Mission Dialer runtime data logging and pump drawdown information) and combined with the daily rainfall data from the airport from October 1, 2009 to December 30, 2009. The data shows the impact on the entire collection system to gauge the overall impact of rain in the system. More discrete data from sectionalized areas in the collection system would be needed to identify the sources of the I&I into the system.

Preventative Maintenance:

- The preventative maintenance tasks have been completed for the month January 2010 and summarized in the attached report.

Corrective Action / Significant Tasks Completed:

- Thursday January 7, 2010 ML-PS #4: Pump #1 was removed from ML-PS #4 to be overhauled and inspected by Fix All Electric. Currently the pump produces 88 gpm (or 40% of the station's rated capacity of 220 gpm).

- Thursday January 7, 2010 RL-PS #15: Pump #2 was removed from RL-PS #15 to be overhauled and inspected by Fix All Electric. Currently the pump produces 24 gpm (or 46% of the station's rated capacity of 52 gpm).
- Thursday January 14, 2010 BCL-PS #1: IAI performed a Confined Space Entry (CSE) into the pump station to document the pump station mount/base due to excessive pump blow-by (discharge from the pump which sprays back into the station). Pictures from within the station will be used to prepare pump mount and base replacement specifications as well as establish current conditions. Pictures from the CSE can be made available upon request.
- Thursday January 14, 2010 ML-PS #6: IAI performed a Confined Space Entry (CSE) into the pump station to document the pump station mount/base due to excessive pump blow-by (discharge from the pump which sprays back into the station). Pictures from within the station will be used to prepare pump mount and base replacement specifications as well as establish current conditions. Pictures from the CSE can be made available upon request.
- Thursday January 14, 2010 ML-PS #4: The report from FixAll for Pump #1 did not identify any potential pump performance repair. A possible theory of the pump's poor performance could be explained through a partial plug in the discharge piping from the pump. To determine if this was the case, Pump #2 was placed into the mount for Pump #1 and a pump draw-down was completed. The data was consistent with the pump draw-down for Pump #2 in its own (Pump #2) mount. Therefore, the issue still lies within the pump not obtaining the rated capacity of the station at its observed Total Dynamic Head (TDH).
- Thursday January 21, 2010 RL-PS #15: Pump #2 was installed in the station after being inspected and serviced by FixAll Electric (no significant replacements made). According to the pump curve provided by the manufacturer, the pump should easily attain the rated capacity of 52 gpm. However, an addition pump draw down still only resulted in 24 gpm. The installation of the up-sized impeller from the Myers Grinder Pump #1 will help to reveal if the pumps are simply undersized or if there is a more serious problem in the force-main piping from the station.

Pending Projects:

- A larger impeller has been purchased from N.R. Mitchell for RL-PS #15 Pump #1 (Myers Grinder Pump). Once installed, the impeller should significantly increase the pumping capacity to at least match the rated design for the station.
- The unreliable controls in ML-PS #6 will be replaced with a Motor Pump Controller operating from a pressure transducer with float switches for redundancy in both alarms and controls.