

**Environmental
Protection Agency**

**Governor
Lt. Governor
Director**

November 8, 2011

RE: MEDINA COUNTY
LIVERPOOL TOWNSHIP
MEDINA SD 500
(NPDES NO. 3PK00004)

Mr. David Bazilevich, Supt. Of Treatment
Medina County Sanitary Engineers
791 West Smith Road
PO Box 542
Medina, OH 44258

Dear Mr. Bazilevich:

On October 13, 2011, a Compliance Evaluation Inspection (CEI) was conducted at the Medina SD 500 (Liverpool) wastewater treatment plant (WWTP). Present during the inspection were Messrs. Phil Cummings and Craig Rudolph, representing the Medina County Sanitary Engineers, and this writer.

The purpose of the inspection was to evaluate the operation and maintenance of the facility, the effluent discharge quality, and the general compliance with the intent of the National Pollutant Discharge Elimination System (NPDES) permit. The most recent inspection of the SD 500 WWTP was February 23, 2010.

At the time of the October 13th inspection, the following observations were made, and information obtained:

- 1) Raw flow enters the WWTP headworks via four raw sewage influent pumps. During normal influent flow rates, only two of the four pumps are utilized, with the remaining two pumps being kept in standby mode. A third pump is put into operation when influent flows reach approximately 20 MGD. At the time of the inspection there were two influent pumps operating.
- 2) Both of the mechanical bar screens were operating, and the grit chamber was being well aerated. Screenings and grit removed in the headworks is collected in a 2 cubic yard container, and ultimately disposed of at the Allied Waste (former BFI) landfill in Lorain County.
- 3) Six primary clarifiers follow the aerated grit removal, and typically all six clarifiers are in use. Any floating grease which may collect on the water surface in the settling tanks is manually skimmed, and disposed of in the Zimpro LPO unit directly. At the time of the inspection, one of the primaries was out of service for cleaning and chain tightening.
- 4) Following the primary clarifiers, flow enters nine aeration tanks, which were all in use at the time of the inspection. Aeration tank contents were dark gray to black in color with crisp light gray foam, typical of an activated carbon WWTP.

- 5) Three final clarifiers follow the aeration tanks. At the time of the inspection, all three final clarifiers were in use. Effluent from the clarifiers was clear, and effluent troughs were free of solids or algae. Water in the final clarifiers did have a very slight skim of matter on the surface.
- 6) Following the final settling tanks, flow enters six (US Filter) rapid sand filters (three older and three newer). All filters were being operated at the time of the inspection. The rapid sand filters are backwashed based on water level in the filter. If not backwashed within an eight hour period, the filters are automatically backwashed based upon elapsed time since the last backwash.
- 7) Disinfection of the treated water is accomplished with chlorine gas, supplied from one Ton cylinders. Dechlorination is performed with sodium metabisulfite. Chlorine use is approximately 300 to 400 pounds per day during the disinfection season, and 100 pounds per day during the off season for internal use.
- 8) Ultra Violet (UV) disinfection was investigated a few years ago, and at the time was determined to not be a viable alternative. However, UV now may be an alternative to be considered in the future.
- 9) The final effluent was visually clear, and free of solids or foam. The NPDES permit-required outfall sign was observed at the effluent discharge pipe from the WWTP, where the effluent enters the receiving stream.
- 10) Raw sludge generated at the WWTP is sent to a raw sludge thickener, then to a raw sludge storage tank. From the storage tank, the sludge is thermally treated in the Zimpro process, then pressed by two 1.3-meter plate and frame filter presses.
- 11) The sludge filter presses are typically operated seven days per week, up to 24 hours per day. Sludge cake generated by the presses are approximately 48% to 50% solids content.
- 12) The old filter presses were replaced with new presses approximately three months ago.
- 13) Sludge cake is stored in a building known as the 'sludge barn' until it is land applied. While in the sludge barn, the sludge is kept in an initial pile for approximately four days, then moved to a second pile where it is kept for approximately two days. Final disposal of the sludge is by land application.
- 14) Sludge generated at the Medina SD 500 WWTP is a Class A sludge. Approximately 2000 dry tons of Class A sludge is generated per year, and is hauled and land applied in Medina County by Agri-Sludge.
- 15) The Medina SD 700 (Chippewa) WWTP sludge is brought to the Medina SD 500 WWTP for treatment and disposal.

- 16) Wastewater samples for all conventional parameters in the NPDES Permit are collected and analyzed by SD 500 personnel. Any required bioassay work is sent to outside labs.
- 17) Results of the most recent DMRQA unknown sample analysis came back as "acceptable".
- 18) ADDF of the WWTP is 15 MGD. Average dry weather flow seen at the WWTP is approximately 10 MGD. There is a slight I/I problem in the collection system, and estimated I/I is 1 MGD.
- 19) When the influent flow rate exceeds approximately 40 MGD, storm flow is diverted, after grit removal, to storm flow clarifiers for storage. Storm clarifier storage capacity is approximately 2.8 MGal in total capacity (four tanks x 700,000 gallons each).
- 20) If the storm flow exceeds the 2.8 MGal. capacity, flow bypasses biological and final settle treatment, and is sent directly to the sand filters. As the influent flow rate decreases, the wastewater in the storm flow clarifiers is redirected to receive full treatment.
- 21) As per the entity's renewed NPDES permit effective August 1, 2010, any storm flow bypassing biological treatment and final settling is required to be monitored, and reported in the monthly eDMR submittal (STA 602).
- 22) The bypass has been used approximately twice since August 2010, and the monitoring data has been reported as STA 602 in the eDMR submittal.
- 23) The Medina SD 500 WWTP accepts septage from haulers that are licensed through the Medina County Health Department (currently 6 haulers). The septage is dumped into the treatment plant's old headworks, which then is discharged to the new headworks.
- 24) A manifest type of system is utilized with the haulers. Each load brought to the WWTP by the haulers is sampled for various parameters (COD, BOD, TSS).
- 25) The Medina SD 500 WWTP employs 46 full time employees, and coverage is provided 24/7.

A review of the electronic Discharge Monitoring Reports (eDMR's) submitted for the Medina SD 500 WWTP, for the period of February 1, 2010, through October 1, 2011, found the following final effluent limit numeric violations:

Medina SD 500
NPDES Permit No. 3PK00004
(Feb. 1, 2010 – Oct. 1, 2011)
Numeric Effluent Violations

Reporting Period	Station	Parameter	Limit Type	Limit	Reported Value	Violation Date
September 2010	001	Mercury, Total (Low Level)	30D Conc	3.2	4.46357	9/1/2010
September 2010	584	Fecal Coliform in Sludge	1D Conc	1000	1860.	9/9/2010
September 2010	584	Fecal Coliform in Sludge	1D Conc	1000	4200.	9/15/2010
October 2010	001	Mercury, Total (Low Level)	30D Conc	3.2	3.65417	10/1/2010
October 2010	584	Fecal Coliform in Sludge	1D Conc	1000	3000.	10/13/2010
December 2010	001	pH, Minimum	1D Conc	6.5	6.36	12/7/2010
June 2011	001	Mercury, Total (Low Level)	30D Conc	3.2	3.49786	6/1/2011
July 2011	001	Mercury, Total (Low Level)	30D Conc	3.2	3.34923	7/1/2011

Monthly data for the same time period also revealed the following reporting code violations:

Medina SD 500
NPDES Permit No. 3PK00004
(Feb. 1, 2010 – Oct. 1, 2011)
Reporting Code Violations

Reporting Period	Station	Reporting Code	Parameter	Limit Type	Limit	Reported Value	Violation Date
February 2010	601	61941	pH, Maximum			AD	2/24/2010
February 2010	601	61942	pH, Minimum			AD	2/24/2010
February 2010	601	61941	pH, Maximum			AD	2/25/2010
February 2010	601	61942	pH, Minimum			AD	2/25/2010
February 2010	601	61941	pH, Maximum			AD	2/26/2010
February 2010	601	61942	pH, Minimum			AD	2/26/2010
February 2010	601	61941	pH, Maximum			AD	2/27/2010
February 2010	601	61942	pH, Minimum			AD	2/27/2010
February 2010	601	61941	pH, Maximum			AD	2/28/2010
February 2010	601	61942	pH, Minimum			AD	2/28/2010
March 2010	601	61941	pH, Maximum			AD	3/1/2010
March 2010	601	61942	pH, Minimum			AD	3/1/2010
March 2010	601	61941	pH, Maximum			AD	3/2/2010
March 2010	601	61942	pH, Minimum			AD	3/2/2010
June 2010	001	31616	Fecal Coliform			AK	6/3/2010
September 2010	001	31616	Fecal Coliform			AK	9/30/2010
September 2010	801	31648	E. coli			AK	9/30/2010
December 2010	601	61941	pH, Maximum			AD	12/4/2010
December 2010	601	61942	pH, Minimum			AD	12/4/2010

Reporting Period	Station	Reporting Code	Parameter	Limit Type	Limit	Reported Value	Violation Date
December 2010	601	61941	pH. Maximum			AD	12/5/2010
December 2010	601	61942	pH. Minimum			AD	12/5/2010
December 2010	601	61941	pH. Maximum			AD	12/6/2010
December 2010	601	61942	pH. Minimum			AD	12/6/2010
December 2010	601	61941	pH. Maximum			AD	12/7/2010
December 2010	601	61942	pH. Minimum			AD	12/7/2010
December 2010	601	61941	pH. Maximum			AD	12/8/2010
December 2010	601	61942	pH. Minimum			AD	12/8/2010
July 2011	584	31641	Fecal Coli in Sludge			AK	7/7/2011

AD - Automatic Analyzer Out of Service: Use this code when an automatic analyzer, which is normally used to analyze samples at the treatment works, is inoperative. The circumstances causing the use of this code should be explained in a Specific Comment on the first date of occurrence for each parameter.

AK - Biological Sample Too Numerous to Count: Use this code when the number of bacterial colonies for each dilution tested exceeds the acceptable number of colonies given by the analytical method used. (Appropriate dilutions should be used to obtain an acceptable count of bacterial colonies.)

A list of all violations, numeric and reporting code, was left with Mr. Cummings for later explanation.

Medina County should continue current operation and maintenance practices, which allow the SD 500 WWTP to consistently meet its NPDES Permit limits. If you have any comments or questions regarding this correspondence, you may contact me at (330) 963-1110.

Respectfully,



Charles E. Allen
Environmental Engineer
Division of Surface Water

CA/cs

File: Public/MedinaCounty SD 500/P&C