



John R. Kasich, Governor  
Mary Taylor, Lt. Governor  
Scott J. Nally, Director

December 5, 2012

RE: MEDINA COUNTY  
VILLAGE OF LODI WWTP  
CEI  
NPDES NO. 3PB00027

Mayor Geissman and Council  
Village of Lodi  
108 Ainesworth Street  
PO Box 95  
Lodi, OH 44254

Dear Mayor Geissman:

A Compliance Evaluation Inspection (CEI) was conducted at the Village of Lodi wastewater treatment plant (WWTP) on November 8, 2012. Present during the inspection were Ms. Christie Britt, representing the Village of Lodi; and this writer, of the Ohio EPA. The Lodi WWTP is located at 300 Grandview Avenue.

The purpose of the inspection was to evaluate the facility's operation and maintenance condition; evaluate the facility's compliance with its current National Pollutant Discharge Elimination System (NPDES) permit to discharge limits, terms and conditions; and to discuss the forthcoming NPDES permit renewal. The previous CEI conducted on the Lodi WWTP was April 19, 2011.

At the time of the November 8<sup>th</sup> inspection, the following observations were made and information was obtained:

- 1) Influent is pumped to the WWTP via two screw pumps. During normal flow rates, only one screw pump is utilized, with the other being kept as a standby. Use of the screw pumps is alternated approximately every six months.
- 2) The WWTP headworks contain a grit removal system and primary rotary screens. Grit is removed in the grit removal tank, and transferred by auger to dumpsters. Two primary rotary screens are utilized at the head of the plant for preliminary treatment. Screenings fall into 2-cubic yard dumpsters.
- 3) Dumpsters with grit and screenings are hauled to the Republic Landfill in Lorain County for disposal. Approximately 2-cubic yard dumpsters are hauled per week.
- 4) One of the 4 aeration tanks was in operation at the time of the inspection. Contents of the aeration tank were well aerated, and were medium brown in color. For enhanced solids settling and phosphorus removal, alum is fed to the aeration tank(s), following the secondary flow meter.

- 5) According to Ms. Britt, aeration tank Mixed Liquor Suspended Solids (MLSS) concentrations were approximately 5600 ppm. Ms Britt indicated usual summer MLSS concentrations are maintained around 4000 ppm, while winter MLSS concentrations are kept in the 6000 ppm range.
- 6) A wastewater flow equalization tank (148,000-gallon capacity) is available for storage of excessive flow during storm events. At the time of the inspection the tank was empty of water, but did contain solids on the tank bottom, from recent use due to a storm the previous week. Ms. Britt indicated the solids were to be removed within a few days of the inspection.
- 7) Normally, one of two final settling tanks is in operation. At the time of the inspection, the Number 1 settling tank was being emptied (contained water stored from a storm the previous week), and the Number 2 settling tank was in use. Use of the tanks is alternated every 6 months.
- 8) Contents of the Number 2 settling tank were slightly turbid, with visible pinfloc in the water, and an observable sludge blanket at a depth of 1 ½ to 2 feet down. Sludge is wasted from the settling tank approximately 2 to 3 times per week.

Effluent from the settling tank was visually clear, and the effluent troughs exhibited a slight algal growth on the side of the weirs.

- 9) Both rapid sand filters following the settling tanks were online, and operating satisfactorily. Backwash of the rapid sand filters is either time based, or whenever pressure headloss across the filters reaches a set limit, whichever is first.
- 10) Disinfection of treated effluent is accomplished with Ultra Violet radiation. Due to the time of year (November 1<sup>st</sup> through April 30<sup>th</sup>), operation of the UV facilities is not required. It is noted the UV unit consists of 2 banks of UV lights, each containing 6 light bulbs, and the bulbs have an auto cleaning mechanism.

When in use, only one bank of UV lights is operated at a time. Light bulbs are removed from the UV unit and stored during winter months.

- 11) Treated effluent being discharged was visually clear, and free of foam or solids. Effluent is discharged to the East Fork of the East Branch of the Black River.
- 12) In anticipation of the renewed NPDES permit requiring the erection of an outfall discharge information sign, the Village erected an outfall sign at the WWTP outfall discharge location to the receiving stream.
- 13) Sludge wasted from the final settling tanks, and a portion of return sludge from the aeration tanks, is sent to one of two aerobic digesters. Cationic polymer emulsion is added to sludge removed from the aerobic digesters, prior to the sludge being pumped to a 1 meter belt sludge press for dewatering. Filter pressed sludge cake is then conveyed to two 15 cubic yard dumpsters, the contents of which are hauled to the Kimble Landfill for disposal.
- 14) The aerobic digesters are used one at a time for sludge treatment. While one digester is in the fill mode, the second digester is in the sludge digestion mode.

At the time of the inspection, the #1 digester was full of dark brown sludge, to be decanted the week following the inspection. The #2 digester was approximately 1/3 full, with sludge being decanted and filter pressed.

- 15) Sludge sent to the belt filter press enters the press at approximately 2% solids, and sludge cake leaves the press at approximately 18 to 20% solids. The filter press is operated 3 to 4 days per week.
- 16) Approximately two 15 c.y. dumpsters of sludge are hauled once per month to the Kimble Landfill for disposal. Approximately 100 dry tons of sludge was landfilled last year from the Lodi WWTP.
- 17) Processed sludge is disposed of by landfilling only, as the sludge cannot meet proper pathogen reduction required for land application.

A review of the electronic Discharge Monitoring Reports (eDMRs) submitted for the Lodi WWTP, and covering the period of April 1, 2011, through November 1, 2012, indicates the Lodi WWTP experienced the following incidences of non-compliance with its NPDES Permit effluent limits:

**VILLAGE OF LODI  
 NPDES PERMIT NO. 3PB00027  
 EFFLUENT NUMERIC VIOLATIONS  
 (APR. 1, '11 – NOV. 1, '12)**

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
December 2011	Phosphorus, Total (P)	30D Qty	3.0	3.06746	12/1/2011
December 2011	Phosphorus, Total (P)	7D Qty	4.5	5.86675	12/1/2011
August 2012	Copper, Total Recoverable	30D Conc	18	41.3	8/1/2012
August 2012	Copper, Total Recoverable	1D Conc	29	41.3	8/9/2012
August 2012	pH, Minimum	1D Conc	6.5	6.48	8/17/2012
August 2012	pH, Minimum	1D Conc	6.5	6.37	8/18/2012
August 2012	pH, Minimum	1D Conc	6.5	6.33	8/19/2012
August 2012	pH, Minimum	1D Conc	6.5	6.29	8/20/2012

Ms. Britt indicated the pH excursions were due to a bad pH probe, which was replaced when discovered. The phosphorus violations were due to a mal-adjustment of the alum feed during that time of the winter.

Various items discussed with Ms. Britt during the November 8<sup>th</sup> inspection included the following:

- 1) The excessive number (17) of effluent copper violations reported in the last inspection have been reduced to 2 effluent copper violations since that inspection. Ms. Britt indicated the Village has been actively searching for the source of the copper in the influent to the WWTP.
- 2) An Industrial Waste Survey (IWS) survey was conducted by the Village on all of the Industrial Users (IU) discharging to the sanitary sewer system tributary to the Lodi WWTP. A total of 17 IUs, not including car washes, were requested to complete detailed information contained in an IWS form. Each of the IUs was then inspected by Ms. Britt, and information contained in the completed IWS was discussed with the IU.

- 3) Based upon results of the IWS, Ms. Britt indicated the potential source of excessive copper being discharged to the sewer system has been narrowed down to one part of town. Efforts will now be directed to further investigation of potential copper sources in that particular area.
- 4) Upon occasion, the Lodi WWTP receives hauled liquid sludge for treatment and disposal, from Spencer, West Salem, Burbank, Smithville, Highland Schools, and Cloverleaf Schools WWTPs.
- 5) Hauled septage is also accepted for treatment at the Lodi WWTP. Hauled septage is sampled (for pH), then discharged directly to the sludge digester for treatment.

Approximately 400 gpd of septage is accepted at the Lodi WWTP, from some of 15 registered septage haulers in Medina County. A manifest system is in place for the septage haulers

- 6) The Village of Lodi currently employs 5 full time employees that work at the water and wastewater treatment plants. There are 2 employees at the WWTP from 7:30 a.m. to 4:00 p.m., Monday through Friday; and weekends for 5 hours on Saturday, and 3 hours on Sunday.

A SCADA system is employed at the Lodi WWTP, and at times when no personnel are present at the WWTP, an auto-dialer will alert an on-call WWTP employee that attention is needed at the plant.

- 7) The forthcoming NPDES permit renewal was discussed with Ms. Britt. Several items regarding the permit which were discussed include:
  - a) A preliminary Waste Load Allocation (WLA) was performed, based upon TMDL Study results for the black River. Based upon the WLA, the renewed permit will contain limits for nitrate-nitrogen: 4.92 mg/l (7 day avg.), and Phosphorus limits will be lowered from 1.5 mg/l (7 day avg.) to 0.52 mg/l (7 day avg.).
  - b) Based on limits needed to protect Water Quality Criteria (WQC), effluent limits will be recommended for dissolved hexavalent chromium: 11 ug/l (30 day avg.), and 16 ug/l (7 day avg.).
- 8) As required by the current NPDES permit, and as a result of the last inspection, the Village of Lodi submitted a mercury limit variance request. The request, which was to have been submitted by May 1, 2008, was received on May 12, 2011. Ms. Britt requested an update on the mercury variance approval by Ohio EPA. The mercury variance, and its approval, will be addressed in Ohio EPA correspondence to follow in the near future.
- 9) Effluent samples collected for ammonia, CBOD, suspended solids, phosphorus, pH, dissolved oxygen, temperature, and fecal coliform, are analyzed by the Lodi WWTP lab. Samples collected for nitrate-nitrite, sludge, heavy metals, oil and grease, and low level mercury, are contracted out for analysis to Precision Analytical Labs in Cleveland. Chain of custody forms are employed with the lab samples.

- 10) Since the last inspection, e.Coli samples have been collected, and analyzed, in addition to the required Fecal Coliform samples, in an attempt to ensure the Lodi WWTP will be able to meet forthcoming e.Coli limits in the renewed permit.

Ms. Britt indicated the Lodi WWTP can meet proposed e.Coli limits, and therefore requests the renewed permit not contain interim Fecal Coliform limits, but contain final e.Coli limits from the permit effective date. Data from the e.Coli testing was presented during the inspection, as a demonstration of the fact the new e.Coli limits can be met.

- 11) Ms. Britt also requested the renewed NPDES permit not include sludge monitoring Station 581, since all sludge is landfilled and not land applied.
- 12) The flow equalization tank is used during periods of high flow, and then left unused when emptied back into the treatment scheme. Cleaning sediment out of the tank is very difficult, and time consuming, without the presence of a water source (hydrant) in the area of the tank.

There is a need for the installation of a source of water (hydrant) in the immediate area of the flow equalization tank, to facilitate the cleaning of the flow equalization tank. Extra time not spent cleaning the tank could be utilized elsewhere in the WWTP.

- 13) The Lodi WWTP has an on-site backup generator for periods of power outage. The generator is also shared with the Lodi Hospital, located on adjacent property. The generator is tested on a monthly basis.

The Village of Lodi should continue with all efforts that will enable the WWTP to consistently meet its NPDES Permit limits.

If there are comments or questions regarding this document, you may contact me at (330) 963-1110.

Respectfully,



Charles E. Allen  
Environmental Engineer  
Division of Surface Water

CEA/cs