



Environmental
Protection Agency

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

March 4, 2011

RE: LORAIN COUNTY
CITY OF LORAIN PQM WWTP
CEI INSPECTION
NPDES NO. 3PD00040

Mr. Corey Timko, Utilities Director
City of Lorain
Municipal Utilities Dept.
1106 First Street
Lorain, OH 44052

Dear Mr. Timko:

On January 25, 2011, a Compliance Enforcement Inspection (CEI) was conducted at the City of Lorain PQM wastewater treatment plant. Present during the inspection were Mr. Doug Brown, representing the City of Lorain; Mr. John Sabo of the Lorain County Board of Health; and this writer.

The purpose of the inspection was to evaluate the treatment plant processes and effluent discharge quality, and to discuss the plant's compliance with the NPDES permit to discharge limits and compliance schedule. The last Compliance Evaluation Inspection conducted at the PQM WWTP was on July 10, 2008.

At the time of the January 25th inspection, the following observations were made of the treatment processes:

- 1) Two of 3 original influent screw pumps have been replaced with submersible pumps.
- 2) One of 2 grit cyclones was in operation, which is typical operating mode. The cyclones are switched manually, but come on automatically.
- 3) Two of 3 aerated grit tanks were in operation, with contents being the typical turbid gray color.
- 4) Three of 4 primary settling tanks were in use, with contents being typical. The primary clarifier tanks are covered.
- 5) Two of 3 trickling filters were on-line (low flow mode).
- 6) Two of 3 final settling tanks were in use. Effluent from the final settling tanks was visually clear, and the troughs were free of solids. The final settling tanks are uncovered.

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- 7) Effluent disinfection facilities (chlorine / dechlorination) were not on-line due to the time of year (not required November 1st through April 30th).
- 8) Observation of the treated effluent found it to be visually clear, colorless, and free of solids or foam.

A review of the electronic Discharge Monitoring Reports (eDMR), submitted by the City for the PQM WWTP for the period of August 1, 2008 through January 1, 2011, found the following reported NPDES Permit effluent violations for the period:

**LORAIN PQM WWTP
 Effluent Numeric Limit Violations
 NPDES Permit No. 3PD00040
 (Aug. 1, 2008 through Jan. 1, 2011)**

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
October 2010	Fecal Coliform	7D Conc	400	1241.42	10/1/2010
December 2010	Mercury, Total (Low Level)	30D Conc	1.3	6.86	12/1/2010
December 2010	Mercury, Total (Low Level)	30D Qty	0.0000	.00006	12/1/2010

A review of the eDMR data submitted also found the following reporting frequency violations for the same period:

**LORAIN PQM WWTP
 Reporting Frequency Violations
 NPDES Permit No. 3PD00040
 (Aug. 1, 2008 through Jan. 1, 2011)**

Reporting Period	Parameter	Sample Frequency	Expected	Reported	Violation Date
September 2009	Fecal Coliform	3/Week	3	2	09/01/2009
September 2009	E. coli	3/Week	3	2	09/01/2009

During the January 25th inspection the following items were discussed with Mr. Brown:

- 1) The remaining influent screw pump is planned for replacement with a submersible pump within the next year. Mr. Brown was reminded that a Permit To Install (PTI) will be needed for the new submersible pump.
- 2) The 1000 gallon sodium bisulfite tank was moved outside within the past couple years. A containment dike was constructed around the tank

- 3) Ferric chloride is used for phosphorus removal. A new peristaltic chemical feed pump has been installed, and the ferric is fed flow proportionately.
- 4) In Spring 2011, the last remaining trickling filter influent screw pump is planned for replacement with a submersible pump (a PTI is also needed for this replacement).
- 5) Settled sludge at the PQM WWTP is sent to the sludge thickening tank, then to the primary and secondary anaerobic digesters. From the secondary digester, the PQM sludge (approx. 5% solids) is hauled to the Lorain BRP WWTP for further processing.
- 6) The primary sludge digester roof and tank façade were replaced in the fall of 2009. A new roof for the secondary digester tank is planned in the near future.
- 7) The sludge digester heat exchanger is in good operating condition. Gas generated by the digester is used to operate the heat exchanger, with excess gas being flared off. The digester is always kept full.
- 8) Screenings from the barscreen are collected in a 2 cubic yard dumpster, and hauled to the Republic (former BFI) landfill in Oberlin, Ohio.
- 9) The PQM WWTP does not accept sewage from septic haulers.
- 10) A new phone system was installed in the WWTP buildings during the past few years. Fiber optics have also been installed in the buildings since the last inspection. All treatment processes are connected to a SCADA system.
- 14) The majority of effluent samples for the Lorain PQM WWTP NPDES Permit requirements are analyzed at the Lorain BRP WWTP lab. The exceptions being temperature, dissolved oxygen, and pH, which are measured by PQM personnel. A chain of custody form has been developed and is used for tracking of effluent samples.
- 15) Three new auto samplers were installed at the end of 2009. The samplers collect samples at the plant influent, effluent, and after settling tanks.
- 16) When effluent disinfection is required, chlorine gas is utilized from 1 Ton cylinders. Four 1 Ton cylinders are kept on-site at a time, with approximately 150# of chlorine being used on an average flow day. An additional 20# of chlorine is used in the odor control system for the covered tanks.

- 17) An SCBA apparatus is kept by the chlorine building in case of emergencies. Training on proper use of the SCBA is conducted 4 to 5 times per year.
- 18) The WWTP ultrasonic flow meter is calibrated weekly.
- 19) The treated effluent from the WWTP is discharged approximately 1000 feet out into Lake Erie via submerged pipe. An informational on-shore sign has been erected on the shore where the underwater pipe enters the Lake.
- 20) There are 9 full time employees at the PQM WWTP (5 operators, 3 maintenance, 1 supervisor). Coverage at the WWTP is 24/7.

The existing NPDES Permit, and its compliance schedule, was discussed. Items which the permit requires to be submitted, and were not submitted or status was unknown,, are as follows:

- a) A status report on the PQM WWTP's ability to meet the final effluent limit for E. coli with existing treatment facilities, which was due, and not received, by August 1, 2010. (It is noted that the status report was subsequently received after the inspection, on February 1, 2011).
- b) An evaluation of the adequacy of the local industrial user limitations to attain compliance with final effluent table limits (for As, Cd, Cr_T, Cr⁺⁶, Cu, Pb, Mo, Ni, Se, Ag, and Zn), and technical justification for the limits, was to have been conducted and submitted to the Ohio EPA by December 1, 2009 (status unknown to Mr. Brown, check with Pretreatment Coordinator).
- c) An evaluation of the adequacy of the local industrial user limitations to attain compliance with final effluent table limit for mercury, and technical justification for the limit, was to have been conducted and submitted to the Ohio EPA by February 1, 2010 (status unknown to Mr. Brown, check with Pretreatment Coordinator).
- d) A pretreatment program modification request to incorporate revisions of Chapter 3745-3 of the OAC, which became effective February 1, 2007, was to have been submitted to the Ohio EPA by February 1, 2010 (status unknown to Mr. Brown, check with Pretreatment Coordinator).

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- e) An evaluation of the PQM WWTP's capability of meeting the final mercury effluent limit of 1.3 ng/l (30 day avg.) was to be conducted, and results of the evaluation submitted to Ohio EPA. The study was conducted, and a mercury variance modification to the NPDES permit request was submitted by Mr. Brown in April 2010.

The request being made is for modifying the mercury permit limit from 1.3 ng/l to 9.5 ng/l, which the WWTP can meet, based upon existing effluent data.

The NPDES permit modification is currently under review by Ohio EPA, and coordination with Mr. Brown concerning the modification process will continue.

If you have any comments or questions concerning this correspondence, you or Mr. Brown may contact me at (330) 963-1110.

Respectfully,



Charles E. Allen
Environmental Engineer
Division of Surface Water

CEA/mt

File: MUNI/Lorain PQM/ P&C file