



**Environmental
Protection Agency**

John R. Kasich, Governor

Mary Taylor, Lt. Governor

Scott J. Nally, Director

February 28, 2012

RE: LORAIN COUNTY
VILLAGE OF GRAFTON WWTP
COMPLIANCE EVALUATION INSPECTION
NPDES No. 3PB00024

Village of Grafton
Mayor and Council
1009 Chestnut Street
Grafton, OH 44044

Dear Mayor and Council:

On January 31, 2012, a Compliance Evaluation Inspection (CEI) was conducted at the Village of Grafton wastewater treatment plant (WWTP), 1013 McAlpin Court, Grafton. Present during the inspection were Messer., Hobart Wells, and Jarrett Gott, representing the Village of Grafton; Mr. John Sabo, of the Lorain County Health Department; and this writer, of the Ohio EPA.

The purpose of the inspection was to evaluate the overall operation and maintenance of the WWTP; as well as the the facility's compliance with the effluent limits, terms, and conditions of its NPDES Permit. The last WWTP CEI inspection was conducted on August 3, 2010.

The following observations were made, and items discussed, during our January 31st inspection:

- 1) All four sequencing batch reactor (SBR) were in operation at the time of the inspection. Reactor one was in the anoxic fill / mix phase; Reactor two was in the settle phase; Reactor three was in the decant phase; and Reactor four was in the react phase.

There are five blowers total, which provide aeration to the SBRs. Two blowers are dedicated for each SBR being treated, with one kept in the standby mode.

- 2) All three Aqua Disk filters were online. The filters are backwashed either based upon a set pressure head loss across the filter media, or after approximately two hours if they have not been backwashed during that time period.

- 3) As in the past, the discharge from the State Prisons to the Grafton sanitary sewer system is causing operational and maintenance problems at the Grafton WWTP. Flow from the State Prisons constitute up to 50% of the influent to the Grafton WWTP.
 - a) Shredded plastic is causing clogging problems with the Aqua Disk tertiary filters, requiring excessive maintenance time to manually remove the shredded material.
 - b) Shredded plastic is also causing Aqua Disk pump cavitation, and subsequently additional pump repair.
 - c) Wastewater from State Prison machine shops sometimes contains metal filings/grindings, which are potential sources of copper and zinc. Copper concentrations in the 40 to 50 ug/l range, and zinc concentrations in the 60 to 130 ug/l range, have been encountered.
 - d) Mr. Wells has concerns with the copper and zinc influent concentrations, as they can concentrate in the WWTP sludge, and potentially cause future sludge disposal problems if sludge metals concentrations exceed ceiling limits.
- 4) At the time of the inspection, all processes were operational or in standby mode, and no effluent was being discharged due to the phase of treatment in the batch reactor process.
- 5) In 2011, approximately 142 dry tons of pressed sludge was hauled by Agri-Sludge, Inc., to the Kimble Landfill in Dover, Ohio. Screenings from the mechanical bar screen (up to 2 c.y./mo.) are collected in a dumpster and hauled to the Republic (BFI) Landfill in Lorain County.
- 6) The Grafton WWTP laboratory runs effluent analysis for pH, temperature, dissolved oxygen, total suspended solids, ammonia, phosphorus, and volatile solids. Analysis for CBOD₅, Oil & Grease, Fecal Coliform, Total Kjehldahl Nitrogen, low-level mercury, heavy metals, and nitrate-nitrite nitrogen are run by a contracted outside laboratory (North Coast Labs).
- 7) The most recent Discharge Monitoring Report - Quality Assurance (DMRQA) Study (#31) unknown sample analyses were run by the WWTP and contracted outside lab. All results came back within acceptable analytical limits.

- 8) Final effluent flow is measured at the end of the Ultra Violet disinfection channel. The raw flow meter was calibrated September 8, 2011, by Control Associates. Wet weather flow rates can reach up to a maximum of approximately 4.5 million gallons.
- 9) Mr. Wells indicated consideration is being given by the Village to purchasing additional, adjacent property for the installation of Flow Equalization facilities. A minimum of two million gallons of storage is being evaluated. The proposed location of the new Flow Equalization facility is immediately east of the WWTP front gate entrance.
- 10) Also under consideration is the installation of a fine perforated bar screen at the headworks of the WWTP. Installation of the fine perforated bar screen would help eliminate introduction of the shredded plastic to the wastewater treatment process, thus reducing operation and maintenance efforts in the tertiary filter area.
- 11) Concurrent with the installation of a new fine bar screen, influent wastewater hydraulics at the head of the WWTP could be changed, allowing the plant to hydraulically handle more influent flow through the plant.
- 12) With the WWTP being able to accept a larger hydraulic flow into the plant, consideration will also be given to increasing the treatment capacity of the Ultra Violet disinfection system. The current UV system contains a total of 16 UV bulbs. The proposed expansion is for up to 32 UV bulbs, effectively doubling the current disinfection capability.
- 13) There are three full time employees at the Grafton WWTP, with coverage Monday through Friday from 7:00am to 3:30pm. During the weekend, personnel come into the WWTP for a check of the plant and pump stations.

When the WWTP is unmanned, the WWTP is monitored by computers, and in the event of an emergency, the Verbatim System autodial a call down list of superintendent and operators until someone is reached.

- 14) The recently renewed NPDES permit required the installation of an effluent outfall sign, containing specific information pertaining to the effluent; the owner of the outfall; the NPDES permit number; and a contact telephone number. The sign was installed in December 2011, and properly displayed the appropriate information.

- 15) The General Mercury Variance granted to the Village in their recently renewed NPDES permit requires the submittal of a mercury Pollutant Minimization Program (PMP) annual report by July 15th of each year. This serves as a reminder of that upcoming report submission due date.
- 16) Mr. Wells indicated two industries tributary to the sanitary sewer system may be potential sources of mercury to the Grafton WWTP. It was recommended that Mr. Wells follow-up with the industries as part of the PMP process.

According to analytical data contained in the electronic Discharge Monitoring Reports (eDMR) submitted to the Ohio EPA since the last inspection (August 1, 2010 through February 1, 2012), the Grafton WWTP has reported the following numeric violations for the final effluent:

**VILLAGE OF GRAFTON
NPDES PERMIT NO. 3PB00024
NUMERIC EFFLUENT VIOLATIONS
(AUG. 1, 2010 – FEB. 1, 2012)**

Reporting Period	Parameter	Limit Type	Limit	Reported Value	Violation Date
April 2011	Total Suspended Solids	30D Qty	68.2	100.284	4/1/2011
April 2011	Total Suspended Solids	7D Qty	102.3	115.476	4/15/2011
April 2011	Total Suspended Solids	7D Conc	18	27.4666	4/22/2011
April 2011	Total Suspended Solids	7D Qty	102.3	270.215	4/22/2011
April 2011	Phosphorus, Total (P)	7D Qty	8.5	8.6488	4/22/2011
September 2011	Mercury, Total (Low Level)	30D Conc	2.7	2.8	9/1/2011

The Village of Grafton should continue implementation of operation and maintenance practices that will enable the WWTP to consistently meet its NPDES Permit effluent limits. The Village should also continue with the implementation of the PMP requirements necessary for the continuation of the mercury variance as granted in the NPDES permit.

If there are any questions or comments regarding the contents of the report or this letter, please contact me at (330) 963-1110.

Respectfully,



Charles E. Allen
Environmental Engineer
Division of Surface Water

CEA/cs