



Environmental
Protection Agency

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

June 21, 2012

Village of Greenfield
Attention: Ms. Betty Bishop, Village Manager
P.O. Box 300
Greenfield, OH 45123

**RE: Village of Greenfield WWTW/Reconnaissance Inspection Report
NPDES Permit No. OH0021083/OEPA PERMIT NO. 1PD00022*GD**

Dear Ms. Bishop:

On June 14, 2012, I conducted an NPDES Reconnaissance Inspection at the village of Greenfield Wastewater Treatment Works (WWTW). Jim McCoy (Operator of Record), representing the facility, was present during the inspection, as was Brian Smith. The purpose of the inspection was to check on the construction progress of the WWTW improvements.

Items Noted During the Inspection

- Construction work continues on the village of Greenfield WWTW Phase II (and wet weather UV system) improvements. It is anticipated that the project will be completed by September 2012.
- As part of the upgrade, one of the final clarifiers was out of service in order to replace the drive mechanism, rake arm, scum skimmers, scum box, scum flushing valve, scum baffles and weirs. Work on the remaining clarifier was completed in early June.
- The surface of the operational clarifier contained a significant amount of "ash", which are fine sludge particles that are not filtered out in the solids flocculation and sedimentation process. Ashing can be caused by over-aeration in the biological treatment system or carrying a high mean cell residence time (MCRT) in the solids inventory. Mr. McCoy currently maintains a dissolved oxygen level of 6-7 mg/l in the jet aeration system. In a follow-up email sent after the inspection, I recommended that Mr. McCoy begin to either cycle the jet aeration system or reduce the aeration blowers so that dissolved oxygen levels are maintained in a 2-3 mg/l range. In conjunction with this, nitrogen-ammonia should be monitored frequently to ensure satisfactory nitrification is occurring at the reduced dissolved oxygen levels. MCRT levels should be tracked in order to identify an optimal sludge age for the overall treatment performance.
- Mr. McCoy is utilizing one of the jet aeration tanks for equalization during wet weather flows (it was empty at the time of the inspection). The alarm system is set to contact him once influent flow rates reach 4.5 MGD.
- The Village has experienced difficulties with the recirculation pumps in the #2 jet aeration tank that currently is being utilized for equalization. According to Mr. McCoy, cavitation has caused premature failure of the pumps in that particular tank. This is somewhat unusual, since the pump in the remaining jet aeration tank is not experiencing similar problems, although it did have a seal failure one year after it was put into service. All parties including the engineering firm (Woolpert), the pump manufacturer (Xylem) and the proprietor of the jet aeration system (Mass Transfer) have been notified of the

problem. Due to the high maintenance cost, the Village is interested in identifying and remedying the cause of the cavitation wear before resuming normal operation of the #2 aeration tank. Although if the aeration tank is needed to maintain compliance, Mr. McCoy assures me that the aeration tank will be put in service.

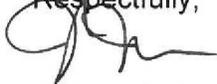
- The Village should provide Ohio EPA with frequent updates on this issue, especially since it could affect compliance with the NPDES permit.
- A review of the Village's discharge monitoring reports from December 2011 through May 2012, revealed two NPDES effluent limit violations:

Reporting Period	Station	Parameter	Limit Type	Limit	Reported Value	Violation Date
December 2011	001	Phosphorus, Total (P)	7D Qty	9.1	9.27522	12/1/2011
January 2012	001	Total Suspended Solids	7D Qty	110	145.593	1/15/2012

- The Village has reported two tank overflow (bypass) events in 2012, both of which occurred during wet weather events. The WWTW improvement project includes tank piping additions, which are designed to convey more flow between tanks. An additional line was also installed after post aeration. This line will convey treated wastewater through a wet weather ultraviolet disinfection system and into the US Army Corps of Engineers pump station, which is utilized for pumping treated wastewater effluent into Paint Creek. With these improvements, the Village does not anticipate tank overflows in the future.
- The Village has still experienced collection system overflows at the Washington & Oak Street manhole. In order to alleviate this condition, the Village will be making changes to the South Jefferson Street pump station, which is the main pump station in the collection system, so that all flow from the lift station will be diverted to a section of town that is *not* a tributary to the Washington & Oak Street overflow. The Village is currently working on this project and it is expected to be completed by no later than June 30, 2012. The Village is also installing a new telemetry system for the pump station as well.
- The effluent was clear of observable solids and the receiving stream appeared free of sludge deposits attributed to the WWTW.

Thank you and your staff for the time extended during the inspection process. If you have any questions, please feel free to contact me by phone at (937) 285-6029 or by email at joshua.jackson@epa.state.oh.us.

Respectfully,



Joshua Jackson
Environmental Specialist II
Division of Surface Water

cc: Jim McCoy, Village of Greenfield (w/report and attachments)

Enclosures

JJ/ca



**Environmental
Protection Agency**

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

NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
1PD00022*GD	OH0021083	6/14/2012	R	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
City of Greenfield WWTW 187 Lost Bridge Road Greenfield (Ross County)	9:30 a.m.	6/1/2009
	Exit Time	Permit Expiration Date
	11:00 a.m.	7/31/2013
Name(s) and Title(s) of On-Site Representatives		Phone Number(s)
Jim McCoy, Operator of Record		937-981-3413
Name, Address and Title of Responsible Official		Phone Number
City of Greenfield Attn: Ms. Betty Bishop, City Manager 300 Jefferson Street Greenfield, OH 45123		937-981-3500

Section C: Areas Evaluated During Inspection					
(S = Satisfactory, M = Marginal, U = Unsatisfactory, N = Not Evaluated)					
S	Permit	N	Flow Measurement	N	Pretreatment
S	Records/Reports	N	Laboratory	N	Compliance Schedule
S	Operations & Maintenance	S	Effluent/Receiving Waters	N	Self-Monitoring Program
S	Facility Site Review	N	Sludge Storage/Disposal	N	Other
N	Collection System				

Section D: Summary of Findings (Attach additional sheets if necessary)	
See cover letter.	

Inspector	Reviewer
Joshua Jackson Division of Surface Water Southwest District Office	Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office
Date	Date