



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

May 13, 2013

RE: PORTAGE COUNTY  
VILLAGE OF MANTUA  
MANTUA WWTP  
NPDES PERMIT NO. OH0025917  
OHIO EPA PERMIT NO. 3PB00031

Anthony Fiorilli III, Village Administrator  
Village of Mantua  
4650 West High Street  
P.O. Box 775  
Mantua, Ohio 44255

Dear Mr. Fiorilli:

On April 15, 2013, an inspection of the wastewater treatment plant (WWTP) serving the Village of Mantua was conducted by the undersigned. The facility was represented by Operator of Record (ORC), Mr. Matthew Kohn. The purpose of the inspection was to evaluate the facility's compliance status with respect to the terms and conditions of the above-referenced National Pollutant Discharge Elimination System (NPDES) permit. During the course of the inspection, evaluations were conducted of the treatment processes, effluent discharge quality, laboratory, and biosolids management.

At the close of the inspection, I met with you to discuss the general inspection findings.

#### **NPDES Permit Status**

The current NPDES permit for this facility became effective on June 1, 2010 and will expire on May 31, 2015. The permit authorizes an average daily discharge of 0.5 MGD from the facility to the Cuyahoga River.

#### **Facility Description**

The treatment processes consist of influent comminutors, influent lift station, flow equalization basins, oxidation ditches, final clarifiers, post aeration, and UV disinfection.

Sludge handling consists of aerobic digestion, sludge holding, and sludge drying beds. The dewatered biosolids are generally hauled to local farms by Agri-Sludge, Inc. for agricultural land application.

Bypass of treatment can occur during wet weather events when flow in the collection system is diverted to the equalization tank. This **unpermitted** EQ basin overflow mixes with the treated effluent prior to discharge at Outfall 001. No overflow events have occurred since permit issuance. Please be advised that the diverting or bypassing of wastewater from any portion of the treatment facility is generally prohibited. All such events must be reported as an

**ANTHONY FIORILLI III, VILLAGE ADMINISTRATOR**  
**VILLAGE OF MANTUA**  
**MAY 13, 2013**  
**PAGE 2 OF 9**

unauthorized discharge in accordance with Part III, Items 11 and 12, of your NPDES permit. This includes notification by email/telephone and confirmation in writing.

**Inspection Findings/Compliance Status**

At the time of the April 15<sup>th</sup> inspection, the general operation and maintenance of the treatment processes and equipment was found to be marginal. Much of the problem was directly attributed to the fact that the plant was carrying an excessive inventory of mixed liquor suspended solids (MLSS) and waste activated sludge (WAS). The MLSS concentration in the north Oxidation Ditch was in excess of 7,000 mg/l. The digester and sludge holding tanks were also at full capacity with WAS. Solids carryover was clearly evident at the clarifiers.

We understand that appropriate funds were not allocated in 2012 to remove the necessary amount of WAS for land application. As discussed with you, WAS must be routinely removed from the biological treatment process in order to keep the ratio of MLSS to food supplied in the wastewater in balance. Failure to maintain this balance, i.e. via proper WAS management, inherently leads to a loss of operational control of the wastewater treatment system.

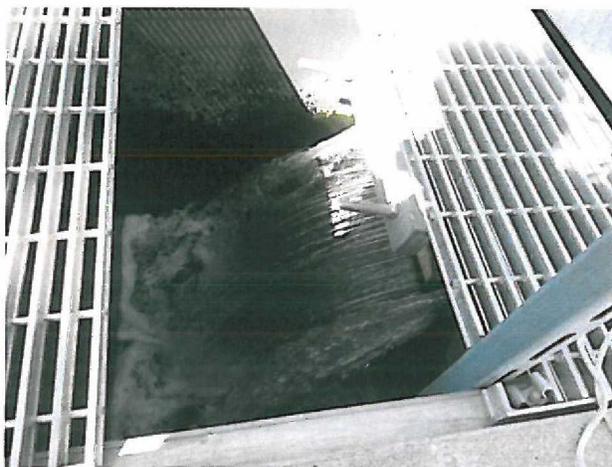
To compound matters, the facility had been accepting approximately 6,000 - 7000 gallons of septage per week from local haulers. Ohio EPA records do not indicate that the facility was ever authorized to accept any "trucked-in" wastes. In addition to the high organic load, this hauling may have contributed to the excessive volume of rags/debris observed at various locations in the plant.



**ANTHONY FIORILLI III, VILLAGE ADMINISTRATOR**  
**VILLAGE OF MANTUA**  
**MAY 13, 2013**  
**PAGE 3 OF 9**



ANTHONY FIORILLI III, VILLAGE ADMINISTRATOR  
VILLAGE OF MANTUA  
MAY 13, 2013  
PAGE 4 OF 9



As a result of the inspection, the facility was directed to immediately cease the acceptance of any septage until further notice from Ohio EPA. Additionally, Mr. Kohn was asked to place the south Oxidation Ditch in service in order to reduce the risk of a solids washout.

The inspection also documented that neither the influent or effluent automatic composite samplers had been utilized in many years. We understand that the facility had been collecting "manual" composite samples during the time that the facility is normally staffed, 7AM - 11AM. This calls into question the validity of the sampling data that has been reported to Ohio EPA over the years. Part II of the NPDES permit specifically states that:

- ***Composite samples shall be comprised of a series of grab samples collected over a 24-hour period and proportionate in volume to the sewage flow rate at the time of sampling. Such samples shall be collected at such times and locations, and in such a fashion, as to be representative of the facility's overall performance.***



- The facility lacks the appropriate mechanical filtration apparatus for use in filtering solids samples. The use of a water aspirator can often be a slow and tedious process.
- The laboratory refrigerator was inoperative and must be repaired or replaced.
- The existing DO probe and meter must be evaluated to determine if they are operating correctly. If not, they must be repaired or replaced.
- The analysis of duplicate samples is not being performed. General laboratory procedures require that blanks, spiked, and duplicate samples should be run with each batch of samples. Quality control charts should be developed from the results of standards, duplicates, and spikes.
- In the CBOD procedure, effluent samples that are collected after disinfection must be "seeded". Additionally, a glucose-glutamic acid (GGA) standard should be analyzed with each batch of tests.
- Thermometers, immersed in liquid, are maintained in the composite samplers. All thermometers are to be calibrated annually against a NIST-traceable thermometer. Additionally, temperature logs must be kept of all refrigerators, ovens, water baths, incubators, etc. during the periods that the equipment is in use.

**Discharge Monitoring Reports (DMR)**

Discharge monitoring reports (DMR) received by Ohio EPA for the period January 2011 through March 2013, were reviewed. A summary of the Outfall 001 discharge data is listed in Attachment A. Additionally, the effluent data was reviewed for compliance with the final effluent limitations and monitoring requirements of the NPDES permit. A summary of the specific violations are cited in Attachment B.

**ANTHONY FIORILLI III, VILLAGE ADMINISTRATOR**  
**VILLAGE OF MANTUA**  
**MAY 13, 2013**  
**PAGE 5 OF 9**



It was noted that the pH, DO, and temperature sensors at the effluent station should be checked and calibrated as necessary.



### **Laboratory Review**

The review of the plant laboratory noted that the following permit parameters were being analyzed in-house: dissolved oxygen (DO), pH, Temperature, cBOD, and Total Suspended Solids (TSS). The balance of the permit parameters are analyzed by external laboratories (.e.g. Portage County). The following major highlights were noted during the review:

- The facility must develop written standard operating procedures (SOPs) for sample collection, storage, transport, analyses, quality control, and record keeping.
- The facility was using a significantly out-dated two pan balance in the TSS procedure. Mr. Kohn was advised that analytical balances must have a capability of weighing to an accuracy of 0.0001 gram (0.1 mg) and, thus, all samples were to be sent out until such time as a new balance was purchased. Additionally, the replacement balance must be situated on a heavy shock-proof table.

**ANTHONY FIORILLI III, VILLAGE ADMINISTRATOR**  
**VILLAGE OF MANTUA**  
**MAY 13, 2013**  
**PAGE 7 OF 9**

Please be advised that any violations referenced herein are subject to appropriate enforcement actions pursuant to Chapter 6111 of the Ohio Revised Code. Such actions can result in the imposition of fines of up to \$10,000 per day of violation.

During subsequent telephone conversations with Village representatives, we were informed that many of the items referenced in this letter have been or are in the process of being addressed. In the interest of establishing a complete record, we are requesting that you itemize the improvements that have been made, along with the dates of completion, in writing to this office. Your response must be submitted as soon as possible but by no later than June 1, 2013.

If you should have any questions, please contact this office at (330) 963-1196.

Respectfully,



Ermelindo Gomes  
Environmental Engineer  
Division of Surface Water

EG/cs

File: Public/ Mantua/Permit-Compliance

**ANTHONY FIORILLI III, VILLAGE ADMINISTRATOR**  
**VILLAGE OF MANTUA**  
**MAY 13, 2013**  
**PAGE 8 OF 9**

Attachment A: Mantua WWTP Effluent Summary Data (1/2012 – 3/2013)						
Parameter	Season	Units	# Obs.	50 <sup>th</sup>	95 <sup>th</sup>	Data Range
Outfall 001						
Water Temperature	Annual	C	599	12	22	3-24
Dissolved Oxygen	Annual	mg/l	599	9.4	11.9	6.7-13.9
pH	Annual	S.U.	599	6.9	7.4	6.6-8.2
Total Suspended Solids	Annual	mg/l	226	6	14.3	1-263
Oil and Grease, Hexane Extr Method	Annual	mg/l	28	2.5	2.63	2.5-2.8
Nitrogen, Ammonia (NH3)	Annual	mg/l	247	0.09	6.71	0.02-19.2
Nitrite Plus Nitrate, Total	Annual	mg/l	28	24.6	63.7	0.7-66.2
Phosphorus, Total (P)	Annual	mg/l	28	0.34	0.839	0.2-0.88
Cyanide, Free	Annual	mg/l	9	0.01	0.604	0.01-1
Nickel, Total Recoverable	Annual	ug/l	9	5	5	1-5
Zinc, Total Recoverable	Annual	ug/l	9	10	10	1-10
Cadmium, Total Recoverable	Annual	ug/l	9	1	2	0.5-2
Lead, Total Recoverable	Annual	ug/l	9	5	5	1-5
Chromium, Total Recoverable	Annual	ug/l	9	2	5	1-5
Copper, Total Recoverable	Annual	ug/l	9	5	5	1-5
Chromium, Dissolved Hexavalent	Annual	ug/l	9	1	10	0.01-10
Fecal Coliform	Annual	#/100 ml	9	42	211	4-254
E. coli	Annual	#/100 ml	95	12	986	2-2420
Flow Rate	Annual	MGD	850	0.224	0.49	0.091-1.22
Mercury, Total (Low Level)	Annual	ng/l	9	4.53	10.8	0.5-11.2
CBOD 5 day	Annual	mg/l	239	2.1	6	1-10.8

Attachment B: Mantua WWTP Numeric Effluent Violations (1/2011 – 3/2013)						
Reporting Period	Station	Parameter	Limit Type	Limit	Reported Value	Violation Date
March 2011	001	Nitrogen, Ammonia (NH3	30D Conc	1.7	4.159	3/1/2011
March 2011	001	Nitrogen, Ammonia (NH3	30D Qty	3.22	9.22173	3/1/2011
March 2011	001	Phosphorus, Total (P)	30D Conc	0.60	.86	3/1/2011
March 2011	001	Phosphorus, Total (P)	30D Qty	1.14	1.71218	3/1/2011
March 2011	001	Nitrogen, Ammonia (NH3	7D Conc	2.5	10.8	3/8/2011
March 2011	001	Nitrogen, Ammonia (NH3	7D Qty	4.74	24.1589	3/8/2011
March 2011	001	Nitrogen, Ammonia (NH3	7D Conc	2.5	9.765	3/15/2011
March 2011	001	Nitrogen, Ammonia (NH3	7D Qty	4.74	21.5078	3/15/2011
March 2011	001	Phosphorus, Total (P)	7D Qty	1.71	1.71218	3/15/2011
June 2011	001	E. coli	7D Conc	284	2000.	6/1/2011
July 2011	001	Phosphorus, Total (P)	30D Conc	0.60	.67	7/1/2011
July 2011	001	E. coli	7D Conc	284	330.	7/1/2011

**ANTHONY FIORILLI III, VILLAGE ADMINISTRATOR**  
**VILLAGE OF MANTUA**  
**MAY 13, 2013**  
**PAGE 9 OF 9**

<b>Attachment B: Mantua WWTP Numeric Effluent Violations (1/2011 – 3/2013)</b>						
<b>Reporting Period</b>	<b>Station</b>	<b>Parameter</b>	<b>Limit Type</b>	<b>Limit</b>	<b>Reported Value</b>	<b>Violation Date</b>
August 2011	001	Nitrogen, Ammonia (NH3	30D Conc	1.4	8.066	8/1/2011
August 2011	001	Nitrogen, Ammonia (NH3	7D Conc	2.1	4.445	8/1/2011
August 2011	001	Nitrogen, Ammonia (NH3	30D Qty	2.65	7.42282	8/1/2011
August 2011	001	E. coli	7D Conc	284	330.454	8/1/2011
August 2011	001	Nitrogen, Ammonia (NH3	7D Conc	2.1	5.78	8/8/2011
August 2011	001	Nitrogen, Ammonia (NH3	7D Qty	3.98	4.93655	8/8/2011
August 2011	001	Nitrogen, Ammonia (NH3	7D Conc	2.1	18.8	8/15/2011
August 2011	001	Nitrogen, Ammonia (NH3	7D Qty	3.98	19.7312	8/15/2011
August 2011	001	Nitrogen, Ammonia (NH3	7D Conc	2.1	11.21	8/22/2011
August 2011	001	Nitrogen, Ammonia (NH3	7D Qty	3.98	8.68446	8/22/2011
September 2011	001	Total Suspended Solids	30D Conc	11.9	188.888	9/1/2011
September 2011	001	Total Suspended Solids	7D Conc	17.9	200.5	9/1/2011
September 2011	001	Total Suspended Solids	30D Qty	22.7	211.687	9/1/2011
September 2011	001	Total Suspended Solids	7D Qty	34.1	173.093	9/1/2011
September 2011	001	Total Suspended Solids	7D Conc	17.9	188.	9/8/2011
September 2011	001	Total Suspended Solids	7D Qty	34.1	195.639	9/8/2011
September 2011	001	Total Suspended Solids	7D Conc	17.9	118.5	9/15/2011
September 2011	001	Total Suspended Solids	7D Qty	34.1	136.640	9/15/2011
September 2011	001	Total Suspended Solids	7D Conc	17.9	241.	9/22/2011
September 2011	001	Total Suspended Solids	7D Qty	34.1	322.517	9/22/2011
October 2011	001	Nitrogen, Ammonia (NH3	7D Conc	2.1	2.18667	10/22/2011
April 2012	001	Nitrogen, Ammonia (NH3	30D Conc	1.7	4.67778	4/1/2012
April 2012	001	Nitrogen, Ammonia (NH3	30D Qty	3.22	3.28693	4/1/2012
April 2012	001	Nitrogen, Ammonia (NH3	7D Conc	2.5	5.85	4/8/2012
April 2012	001	Nitrogen, Ammonia (NH3	7D Conc	2.5	5.9	4/15/2012
April 2012	001	Nitrogen, Ammonia (NH3	7D Conc	2.5	5.1	4/22/2012
May 2012	001	Phosphorus, Total (P)	30D Conc	0.60	.88	5/1/2012
June 2012	001	Phosphorus, Total (P)	30D Conc	0.60	.8	6/1/2012
June 2012	001	E. coli	7D Conc	284	632.957	6/8/2012
July 2012	001	Nitrogen, Ammonia (NH3	30D Conc	1.4	3.3125	7/1/2012
July 2012	001	Nitrogen, Ammonia (NH3	7D Conc	2.1	11.8	7/1/2012
July 2012	001	Nitrogen, Ammonia (NH3	7D Qty	3.98	6.61921	7/1/2012
August 2012	001	Phosphorus, Total (P)	30D Conc	0.60	.67	8/1/2012
March 2013	001	Nitrogen, Ammonia (NH3	7D Conc	2.5	4.65667	3/1/2013