



**Environmental
Protection Agency**

Ted Strickland, Governor
Lee Fisher, Lt. Governor
Chris Korleski, Director



1PC0001320100114

GREENE YELLOW SPRINGS WWTP

JACKSON, JOSHUA 2010/01/14



State of Ohio Environmental Protection Agency

Southwest District Office

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January 11, 2010

Copy
Village of Yellow Springs
Attn: Mr. Mark Cundiff
100 Dayton Street
Yellow Springs, OH 45387

**RE: Village of Yellow Springs WWTW/Reconnaissance Inspection Report
NPDES Permit No. OH0028215/OEPA PERMIT NO. 1PC00013*HD**

Dear Mr. Cundiff:

On January 6, 2010, Michelle Waller and I conducted an NPDES Compliance Evaluation Inspection at the Village of Yellow Springs wastewater treatment works (WWTW). Joe Bates (Operator of Record), Saa Shemsu (LJB, Inc.) and Rick Trout (Kirk Bros.) were present during the inspection. The purpose of the inspection was to evaluate compliance with the terms and conditions of the NPDES Permit and to complete an construction site visit required by WPCLF and ARRA funding.

A copy of the report on the inspection is enclosed. Three evaluated sections received below "Satisfactory" ratings due to various reasons shown in the report. **Please pay attention to the "items requiring correction" in bold type, as there are associated compliance schedules.**

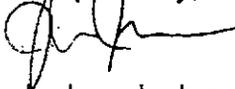
During the inspection, Mr. Bates was given example SOPs and/or sections of Standard Methods for every analytical method performed at the WWTW. **It is expected that the Village of Yellow Springs develop SOPs for the following analytical procedures (at a minimum) by no later than May 1, 2010: pH, temperature, dissolved oxygen, chlorine residual and sample collection.** Each of the SOPs should comply with the analytical methods outlined in Standard Methods. The next compliance inspection to be conducted at the Village of Yellow Springs WWTW will most likely include a more in depth examination of the laboratory than has been done previously. The intent is to assist the village in being able to document that the data produced by the laboratory is "true and accurate" and is therefore defensible.





If you have any questions, please feel free to contact me by phone at (937) 285-6029 or by e-mail at joshua.jackson@epa.state.oh.us.

Respectfully,



~~Joshua Jackson~~

Environmental Specialist II
Division of Surface Water

Cc: Joe Bates, Village of Yellow Springs (w/report)

Enclosure





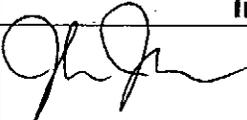
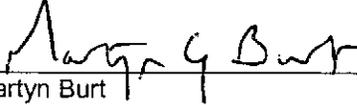
State of Ohio Environmental Protection Agency
Southwest District Office

NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
1PC00013*HD	OH0028215	1/6/2010	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
Village of Yellow Springs WWTW 3835 Grinnell Road Yellow Springs, Greene County	10:00 a.m.	9/1/2005
	Exit Time	Permit Expiration Date
	1:00 p.m.	8/31/2010
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Joe Bates, Operator of Record Brad Ault, Operator	937-767-7208	
Name, Address and Title of Responsible Official	Phone Number	
Mark Cundiff, Village Manager Village of Yellow Springs 100 Dayton Street Yellow Springs, OH 45387	937-767-1279	

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

Section D: Summary of Findings (Attach additional sheets if necessary)	
See Attached Report.	
Inspector	Reviewer
 Joshua Jackson Division of Surface Water Southwest District Office	 Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office
Date 1-11-10	Date 1/14/2010



Permit # : 1PC00013*HD

NPDES #: OH0028215

Sections E thru K: Complete on all inspections as appropriate

Y – Yes, N – No, N/A – Not Applicable, N/E – Not Evaluated

Section E: Permit Verification

Inspection observations verify the permit

- (a) Correct name and mailing address of permittee Y
- (b) Flows and loadings conform with NPDES permit..... Y
- (c) Treatment processes are as described in permit application... Y
- (d) All discharges are permitted..... Y
- (e) Number and location of discharge points are as described
in permit..... Y
- (f) Storm water discharges properly permitted..... Y

Comments/Status:

No storm water catch basins on site.

Section F: Compliance

- (a) Any significant violations since the last inspection..... Y
- (b) Appropriate Non-compliance notification of violations..... Y
- (c) Permittee is taking actions to resolve violations..... Y
- (d) Permittee has a compliance schedule..... Y
- (e) Compliance schedule contained in...NPDES Permit Compliance Schedule
- (f) Permittee is in compliance with schedule..... N
- (g) Has biomonitoring shown toxicity in discharge since last inspection N/A

Comments/Status:

Ohio EPA is in the process of negotiating Administrative Orders with the Village over NPDES compliance schedule violations and past effluent limit violations. Because the Village has not complied with the NPDES compliance schedule, a rating of "Unsatisfactory" was given for this section of the report.



Section G: Operation & Maintenance

Treatment Works:

Treatment facility properly operated and maintained

(a) Standby power available.....generator or dual feed N

i. What does the back-up power source operate.....

ii. How often is the generator tested under load.....

N/A

(b) Which components have an alarm system available for power or equipment failures.....

Mr. Bates is notified, via dialer, when the power to the WWTW is out.

(c) All treatment units in service other than backup units..... N

(d) What method is used for scheduling routine & preventative maintenance (calendar, software, etc.).....

Calendar. Mr. Bates is investigating software to replace the current system.

(e) Any major equipment breakdown since last inspection..... Y

(f) Operation and maintenance manual provided and maintained..... Y

(g) Any plant bypasses since last inspection..... N

(h) Any plant upsets since last inspection..... N

Comments/Status:

The WWTW does not currently have a generator but one will be provided with the WWTW upgrade that is underway.

One clarifier drive unit has been rebuilt and the entire center assembly has been sand blasted and painted. This unit has been down since September of 2009. Yellow Springs plans to have this local contractor install the Current Density Baffles prior to reassembly of the clarifier. The whole process will be repeated for the remaining clarifier in the Spring.



Section G: Operation & Maintenance con't

Record Keeping/Operator of Record:

- (a) Wastewater Treatment Works classification (OAC 3745-7)..... II
- (b) Operator of Record holds unexpired license of class required by Permit..... Y
- (c) Copy of certificate of Operator of Record displayed on-site..... Y
- (d) Has the Operator of Record submitted an ORC Notification form.. Y
- (e) Minimum operator staffing requirements fulfilled (OAC 3745-7).... Y
- (f) If a Staffing Reduction plan has been approved, are the stipulations of the plan being met..... N/A
- (g) Operator of Record log book provided..... Y
- (h) Format of log book (e.g. computer log, hard bound book)

A log book has been provided however it is not hard bound/numbered. Mr. Bates will purchase the correct log book. Mr. Bates will also start recording his time at the WWTW on the log book.
- (i) Log book kept onsite (in an area protected from weather)..... Y
- (j) Log book contains the following:
 - I. Identification of treatment works..... Y
 - II. Date/times of arrival/departure for Operator of Record and any other operator required by OAC 3745-7..... N
 - iii. Daily record of operator and maintenance activities (including preventative maintenance, repairs and request for repairs, process control test results, etc.)..... Y
 - iv. Laboratory results (unless documented on bench sheets)... N
 - v. Identification of person making entries..... Y
- (k) Has the Operator of Record submitted written notifications to the permittee, Ohio EPA and, if applicable, any local environmental agencies when a collection system overflow, treatment plant bypass or effluent limit violation has occurred..... N/A

Comments/Status:



Section G: Operation & Maintenance con't

Collection System:

- (a) Are there pump stations in the collection system..... Y
 - i. How many publicly-owned pump stations equipped with permanent standby power or equivalent.....0
 - ii. How many pump stations have telemetered alarms.....0
 - iii. How many pump stations have operable alarms.....0

- (b) Any chronic collection system overflows since last inspection..... N
- (c) Regulatory agency notified of all overflows..... N/A
- (d) Are there CSOs in the collection system..... N
if so, what is the LCTP status.....
- (e) How are CSOs monitored (chalk, block, level sensor, etc.).....
- (f) Portable pumps available for collection system maintenance..... Y
- (g) RDII Program established and active..... N
- (h) Any WIB complaint received since last inspection..... N/E
- (i) Is there a WIB response plan..... N/E
- (j) Is any portion of the collection system at or near dry weather capacity..... N

Comments/Status:

There is one pump station in the Village's collection system and it is equipped with a level sensor and pump cycle totalized that is telemetered back to the WWTW. There is, however, no alarm for the pump station in the event of high wet well levels.

Since Mr. Bates is responsible for Water-in-Basement complaint reporting. Mr. Bates should be made aware of all WIB complaints and the response plan for these event. At the time of the inspection, he did not have this information available.



Section H: Sludge Management

- (a) Method of Sludge Disposal... Land Application
 Haul to Another NPDES Permittee
 Haul to a Mixed Solid Waste Landfill

*if one of the selected methods is land application, complete applicable charts.

Class B Sewage Sludge (monitoring station 581)

Pathogen Reduction Alternative	84370 Vector Attraction Reduction Options									
	Option 1 -38% Volatile Solids Reduction	Option 2 -Anaerobic Bench Scale Analysis	Option 3 - Aerobic Bench Scale Analysis	Option 4 - Specific Oxygen Uptake Rate	Option 5 - Aerobic Time and Temperature	Option 6 - Alkali Addition	Option 7 - >75% Percent Solids without Unstabilized	Option 8 - >75% Percent Solids with Unstabilized	Option 9 - Land Injection	Option 10 - Immediate Incorporation
Alternative 1 - Geometric Mean of Seven Fecal Samples (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

- (b) Has amount of sludge generated changed significantly since the last inspection..... N
- (c) How much sludge storage is provided at the plant.....
 The new plant will have well over 200 days.
- (d) Records kept in accordance with State and Federal law (5 years according to OAC 3745-40-06)..... Y
- (e) Any complaints received in last year regarding sludge..... N
- (f) 5/8" screen at headworks for facilities that land apply sludge..... Y
- (g) Are sludge application sites inspected to verify compliance with NPDES permit..... Y
- (h) Is a contractor used for sludge disposal..... Y
 If so, what is the name of the contractor.....
 Synagro

Comments/Status:

Mr. Bates will check with Synagro to see whether other farm fields are available for the "immediate incorporation" or "land injection" vector attraction reduction options. It seems there are times when the SOUR option can not be met, so more flexibility is needed.



Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary/Secondary flow measuring devices (e.g. weir with ultrasonic level sensor):
- (b) Flow meter calibrated annually Y
(Date of last calibration: 12/1/2009)
- (c) 24-hour recording instruments operated and maintained..... Y
- (d) Flow measurement equipment adequate to handle full range of flows..... Y
- (e) All discharged flow is measured..... Y

Comments/Status:

Section I: Self-Monitoring Program (con't)

Sampling:

- (a) Sampling location(s) are as specified by permit..... Y
- (b) Parameters and sampling frequency agree with permit..... Y
- (c) Permittee uses required sampling method..... Y
(see GLC page)
- (d) Monitoring records (i.e., flow, pH, DO) maintained for a minimum of three years including all original strip chart recordings (i.e, continuous monitoring instrumentation, calibration and maintenance records)..... Y

Comments/Status:



Section I: Self-Monitoring Program (con't)

Laboratory:

General

(a) Does the Quality Assurance Manual contain written Standard Operating Procedures (SOP's) for all analysis performed onsite..... N

(b) Do SOP's include the following if applicable:

- Title
- Scope and Application
- Summary
- Sample Handling and Preservation
- Interferences
- Apparatus and Materials
- Reagents
- Procedure
- Calculations
- Quality Control
- Maintenance
- Corrective Action
- Reference (Parent Method)

Note: Standard Methods 1020A establishes that "Quality assurance (QA) is the definitive program for laboratory operation that specifies the measure required to produce defensible data of known precision and accuracy. "Standard operating procedures are to be used in the laboratory in sufficient detail that a competent analyst unfamiliar with the method can conduct a reliable review and/or obtain acceptable results." SOPs should be developed for each analytical procedure.

(c) EPA approved analytical testing procedures used (40 CFR 136.3).. Y

(d) If alternate analytical procedures are used, proper approval has been obtained..... N/A

(e) Analyses being performed more frequently than required by permit. Y

(f) If (e) is yes, are results in permittee's self-monitoring report..... Y

(g) Satisfactory calibration and maintenance of instruments/equipment. N (see score from GLC page)

(h) Commercial laboratory used..... Y

Parameters analyzed by commercial lab: all parameters with the exception of temperature, pH, DO, and Cl₂

Lab name: Belmont Labs

Discharge Monitoring Report Quality Assurance (DMRQA)

(a) Participation in latest USEPA quality assurance performance sampling..... N

Date:

(b) Were any parameters "Unsatisfactory"..... N/A

(c) Reasons for "Unsatisfactory" parameters.....

Comments/Status:



Section J: Effluent/Receiving Water Observations

Outfall # 001

Outfall Description: Clear with the exception of intermittent floating clumps of solids breaking loose from the chlorine contact tank and clarifier.

Receiving Stream: Unnamed trib to Yellow Springs Creek

Receiving Stream Description: Did not walk down to Yellow Springs Creek, but the receiving tributary did not show obvious signs of solids deposition.

Comments/Status:

Section K: Multimedia Observations

- (a) Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories..... N
- (b) Do you notice staining or discoloration of soils, pavement or floors.. N
- (c) Do you notice distressed (unhealthy, discolored, dead) vegetation.. N
- (d) Do you see unidentified dark smoke or dust clouds coming from sources other than smokestacks..... N
- (e) Do you notice any unusual odors or strong chemical smells..... N
- (f) Do you see any open or unmarked drums, unsecured liquids, or damaged containment facilities..... N

If any of the above are observed, ask the following questions:

- (1) What is the cause of the condition?
- (2) Is the observed condition or source a waste product?
- (3) Where is the suspected contaminant normally disposed?
- (4) Is this disposal permitted?
- (5) How long has the condition existed and when did it begin?

Comments/Status:



Inspection Findings

The Village of Yellow Springs wastewater treatment works (WWTW) is designed to treat an average daily of 0.6 million gallons/day. A review of the discharge monitoring reports (DMRs) show an average daily flow of 0.35 MGD. The Village started construction of the WWTW upgrade in October 2009. The Permit to Install was issued by Ohio EPA to the Village on July 1, 2009. In general, this upgrade will include installation/construction of the following salient features:

- Earthen overflow basin (Overflow box will divert influent flow in excess of 3.93 MGD to the overflow basin until flows subside. Wastewater in the overflow basin will then be pumped back to the head of the plant.)
- Mechanical fine screen (6.0 MGD capacity – ¼ inch openings)
- Grit Removal (4.0 MGD capacity – “Vortex”)
- Conversion of existing extended aeration activated sludge system to a biological nutrient removal plant (~500,000 gallons of tank volume)
- Conversion of existing aerobic digester and sludge storage tank to a “Sequencing Facultative Digester”
- Side stream Phosphorus treatment for digester supernatant and sludge dewatering filtrate
- Back-up Generator (350 KW – which will power all essential equipment)
- Supervisor Control and Data Acquisition (SCADA) system via DeviceNet.

*At the time of the inspection, the majority of the earthen overflow basin had been excavated. Foundation work had also begun on sand filter walls for the side stream phosphorus treatment.

EFFLUENT LIMIT VIOLATIONS (Period of Review: January 2009 – November 2009)

7D = Weekly 30D = Monthly 1D = Daily
 Conc. = Concentration (mg/l) Qty. = Quantity (Kg/Day)

Reporting Period	Parameter	Limit Type	Limit	Reported Value
September 2009	Total Suspended Solids	30D Conc	18	23.375
September 2009	Nitrogen, Ammonia (NH3)	30D Conc	1.5	5.07875
September 2009	Nitrogen, Ammonia (NH3)	30D Qty	3.4	6.1664
September 2009	Total Suspended Solids	7D Conc	30	39.5
September 2009	Nitrogen, Ammonia (NH3)	7D Conc	2.3	7.805
September 2009	Nitrogen, Ammonia (NH3)	7D Qty	5.2	8.61269
September 2009	Nitrogen, Ammonia (NH3)	7D Conc	2.3	11.125
September 2009	Nitrogen, Ammonia (NH3)	7D Qty	5.2	14.4724



*These violations were discussed in the report for the compliance inspection conducted in November 2009. According to Mr. Bates Synagro removed a year's worth of sludge from the digesters during the month of August 2009. Once Synagro was completed, Mr. Bates believes that he wasted too many solids from the aeration basin to the digester in an effort to reduce the inventory. This action left the aeration mixed liquor thin and less effective; thereby causing the September violations.

Items Noted During the Inspection

1. Both influent and effluent sampler lines were frozen at the time of the inspection. Mr. Bates was performing manual composite sampling throughout the duration of an 8-hour shift. It was expected that the situation would be remedied by the end of the week by re-wrapping the tubing with heat tape.
2. The thermometers in the composite sampler refrigerator were not immersed in water (enclosed chamber thermometers). Proper thermometers must be acquired without delay. For QA/QC purposes, the Village should also document sampler refrigeration temperature on sampling days to verify appropriate holding temperature.
3. As mentioned earlier, one of the clarifiers was down for service (drive unit rebuild and painting of interior components). Mr. Bates was hopeful that the Current Density baffles could be installed while the clarifier was down, so that it wouldn't need to be taken down again. The remaining clarifier will be taken down in the spring for the same reasons.
4. Floating clumps of solids were observed in the chlorine contact tank. This is a condition that Mike Zimmerman observed while conducting the compliance inspection in November 2009. Because of this, a rating of "Unsatisfactory" was given for the "Effluent/Receiving Waters" section of this report. These solids were partially due to denitrifying solids that have settled in the chlorine contact tank and also to having just one clarifier on-line.

The Village should clean the chlorine contact tank as soon as possible but no later than February 15, 2010. The Village should also install "floating" baffles near the effluent that would capture any further floating debris during the construction process. These baffles should be installed no later than February 15, 210.

5. Other than the occasional floating clump of solids, the effluent was clear. The WWTW did not have any objectionable odors that are indicative of poor treatment.



Quality Assurance & Standard Operating Procedures

The foundation of the NPDES permitting program is the reliability of data "self-reported" by wastewater dischargers under permit. Part III, 3., of the Village's NPDES permit requires "All wastewater treatment works shall be operated in a manner consistent with the following: At all times, the permittee shall maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems installed or used by the permittee necessary to achieve compliance with the terms and conditions of this permit. *Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures...*" Part III, 5., goes on to say, "Test procedures for the analysis of pollutants shall conform to regulation 40 CFR 136... The permittee shall periodically calibrate and perform maintenance procedures on all monitoring and analytical instrumentation at intervals to insure accuracy of measurements."

The federal regulatory benchmark for all water and wastewater sampling/laboratory procedures is 40 CFR 136. This rule lists acceptable sampling and laboratory procedures published in "Standard Methods for the Examination of Water and Wastewater" (Standard Methods) among other resources such as the American Society for Testing and Materials (ASTM). Standard Methods is a comprehensive reference widely used throughout the industry and is cooperatively published by the American Water Works Association, Water Environment Federation and the American Public Health Association.

Standard Methods 1020A establishes that "Quality assurance (QA) is the definitive program for laboratory operation that specifies the measure required to produce defensible data of known precision and accuracy". *Without a QA program, the Village is without defensible data showing compliance with the NPDES permit.* Standard Methods goes on to require the inclusion of Standard Operating Procedures (SOP) for each analytical method within the QA manual. The SOP should include the following applicable categories:

- Title
- Scope and Application
- Summary
- Sample Handling and Preservation
- Interferences
- Apparatus and Materials
- Reagents
- Procedure
- Calculations
- Quality Control (calibration)
- Maintenance
- Corrective Action
- Reference (Parent Method)

During the inspection, Mr. Bates was given example SOPs and/or sections of Standard Methods for every analytical method performed at the WWTW. **It is expected that the Village of Yellow Springs develop SOPs for the following analytical procedures (at a minimum) by no later than May 1, 2010: pH,**



temperature, dissolved oxygen, chlorine residual and sample collection. Each of the SOPs should comply with the analytical methods outlined in Standard Methods. Future compliance inspections will include evaluations of the Village's QA program.

If the Village has the resources, Ohio EPA encourages expansion of the current testing program to include additional analytical methods (e.g. suspended solids, CBOD5, etc.). In the long term, this could save the Village laboratory testing fees and give operations staff more of an "ownership" role in the WWTW monitoring & sampling program. If the City does expand the scope of in-house testing, SOPs will need to be developed for the additional procedures. Contact Ohio EPA Southwest District Office for additional information if needed.

Pump Station Alarm

According to Mr. Bates, there is no high level alarm for the pump station in the Village's collection system. A control panel at the WWTW receives a signal from the pump station with wet well level readings and pump cycle counter readings; however, unless the operator is watching the control panel there is no alarm for high wet well levels. In order to prevent any future collection system overflows from this pump station, the Village must provide a high level alarm (at a minimum). This alarm must notify the WWTW operator or another 24-hour emergency number within the Village so that the problem can be addressed as soon as possible. **This alarm system shall be installed no later than March 15, 2010.**

Inflow and Infiltration

At the time of the inspection, the Village of Yellow Springs did not have an infiltration & inflow (I&I) removal program established. For this reason, a rating of "Marginal" was given to the "Collection System" section of this report. With aging sewer infrastructures, more and more communities are investing time and money into sewer investigation and repair work in order to remove extraneous water from the collection system. Groundwater and surface water run-off can enter the sewers through deteriorated manholes, sewer joints, cracked sewer mains/laterals and cross-connections (including downspouts, sump pumps and driveway drains). During precipitation events, surges of "clean" water in the collection system can create compliance problems at the WWTW or even illegal sanitary sewer overflows.

The Village of Yellow Springs is making a substantial investment with the WWTW currently under construction. Attention should also be given to the sewage collection system in order to protect that investment. Initiating an I&I removal program should consist of the following items (at a minimum):



Permit # : 1PC00013*HD
NPDES # : OH0028215

1. Dye/smoke testing.
2. Collection system flow monitoring to identify and prioritize problems areas.
3. Establish and implement a rotating schedule for CCTVing of the sewer mains (starting with the problem areas identified by the collection system flow monitoring)
4. Inventory manhole conditions and residential downspout connections.
5. Prioritize and initiate specific I&I removal projects.

All of the items shown above must be documented and available for review by Ohio EPA.

