



State of Ohio Environmental Protection Agency

STREET ADDRESS:

Lazarus Government Center  
50 W. Town St., Suite 700  
Columbus, Ohio 43215

TELE: (614) 644-3020 FAX: (614) 644-3184  
[www.epa.state.oh.us](http://www.epa.state.oh.us)

MAILING ADDRESS:

P.O. Box 1049  
Columbus, OH 43216-1049



\*1PD0001920100813\*

MIAMI

TROY WWTP

MILLER, JOSEPH

2010/08/13

Ted Strickland, Governor  
Lee Fisher, Lieutenant Governor  
Chris Korleski, Director

Ohio EPA is an Equal Opportunity Employer



**Environmental  
Protection Agency**

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

August 17, 2010

City of Troy  
Attn: Mayor and Council  
100 South Market Street  
PO Box 3003  
Troy, OH 45373

**RE: Compliance Evaluation Inspection (CEI)  
City of Troy Wastewater Treatment Facility  
NPDES Permit 1PD00019\*KD/OH0027758  
Troy, Miami County**

Ladies and Gentlemen,

On July 27, 2010, Ned Sarle, Dan Marsh, and I conducted a Compliance Evaluation Inspection (CEI) at the City of Troy Wastewater Treatment Facility. This inspection was conducted to review plant performance and compliance with the NPDES permit. In addition, a review of the wastewater laboratory was conducted as well as an evaluation of the wastewater collection system.

Overall, the wastewater treatment facility was rated as "Satisfactory". A detailed inspection report and the laboratory evaluation are attached.

A response to this report is not necessary at this time; however, please note the expected changes in the upcoming NPDES permit renewal with respect to bacteria testing and implementation of a CMOM program. Should you have any questions, I can be reached by telephone at (937) 285-6109 or by email at [joe.miller@epa.state.oh.us](mailto:joe.miller@epa.state.oh.us).

Sincerely,

Joe Miller  
Division of Surface Water

ec: Tim Snider, City of Troy  
Thomas Parsons, City of Troy  
Thomas Funderburg, City of Troy  
Debbie Swan, City of Troy

**Compliance Evaluation Inspection (CEI)  
City of Troy, Miami County  
July 27, 2010**

***Overview***

The City of Troy wastewater treatment plant (WWTP) is located on Dye Mill Road south of Troy in Miami County. Effluent discharges to the Great Miami River at River Mile 105.62. The Great Miami River is designated for the following uses under Ohio's Water Quality Standards (OAC 3745-1-21): Exceptional Warmwater Habitat (EWH), Agricultural Water Supply (AWS), Industrial Water Supply (IWS), and Primary Contact Recreation (PCR).

The Troy WWTP has a permitted average design flow of 7.0 MGD (million gallons per day). We stream processes include screening (Parkson Fine Screens), grit removal (Eutek systems), screw pumps (Spaans Babcock, four sets of two stage pumps), primary settling and scum removal (Eimco), flow equalization, activated sludge aeration (Hoffman - Ott fine bubble diffusers, secondary clarification (Eimco), ultraviolet disinfection (Infilco Degremont), and post aeration (Hoffman). Influent flow monitoring is obtained via ultrasonic flow metering and parshall flume. Effluent flow monitoring is measured by magmeter. Two - 1 Million Gallon equalization basins are utilized during storm events resulting in flow in excess of plant treatment capacity. Solid stream processes include: sludge thickening, dewatering with belt filter press, lime stabilization, and disposal by hauling to a mixed waste landfill.

The wastewater facility is staffed by ten (10) wastewater operators with the following classification breakdown: 7 Class III Operators, 1 Class II Operator, 1 Class I Operator, and 1 Operator-in-training. The facility is manned twenty-four hours a day.

***Plant Compliance***

There were no reported effluent limitation violations or effluent frequency violations during the period of review (January 2009 to June 2010). Average daily flow during the period from January 2009 to June 2010 was 4.485 MGD. There were no complaints received regarding odor or sludge disposal.

Reporting code violations occurred when Hexavalent Chromium samples were not analyzed within the required 24 hour holding time in June 2010. The contract laboratory, Test America, did not analyze the samples for stations 001 (effluent), 601 (influent), and 901 (downstream) within the required time.

The annual discharge monitoring report quality assurance (DMR-QA) performance sampling evaluation required a check for error on CBOD testing. After changing the source of dilution water, the test was found to be acceptable. All other test procedures produced results within the acceptable range.

Ohio EPA conducted bioassay testing of plant effluent in February 2009. The results of the test showed no acute toxicity.

## ***E.Coli***

New water quality standards were adopted on December 15, 2009. These standards require a change in bacteria monitoring in new and renewed NPDES permits. The Troy WWTP NPDES permit expires on January 31, 2011. The proposed renewal permit will include a Schedule of Compliance for meeting *E.Coli* effluent limitations. While the compliance schedule is in effect, both fecal coliform and *E.Coli* sampling will be included in the final effluent monitoring requirements. Upon termination of the compliance schedule, *E.Coli* will be the indicator bacteria used to determine compliance with limitations of 126 counts per 100 ml (30-day average) and 284 counts per 100 ml (7-day average). These limitations are based upon the Great Miami River being defined as a Class A waterway in the final rule (OAC 3745-1-07). Class A waterways are those that support or potentially support frequent primary contact activities (i.e. swimming, boating, etc.). Wastewater operators are encouraged to begin monitoring for *E.Coli* prior to NPDES renewal.

## ***Operator Log Book***

The Operator of Record needs to maintain a log book containing operations and maintenance records for the wastewater treatment works. An acceptable format for the log book is the use of a hard bound book with consecutive page numbering. The log book needs to be accessible by Agency or emergency response personnel twenty four hours a day. At minimum, the following information needs to be included in the log book:

- a.) Name of treatment works
- b.) Dates and times of arrival and departures for the Operator of Record and other operators as required by OAC 3745-7-09.
- c.) Specific operation and maintenance activities that affect or could affect the quantity and quality of effluent.
- d.) Performance of preventative maintenance and repairs or requests for repairs that affect or could affect the quantity and quality of effluent.
- e.) Identification of the person making entries

## ***Signage***

The NPDES permit renewal will also include a requirement for outfall signage. Outfall signage requirements are detailed in *Ohio Administrative Code 3745-33-08*.

## ***Collection System***

Aging wastewater collection infrastructure requires management and maintenance. Currently, the Troy collection system maintenance program is more reactive than proactive. Establishment of a Capacity, Management, Operations, and Management (CMOM) program will provide the City of Troy with a means to identify and address areas of need to prevent problems, protect the capacity of the sanitary sewer to convey wastewater, operate the system efficiently, and maintain and prolong the useful life of

the collection system using widely accepted wastewater industry practices. The upcoming renewal NPDES will include the requirement to prepare and implement a CMOM program. I provided an example "Collection System Performance Indicator Data Collection Form" to Tom Parsons, Sewer Maintenance Foreman, in January 2009 which will assist the City in gathering the necessary information for a CMOM program. I have attached a copy of this form along with a document detailing the expected components of a CMOM program. More information can be found at both the Ohio EPA and USEPA websites.

Ten (10) Water-In-Basement (WIB) Occurrences were reported for calendar year 2009. The causes cited for these WIB occurrences were roots and debris in sanitary sewer lines. Four of the WIB occurrences were in the Westbrook neighborhood, which is the site of an ARRA funded sewer lining project currently being completed.

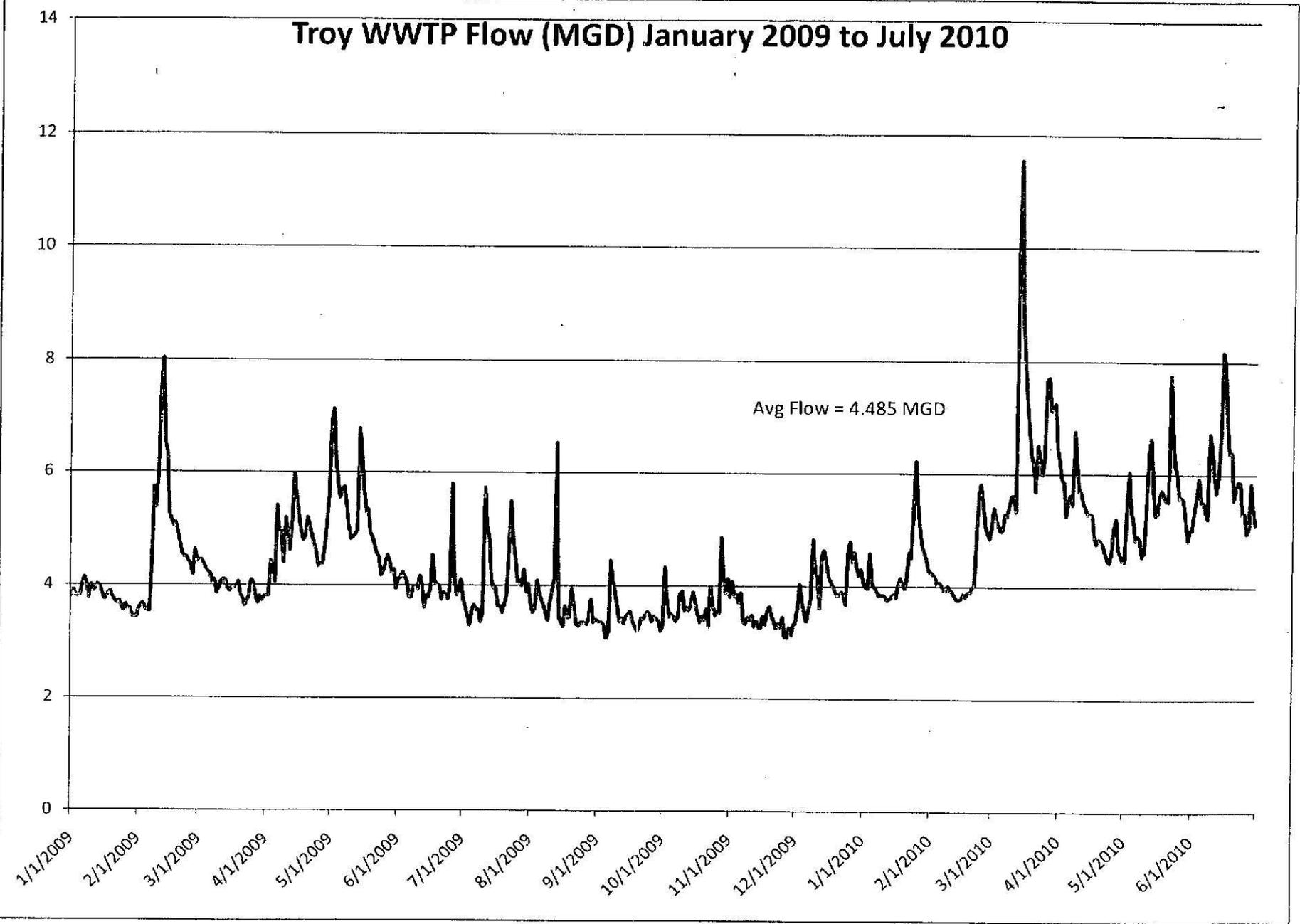
The collection system includes eight (8) lift stations. Currently, none of these lift stations are alarmed or have permanent standby power available. A project initially planned for completion in 2009, now scheduled for September 2010, would provide SCADA for three lift stations (Southview, Dorset, and Kirk Lane). An expansion of the SCADA system to additional lift stations is being evaluated. Four of the lift stations can be powered by portable generator during an electrical outage. The other four lift stations would require bypass pumping to a system manhole during an outage. City workers are tasked with checking lift stations 3 times a week and during storm events. Providing alarms and/or SCADA at lift stations is advisable. Ten State Standards includes the provision that new lift stations include alarms, with a preference to alarms that transmit the alarm condition to a municipal facility.

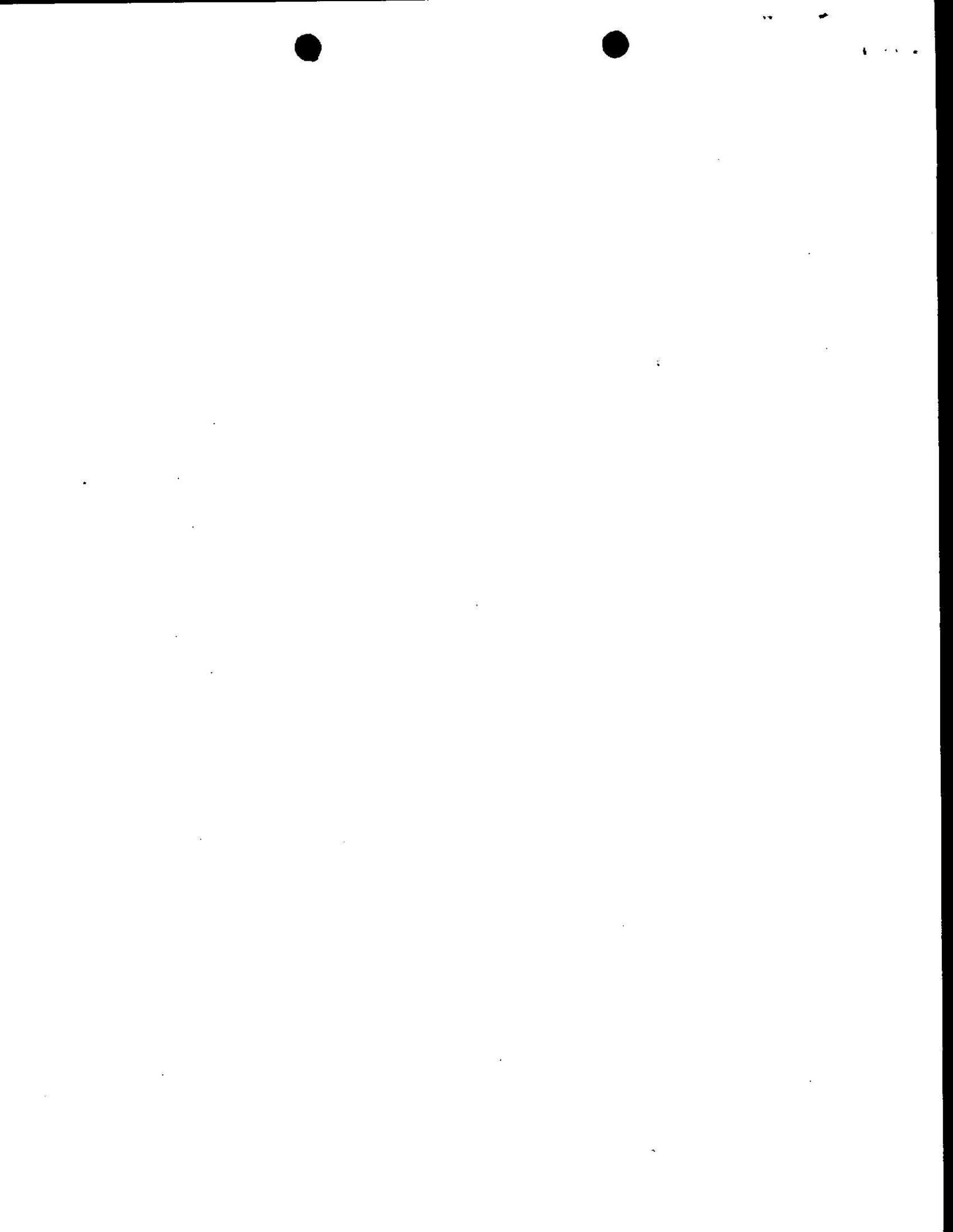
### **Sludge Processing**

Jacob Howdyshell, CO-DSW, completed a review of the sludge handling program on September 29, 2009. Items identified that required attention included records for vector and pathogen reduction along with documentation of certification statements. These items were from previous years when sludge was disposed of by land application. These items were provided as requested. Sludge is now hauled to the Jay County Indiana Landfill for disposal.

Sludge volume generation has increased in the last couple of years, due to an increase in Waste Activated Sludge (WAS). F:M ratio has improved along wastewater plant performance and compliance.

# Troy WWTP Flow (MGD) January 2009 to July 2010





Permit # : 1PD00019\*KD  
 NPDES # : OH0027758



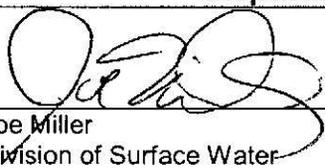
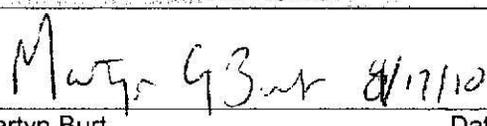
State of Ohio Environmental Protection Agency  
 Southwest District Office

### NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
1PD00019*KD	OH0027758	7/27/2010	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
City of Troy WWTP 1400 Dye Mill Road Troy, OH 45373	9:15 AM	9/1/2006
	Exit Time	Permit Expiration Date
	2:30 PM	1/31/2011
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Timothy Snider, WWTP Superintendent	937-339-1410	
Phil Osting, WWTP Assistant Superintendent	937-339-1410	
Mitch Beckner, Pretreatment/Operations Manager	937-339-1410	
Thomas Funderburg, Asst. Dir. of Public Service & Safety	937-339-7639	
Thomas Parsons, Water Dist. and Sewer Maint. Foreman	937-335-1914	
Name, Address and Title of Responsible Official	Phone Number	
Mayor and Council City of Troy 110 South Market Street Troy, OH 45373	937-339-1221	

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

Section D: Summary of Findings (Attach additional sheets if necessary)	
Inspector	Reviewer
 Joe Miller Division of Surface Water Southwest District Office	 Martyn Burt Compliance & Enforcement Supervisor Division of Surface Water Southwest District Office
8/17/10 Date	8/17/10 Date

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..... N/E

Comments/Status:

Average flow during the period of January 2009 to June 2010 was 4.485 MGD. Design flow is 7.0 MGD.  
Effluent discharges to Great Miami River near bike path bridge.  
Upstream sampling location is GMR at the State Route 41 Bridge.  
Downstream sampling location is the GMR at the Tipp-Elizabeth Road bridge.

**Section F: Compliance**

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

Comments/Status:

**Section G: Operation & Maintenance**

**Treatment Works:**

Treatment facility properly operated and maintained

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

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

Entire facility

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

Generator tested monthly under load

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

Return activated sludge lines (RAS), Ultraviolet Disinfection (UV), high water alarms on influent and screw pumps, malfunction alarms on screw pumps, RAS, finals  
PLC malfunction alarm

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

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

Work orders tracked with a spreadsheet are assigned daily, monthly, semi-annually, and annually.

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

(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:**

Two clarifiers off-line during low flow period.

**Section G: Operation & Maintenance con't**

**Record Keeping/Operator of Record:**

- (a) Wastewater Treatment Works classification (OAC 3745-7)..... III
- (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)
 

3 ring binder...need to provide bound log book with numbered pages
- (i) Log book kept onsite (in an area protected from weather)..... Y
- (j) Log book contains the following:
  - I. Identification of treatment works..... N
  - 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..... N
- (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..... Y

**Comments/Status:**

Need to incorporate operator log book that is bound and numbered. Log book should include the items identified in item (j) above.

10 operators on staff: 7 Class III Operators, 1 Class II Operator, 1 Class I Operator, and 1 O.I.T.

**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.....4
  - 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 LTCP 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..... Y
- (i) Is there a WIB response plan..... Y
- (j) Is any portion of the collection system at or near dry weather capacity..... N

**Comments/Status:**

\*Currently there are 8 primary lift stations.

1. Southview LS - currently not alarmed, emergency power provided by portable generator
2. Dorset LS - currently not alarmed, emergency power provided by portable generator
3. Kirk Lane LS - currently not alarmed, emergency power provided by portable generator  
(The above 3 lift stations are planned to be provided with SCADA by September 2010, delayed from '09)
4. Nottingham - not alarmed, emergency power provided by portable generator
5. Trade LS - not alarmed, pumper bypass used during power outages
6. Fernwood LS - not alarmed, pumper bypass used during power outages
7. Haywood LS - not alarmed, pumper bypass used during power outages
8. Duke Park LS - not alarmed, pumper bypass used during power outages

Other: Barn in the Park LS - not alarmed, pumper bypass used during power outages

**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 A - Exception Quality Sewage Sludge (monitoring station 584)**

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 Solids	Option 8 - >75% Percent Solids with Unstabilized Solids
Alternative 1 - Time and Temperature Regime (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - High pH and High Temperature (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 - Other Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 4 - Unknown Processes (84369)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Composting (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Heat Drying (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Heat Treatment (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Thermophilic Aerobic Digestion (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Beta Ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Gamma ray Irradiation (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 5 - Pasteurization (84397)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 6 - Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**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 type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Aerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Air Drying (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Anaerobic Digestion (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 – Composting (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 2 - Lime Treatment (46396)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Alternative 3 – Approved Equivalent Process	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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..... Y
- (c) How much sludge storage is provided at the plant.....
- (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..... Y
- (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..... N/E
- (h) Is a contractor used for sludge disposal..... Y  
 If so, what is the name of the contractor.....

**Comments/Status:**

3 Gravity Thickeners: 2 - Waste (137,000 Gal), 1 - Primary (127,500); 631,000 Gal Sludge Holding Tank  
 Hauling sludge to Jay County, IN. landfill

**Section I: Self-Monitoring Program**

**Flow Measurement:**

- (a) Primary/Secondary flow measuring devices (e.g. weir with ultrasonic level sensor):  

Effluent Magmeter; Influent Ultrasonic and Parshall Flume
---
- (b) Flow meter calibrated annually ..... Y  
(Date of last calibration: continuous)
- (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:**

Total Suspended Solids samples taken every day and reported on eDMRs.

See attached General Lab Criteria evaluation.

**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..... Y
- (b) Do SOP's include the following if applicable..... N/E
  - 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. Y (see score from GLC page)
- (h) Commercial laboratory used..... Y  
Parameters analyzed by commercial lab: NH3, TSS, CBOD5, Fecal Coliform, TKN, Nitrite-Nitrate, O&G, total phosphorus, mercury, metals  
Lab name: Test America

*Discharge Monitoring Report Quality Assurance (DMRQA)*

- (a) Participation in latest USEPA quality assurance performance sampling..... Y  
Date:
- (b) Were any parameters "Unsatisfactory"..... Y
- (c) Reasons for "Unsatisfactory" parameters.....  
water being used in CBOD test changed

**Comments/Status:**

**Section J: Effluent/Receiving Water Observations**

Outfall # 001

Outfall Description: Headwall near bike path, turbulent discharge, effluent clear

Receiving Stream: Great Miami River

Receiving Stream Description: EWH

**Comments/Status:**

Effluent to GMR clear, the GMR was slightly muddy.

Outfall sign requirement will be included in NPDES renewal.

**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:**

# General Lab Criteria

Criteria	Standard Methods Requirement		Acceptable?	Rating
<b>Balance</b>				<b>A</b>
• Standard Weights	• Either NIST Class s or ASTM/ANSI Class 1 weights <sup>1,2</sup>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Calibration Frequency / Documentation	• Calibration verification required at least once each day the balance is used. <sup>3</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Cleanliness, air movement, vibration	• Cleanliness of balance is a must and air movement and vibration needs to be kept to a minimum <sup>1</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Service and recalibrate annually (manufacturer representative or comparable) <sup>1</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Must be able to measure to 0.1 grams <sup>4</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book maintained <sup>2</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: : The balance weights are not NIST or ASTM/ANSI certified. Calibration on bench sheets.

Criteria	Standard Methods Requirement		Acceptable?	Rating
<b>Drying Oven (Suspended Solids)</b>				<b>A</b>
• Temperature Recordkeeping	• Temperature recorded with each use <sup>4</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book maintained <sup>2</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Calibration Frequency / Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup> . Correction factor posted on thermometer / equipment <sup>1</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Thermometer temperature in 0.5° C increments <sup>5</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Acceptable temperature range is 103° – 105° F <sup>4</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: : Calibration on bench sheets.

# ● General Lab Criteria ●

Criteria	Standard Methods Requirement		Rating
<b>pH Meter</b>			
	Acceptable?		
• Calibration Frequency / Documentation	• Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples) <sup>3</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>A</b>
	• Logbook maintained <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Minimum of 2 point calibration	• Calibration per manufacturer specification and calibration buffers must bracket anticipated result <sup>7</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Slope acceptable range indicated on benchsheet <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Buffer Expiration Date	• Buffers must not be expired	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Instrument manual available	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Teflon covered magnetic stirrer or equivalent for mixing <sup>8</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Comments: : Buffers 7 & 10 used for calibration, calibration on bench sheets.			
Criteria	Standard Methods Requirement		Rating
<b>Dissolved Oxygen Meter</b>			
	Acceptable?		
• Calibration Method	• Air or known DO calibration method <sup>10</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	<b>A</b>
	• Calibration per manufacturer specification <sup>10</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Calibration Frequency / Documentation	• Logbook maintained <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Calibration verification required at least once each day the meter is used. <sup>3</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Small to no bubble present under membrane (must be smaller than the lead in number 2 pencil) <sup>11</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Comments: D.O. Meter YSI auto-calibrating model			

# General Lab Criteria

Criteria	Standard Methods Requirement		Rating
Incubator (CBOD/ E-Coli)	Acceptable?		
• Temperature Recordkeeping	• Temperature checked / recorded twice daily for each shelf in use <sup>1</sup> (E-Coli)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>A</b>
	• Temperature checked / recorded daily <sup>2</sup> (CBOD)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Acceptable temperature range (CBOD) is 20° C ±1.0° <sup>12</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Acceptable temperature range (E-Coli) is 35° C ±0.5° <sup>22</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Logbook maintained <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Temperature correction information posted on incubator <sup>1</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• E-Coli can use multiple tubes (five 20 ml or ten 10 ml), or mfg's multi-well tray	• E-coli Ultraviolet lamp (365 nm wave length, 6 W bulb) <sup>23</sup>	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Instrument manual available	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Temperature Log (thermometer reads to 0.5 Celsius). <sup>1</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: : Calibration on bench sheets.

Criteria	Standard Methods Requirement		Rating
Refrigerator	Acceptable?		
• Temperature Recordkeeping	• Temperature Log (thermometer reads to 0.5 Celsius). <sup>5</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>A</b>
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
• Other	• Thermometer held in water bath. <sup>1</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Refrigerator temperature ≤6° Celsius. <sup>13</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Do not store volatile solvents, food, or beverages. <sup>14</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: Traceable thermometer does not read to refrigerator temperature range.

# General Lab Criteria

Criteria	Standard Methods Requirement		Rating
<b>Sample Collection/Handling</b>	Acceptable?		<b>A</b>
• Sample Labeling	• Samples container labeled (description, date, time, preservative added, initialed). <sup>19</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Chain of Custody	• Chain of custody (description, date, time, signature). <sup>19</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Composite samples refrigerated during sample collection <sup>14</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Equipment blanks utilized <sup>14</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• SOP for cleaning of sampling equipment	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Logbook being maintained <sup>2</sup>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Comments:			

Criteria	Standard Methods Requirement		Rating
<b>Desiccator</b>	Acceptable?		<b>A</b>
• General criteria	• Properly working seals.	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Desiccant fresh (blue color)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Documentation	• Log book being maintained <sup>2</sup>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Comments:			

Criteria	Standard Methods Requirement		Rating
<b>Bench sheets</b>	Acceptable?		<b>A</b>
• General criteria	• Date(s) <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Analyst initials <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Blue or black ink pen <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Calibration information <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Equations, calculations, units for all measurements, notations, and results present <sup>2</sup>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	• Corrections, single line through, initialed and dated <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Comments:			

# General Lab Criteria

Criteria	Standard Methods Requirement		Rating
<b>Hot Water Bath (Fecal Coliform/E. Coli)</b>			Acceptable?
• Temperature Recordkeeping	• Temperature Log (thermometer reads 0.2° C) <sup>21</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Incubator temperature 44.5° C ± 0.2° <sup>21/24</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Log book being maintained <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Water Level	• Thermometer total immersion or partial (line on thermometer to ID immersion depth) <sup>1,5</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: Calibration on bench sheets

Criteria	Standard Methods Requirement		Rating
<b>Autoclaves/Steam Sterilizers</b>			Acceptable?
• All apparatus utilized is adequately sterilized before use	• Sterilizing temperature 121° C <sup>25</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>A</b>
	• 10 to 30 minutes time based on material being sterilized <sup>26</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Documentation	• Verify the autoclave temperature weekly by using a maximum registering thermometer (MRT) to confirm that 121°C has been reached as measured in the exhaust. <sup>1</sup>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	• Date, contents, sterilization time and temperature, total time in autoclave, and analyst's initials should be recorded each time the autoclave is used <sup>1</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Log book being maintained <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Performance Checks	• Test monthly for efficacy using a biological such as commercially available <i>Geobacillus stearothermophilus</i> in spore strips, suspensions, or capsules <sup>1</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: Maximum registering thermometer confirmation not being used.

# ● General Lab Criteria ●

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>Final Effluent Temperature Monitoring</b>				
<ul style="list-style-type: none"> <li>• General Criteria</li> </ul>	<ul style="list-style-type: none"> <li>• Thermometer calibrated annually with NIST traceable thermometer <sup>1,2</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<b>A</b>
	<ul style="list-style-type: none"> <li>• Thermometer reads in increments of at least 0.1° C <sup>5</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>• Log book being maintained <sup>2</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				
<b>Number of Criteria Rated:</b>				Acceptable
				Marginal
				Unacceptable
				Total Number of Areas Rated
<p><b>Acceptable Ratings</b> – No action required (recommend SOP's written or updated, perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, written response not required).</p>				
<p><b>Marginal Ratings</b> – Improvements required, written response required (recommend SOP's be written or updated, recommend they perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, require deficiencies to be addressed in written response).</p>				
<p><b>Unsatisfactory Rating</b> - Improvements required, written response required, NOV issued (recommend SOP's be written or updated, recommend they perform DMRQA's for all onsite analysis, recommend voluntary lab analyst certification, require deficiencies to be addressed in written response to NOV).</p>				
Consider recommending PAI Audit from DES when:		>60% of ratings are Marginal >45% of ratings are a combination of Marginal or Unacceptable >30% of ratings are Unacceptable		

### Notation of Referenced Method

- |  |  |
|--|--|
| 1 Method 9020-B, Item 3<br>2 Method 1020-A, Item 1<br>3 Method 1020-B, Item 10<br>4 Method 2540-B, Item 2<br>5 Method 2550-B, Item 1<br>6 Method 1020-A, Item 1<br>7 Method 4500-H B, Item 4<br>8 Method 4500-H B, Item 2<br>9 Method 1020-B, Item 2<br>10 Method 4500-O B, Item 3<br>11 Method 4500-O G, Item 3<br>12 Method 5210-B, Item 5<br>13 CFR 136.3, Table II | 14 Method 1060A, Item 1<br>15 Method 4500-CI I, Item 2<br>16 Method 4500-CI I, Item 4<br>17 Method 4500-NH3 D, Item 4<br>18 Method 4500-NH3 D, Item 2<br>19 Method 1060-B, Item 2<br>20 Method 1060-B, Item 1<br>21 Method 9222D, Item 1<br>22 Method 9223 B, Item 2<br>23 Method 9223 B, Item 3<br>24 Method 1603, Item 2<br>25 Method 9030-B, Item 3<br>26 Method 9020 B, Table IV |
|--|--|

# General Lab Criteria

Equipment Logbook Content - all maintenance performed on a piece of equipment should be documented in the logbook. This should include parts replacement and routine maintenance activities. Entries should include date, maintenance performed and initials of person making entry.

<b>Preservation and Holding Times</b>						
Parameter	Container	Min. Sample Size (mL)	Sample Type	Preservation	Maximum Storage Time	
					Recommended	Regulatory
BOD / CBOD	P, G	1000	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	6h	48h
TSS	P, G	200	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 d
pH	P, G	50	G	Analyze immediately	0.25h	0.25 h
NH <sub>3</sub> -N	P, G	500	G, C	Analyze as soon as possible or add H <sub>2</sub> SO <sub>4</sub> to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	28 d
TRC	P, G	500	G	Analyze immediately	0.25h	0.25 h
DO (electrode)	G, BOD Bottle	300	G	Analyze immediately	0.25h	0.25 h
Temperature	P, G	--	G	Analyze immediately	0.25h	0.25 h
Metals, general	P, G	1000	G, C	For dissolved filter immediately and add HNO <sub>3</sub> to pH <2	6 months	6 months
Purgeables by purge and trap	G (PTFE lined lid)	40 (X2)	G	HCl to pH<2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	14 d
Base/Neutrals and acids	G (solvent rinsed or baked)	1000	C, G	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Pesticides	G (PTFE lined lid)	1000	C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Fecal Coliform / E-Coli	G, P (Sterilized)	100	G	Refrigerate $\leq 10^{\circ}\text{C}$ If chlorine present, add sodium thiosulfate tablet	6 hrs transport Start analysis within 2 hrs of receipt in lab.	
Oil and Grease	G	1000	G	HCl or H <sub>2</sub> SO <sub>4</sub> to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	28 d	28 d

<b>Approved Standard Methods</b>	
CBOD / BOD 5 Day	Std Methods 5210-B
Ammonia, Selective Electrode Method	Std Methods 4500-NH <sub>3</sub> D
Total Residual Chlorine, DPD Colorimetric Method	Std Methods 4500-Cl G
Total Suspended Solids, Dried at 103-105 °C	Std Methods 2540-D
Dissolved Oxygen, Membrane Electrode Method	Std Method 4500-O G
pH, Electrometric Method	Std Methods 4500-H+ B
Fecal Coliform, Membrane Filter Procedure	Std Methods 9222D
Escherichia Coli, Enzyme Substrate Test	Std Method 9223B
Escherichia Coli Membrane Filtration Procedure	EPA Method 1603
Oil and Grease	USEPA 1664A or Std Methods 5520B
Metals, general	USEPA 200, Std Methods 3111B or C, or 3120B
Volatiles (Purgeables by purge and trap)	USEPA 6210, Std Methods 624
Semi-Volatiles (Base/Neutrals and acids)	USEPA 6410, Std Methods 625
Pesticides	USEPA 6410 and 6630, Std Methods 608

