



State of Ohio Environmental Protection Agency

Southeast District Office

2195 Front Street
Logan, Ohio 43138

TELE: (740) 385-8501 FAX: (740) 385-6490
www.epa.state.oh.us

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

June 14, 2010

Re: Guernsey County
Byesville Sewage Treatment Plant
Compliance Evaluation Inspection
Correspondence (PWW)

Mayor and Council
221 East Main Street
P.O. Box 8
Byesville, Ohio 43723

Dear Mayor and Council:

On May 25, 2010, I conducted a compliance evaluation inspection of the Byesville wastewater treatment plant. The purpose of the inspection was to determine the facility's compliance to the terms and conditions of NPDES permit 0PB00004*FD.Ms. Karen Froehlich, plant superintendent was present at the time of my inspection.

Based on the findings of my inspection and the review of our records, I have the following comments:

1. Following the review of daily records of operational items at the wastewater treatment plant it was revealed that the influent and effluent flow meters had not been calibrated for several years. It was instructed to Ms. Froehlich that all flow meters, totalizers, etc. should be placed on a schedule to be factory calibrated annually to ensure accurate flow data is being recorded. It was also noted during my inspection that the manhole vault housing the influent flow meter on the force main had a leak causing the vault to be filled with water. Efforts should be taken to investigate the leak within the vault and schedule the appropriate factory flow meter calibrations within the next **30** days.
2. At the time of my inspection, the surfaces of the final clarifiers were free of any significant scum or bulking sludge although the water had a light gray color. Past upsets at the Island Aseptics plant has organically overloaded the Byesville plant contributing to the darker effluent from excessive solids. In order to better track any upsets a composite sampler has been setup at the Island Aseptic's outfall to collect daily samples for total suspended solids analysis. This daily monitoring has enabled the village to better monitor the wastewater from the industrial facility although some high strength discharges are still occurring causing plant

upsets and effluent limit violations. Island Aseptics is currently designing a new pre-treatment unit to alleviate the excessive organic loads being discharged to the village.

3. Inspection of the chlorine contact tank and the de-chlorination system found both units to be fully operable with minimal algae growth present in both tanks. The effluent was found to be free of any noticeable suspended solids although the color appeared darker than normal.

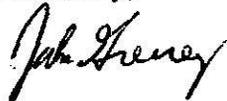
Upon discussion with Ms. Froehlich it was discovered that normal day shift staffing of the plant consists of a Class III and Class I wastewater operator. This staffing level is provided from 8:00 a.m. to 5:00 p.m. Monday through Friday with only periodic inspections during the second shift and weekends. Due to the fact that the plant superintendent also serves as the lab analyst and conducts all analysis off-site actual time at the plant to conduct necessary daily operational and maintenance items can be limited. This was verified by the fact that no operators at the facility could verify when the flow meters were last calibrated and no procedure was in place to ensure this common act is performed annually.

The current staffing levels and work assignments of the Class III operator will cause difficulties in achieving the minimum staffing levels as required on-site at the new facility. The new treatment plant, which is expected to go on line within the next year, will be a Class III facility which will require a Class III operator of record who will be required to be at the plant 40 hours a week, 5 days a week. In addition to the required staffing times for the operator of record, a backup operator with a wastewater classification one class lower should be available as well. Please provide a detailed staffing report describing the certified operators available for daily operation and maintenance of the existing facility as well as the measures to be implemented to assure all requirements of OAC 3745-7 will be met when the new plant goes on line.

Review of the file has shown that routine sanitary sewerage system overflows occur at the High Avenue lift station following a measurable precipitation event. As a reminder all sanitary sewer overflows (SSOs) shall be reported under Station 300 of your NPDES report and on an annual report submitted according to Part II of your permit. The SSOs are violations to Part I, B of your NPDES permit. Please provide an explanation of planned actions to reduce the Infiltration and Inflow (I&I) flows as well as other problems to reduce the SSOs at this lift station as well as the State Route 209 lift station.

Please provide a written response to the concerns addressed above within **30** days upon receipt of this letter. Attached is a copy of my detailed inspection report for the treatment plant and lab. If you have any questions, please contact me at (740) 380-5416.

Sincerely,



Jake Greuey
District Representative
Division of Surface Water

JGG/dh

Enclosure

c: Thomas McVickers, Superintendent, Byesville WTP

NPDES Compliance Inspection Report

A. NATIONAL DATA SYSTEM CODING

Permit No.	NPDES No.	Date	Inspection Type	Inspector	Facility Type
OPB00004*FD	OH0024287	May 25, 2010	C	S	1

B. FACILITY DATA

Name & Location of Facility Inspected	Entry Time	Permit Effective Date
Byesville WWTP 60806 Opal Lane Byesville, Ohio 43723	1:30 p.m.	January 2, 2007
	Exit Time	Permit Expiration Date
	3:30 p.m.	December 31, 2011

Name(s) & Title(s) of On-Site Representative(s)	Phone Number(s)
Karen Froehlich, Plant Superintendent	(740) 685-6239
Name, Address, & Title of Responsible Official	Phone Number
Mayor and Council 221 East Main Street P.O. Box 8 Byesville, Ohio 43723	

C. AREAS EVALUATED DURING INSPECTION

<u>S</u> Permit	<u>U</u> Flow Measurement	<u>N/A</u> Pretreatment
<u>S</u> Records/Reports	<u>S</u> Laboratory	<u>N/A</u> Compliance Schedules
<u>M</u> Operations & Maintenance	<u>S</u> Effluent/Receiving Waters	<u>S</u> Self-Monitoring Program
<u>S</u> Facility Site Review	<u>S</u> Sludge Storage/Disposal	<u> </u> Other
<u>M</u> Collection System		

(S = Satisfactory; M = Marginal; U = Unsatisfactory; N = Not Evaluated; N/A = Not Applicable)

D. SUMMARY OF FINDINGS/COMMENTS (attach additional sheets if necessary)

Jake Greuey
Jake Greuey, Inspector, Ohio EPA, Southeast District Office

6/14/10
Date

David D. Shurtz
Timothy M. Campbell, Reviewer, Ohio EPA, Southeast District Office

6/14/10
Date

E. PERMIT VERIFICATION

Inspection Observations Verify the Permit	YES	NO	N/A	N/E
a. Correct name & mailing address of permittee	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Correct name & location of receiving waters	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Product(s) & production rates conform with permit application (industries)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Flows & loadings conform with NPDES permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Treatment processes are as described in permit application/briefing memo	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. New treatment process(es) added since last inspection	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Notification given to state of new, different, or increased discharges	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h. All discharges are permitted	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Number & location of discharge points are as described in permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

F. COMPLIANCE SCHEDULES/VIOLATIONS

	YES	NO	N/A	N/E
a. Any significant violations since the last inspection	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Permittee is taking actions to resolve violations	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Permittee has compliance schedule	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Compliance schedule contained in:	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. Permittee is meeting compliance schedule	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Comments:

G. OPERATION AND MAINTENANCE

Treatment Facility Properly Operated & Maintained	YES	NO	N/A	N/E
a. Standby power available: Generator: <input checked="" type="checkbox"/> Dual Feed: <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Adequate alarm system available for power or equipment failures	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. All treatment units in service other than backup units	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Sufficient operating staff provided: # of shifts: 1 Days/Week: 5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Operator holds unexpired license of class required by permit. Class: III	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Copy of certificate of Operator of Record displayed on-site	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Minimum operator staffing requirements fulfilled (OAC 3745-7)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
h. Routine & preventive maintenance schedule/performed on time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Any major equipment breakdown since last inspection	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Operation & maintenance manual provided & maintained	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Any plant bypasses since last inspection	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Regulatory agency notified of bypasses: On MORS: <input type="checkbox"/> 800 No.: <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
m. Any hydraulic and/or organic overloads experienced since last inspection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Record Keeping	YES	NO	N/A	NE
a. Log book provided	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Log book kept on-site	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Log book contains the following:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. Identification of treatment works	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Date/time of arrival/departure of ORC	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Daily record of operation and maintenance activities	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Laboratory results (unless documented on bench sheets)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Identification of person making log entries	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Is the ORC submitting written notification to Ohio EPA and permittee when a collection system overflow, treatment plant bypass or effluent limit violation has occurred.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

Collection System	YES	NO	N/A	NE
a. Percent combined system. Percent: 0	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Any collection system overflows since last inspection: CSO: <input type="checkbox"/> SSO: <input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Regulatory agency notified of overflow (SSOs)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. CSO O&M plan provided and implemented	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
e. DSOs monitored and reported in accordance with permit	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Portable pumps used to relieve system	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Lift station alarm systems provided and maintained	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Are lift stations equipped with permanent standby power or equivalent	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Is there an inflow/infiltration problem (separate sewer system), or were there any major repairs to collection system since last inspection	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Any complaints received since last inspection of basement flooding	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Are any portions of the sewer system at or near capacity	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

The SR 209 and High Avenue lift stations have frequent bypasses following storm events due to excessive I&I flows in these areas which exceed the capacities of the lift stations causing a bypass.

H. SLUDGE MANAGEMENT

	YES	NO	N/A	NE
a. Sludge adequately disposed. Method: Land Application	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. If sludge is incinerated, where is ash disposed of?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Is sludge disposal contracted? Name:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Has amount of sludge generated changed significantly since last inspection	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Adequate sludge storage provided at facility	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Land application sites monitored and inspected per state rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
g. Records kept in accordance with state rules	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
h. Any complaints received in last year regarding sludge	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Is sludge adequately processed (digestion, dewatering, pathogen control) in accordance with Ohio EPA rules	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

I. SELF-MONITORING PROGRAM

Part 1 – Flow Measurement	YES	NO	N/A	N/E
a. Primary flow measuring device properly operated & maintained. Type of device: <input checked="" type="checkbox"/> Ultrasonic & parshall flume <input type="checkbox"/> Calculated from influent <input type="checkbox"/> Weir <input type="checkbox"/> Other <input type="checkbox"/> Ultrasonic & weir specify:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Calibration frequency adequate. Date of last calibration:	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Secondary instruments (totalizers, recorders, etc.) properly operated and maintained	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Flow measurement equipment adequate to handle expected ranges of flows	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Actual flow discharged is measured	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Flow measuring equipment inspection frequency: <input checked="" type="checkbox"/> Daily <input type="checkbox"/> Monthly <input type="checkbox"/> Weekly <input type="checkbox"/> Other				

Comments:

Part 2 – Sampling	YES	NO	N/A	N/E
a. Sampling location(s) are as specified by permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Parameters and sampling frequency agree with permit	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Permittee uses required sampling method	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Sample collection procedures are adequate	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Samples refrigerated during compositing	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ii. Proper preservation techniques used	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conform with 40 CFR 136.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Monitoring records (e.g., flow, pH, D.O., etc.) maintained for a minimum of three years including all original strip chart recordings (e.g., continuous monitoring instrumentation, calibration, & maintenance records)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Adequate records maintained of sampling date, time, exact location, etc.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

At the time of my inspection, the influent sampler did not contain with a thermometer to verify proper temperature and the Outfall 001 sampler was unplugged.

Part 3 – Laboratory, General	YES	NO	N/A	N/E
a. Written Standard Operating Procedures (SOPs) for all analysis performed on-site	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. EPA approved analytical testing procedures used (40 CFR 136.3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. If alternate analytical procedures are used, proper approval has been obtained	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Analyses being performed more frequently than required by permit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. If (c) is yes, are results reported in permittee's self-monitoring report	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Commercial laboratory used: 1. Parameters analyzed by commercial lab: O&G and Metals 2. Lab name: Coshocton Environmental				

Comments:

Part 3 – Laboratory, Quality Control/Quality Assurance	YES	NO	N/A	N/E
a. Quality assurance manual provided and maintained	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Satisfactory calibration and maintenance of instruments and equipment	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Adequate records maintained	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

J. EFFLUENT/RECEIVING WATER OBSERVATIONS

Outfall #	Oil Sheen	Grease	Turbidity	Visible Foam	Visible Float Solids	Color	Other
001	None	None	Clear	None	None	Light Gray	

Comments:

K. MULTIMEDIA OBSERVATIONS

Collection System	YES	NO	N/A	N/E
a. Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Do you notice staining or discoloration of soils, pavement, or floors	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Do you notice distressed (unhealthy, discolored, dead) vegetation	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Do you see unidentified dark smoke or dustclouds coming from sources	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Do you notice any unusual odors or strong chemical smells	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Do you see any open or unmarked drums, unsecured liquids, or damaged containment facilities	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

1. What is the cause of the conditions?
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:

General Lab Criteria

Facility:

Criteria	Standard Methods Requirement	Acceptable?		Rating
Balance				
• Standard Weights	• Either NIST Class s or ASTM/ANSI Class 1 weights ^{1,2}	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	M
• Calibration Frequency / Documentation	• Calibration verification required at least once each day the balance is used. ³	<input type="checkbox"/> Yes	<input checked="" 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 ¹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Service and recalibrate annually (manufacturer representative or comparable) ¹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Must be able to measure to 0.1 grams ⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book maintained ⁶	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: Need to purchase a light and heavy Class I weight within the expected range to calibrate scales.

Criteria	Standard Methods Requirement	Acceptable?		Rating
Drying Oven (Suspended Solids)				
• Temperature Recordkeeping	• Temperature recorded with each use ⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
		• Log book maintained ⁶	<input checked="" type="checkbox"/> Yes	
• Calibration Frequency / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2} . Correction factor posted on thermometer / equipment ¹	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Other	• Thermometer temperature in 0.1° C increments ⁵	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Acceptable temperature range is 103° – 105° F ⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: Need to purchase an NIST traceable thermometer and calibrate thermometer and post the correction factor if necessary.

Criteria	Standard Methods Requirement	Acceptable?		Rating
pH Meter				
• 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) ³	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	A
		• Logbook maintained ⁹	<input checked="" type="checkbox"/> Yes	
• Minimum of 2 point calibration	• Calibration per manufacturer specification and calibration buffers must bracket anticipated result ⁷	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Slope acceptable range indicated on benchsheet ²	<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 ⁸	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: SOP for pH analysis should be updated to include an known standard analysis if greater than 10 samples are measured in one day.

Criteria	Standard Methods Requirement	Acceptable?		Rating
Dissolved Oxygen Meter				
• Calibration Method	• Air or known DO calibration method ¹⁰	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
		• Calibration per manufacturer specification ¹⁰	<input checked="" type="checkbox"/> Yes	
• Calibration Frequency	• Logbook maintained ⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

General Lab Criteria

/ Documentation	• Calibration verification required at least once each day the meter is used. ³	<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) ¹¹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

Criteria	Standard Methods Requirement	Acceptable?		Rating
Incubator (CBOD/ E-Coli)		Acceptable?		
• Temperature Recordkeeping	• Temperature checked / recorded twice daily for each shelf in use ¹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	M
	• Acceptable temperature range (CBOD) is 20° C ±1.0 ^{o 12}	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Acceptable temperature range (E-Coli) is 35° C ±0.5 ^{o 22}	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Logbook maintained ⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1, 2}	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
	• Temperature correction information posted on incubator ¹	<input type="checkbox"/> Yes	<input checked="" 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) ²³	<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 0.1 Celsius). ⁵	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Comments: NIST traceable thermometer should be purchased and incubator thermometer calibrated and necessary correction factor posted. A log of the temperature readings should also be kept.

Criteria	Standard Methods Requirement	Acceptable?		Rating
Refrigerator		Acceptable?		
• Temperature Recordkeeping	• Temperature Log (thermometer reads to 0.1 Celsius). ⁵	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	A
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1, 2}	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Other	• Thermometer held in water bath. ¹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Refrigerator temperature ≤6° Celsius. ¹³	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Do not store volatile solvents, food, or beverages. ¹⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

Criteria	Standard Methods Requirement	Acceptable?		Rating
Chlorine Meter		Acceptable?		
• Calibration Frequency / Documentation	• pH / millivolt meter read to 0.1 mV ¹⁵	<input type="checkbox"/> Yes	<input type="checkbox"/> No	A
	• Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples) ³	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Calibration Method	• Calibration using three iodate solutions 0.2, 1.0, 5.0 milliliters or calibration per manufacturer specification ¹⁶	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Standards used for calibration not expired	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Calibration curve (acceptable slope)	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Electrode free of deposits and foreign material	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained. ⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

General Lab Criteria

	<ul style="list-style-type: none"> Instrument manual available 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments: A HACH pocket colorimeter residual chlorine meter is used so many of the above questions do not apply. The instrument is factory calibrated and checked yearly and all measurements conducted per the instrument manual.					
Criteria	Standard Methods Requirement	Acceptable?		Rating	
Ammonia Meter					
<ul style="list-style-type: none"> Calibration Frequency / Documentation 	<ul style="list-style-type: none"> Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples)³ 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	A	
		<ul style="list-style-type: none"> Log book being maintained⁹ 	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No
<ul style="list-style-type: none"> Slope acceptability 	<ul style="list-style-type: none"> Verify calibration slope is acceptable (per mfg. spec.). 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
<ul style="list-style-type: none"> Calibration Method 	<ul style="list-style-type: none"> Standards used for calibration (3 ammonia solutions of 10 mg/l, 1 mg/l, and 0.1 mg/l) or per mfg. spec.¹⁷ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
		<ul style="list-style-type: none"> Standards used for calibration not expired 	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No
<ul style="list-style-type: none"> Other 	<ul style="list-style-type: none"> Electrode free of deposits and foreign material 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	<ul style="list-style-type: none"> Teflon covered magnetic stirrer or equivalent for mixing¹⁸ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	<ul style="list-style-type: none"> Instrument manual available 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments: Update the Ammonia SOP to include a calibration verification by measuring a known standard if greater than 10 samples are analyzed in one day.					
Criteria	Standard Methods Requirement	Acceptable?		Rating	
Sample Collection/Handling					
<ul style="list-style-type: none"> Sample Labeling 	<ul style="list-style-type: none"> Samples container labeled (description, date, time, preservative added, initialed).¹⁹ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A	
<ul style="list-style-type: none"> Chain of Custody 	<ul style="list-style-type: none"> Chain of custody (description, date, time, signature).¹⁹ 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
<ul style="list-style-type: none"> Other 	<ul style="list-style-type: none"> Composite samples refrigerated during sample collection¹⁴ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
		<ul style="list-style-type: none"> Equipment blanks utilized¹⁴ 	<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No
		<ul style="list-style-type: none"> SOP for cleaning of sampling equipment 	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No
		<ul style="list-style-type: none"> Logbook being maintained⁹ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments: Samples are delivered directly to the lab analyst following collection from the individual collecting the samples.					
Criteria	Standard Methods Requirement	Acceptable?		Rating	
Desiccator					
<ul style="list-style-type: none"> General criteria 	<ul style="list-style-type: none"> Properly working seals. 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	M	
		<ul style="list-style-type: none"> Desiccant fresh (blue color) 	<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> Documentation 	<ul style="list-style-type: none"> Log book being maintained⁹ 	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
Comments: At the time of my inspection the dessicator needs to be refreshed and a log book maintained.					
Criteria	Standard Methods Requirement	Acceptable?		Rating	
Bench sheets					
<ul style="list-style-type: none"> General criteria 	<ul style="list-style-type: none"> Date(s)² 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A	
		<ul style="list-style-type: none"> Analyst initials² 	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No
		<ul style="list-style-type: none"> Blue or black ink pen² 	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No
		<ul style="list-style-type: none"> Calibration information² 	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No
		<ul style="list-style-type: none"> Equations, calculations, units for all measurements, notations, and results present² 	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No
		<ul style="list-style-type: none"> Corrections, single line through, initialed and dated² 	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No
Comments:					

General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?	Rating
Hot Water Bath (Fecal Coliform/E. Coli)			
<ul style="list-style-type: none"> Temperature Recordkeeping 	<ul style="list-style-type: none"> Temperature Log (thermometer reads 0.2° C)²¹ 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A
	<ul style="list-style-type: none"> Incubator temperature 44.5° C ± 0.2°^{21/24} 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<ul style="list-style-type: none"> Temperature Calibration / Documentation 	<ul style="list-style-type: none"> Thermometer calibrated annually with NIST traceable thermometer^{1,2} 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> Log book being maintained⁹ 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Water Level 	<ul style="list-style-type: none"> Thermometer total immersion or partial (line on thermometer to ID immersion depth)^{1,5} 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: Need to purchase an NIST traceable thermometer and calibrate water bath thermometer to make any necessary corrections.

Criteria	Standard Methods Requirement	Acceptable?	Rating
Autoclaves/Steam Sterilizers			
<ul style="list-style-type: none"> All apparatus utilized is adequately sterilized before use 	<ul style="list-style-type: none"> Sterilizing temperature 121° C²⁵ 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A
	<ul style="list-style-type: none"> 10 to 30 minutes time based on material being sterilized²⁶ 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Documentation 	<ul style="list-style-type: none"> 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.¹ 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	<ul style="list-style-type: none"> Date, contents, sterilization time and temperature, total time in autoclave, and analyst's initials should be recorded each time the autoclave is used¹ 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<ul style="list-style-type: none"> Temperature Calibration / Documentation 	<ul style="list-style-type: none"> Thermometer calibrated annually with NIST traceable thermometer^{1,2} 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	<ul style="list-style-type: none"> Log book being maintained⁹ 	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<ul style="list-style-type: none"> Performance Checks 	<ul style="list-style-type: none"> Test monthly for efficacy using a biological such as commercially available <i>Geobacillus stearothermophilus</i> in spore strips, suspensions, or capsules¹ 	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments: Currently there is no easy way to check the exhaust temperature although calibration of the autoclave temperature will be done in the future with a traceable thermometer.

Number of Criteria Rated:	Acceptable	10
	Marginal	3
	Unacceptable	0
Total Number of Areas Rated		13

Acceptable Ratings – 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).

Marginal Ratings – 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).

Unsatisfactory Rating - 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).

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

General Lab Criteria

Notation of Referenced Method

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

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.

Preservation and Holding Times

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
NH3-N	P, G	500	G, C	Analyze as soon as possible or add H_2SO_4 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_3 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_2SO_4 to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	28 d	28 d

General Lab Criteria

Approved Standard Methods	
CBOD / BOD 5 Day	Std Methods 5210-B
Ammonia, Selective Electrode Method	Std Methods 4500-NH3 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