



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

December 7, 2012

Re: Morgan County
McConnelsville POTW
0PC00000, OH0021466
Correspondence (PWW)

Mr. John Thompson, Village Administrator
Village of McConnelsville
9 West Main Street
McConnelsville, Ohio 43756

Dear Mr. Thompson:

On November 9, 2012 I conducted a Compliance Evaluation Inspection at the McConnelsville Publicly Owned Treatment Works located in McConnelsville, Ohio. You and Damon Drake represented McConnelsville and accompanied me during the inspection. The purpose of the inspection was to determine McConnelsville's compliance with NPDES Permit Number 0PC00000*GD and the Ohio Water Pollution Control Act, Revised Code Chapter 6111.

As a result of the inspection and review of our files, I have the following comments:

PART III. 3.A. of the Permit states, 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. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with conditions of the permit.

McConnelsville has had NPDES permit violations since the last inspection. The violations have decreased in the past 6 months due to improved maintenance and operations. Also, we discussed the installation of larger sewage pumps at the McConnels Run Pump Station and the installation of variable frequency drives to enable the village to provide a constant flow of sewage to the wastewater plant. This would ensure more consistent flows to the wastewater treatment plant instead of slug flows into the plant which causes disruptions in the treatment cycle. It would also allow for maximum flows to be pumped to the treatment plant during wet weather events.

All of the village's CSO's have been abated except for the McConnels Run Pump Station and Riverside Drive Pump Station. This is part of the village's long term control plan. We discussed where the village should place flow monitoring devices in its collection system to insure the separation project has been successful.

Attached is a copy of the inspection report which indicates **unsatisfactory** evaluations of the following area: Compliance Schedules/Violations. I gave this rating because of the deficiencies mentioned in the above comments. McConnelsville should take the appropriate actions to maintain the facility in compliance with all terms and conditions of the NPDES permit.

The Ohio EPA strongly encourages pollution prevention as the preferred approach for waste management. The first priority of pollution prevention is to eliminate the generation of wastes and pollutants at the source (source reduction). For those wastes or pollutants that are generated, the second priority is to recycle or reuse them in an environmentally sound manner. You can benefit economically, help preserve the environment, and improve your public image by implementing pollution prevention programs. For more information about pollution prevention, including fact sheets and U.S. EPA's Facility Pollution Prevention Guide, (EPA/600/R-92/088), you may contact the Ohio EPA Pollution Prevention Section at (614) 644-3469 or me for additional information.

Sincerely,



Scott Foster
District Representative
Division of Surface Water

SF/dh

Enclosure

c: John Walter Finley, Mayor
c: Damon Drake, Operator



State of Ohio Environmental Protection Agency
Southeast District Office

Municipal NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES #	Month/Day/Year	Inspection Type	Inspector	Facility Type
0PC00000*GD	OH0021466	November 9, 2012	C	S	1

Section B: Facility Data			
Name and Location of Facility Inspected		Entry Time	Permit Effective Date
McConnelsville WWTP State Route 376 McConnelsville, Ohio 43756		8:45 a.m.	June 1, 2008
		Exit Time	Permit Expiration Date
		11:30 a.m.	May 31, 2013
Name(s) and Title(s) of On-Site Representative(s)		Phone Number(s)	
Damon Drake, Operator of Responsible Charge		(740) 962-2186	
Name, Address, and Title of Responsible Official		Phone Number	
Damon Drake, ORC Village of McConnelsville 9 West Main Street McConnelsville, Ohio 43756		(740) 962-2186	

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

Section D: Summary of Findings (attach additional sheets if necessary)			
See attached letter.			
Inspector		Reviewer	
Date		Date	
12/13/12		12/13/12	
Scott Foster Division of Surface Water Southeast District Office		Jennifer M. Witte Compliance & Enforcement Supervisor Division of Surface Water Southeast District Office	

Sections E through 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/A

Comments/Status:

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 Y
- (f) Permittee is in compliance with schedule Y
- (g) Has biomonitoring shown toxicity in discharge since last inspection N/A

Comments/Status:

Section G: Operation and 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

- (b) Which components have an alarm system available for power or equipment failures
- (c) All treatment units in service other than backup units Y
- (d) What method is used for scheduling routine and preventative maintenance (calendar, software, etc.)
- (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 Y

Comments/Status:

(e)-RAS Pumps, Chain Flights in Clarifiers
 (h)-2 upsets

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)
- (i) Log book kept onsite (in an area protected from weather) Y
- (j) Log book contains the following: Y
- 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 Y
- 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) Y
- 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 Y

Comments/Status:

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..... 4
 - III. How many pump stations have operable alarms..... 4
- (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 Y

If so, what is the LTCP status

All CSO's Closed Except Riverside and McConnel Run Pump Stations
- (e) How are CSOs monitored (chalk, block, level sensor, etc.)

Packing Peanuts inserted into CSO pipe
- (f) Portable pumps available for collection system maintenance Y
- (g) RDII Program established and active Y
- (h) Any WIB complaint received since last inspection..... N
- (i) Is there a WIB response plan..... N
- (j) Is any portion of the collection system at or near dry weather capacity N

Comments/Status:

(g) Active downspout removal, sump pumps and smoke testing.
 (i) No WIB Plan.

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% Solids without Unstabilized Solids	Option 8 - >75% 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% Solids without Unstabilized Solids	Option 8 - >75% Solids with Unstabilized Solids	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"/>
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 N
- (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 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

Comments/Status:

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
- (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:

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 (see GLC page) Y
- (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:

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 Y
 - Title
 - Scope and Application
 - Summary
 - Sample Handling & 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..... N
 - (f) If (e) is yes, are results in permittee's self-monitoring report..... N/A
 - (g) Satisfactory calibration and maintenance of instruments/equipment (see score from GLC page) Y
 - (h) Commercial laboratory used Y
- Parameters analyzed by commercial lab: **All Permit Parameters except pH, Temp, DO**
Lab name: **TCCI**

Discharge Monitoring Report Quality Assurance (DMRQA)

- (a) Participation in latest USEPA quality assurance performance sampling N/A
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: **Final Outfall**

Receiving Stream: **Muskingum River**

Receiving Stream Description: **Flowing and level normal**

Comments/Status:

Section K: Multimedia Observations

- | | |
|--|---|
| (a) Are there indications of sloppy housekeeping or poor maintenance in work & 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

Facility: McConnellsville WWTP -11/9/12

Criteria	Standard Methods Requirement		Acceptable?		Rating
Balance					NR
• Standard Weights	• Either NIST Class s or ASTM/ANSI Class 1 weights ^{1,2}	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
• Calibration Frequency/ Documentation	• Calibration verification required at least once each day the balance is used ³	<input 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 ¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
• Other	• Service and recalibrate annually (manufacturer representative or comparable) ¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Must be able to measure to 0.1 grams ⁴	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Log book maintained ⁵	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments:					

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

Criteria	Standard Methods Requirement		Acceptable?		Rating
pH Meter					A
• 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Log book maintained ⁹	<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 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:					

General Lab Criteria

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 <input type="checkbox"/> No	
• Calibration Frequency/ Documentation	• Logbook maintained ⁹	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• 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: LDO Method-Light Diode LDO 101			

Criteria	Standard Methods Requirement	Acceptable?	Rating
Incubator (CBOD/E-Coli)			
• Temperature Recordkeeping	• Temperature checked/recorded twice daily for each shelf in use ¹	<input type="checkbox"/> Yes <input type="checkbox"/> No	NR
	• Temperature checked/recorded daily ² (CBOD)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Acceptable temperature range (CBOD) is 20°C ±1.0° ¹²	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Acceptable temperature range (E-Coli) is 35°C ±0.5° ²²	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Logbook maintained ⁹	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Temperature Calibration/ Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	• Temperature correction information posted on incubator ¹	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• E-Coli can use multiple tubes (five 20 ml or ten 10 mg), 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 type="checkbox"/> Yes <input type="checkbox"/> No	
	• Temperature Log (thermometer reads to 0.1 Celsius) ⁵	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Comments:			

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

Criteria	Standard Methods Requirement	Acceptable?	Rating
Chlorine Meter			
• Calibration Frequency/ Documentation	• pH/millivolt meter read to 0.1 mV ¹⁵	<input type="checkbox"/> Yes <input type="checkbox"/> No	NR
	• 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	<input type="checkbox"/> Yes <input type="checkbox"/> No	

General Lab Criteria

	or calibration per manufacturer specification ¹⁶			
	• 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 type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

Criteria	Standard Methods Requirement		Acceptable?		Rating
Ammonia 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 type="checkbox"/> No	NR	
	• Log book being maintained ⁹	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
• Slope Acceptability	• Verify calibration slope is acceptable (per mfg. spec.)	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
• Calibration Method	• 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 type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Standards used for calibration not expired	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
• Other	• Electrode free of deposits and foreign material	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Teflon covered magnetic stirrer or equivalent for mixing ¹⁸	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments:					

Criteria	Standard Methods Requirement		Acceptable?		Rating
Sample Collection/Handling					
• Sample Labeling	• Samples container labeled (description, date, time, preservative added, initialed) ¹⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A	
• Chain of Custody	• Chain of custody (description, date, time, signature) ¹⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
• Other	• Composite samples refrigerated during sample collection ¹⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Equipment blanks utilized ¹⁴	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• SOP for cleaning of sampling equipment	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Log book being maintained ⁹	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
Comments:					

Criteria	Standard Methods Requirement		Acceptable?		Rating
Desiccator					
• General Criteria	• Properly working seals	<input type="checkbox"/> Yes	<input type="checkbox"/> No	NR	
	• Desiccant fresh (blue color)	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
• Documentation	• Log book being maintained ⁹	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments:					

General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
Bench Sheets		Acceptable?		A
<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	
	<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:				

Criteria	Standard Methods Requirement	Acceptable?		Rating
Hot Water Bath (Fecal Coliform/E. Coli)		Acceptable?		NR
<ul style="list-style-type: none"> • Temperature Recordkeeping 	<ul style="list-style-type: none"> • Temperature Log (thermometer reads 0.2° C)²¹ 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Incubator temperature 44.5° C ±0.2°^{21/24} 	<input 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 type="checkbox"/> No	
	<ul style="list-style-type: none"> • Log book being maintained⁹ 	<input 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 type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

Criteria	Standard Methods Requirement	Acceptable?		Rating
Autoclaves/Steam Sterilizers		Acceptable?		NR
<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 type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> • 10 to 30 minutes time based on material being sterilized²⁶ 	<input 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 exhaust¹ 	<input type="checkbox"/> Yes	<input 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 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 type="checkbox"/> No	
	<ul style="list-style-type: none"> • Log book being maintained⁹ 	<input type="checkbox"/> Yes	<input 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 type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?	Rating
Final Effluent Temperature Monitoring			
<ul style="list-style-type: none"> • General Criteria 	<ul style="list-style-type: none"> • Thermometer calibrated annually with NIST traceable thermometer^{1,2} 	<input type="checkbox"/> Yes <input type="checkbox"/> No	NR
	<ul style="list-style-type: none"> • Thermometer reads in increments of at least 0.1°C⁵ 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
	<ul style="list-style-type: none"> • Log book being maintained² 	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Comments:			

Number of Criteria Rated:	Acceptable	4
	Marginal	0
	Unacceptable	0
	Total Number of Areas Rated	4

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 ≤6°C	6h	48h
TSS	P, G	200	G, C	Refrigerate ≤6°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 ₂ SO ₄ to pH <2, Refrigerate ≤6°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 ≤6°C	7 d	14 d
Base/Neutrals and acids	G (solvent rinsed or baked)	1000	G, C	Refrigerate ≤6°C	7 d	7 days until extraction 40 days after extraction
Pesticides	G (PTFE lined lid)	1000	C	Refrigerate ≤6°C	7 d	7 days until extraction 40 days after extraction
Fecal Coliform / E-Coli	G, P (Sterilized)	100	G	Refrigerate ≤10°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 ₂ SO ₄ to pH <2, Refrigerate ≤6°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 Methods 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