



Environmental
Protection Agency

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

February 14, 2012

Re: Muskingum County
Casting Solutions, LLC
Compliance Evaluation Inspection
NPDES Permit 0IS00000*KD
Correspondence (IWW)

Mr. Jeremiah Clegg, Plant Manager
Casting Solutions, LLC
2345 Licking Road
P.O. Box 3148
Zanesville, Ohio 43702

Dear Mr. Clegg:

On January 10, 2012, I conducted a compliance evaluation inspection at your facility. The purpose of the inspection was to determine Casting Solution's compliance status with its NPDES permit number 0IS00000*KD. I was accompanied by Mr. Jim Dingley, Casting Solutions, Environmental Engineer.

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

PART III. 3.B. of the Permit states, All wastewater treatment works shall be operated in a manner consistent with the following: The permittee shall effectively monitor the operation and efficiency of treatment and control facilities and the quantity and quality of the treated discharge.

Casting Solutions has recently had problems with the Phenol removal system in cold weather. You should monitor the system more often to insure it is operating optimally for removal of Phenol from the plant's waste stream.

Ohio Revised Code 6111.04, Part C states, No person to whom a permit has been issued shall place or discharge, or cause to be placed or discharged, in any waters of the state any sewage, sludge, sludge materials, industrial waste, or other wastes in excess of the permissive discharges specified under an existing permit without first receiving a permit from the director to do so.

Casting Solutions has made efforts to alleviate the possibility of water pollution from their facility due to a rain event. However, a large area of the facility does not have concrete. Also, the street sweeper is not operated on a regular schedule. Casting Solutions should continue to make every effort to improve in this area.

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.

Enclosed is a copy of the inspection report. If you have any questions or comments, please feel free to call at (740) 380-5227.

Sincerely,



Scott Foster
Environmental Specialist 2
Division of Surface Water

SF/dh

Enclosure

c: Jim Dingey, Burnham

NPDES Compliance Inspection Report

A. NATIONAL DATA SYSTEM CODING

Permit No.	NPDES No.	Date	Inspection Type	Inspector	Facility Type
0IS00000*KD	OH0004901	January 10, 2012	C	S	2

B. FACILITY DATA

Name & Location of Facility Inspected	Entry Time	Permit Effective Date
Casting Colutions, LLC 2345 Licking Road, P.O. Box 3148 Zanesville, Ohio 43702	9:03 a.m.	July 1, 2009
	Exit Time	Permit Expiration Date
	10:15 a.m.	October 31, 2013

Name(s) & Title(s) of On-Site Representative(s)	Phone Number(s)
Jeremiah Clegg, Plant Manager Jim Dingey, Environmental Engineer	(740) 452-9371, Ext. 6274 (740) 452-9371, Ext. 6234
Name, Address, & Title of Responsible Official	Phone Number
Jeremiah Clegg, Plant Manager Casting Solutions, LLC 2345 Licking Road, P.O. Box 3148 Zanesville, Ohio 43702	(740) 452-9371, Ext. 6274

C. AREAS EVALUATED DURING INSPECTION

<u>S</u> Permit	<u>S</u> Flow Measurement	<u>N/A</u> Pretreatment
<u>S</u> Records/Reports	<u>S</u> Laboratory	<u>S</u> Compliance Schedules
<u>S</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>N/A</u> Other
<u>N/A</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)

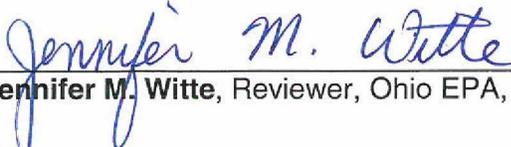
See attached letter.



Scott Foster, Inspector, Ohio EPA, Southeast District Office

2/14/12

Date



Jennifer M. Witte, Reviewer, Ohio EPA, Southeast District Office

2/14/12

Date

E. PERMIT VERIFICATION

Inspection Observations Verify the Permit	YES	NO	N/A	N/E
a. Correct name & mailing address of permittee	<input type="checkbox"/>	<input checked="" 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" 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:

Company is now doing business as Casting Solutions, LLC.

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 checked="" type="checkbox"/>	<input 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 type="checkbox"/> Dual Feed: <input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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: <u>1</u> Days/Week: <u>5</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Operator holds unexpired license of class required by permit. Class: <u>1+A</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Routine & preventive maintenance schedule/performed on time	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Any major equipment breakdown since last inspection	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Operation & maintenance manual provided & maintained	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Any plant bypasses since last inspection	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. 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"/>
k. Any hydraulic and/or organic overloads experienced since last inspection	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

H. SLUDGE MANAGEMENT

	YES	NO	N/A	N/E
a. Sludge adequately disposed. Method: <u>Suburban Landfill</u>	<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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Is sludge disposal contracted? Name: <u>Zemba Brothers Sanitary</u>	<input checked="" type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
f. Land application sites monitored and inspected per state rules	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
g. Records kept in accordance with state rules	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input 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:

Two plate frame presses, industrial-sanitary sludge hauled to Zanesville 8,000 gallons by Zemba's.

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 type="checkbox"/> Ultrasonic & parshall flume <input type="checkbox"/> Calculated from influent <input type="checkbox"/> Weir <input checked="" type="checkbox"/> Other – 005, Ultrasonic <input type="checkbox"/> Ultrasonic & Weir specify: <u>003, ISCO 4230 P/I</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Calibration frequency adequate. Date of last calibration: <u>003-7/15/11; 005-12/21/11</u>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Secondary instruments (totalizers, recorders, etc.) properly operated and maintained	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Flow measurement equipment adequate to handle expected ranges of flows	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Actual flow discharged is measured	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Flow measuring equipment inspection frequency: <input type="checkbox"/> Daily <input type="checkbox"/> Monthly <input checked="" type="checkbox"/> Weekly <input type="checkbox"/> Other				

Comments:

*Preventive Maintenance Program every 6 months

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:

Part 3 – Laboratory, General	YES	NO	N/A	N/E
a. EPA approved analytical testing procedures used (40 CFR 136.3)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. If alternate analytical procedures are used, proper approval has been obtained	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Analysis being performed more frequently than required by permit	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. 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"/>
e. Commercial laboratory used:				
1. Parameters analyzed by commercial lab: <u>Permit parameters except pH</u>				
2. Lab name: <u>Coshocton Environmental - Enviroscience - Toxicity</u>				

Part 3 – Laboratory, Quality Control/Quality Assurance	YES	NO	N/A	N/E
a. Quality assurance manual provided and maintained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
b. Satisfactory calibration and maintenance of instruments and equipment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
c. Adequate records maintained	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
d. Results of latest U.S. EPA quality assurance performance sampling program:				
Date: <u>08/29/11</u> <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Marginal <input type="checkbox"/> Unsatisfactory				

Comments:

J. EFFLUENT/RECEIVING WATER OBSERVATIONS

Outfall #	Oil Sheen	Grease	Turbidity	Visible Foam	Visible Float Solids	Color	Other
001	None	None	None	None	None	Clear	--
002	None	None	None	None	None	Clear	--
003	None	None	None	None	None	Clear	--
004 & 005	None	None	None	None	None	Clear	--

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?

General Lab Criteria

Facility: Casting Solutions, LLC

Criteria	Standard Methods Requirement	Acceptable?		Rating
Balance		Acceptable?		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 ⁶	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

Criteria	Standard Methods Requirement	Acceptable?		Rating
Drying Oven (Suspended Solids)		Acceptable?		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		Acceptable?		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			Acceptable?		NR
• Calibration Method	• Air or known DO calibration method ¹⁰	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Calibration per manufacturer specification ¹⁰	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
• Calibration Frequency/ Documentation	• Logbook maintained ⁹	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
	• Calibration verification required at least once each day the meter is used. ³	<input 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 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	
Incubator (CBOD/E-Coli)			Acceptable?		NR
• Temperature Recordkeeping	• Temperature checked/recorded twice daily for each shelf in use ¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
	• 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			Acceptable?		A
• Temperature Recordkeeping	• Temperature Log (thermometer reads to 0.1 Celsius) ⁵	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
• Temperature Calibration/ Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input checked="" type="checkbox"/> Yes	<input 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?		NR
• Calibration Frequency/ Documentation	• pH/millivolt meter read to 0.1 mV ¹⁵	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
	• 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			
	<ul style="list-style-type: none"> Standards used for calibration not expired 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
<ul style="list-style-type: none"> Slope Documentation/ Acceptability 	<ul style="list-style-type: none"> Calibration curve (acceptable slope) 	<input 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 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"> Instrument manual available 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

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 type="checkbox"/> No	NR
		<ul style="list-style-type: none"> Log book being maintained⁹ 	<input type="checkbox"/> Yes	
<ul style="list-style-type: none"> Slope Acceptability 	<ul style="list-style-type: none"> Verify calibration slope is acceptable (per mfg. spec.) 	<input 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 type="checkbox"/> Yes	<input type="checkbox"/> No	
		<ul style="list-style-type: none"> Standards used for calibration not expired 	<input type="checkbox"/> Yes	
<ul style="list-style-type: none"> Other 	<ul style="list-style-type: none"> Electrode free of deposits and foreign material 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> Teflon covered magnetic stirrer or equivalent for mixing¹⁸ 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	<ul style="list-style-type: none"> Instrument manual available 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

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 checked="" type="checkbox"/> Yes	<input 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 checked="" type="checkbox"/> Yes		<input 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"> Log book being maintained⁹ 	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments:					

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 type="checkbox"/> Yes	<input type="checkbox"/> No	NR
		<ul style="list-style-type: none"> Desiccant fresh (blue color) 	<input type="checkbox"/> Yes	
<ul style="list-style-type: none"> Documentation 	<ul style="list-style-type: none"> Log book being maintained⁹ 	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

General Lab Criteria

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 type="checkbox"/> Yes <input checked="" 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: Employees need to initial after calibrations and sampling performed.				

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 type="checkbox"/> Yes <input type="checkbox"/> No	NR
		<ul style="list-style-type: none"> • Incubator temperature 44.5° C ±0.2°^{21/24} 		
<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 		
<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				
<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	NR
		<ul style="list-style-type: none"> • 10 to 30 minutes time based on material being sterilized²⁶ 		
<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 		
<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 		
<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 $\leq 6^{\circ}\text{C}$	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	G, C	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 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