



State of Ohio Environmental Protection Agency

**Southeast District Office**

2195 Front Street  
Logan, Ohio 43138

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www.epa.state.oh.us

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

July 26, 2010

**Re:** Washington County  
City of Belpre  
Compliance Evaluation Inspection (CEI)  
Correspondence (PWW)

Mayor and Council  
City of Belpre  
P.O. Box 160  
Belpre, Ohio 45714

Dear Mayor and Council:

On June 22, 2010, a Compliance Evaluation Inspection (CEI) was conducted at the City of Belpre's wastewater treatment plant. The purpose of the inspection was to determine the City's compliance with its National Pollutant Discharge Elimination System (NPDES) Permit. Present for the inspection were Mike Betz and Denzil Ray representing the City of Belpre and Stephen Wells representing Ohio EPA, Division of Surface Water, Southeast District Office. No wastewater samples were collected as part of the inspection. A copy of my inspection report is attached.

As a result of my inspection, I have the following comments:

1. One of the influent pumps was out of service at the time of the inspection. The pump was is in the process of being repaired and replaced the following week of the inspection. Please inform this office when the pump was back into service.
2. The SCADA system for the plant is out of service. With the SCADA system down, the plant has some operational problems due to the influent pumps not working automatically when flows are high. Please inform this office when SCADA system will be repaired.
3. The City is currently in the process of using a contractor to clean the collection system. The sewer cleaning work is being done in stages. The City needs to be working on removing inflow and infiltration (I/I) along with the sewer cleaning. Please inform this office on how much of the collection system has been cleaned and I/I work that is being completed.
4. The underdrains of the sand filters beds are currently being replaced a bed at a time. The plant has found the old underdrains were plugged. The sand beds that have had the underdrains replaced are operating more efficiently. Please inform this office when the rest of the underdrains will be replaced.

5. The week of June 28th, the plant had a spill of anaerobic digester sludge to the ground. Please inform this office on the cause and the efforts the plant used to clean up the spill of sludge.
6. A laboratory inspection was also conducted at the time of the inspection. A copy of the laboratory inspection report is also attached. The biggest issue appears to be the lack of a log books to document the proper operation and calibration of the equipment.

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 or U.S. EPA's "Facility Pollution Prevention Guide" (EPA/600/R-92.008), please contact the Ohio EPA Pollution Prevention Section at (614) 644-3469.

In conclusion, the City of Belpre appeared to be in compliance with its NPDES Permit at the time of the inspection.

Please respond to above comments in writing to this office within 20 days upon receipt of this letter.

If you have any questions, feel free to contact me (740) 380-5434.

Sincerely,



Stephen Wells  
District Representative  
Division of Surface Water

SW/dh

Enclosure

c: Mike Betz, City of Belpre  
c: Denzil Ray, City of Belpre

# NPDES Compliance Inspection Report

## A. NATIONAL DATA SYSTEM CODING

Permit No.	NPDES No.	Date	Inspection Type	Inspector	Facility Type
OPD00027*GD	OH0020621	June 22, 2010	C	S	1

## B. FACILITY DATA

Name & Location of Facility Inspected	Entry Time	Permit Effective Date
City of Belpre Wastewater Treatment Plant 1400 Blennerhasset Avenue Belpre, Ohio	10:15 a.m.	August 1, 2008
	Exit Time	Permit Expiration Date
	12:15 p.m.	January 31, 2013

Name(s) & Title(s) of On-Site Representative(s)	Phone Number(s)
Denzil Ray, Operator	(740) 423-9941
Mike Betz, Public Works Superintendent	(740) 423-6485
Name, Address, & Title of Responsible Official	Phone Number
Mayor and Council City of Belpre 715 Park Drive Belpre, Ohio 45714	(740) 423-7592

## 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>M</u> Laboratory	<u>N/A</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>   </u> Other
<u>S</u> Collection System		

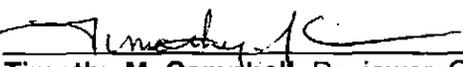
(S = Satisfactory; M = Marginal; U = Unsatisfactory; N = Not Evaluated; N/A = Not Applicable)

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

See attached letter.

  
 Stephen Wells, Inspector, Ohio EPA, Southeast District Office

7/26/10  
 Date

  
 Timothy M. Campbell, Reviewer, Ohio EPA, Southeast District Office

7/26/10  
 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Permittee is taking actions to resolve violations	<input checked="" type="checkbox"/>	<input 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 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: 2 Days/Week: 7	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Comments:

<b>Record Keeping</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>N/E</b>
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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:**

Denzil Ray is the Operator of Record. Mike Betz, Public Works Superintendent is a Class IV Operator.

<b>Collection System</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>N/E</b>
a. Percent combined system. Percent: 0	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Comments:**

The Shell lift station is not alarmed.

**SLUDGE MANAGEMENT**

	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>N/E</b>
a. Sludge adequately disposed. Method: Landfill	<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: J&J Refuse	<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 checked="" type="checkbox"/>	<input 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 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:**



<b>Part 3 – Laboratory, Quality Control/Quality Assurance</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>N/E</b>
a. Quality assurance manual provided and maintained	<input checked="" type="checkbox"/>	<input 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"/>
d. Results of latest U.S. EPA quality assurance performance sampling program: Date: DMR-QA 29 <input checked="" type="checkbox"/> Satisfactory <input type="checkbox"/> Marginal <input type="checkbox"/> Unsatisfactory				

Comments:

**J. EFFLUENT/RECEIVING WATER OBSERVATIONS**

<b>Outfall #</b>	<b>Oil Sheen</b>	<b>Grease</b>	<b>Turbidity</b>	<b>Visible Foam</b>	<b>Visible Float Solids</b>	<b>Color</b>	<b>Other</b>
001	None	None	None	None	None	Clear	

Comments:

**K. MULTIMEDIA OBSERVATIONS**

<b>Collection System</b>	<b>YES</b>	<b>NO</b>	<b>N/A</b>	<b>N/E</b>
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: City of Belpre, OPD00027\*GD, July 26, 2010

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

Comments: Calibration weights are needed and a log book needs to be maintained on the balance.

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

Comments: Log books need to be maintained and proper thermometer purchased.

Criteria	Standard Methods Requirement	Acceptable?	Rating
<b>pH Meter</b>		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>A</b>
• Calibration Frequency / Documentation	• Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples) <sup>3</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Logbook maintained <sup>9</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Minimum of 2 point calibration	• Calibration per manufacturer specification and calibration buffers must bracket anticipated result <sup>7</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Slope acceptable range indicated on benchsheet <sup>2</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Buffer Expiration Date	• Buffers must not be expired	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Instrument manual available	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
	• Teflon covered magnetic stirrer or equivalent for mixing <sup>8</sup>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

Comments:

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

# General Lab Criteria

/ Documentation	• Calibration verification required at least once each day the meter is used. <sup>3</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Small to no bubble present under membrane (must be smaller than the lead in number 2 pencil) <sup>11</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments: Log book needs to be maintained.

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>Incubator (CBOD/ E-Coli)</b>				
• Temperature Recordkeeping	• Temperature checked / recorded twice daily for each shelf in use <sup>1</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
	• Acceptable temperature range (CBOD) is 20° C ±1.0 <sup>o 12</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Acceptable temperature range (E-Coli) is 35° C ±0.5 <sup>o 22</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Logbook maintained <sup>9</sup>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer <sup>1, 2</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• E-Coli can use multiple tubes (five 20 ml or ten 10 ml), or mfg's multi-well tray	• Temperature correction information posted on incubator <sup>1</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• E-coli Ultraviolet lamp (365 nm wave length, 6 W bulb) <sup>23</sup>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Temperature Log (thermometer reads to 0.1 Celsius). <sup>5</sup>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	

Comments: Log book needs to be maintained.

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

Comments: Log book needs to be maintained.

Criteria	Standard Methods Requirement	Acceptable?		Rating
<b>Chlorine Meter</b>				
• Calibration Frequency / Documentation	• pH / millivolt meter read to 0.1 mV <sup>15</sup>	<input checked="" 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) <sup>3</sup>	<input checked="" 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 <sup>16</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Standards used for calibration not expired	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Calibration curve (acceptable slope)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Electrode free of deposits and foreign material	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained. <sup>9</sup>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	

# General Lab Criteria

	<ul style="list-style-type: none"> <li>Instrument manual available</li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments:					
Criteria	Standard Methods Requirement	Acceptable?		Rating	
<b>Ammonia Meter</b>					
<ul style="list-style-type: none"> <li>Calibration Frequency / Documentation</li> </ul>	<ul style="list-style-type: none"> <li>Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples)<sup>3</sup></li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	NR	
		<ul style="list-style-type: none"> <li>Log book being maintained<sup>9</sup></li> </ul>	<input type="checkbox"/> Yes		<input type="checkbox"/> No
<ul style="list-style-type: none"> <li>Slope acceptability</li> </ul>	<ul style="list-style-type: none"> <li>Verify calibration slope is acceptable (per mfg. spec.).</li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
<ul style="list-style-type: none"> <li>Calibration Method</li> </ul>	<ul style="list-style-type: none"> <li>Standards used for calibration (3 ammonia solutions of 10 mg/l, 1 mg/l, and 0.1 mg/l) or per mfg. spec.<sup>17</sup></li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
		<ul style="list-style-type: none"> <li>Standards used for calibration not expired</li> </ul>	<input type="checkbox"/> Yes		<input type="checkbox"/> No
<ul style="list-style-type: none"> <li>Other</li> </ul>	<ul style="list-style-type: none"> <li>Electrode free of deposits and foreign material</li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No		
		<ul style="list-style-type: none"> <li>Teflon covered magnetic stirrer or equivalent for mixing<sup>18</sup></li> <li>Instrument manual available</li> </ul>	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:					
Criteria	Standard Methods Requirement	Acceptable?		Rating	
<b>Sample Collection/Handling</b>					
<ul style="list-style-type: none"> <li>Sample Labeling</li> </ul>	<ul style="list-style-type: none"> <li>Samples container labeled (description, date, time, preservative added, initialed).<sup>19</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	M	
<ul style="list-style-type: none"> <li>Chain of Custody</li> </ul>	<ul style="list-style-type: none"> <li>Chain of custody (description, date, time, signature).<sup>19</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
<ul style="list-style-type: none"> <li>Other</li> </ul>	<ul style="list-style-type: none"> <li>Composite samples refrigerated during sample collection<sup>14</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
		<ul style="list-style-type: none"> <li>Equipment blanks utilized<sup>14</sup></li> </ul>	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No
		<ul style="list-style-type: none"> <li>SOP for cleaning of sampling equipment</li> <li>Logbook being maintained<sup>9</sup></li> </ul>	<input type="checkbox"/> Yes		<input checked="" type="checkbox"/> No
Comments: Log book needs to be maintained.					
Criteria	Standard Methods Requirement	Acceptable?		Rating	
<b>Desiccator</b>					
<ul style="list-style-type: none"> <li>General criteria</li> </ul>	<ul style="list-style-type: none"> <li>Properly working seals.</li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A	
		<ul style="list-style-type: none"> <li>Desiccant fresh (blue color)</li> </ul>	<input checked="" type="checkbox"/> Yes		<input type="checkbox"/> No
<ul style="list-style-type: none"> <li>Documentation</li> </ul>	<ul style="list-style-type: none"> <li>Log book being maintained<sup>9</sup></li> </ul>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
Comments: Log book needs to be maintained.					
Criteria	Standard Methods Requirement	Acceptable?		Rating	
<b>Bench sheets</b>					
<ul style="list-style-type: none"> <li>General criteria</li> </ul>	<ul style="list-style-type: none"> <li>Date(s)<sup>2</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	M	
	<ul style="list-style-type: none"> <li>Analyst initials<sup>2</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
	<ul style="list-style-type: none"> <li>Blue or black ink pen<sup>2</sup></li> </ul>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
	<ul style="list-style-type: none"> <li>Calibration information<sup>2</sup></li> </ul>	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No		
	<ul style="list-style-type: none"> <li>Equations, calculations, units for all measurements, notations, and results present<sup>2</sup></li> <li>Corrections, single line through, initialed and dated<sup>2</sup></li> </ul>	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No		
Comments: Need to use black or blue ink, no pencils.					

# General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?	Rating
<b>Hot Water Bath (Fecal Coliform/E. Coli)</b>			
<ul style="list-style-type: none"> <li>• Temperature Recordkeeping</li> </ul>	<ul style="list-style-type: none"> <li>• Temperature Log (thermometer reads 0.2° C)<sup>21</sup></li> </ul>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>M</b>
		<ul style="list-style-type: none"> <li>• Incubator temperature 44.5° C ± 0.2°<sup>21/24</sup></li> </ul>	
<ul style="list-style-type: none"> <li>• Temperature Calibration / Documentation</li> </ul>	<ul style="list-style-type: none"> <li>• Thermometer calibrated annually with NIST traceable thermometer<sup>1,2</sup></li> </ul>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
	<ul style="list-style-type: none"> <li>• Log book being maintained<sup>9</sup></li> </ul>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<ul style="list-style-type: none"> <li>• Water Level</li> </ul>	<ul style="list-style-type: none"> <li>• Thermometer total immersion or partial (line on thermometer to ID immersion depth)<sup>1,5</sup></li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Comments: Log book needs to be maintained.			

Criteria	Standard Methods Requirement	Acceptable?	Rating
<b>Autoclaves/Steam Sterilizers</b>			
<ul style="list-style-type: none"> <li>• All apparatus utilized is adequately sterilized before use</li> </ul>	<ul style="list-style-type: none"> <li>• Sterilizing temperature 121° C<sup>25</sup></li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>A</b>
		<ul style="list-style-type: none"> <li>• 10 to 30 minutes time based on material being sterilized<sup>26</sup></li> </ul>	
<ul style="list-style-type: none"> <li>• Documentation</li> </ul>	<ul style="list-style-type: none"> <li>• Verify the autoclave temperature weekly by using a maximum registering thermometer (MRT) to confirm that 121°C has been reached as measured in the exhaust.<sup>1</sup></li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
		<ul style="list-style-type: none"> <li>• Date, contents, sterilization time and temperature, total time in autoclave, and analyst's initials should be recorded each time the autoclave is used<sup>1</sup></li> </ul>	
<ul style="list-style-type: none"> <li>• Temperature Calibration / Documentation</li> </ul>	<ul style="list-style-type: none"> <li>• Thermometer calibrated annually with NIST traceable thermometer<sup>1,2</sup></li> <li>• Log book being maintained<sup>9</sup></li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
<ul style="list-style-type: none"> <li>• Performance Checks</li> </ul>	<ul style="list-style-type: none"> <li>• Test monthly for efficacy using a biological such as commercially available <i>Geobacillus stearothermophilus</i> in spore strips, suspensions, or capsules<sup>1</sup></li> </ul>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Comments: Log book needs to be maintained.			

<b>Number of Criteria Rated:</b>	<b>Acceptable</b>	
	<b>Marginal</b>	
	<b>Unacceptable</b>	
	<b>Total Number of Areas Rated</b>	

**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
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# 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 $\text{H}_2\text{SO}_4$ to $\text{pH} < 2$ , 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 $\text{HNO}_3$ to $\text{pH} < 2$	6 months	6 months
Purgeables by purge and trap	G (PTFE lined lid)	40 (X2)	G	HCl to $\text{pH} < 2$ , 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 $\text{H}_2\text{SO}_4$ to $\text{pH} < 2$ , 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