



**Environmental
Protection Agency**

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

Re: Richland County
City of Shelby
NPDES Permit

September 24, 2012

Mr. John Ensman
Deputy Director of Public Service
City of Shelby
23 West Main Street
Shelby, Ohio 44875

Dear Mr. Ensman:

On August 30, 2012, Walter Ariss conducted a compliance evaluation inspection of the City of Shelby's wastewater treatment plant (WWTP) located at 3626 London West Road, Shelby, Richland County. Mr. Charlie Brown, Superintendent, was present to provide information on plant operations. A copy of our completed inspection checklist is enclosed for your review.

A clear final effluent was being discharged and the majority of the treatment units were in operation at the time of the inspection. The raw bypass of the WWTP was not active and all flow was receiving full treatment. The communitor unit was out for repairs and all flow was being diverted through the manually cleaned bar screen. The communitor suffered damage when a failed bearing allowed the grinding teeth of the unit to damage the drum screens.

During the inspection, we reviewed the plant's laboratory procedure for sample collection and testing of residual chlorine and nitrogen ammonia. The completed laboratory checklist is enclosed for your review. The laboratory's evaluation was acceptable. It is recommended that the City plan to purchase a refrigerated composite sampler as part of the upgrades to the treatment plant.

A review of your discharge monitoring reports covering the months of March through August 2012 revealed several violations of the effluent limitations contained in your National Pollutant Discharge Elimination System (NPDES) permit. A printout of these violations has been enclosed for your review. Your facility is currently in significant non-compliance with the ammonia limits contained in your NPDES permit. Mr. Brown has already provided documentation to our office as to the cause of the violations, and the steps the City has taken to prevent them from occurring in the future. The WWTP was in compliance with all of the numerical limits contained in the NPDES permit for the month of August. Please be aware that our office has very clear expectations for compliance from facility's your size. Further instances of significant non-compliance may lead to enforcement action.

Please contact Walter Ariss at 419-373-3070 with any questions.

Yours truly,

Elizabeth A. Wick, P.E.
Environmental Engineer/Section Manager
Division of Surface Water

WA/jlm
Enclosures
pc: Charlie Brown, Shelby WWTP
ec: Tracking

Northwest District Office
347 North Dunbridge Road
Bowling Green, OH 43402-9398

419 | 352 8461
419 | 352 8468 (fax)
www.epa.ohio.gov



State of Ohio Environmental Protection Agency
Northwest District Office

NPDES Compliance Inspection Report

Section A: National Data System Coding					
Permit #	NPDES#	Month/Day/Year	Inspection Type	Inspector	Facility Type
2PD00036	OH0023540	8/30/2012	C	S	1

Section B: Facility Data		
Name and Location of Facility Inspected	Entry Time	Permit Effective Date
City of Shelby WWTP 3626 London West Road Shelby, OH 44875	10:00 AM	7/1/2008
	Exit Time	Permit Expiration Date
	1:00 PM	7/31/2012
Name(s) and Title(s) of On-Site Representatives	Phone Number(s)	
Charlie Brown, Superintendent	419-755-3413	
Name, Address and Title of Responsible Official	Phone Number	
John Ensmann, Deputy Director of Public Service	419-755-3700	

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

Section D: Summary of Findings (Attach additional sheets if necessary)	
Inspector	Reviewer
 Date: 8/30/12	 Date: 9/20/12
Walter Ariss, P.E. Division of Surface Water Northwest District Office	Thomas Poffenbarger, P.E. Water Quality Engineer/ Unit Supervisor Division of Surface Water Northwest District Office

Sections E thru K: Complete on all inspections as appropriate
Y – Yes, N – No, N/A – Not Applicable, N/E – Not Evaluated

Section E: Permit Verification

Inspection observations verify the permit

- (a) Correct name and mailing address of permittee Y
- (b) Correct name and location of receiving waters..... Y
- (c) Product(s) and production rates conform with permit application (Industries)..... N/A
- (d) Flows and loadings conform with NPDES permit..... Y
- (e) Treatment processes are as described in permit application... Y
- (f) New treatment process(es) added since last inspection..... N
- (g) Notification given to State of new, different or increased discharges..... N/A
- (h) All discharges are permitted..... Y
- (i) Number and location of discharge points are as described in permit..... Y

Comments/Status:

i) upstream taken at London West Road bridge, downstream taken at Plymouth-Springmill bridge

Section F: Compliance Schedules/Violations

- (a) Any significant violations since the last inspection..... Y
- (b) Permittee is taking actions to resolve violations..... Y
- (c) Permittee has a compliance schedule..... Y
- (d) Compliance schedule contained in NPDES permit
- (e) Permittee is meeting compliance schedule..... Y

Comments/Status:

a) ammonia
 b) I/I removal, pretreatment program development.

Section G: Operation & Maintenance

Treatment Works:

Treatment facility properly operated and maintained

- (a) Standby power available.....generator or dual feed Y
- (b) Adequate alarm system available for power or equipment failures.. Y
- (c) All treatment units in service other than backup units..... N
- (d) Wastewater Treatment Works classification (OAC 3745-7)..... II
- (e) Operator of Record holds unexpired license of class required by permit..... Y
 Class: III
- (f) Copy of certificate of Operator of Record displayed on-site..... Y
- (g) Minimum operator staffing requirements fulfilled (OAC 3745-7)... N/A
- (h) Routine and preventative maintenance scheduled/performed... Y
- (i) Any major equipment breakdown since last inspection..... Y
- (j) Operation and maintenance manual provided and maintained.... Y
- (k) Any plant bypasses since last inspection..... N
- (l) Regulatory agency notified of bypasses..... N/A
 On MORs and/or Spill Hotline (1-800-282-9378)
- (m) Any hydraulic and/or organic overloads since last inspection..... N

Record Keeping:

- (a) Log book provided..... Y
- (b) Format of log book (i.e. computer log, hard bound book)

kept in binder
- (c) Log book(s) kept onsite (in an area protected from weather)..... Y
- (d) Log book contains the following:
 - 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 operation and maintenance activities (including preventative maintenance, repairs and request for repairs)..... Y
 - IV. Laboratory results (unless documented on bench sheets)... Y
 - V. Identification of person making log entries..... Y
- (d) Has the operator of record submitted written notification 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

Section G: Operation & Maintenance (con't)

Collection System:

- (a) Percent combined system: 0%
- (b) Any collection system overflows since last inspection..... N
(CSO and/or SSO)
- (c) Regulatory agency notified of overflows (SSOs)..... N/A
- (d) CSO O&M plan provided and implemented..... N/A
- (e) CSOs monitored and reported in accordance with permit..... N/A
- (f) Portable pumps used to relieve system..... N
- (g) Lift station alarms provided and maintained..... N/A
- (h) Are lift stations equipped with permanent standby power
or equivalent..... N/A
- (i) Is there an inflow/infiltration problem (separate sewer system),
or were there any major repairs to collection system since
last inspection..... Y
- (j) Any complaints received since last inspection of basement flooding N
- (k) Are any portions of the sewer system at or near capacity..... N

Comments/Status:

Treatment Works c) and i) comminutor currently out of repair
e) Charlie and Garrett Class III, one Class II, one Class I

Collection System g,h) no lift stations in town, system is entirely gravity fed

Section H: Sludge Management

- (a) Sludge management plan (SMP)
Submitted date: 6/11/1986 Approval #: 03-223-PW Not submitted N/A
- (b) Sludge management plan current..... Y
- (c) Sludge adequately disposed..... Y
(Method: Land Application)
- (d) If sludge is incinerated, where is ash disposed of
- (e) Is sludge disposal contracted..... Y
(Name: Mid Ohio Management)
- (f) Has amount of sludge generated changed significantly since
last inspection..... N
- (g) Adequate sludge storage provided at plant..... Y
- (h) Land application sites monitored and inspected per SMP..... Y
- (i) Records kept in accordance with State and Federal law..... Y
- (j) Any complaints received in last year regarding sludge..... N
- (k) Is sludge adequately processed (digestion, pathogen control)..... Y

Comments/Status:

Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary flow measuring device operated and maintained..... Y
Type of device: Ultrasonic & Parshall flume Ultrasonic & Weir Weir
Calculated from influent Other (Specify: Venturi on influent pump station)
- (b) Calibration frequency adequate Y
(Date of last calibration:)
- (c) Secondary instruments operated and maintained..... Y
- (d) Flow measurement equipment adequate to handle full range
of flows..... Y
- (e) Actual flow discharged is measured..... N
- (f) Flow measuring equipment inspection frequency
 Daily Weekly monthly other

Comments/Status:

Section I: Self-Monitoring Program (con't)

Sampling:

- (a) Sampling location(s) are as specified by permit..... Y
- (b) Parameters and sampling frequency agree with permit..... Y
- (c) Permittee uses required sampling method..... Y
- (d) Sample collection procedures are adequate..... Y
 - (i) Samples refrigerated during compositing..... Y
 - (ii) Proper preservation techniques used..... Y
 - (iii) Containers and sample holding times prior to analysis conform with 40 CFR 136.3..... Y
- (e) 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
- (f) Adequate records maintained of sampling date, time, location, etc.. Y

Laboratory:

General

- (a) EPA approved analytical testing procedures used (40 CFR 136.3).. Y
- (b) If alternate analytical procedures are used, proper approval has been obtained..... N/A
- (c) Analyses being performed more frequently than required by permit. Y
- (d) If (c) is yes, are results in permittee's self-monitoring report..... N
- (e) Commercial laboratory used..... Y
Parameters analyzed by commercial lab: Metals, Sludge, Nitrates, Phosphorous, toxicity

Lab name: Alloway

Quality Control/Quality Assurance

- (f) Quality assurance manual provided and maintained..... Y
- (g) Satisfactory calibration and maintenance of instruments/equipment. Y
- (h) Adequate records maintained..... Y
- (i) Results of latest USEPA quality assurance performance sampling program:
 Satisfactory Marginal Unsatisfactory

Date:

Comments/Status:

Section J: Effluent/Receiving Water Observations

Outfall Number	Oil sheen	Grease	Turbidity	Visible Foam	Visible Floating Solids	Color	Other
001	none	none	none	none	none	clear	

Comments/Status:

Section K: Multimedia Observations

- (a) Are there indications of sloppy housekeeping or poor maintenance in work and storage areas or laboratories..... N
- (b) Do you notice staining or discoloration of soils, pavement or floors.. N
- (c) Do you notice distressed (unhealthy, discolored, dead) vegetation.. N
- (d) Do you see unidentified dark smoke or dust clouds coming from sources other than smokestacks..... N
- (e) Do you notice any unusual odors or strong chemical smells..... N
- (f) Do you see any open or unmarked drums, unsecured liquids, or damaged containment facilities..... N

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

- (1) What is the cause of the condition?
- (2) Is the observed condition or source a waste product?
- (3) Where is the suspected contaminant normally disposed?
- (4) Is this disposal permitted?
- (5) How long has the condition existed and when did it begin?

Comments/Status:

Get New Data		City of Shelby NPDES permit limit violations March through August 2012							
Permit No	Reporting Period	Station	Reporting Code	Parameter	Limit Type	Limit	Reported Value	Violation Date	
2PD00036*LD	June 2012	001	00610	Nitrogen, Ammonia (NH3	30D Conc	2.0	2.65608	6/1/2012	
2PD00036*LD	June 2012	001	50060	Chlorine, Total Residu	1D Conc	0.025	.145	6/1/2012	
2PD00036*LD	June 2012	001	50060	Chlorine, Total Residu	1D Conc	0.025	.409	6/3/2012	
2PD00036*LD	June 2012	001	00610	Nitrogen, Ammonia (NH3	7D Conc	3.5	3.50667	6/8/2012	
2PD00036*LD	June 2012	001	00610	Nitrogen, Ammonia (NH3	7D Conc	3.5	5.26333	6/15/2012	
2PD00036*LD	June 2012	001	00610	Nitrogen, Ammonia (NH3	7D Qty	33	42.9908	6/15/2012	
2PD00036*LD	June 2012	001	00552	Oil and Grease, Hexane	1D Conc	10	32.	6/15/2012	
2PD00036*LD	July 2012	001	00610	Nitrogen, Ammonia (NH3	30D Qty	19	51.5670	7/1/2012	
2PD00036*LD	July 2012	001	00610	Nitrogen, Ammonia (NH3	7D Qty	33	73.8653	7/1/2012	
2PD00036*LD	July 2012	001	00530	Total Suspended Solids	30D Conc	12	67.25	7/1/2012	
2PD00036*LD	July 2012	001	00530	Total Suspended Solids	30D Qty	115	298.025	7/1/2012	
2PD00036*LD	July 2012	001	00610	Nitrogen, Ammonia (NH3	30D Conc	2.0	10.6216	7/1/2012	
2PD00036*LD	July 2012	001	00610	Nitrogen, Ammonia (NH3	7D Conc	3.5	11.97	7/1/2012	
2PD00036*LD	July 2012	001	00610	Nitrogen, Ammonia (NH3	7D Qty	33	62.2375	7/8/2012	
2PD00036*LD	July 2012	001	00610	Nitrogen, Ammonia (NH3	7D Conc	3.5	14.0333	7/8/2012	
2PD00036*LD	July 2012	001	00610	Nitrogen, Ammonia (NH3	7D Conc	3.5	8.25667	7/15/2012	
2PD00036*LD	July 2012	001	00610	Nitrogen, Ammonia (NH3	7D Qty	33	36.6601	7/15/2012	
2PD00036*LD	July 2012	001	00530	Total Suspended Solids	7D Conc	18	83.6666	7/15/2012	
2PD00036*LD	July 2012	001	00530	Total Suspended Solids	7D Qty	170	416.284	7/15/2012	
2PD00036*LD	July 2012	001	00610	Nitrogen, Ammonia (NH3	7D Conc	3.5	8.22667	7/22/2012	
2PD00036*LD	July 2012	001	00610	Nitrogen, Ammonia (NH3	7D Qty	33	33.5054	7/22/2012	
2PD00036*LD	July 2012	001	00530	Total Suspended Solids	7D Conc	18	173.333	7/22/2012	
2PD00036*LD	July 2012	001	00530	Total Suspended Solids	7D Qty	170	695.942	7/22/2012	
2PD00036*LD	July 2012	001	00300	Dissolved Oxygen	1D Conc	7.0	6.3	7/25/2012	

City of Shelby WWTP 8/30/2012
F. GUIDE - VISUAL OBSERVATION - UNIT PROCESS

Form Approved

OMB No. 158-R0035

RATING CODES: S = Satisfactory; U = Unsatisfactory; M = Marginal; IN = In Operation; OUT = Out of Operation

CONDITION OR APPEARANCE		RATING	COMMENTS
General	Grounds	S	
	Buildings	S	
	Potable Water Supply Protection	S	
	Safety Features	S	
	Plant Bypass	OUT	
	Equalization Diversion	OUT	Small basin needs to be cleaned out
	Alternate Power Source	OUT	Generator
Preliminary	Maintenance of Collection Systems	S	
	Pump Station	IN	Influent pumps, have 4 pumps, use 3
	Ventilation	S	
	Bar Screen	OUT	Back up to comminutor
	Disposal of Screenings	S	Landfill
	Comminutor	OUT	Sent out for repairs last week
	Grit Chamber	IN	Aerated
	Disposal of Grit	S	Landfill
Primary	Settling Tanks	IN	2 tanks, both in use
	Scum Removal	OUT	Use vac truck to periodically clean surface
	Sludge Removal	IN	
	Effluent	S	
Sludge Disposal	Digesters	IN	Anaerobic units – 1 primary, 1 secondary
	Temperature and pH	S	
	Gas Production	IN	Used at plant to run boilers
	Heating Equipment	IN	
	Sludge Pumps	IN	3 RAS, 2 WAS, 2 recirculating for digesters, 1 for pumping out holding basin
	Disposal of Sludge	S	Land application
	Sludge Holding Tank	IN	Stores digested sludge until it can be land applied
	Old drying beds	IN	Using for grease and EQ sludge drying
	Old plant aeration tanks	OUT	Used to store excess sludge during high production periods
Other	Flow Meter and Recorder	IN	Influent venturi meter following influent pumps
	Records	S	
	Lab Controls	S	
	Chemical Treatment		
Secondary-Tertiary <small>List items as</small>	Aeration Tanks	IN	2 Tanks, only use one
	Blowers	IN	5 available
	Secondary Clarifiers	IN	2 units
Disinfection	Effluent	S	
	Disinfection System	IN	Gas chlorine feed
	Effective Dosage	S	
	Contact Time	S	
	Contact Tank	IN	
	Dechlorination	IN	Sodium bisulfite feed
	Post Aeration	IN	

City of Shelby WWTP 8-30-12 General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
Balance				
• Standard Weights	• Either NIST Class s or ASTM/ANSI Class 1 weights ^{1,2}	<input type="checkbox"/> Yes	<input 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)				
• 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				
• 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	
	• Logbook maintained ⁹	<input 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 type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope Documentation / Acceptability	• Slope acceptable range indicated on benchsheet ²	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Buffer Expiration Date	• Buffers must not be expired	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Other	• Instrument manual available	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Teflon covered magnetic stirrer or equivalent for mixing ⁸	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Comments:

City of Shelby WWTP 8-30-12 General Lab Criteria

Criteria	Standard Methods Requirement		Rating
Dissolved Oxygen Meter			Acceptable?
• 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: *Meter needs to be calibrated before each use and recorded in a log.*

Criteria	Standard Methods Requirement		Rating
Incubator (CBOD/ E-Coli)			Acceptable?
• Temperature Recordkeeping	• Temperature checked / recorded twice daily for each shelf in use ¹	<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 ml), or mfg's multi-well tray	• E-coli Ultraviolet lamp (365 nm wave length, 6 W bulb) ²³	<input type="checkbox"/> Yes <input type="checkbox"/> No	
• Other	• Instrument manual available	<input 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		Rating
Refrigerator			Acceptable?
• Temperature Recordkeeping	• Temperature Log (thermometer reads to 0.1 Celsius). ⁵	<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	
• 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:

City of Shelby WWTP 8-30-12 General Lab Criteria

Criteria	Standard Methods Requirement	Acceptable?		Rating
Chlorine Meter				
• Calibration Frequency / Documentation	• pH / millivolt meter read to 0.1 mV ¹⁵	<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) ³	<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 ¹⁶	<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. ⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

Criteria	Standard Methods Requirement	Acceptable?		Rating
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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	A
	• Log book being maintained ⁹	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
• Slope acceptability	• Verify calibration slope is acceptable (per mfg. spec.).	<input checked="" 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 checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Standards used for calibration not expired	<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	
	• Teflon covered magnetic stirrer or equivalent for mixing ¹⁸	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Instrument manual available	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

City of Shelby WWTP 8-30-12 General Lab Criteria

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	M
• Chain of Custody	• Chain of custody (description, date, time, signature). ¹⁹	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
• Other	• Composite samples refrigerated during sample collection ¹⁴	<input type="checkbox"/> Yes	<input checked="" 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	
	• Logbook being maintained ⁹	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Comments: Need to keep log of compositer temperature when samples are pulled. Need to keep record of who pulled samples from compositer and when.				

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

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

Criteria	Standard Methods Requirement	Acceptable?		Rating
Hot Water Bath (Fecal Coliform/E. Coli)				
• Temperature Recordkeeping	• Temperature Log (thermometer reads 0.2° C) ²¹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Incubator temperature 44.5° C ± 0.2° ^{21/24}			
• Temperature Calibration / Documentation	• Thermometer calibrated annually with NIST traceable thermometer ^{1,2}	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
	• Log book being maintained ⁹	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
• Water Level	• Thermometer total immersion or partial (line on thermometer to ID immersion depth) ^{1,5}	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
Comments:				

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Criteria	Standard Methods Requirement		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° C ²⁵ 	<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 exhaust. ¹ 	<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 used ¹ 	<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 maintained ⁹ 	<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 capsules ¹ 	<input type="checkbox"/> Yes <input type="checkbox"/> No									
Comments:											
Number of Criteria Rated:			<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 80%;">Acceptable</td> <td style="width: 20%; text-align: center;">2</td> </tr> <tr> <td>Marginal</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Unacceptable</td> <td></td> </tr> <tr> <td style="text-align: right;">Total Number of Areas Rated</td> <td style="text-align: center;">3</td> </tr> </table>	Acceptable	2	Marginal	1	Unacceptable		Total Number of Areas Rated	3
Acceptable	2										
Marginal	1										
Unacceptable											
Total Number of Areas Rated	3										
<p>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).</p>											
<p>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).</p>											
<p>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).</p>											
Consider recommending PAI Audit from DES when:	<ul style="list-style-type: none"> >60% of ratings are Marginal >45% of ratings are a combination of Marginal or Unacceptable >30% of ratings are Unacceptable 										

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Notation of Referenced Method

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

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

Preservation and Holding Times

Parameter	Container	Min. Sample Size (mL)	Sample Type	Preservation	Maximum Storage Time	
					Recommended	Regulatory
BOD / CBOD	P, G	1000	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	6h	48h
TSS	P, G	200	G, C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 d
pH	P, G	50	G	Analyze immediately	0.25h	0.25 h
NH3-N	P, G	500	G, C	Analyze as soon as possible or add H_2SO_4 to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	28 d
TRC	P, G	500	G	Analyze immediately	0.25h	0.25 h
DO (electrode)	G, BOD Bottle	300	G	Analyze immediately	0.25h	0.25 h
Temperature	P, G	--	G	Analyze immediately	0.25h	0.25 h
Metals, general	P, G	1000	G, C	For dissolved filter immediately and add HNO_3 to pH <2	6 months	6 months
Purgeables by purge and trap	G (PTFE lined lid)	40 (X2)	G	HCl to pH<2, Refrigerate $\leq 6^{\circ}\text{C}$	7 d	14 d
Base/Neutrals and acids	G (solvent rinsed or baked)	1000	C, G	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Pesticides	G (PTFE lined lid)	1000	C	Refrigerate $\leq 6^{\circ}\text{C}$	7 d	7 days until extraction 40 days after extraction
Fecal Coliform / E-Coli	G, P (Sterilized)	100	G	Refrigerate $\leq 10^{\circ}\text{C}$ If chlorine present, add sodium thiosulfate tablet	6 hrs transport Start analysis within 2 hrs of receipt in lab.	
Oil and Grease	G	1000	G	HCl or H_2SO_4 to pH <2, Refrigerate $\leq 6^{\circ}\text{C}$	28 d	28 d

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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