



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

April 3, 2013

Jamestown Mayor and Council
P.O. Box 148
Jamestown, Ohio 45335

RE: Jamestown WWTP Compliance Evaluation Inspection

Ladies and Gentlemen:

On March 26, 2013, I conducted a Compliance Evaluation Inspection at the Jamestown WWTP facility. I have enclosed copies of my inspection reports. The inspection report contains no marginal or unsatisfactory ratings. Please note that Standard Operating Procedures for each parameter that is analyzed at the Jamestown WWTP laboratory, as well as cleaning the autosampler, needs to be developed.

If you have any questions or comments concerning the contents of this letter, please feel free to contact this office at (937) 285-6357.

Sincerely,

A handwritten signature in blue ink, appearing to read "Maureen M. Ware".

Maureen M. Ware
Environmental Specialist II
Division of Surface Water

MMW/tb

Enclosures

ec: Jamestown Wastewater Treatment Plant
Greene County Health District



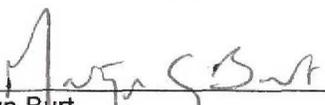
State of Ohio Environmental Protection Agency
Southwest District Office

NPDES Compliance Inspection Report

| Section A: National Data System Coding | | | | | |
|--|-----------|----------------|-----------------|-----------|---------------|
| Permit # | NPDES# | Month/Day/Year | Inspection Type | Inspector | Facility Type |
| 1PB00015 | OH0025879 | 03/26/2013 | C | S | 1 |

| Section B: Facility Data | | |
|--|-----------------|------------------------|
| Name and Location of Facility Inspected | Entry Time | Permit Effective Date |
| Jamestown WWTP 35 S. Limestone St Jamestown, Ohio 45335 | 9:00AM | 08/01/2009 |
| | Exit Time | Permit Expiration Date |
| | 1:50PM | 7/31/2013 |
| Name(s) and Title(s) of On-Site Representatives | Phone Number(s) | |
| Dale Church | 937-675-2951 | |
| Name, Address and Title of Responsible Official | Phone Number | |
| Jamestown Mayor and Council P.O. Box 148 Jamestown, Ohio 45335 | | |

| 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 | N | 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) | |
|--|---|
| See comments in each section. | |
| Inspector | Reviewer |
|  Maureen M. Ware Division of Surface Water Southwest District Office |  Martyn Burt Environmental Supervisor Division of Surface Water Southwest District Office |
| 4/13/13 Date | 4/13/13 Date |

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) Flows and loadings conform with NPDES permit..... Y
- (c) Treatment processes are as described in permit application... Y
- (d) All discharges are permitted..... Y
- (e) Number and location of discharge points are as described
in permit..... Y
- (f) Storm water discharges properly permitted..... N/A

Comments/Status:

Section F: Compliance

- (a) Any significant violations since the last inspection..... N
- (b) Appropriate Non-compliance notification of violations..... Y
- (c) Permittee is taking actions to resolve violations..... Y
- (d) Permittee has a compliance schedule..... Y
- (e) Compliance schedule contained in...NPDES Permit Compliance Schedule
- (f) Permittee is in compliance with schedule..... Y
- (g) Has biomonitoring shown toxicity in discharge since last inspection N/A

Comments/Status:

Compliance evaluated 3/1/11-12/31/12. Violations noted on last sheet of this report.

Section G: Operation & Maintenance

Treatment Works:

- Treatment facility properly operated and maintained..... Y
- (a) Standby power available.....generator or dual feed N/E
- i. What does the back-up power source operate.....
- Whole WWTP
- ii. How often is the generator tested under load.....
- Tested weekly. Used under load two to three times per year.
- (b) Which components have an alarm system available for power or equipment failures.....
- Visual alarms are on the influent pumps, clarifier, and RAS/WAS pumps.
- (c) All treatment units in service other than backup units..... N
- (d) What method is used for scheduling routine & preventative maintenance (calendar, software, etc.).....
- Calendar
- (e) Any major equipment breakdown since last inspection..... N
- (f) Operation and maintenance manual provided and maintained..... Y
- (g) Any plant bypasses since last inspection..... N
- (h) Any plant upsets since last inspection..... N

Comments/Status:

Once clarifier is not in use because it is not needed due to low flows at this time.

Section G: Operation & Maintenance con't

Record Keeping/Operator of Record:

- (a) Wastewater Treatment Works classification (OAC 3745-7)..... II
- (b) Operator of Record holds unexpired license of class required by Permit..... Y
- (c) Copy of certificate of Operator of Record displayed on-site..... Y
- (d) Has the Operator of Record submitted an ORC Notification form.. Y
- (e) Minimum operator staffing requirements fulfilled (OAC 3745-7).... Y
- (f) If a Staffing Reduction plan has been approved, are the stipulations of the plan being met..... N/A
- (g) Operator of Record log book provided..... Y
- (h) Format of log book (e.g. computer log, hard bound book)
- (i) Log book kept onsite (in an area protected from weather)..... Y
- (j) Log book contains the following:
 - I. Identification of treatment works..... Y
 - II. Date/times of arrival/departure for Operator of Record and any other operator required by OAC 3745-7..... Y
 - iii. Daily record of operator and maintenance activities (including preventative maintenance, repairs and request for repairs, process control test results, etc.)..... N
 - iv. Laboratory results (unless documented on bench sheets)... Y
 - v. Identification of person making entries..... Y
- (k) Has the Operator of Record submitted written notifications to the permittee, Ohio EPA and, if applicable, any local environmental agencies when a collection system overflow, treatment plant bypass or effluent limit violation has occurred..... Y

Comments/Status:

Mr. Church is a Class III operator. Currently O&M issues are noted on clip boards near each WWTP component. Major O&M issues will be noted in the ORC book.

Section G: Operation & Maintenance con't

Collection System:

- (a) Are there pump stations in the collection system..... Y
 - i. How many publicly-owned pump stations equipped with permanent standby power or equivalent.....0
 - ii. How many pump stations have telemetered alarms.....0
 - iii. How many pump stations have operable alarms.....3

- (b) Any chronic collection system overflows since last inspection..... N/A
- (c) Regulatory agency notified of all overflows..... Y
- (d) Are there CSOs in the collection system..... N
if so, what is the LTCP status.....
- (e) How are CSOs monitored (chalk, block, level sensor, etc.).....
- (f) Portable pumps available for collection system maintenance..... Y
- (g) RDII Program established and active..... N
- (h) Any WIB complaint received since last inspection..... Y
- (i) Is there a WIB response plan..... Y
- (j) Is any portion of the collection system at or near dry weather capacity..... N

Comments/Status:

A relief sewer was installed autumn/winter 2012. Since that time, no SSO events have occurred. No WIB events have occurred since the relief sewer was installed. WIBs are dealt with on a case by case basis. Prior to the relief sewer installation, SSO events were reported when the operator had knowledge of them.

Section H: Sludge Management

| Pathogen Reduction Alternative | 84370 Vector Attraction Reduction Options | | | | | | | | | |
|---|--|--|---|--|---|----------------------------|---|--|---------------------------|-------------------------------------|
| | Option 1 -38% Volatile Solids Reduction | Option 2 -Anaerobic Bench Scale Analysis | Option 3 – Aerobic Bench Scale Analysis | Option 4 – Specific Oxygen Uptake Rate | Option 5 – Aerobic Time and Temperature | Option 6 – Alkali Addition | Option 7 – >75% Percent Solids without Unstabilized | Option 8 - >75% Percent Solids with Unstabilized | Option 9 – Land Injection | Option 10 – Immediate Incorporation |
| Alternative 1 - Geometric Mean of Seven Fecal Samples (84369) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Alternative 2 - Aerobic Digestion (46396) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Alternative 2 - Air Drying (46396) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Alternative 2 - Anaerobic Digestion (46396) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Alternative 2 – Composting (46396) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Alternative 2 - Lime Treatment (46396) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| Alternative 3 – Approved Equivalent Process | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

- (a) Method of Sludge Disposal... Land Application
 Haul to Another NPDES Permittee
 Haul to a Mixed Solid Waste Landfill

(b) Has amount of sludge generated changed significantly since the last inspection..... N

(c) How much sludge storage is provided at the plant.....

(d) Records kept in accordance with State and Federal law (5 years according to OAC 3745-40-06)..... Y

(e) Any complaints received in last year regarding sludge..... N

(f) 5/8" scree n at headworks for facilities that land apply sludge..... Y

(g) Are sludge application sites inspected to verify compliance with NPDES permit..... Y

(h) Is a contractor used for sludge disposal..... Y

If so, what is the name of the contractor.....Gary Hines

Comments/Status:

Section I: Self-Monitoring Program

Flow Measurement:

- (a) Primary/Secondary flow measuring devices (e.g. weir with ultrasonic level sensor):

Open flow channel with Venturi meter.

- (b) Flow meter calibrated annually N
(Date of last calibration: 3/2011)
- (c) 24-hour recording instruments operated and maintained..... Y
- (d) Flow measurement equipment adequate to handle full range of flows..... Y
- (e) All discharged flow is measured..... Y

Comments/Status:

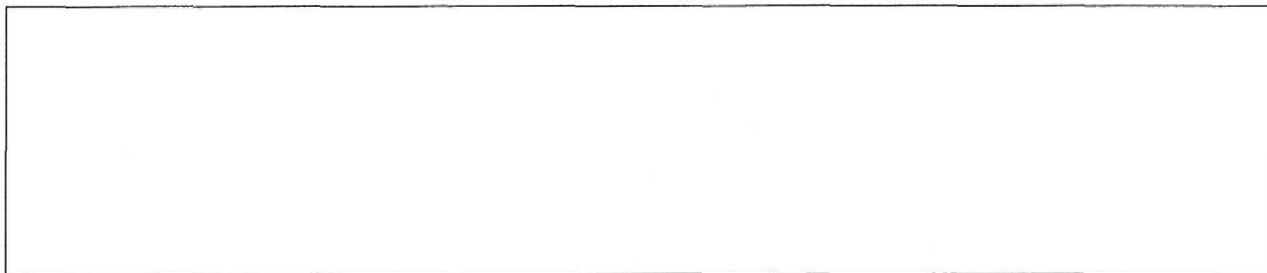
The flow meter will be calibrated annually from now on.

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..... N/E
(see GLC)
- (d) Monitoring records (i.e., flow, pH, DO) maintained for a minimum of three years including all original strip chart recordings (i.e, continuous monitoring instrumentation, calibration and maintenance records)..... Y

Comments/Status:



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

Laboratory:

General

- (a) Does the Quality Assurance Manual contain written Standard Operating Procedures (SOP's) for all analysis performed onsite..... N
- (b) Do SOP's include the following if applicable..... N/A
 - Title
 - Scope and Application
 - Summary
 - Sample Handling and Preservation
 - Interferences
 - Apparatus and Materials
 - Reagents
 - Procedure
 - Calculations
 - Quality Control
 - Maintenance
 - Corrective Action
 - Reference (Parent Method)

Note: Standard Methods 1020A establishes that "Quality assurance (QA) is the definitive program for laboratory operation that specifies the measure required to produce defensible data of known precision and accuracy. Standard operating procedures are to be used in the laboratory in sufficient detail that a competent analyst unfamiliar with the method can conduct a reliable review and/or obtain acceptable results." SOPs should be developed for each analytical procedure.

- (c) EPA approved analytical testing procedures used (40 CFR 136.3).. N/E
- (d) If alternate analytical procedures are used, proper approval has been obtained..... N/E
- (e) Analyses being performed more frequently than required by permit. N
- (f) If (e) is yes, are results in permittee's self-monitoring report..... N/A
- (g) Satisfactory calibration and maintenance of instruments/equipment. Y
- Commercial laboratory used..... Y
- Parameters analyzed by commercial lab: everything except CBOD5, TSS, D.O., pH, and temperature.

Lab name: Masi for everything except low level mercury which is sent to Jones and Henry.

Discharge Monitoring Report Quality Assurance (DMRQA)

- (a) Participation in latest USEPA quality assurance performance sampling..... N/A
Date:
- (b) Were any parameters "Unsatisfactory" N/A
- (c) Reasons for "Unsatisfactory" parameters.....

Comments/Status:

Section J: Effluent/Receiving Water Observations

Outfall # 001

Outfall Description: Pipe

Receiving Stream: South Branch of Caesar Creek

Receiving Stream Description: slightly turbid

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/A
- (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:

| |
|--|
| |
|--|

Violations

| Station | Code | Parameter | Limit Type | Limit | Reported | Date |
|---------|-------|------------|------------|-------|----------|------------|
| 001 | 00400 | pH | 1D Conc | 6.5 | 6.4 | 3/7/2011 |
| 001 | 00400 | pH | 1D Conc | 6.5 | 6.3 | 3/15/2011 |
| 001 | 00610 | NH3 | 7D Conc | 1.5 | 2.1 | 6/1/2011 |
| 001 | 00610 | NH3 | 7D Conc | 1.5 | 1.75 | 6/8/2011 |
| 001 | 00665 | Phosphorus | 30D Conc | 1.0 | 1.02 | 8/1/2011 |
| 001 | 00665 | Phosphorus | 30D Conc | 1.0 | 1.04 | 9/1/2011 |
| 001 | 00665 | Phosphorus | 30D Conc | 1.0 | 3.39 | 10/1/2011 |
| 001 | 00665 | Phosphorus | 30D Qty | 3.41 | 8.72518 | 10/1/2011 |
| 001 | 00665 | Phosphorus | 7D Conc | 1.5 | 3.39 | 10/15/2011 |
| 001 | 00665 | Phosphorus | 7D Qty | 5.11 | 8.72518 | 10/15/2011 |
| 001 | 00665 | Phosphorus | 30D Conc | 1.0 | 2.59 | 8/1/2012 |
| 001 | 00665 | Phosphorus | 7D Conc | 1.5 | 2.59 | 8/22/2012 |
| 001 | 00665 | Phosphorus | 30D Conc | 1.0 | 1.08 | 10/1/2012 |

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 ² | <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 ² | <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 accurate to 0.5° Celsius ⁵ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Acceptable temperature range is 103° – 105° C ⁴ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Instrument manual available | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |

Comments: :

General Lab Criteria

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|--|--|---|-----------------------------|----------|
| pH 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 | M |
| | <ul style="list-style-type: none"> • Logbook maintained² | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| <ul style="list-style-type: none"> • Minimum of 2 point calibration | <ul style="list-style-type: none"> • Calibration per manufacturer specification and calibration buffers must bracket anticipated result⁷ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| <ul style="list-style-type: none"> • Slope Documentation / Acceptability | <ul style="list-style-type: none"> • Slope acceptable range indicated on benchsheet² | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| <ul style="list-style-type: none"> • Buffer Expiration Date | <ul style="list-style-type: none"> • Buffers must not be expired | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| <ul style="list-style-type: none"> • Other | <ul style="list-style-type: none"> • Instrument manual available | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | <ul style="list-style-type: none"> • Teflon covered magnetic stirrer or equivalent for mixing⁸ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Comments: : | | | | |
| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
| Dissolved Oxygen Meter | | | | |
| <ul style="list-style-type: none"> • Calibration Method | <ul style="list-style-type: none"> • Air or known DO calibration method¹⁰ | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | M |
| | <ul style="list-style-type: none"> • Calibration per manufacturer specification¹⁰ | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| <ul style="list-style-type: none"> • Calibration Frequency / Documentation | <ul style="list-style-type: none"> • Logbook maintained² | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | <ul style="list-style-type: none"> • Calibration verification required at least once each day the meter is used.³ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| <ul style="list-style-type: none"> • Other | <ul style="list-style-type: none"> • 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 | |
| | <ul style="list-style-type: none"> • Instrument manual available | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Comments: Jamestown uses the style of D.O. meter that doesn't require a membrane. Currently no SOP is written for D.O. | | | | |

General Lab Criteria

| Criteria | Standard Methods Requirement | | Rating |
|---|--|------------------------------|-----------------------------|
| Incubator (CBOD/ E-Coli) | | Acceptable? | |
| • Temperature Recordkeeping | • Temperature checked / recorded twice daily for each shelf in use ¹ (E-Coli) | <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 ² | <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 accurate to 0.5 Celsius). ¹ | <input type="checkbox"/> Yes | <input type="checkbox"/> No |

Comments: :

| Criteria | Standard Methods Requirement | | Rating |
|---|--|------------------------------|-----------------------------|
| Refrigerator | | Acceptable? | |
| • Temperature Recordkeeping | • Temperature Log (thermometer accurate to 0.5 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:

General Lab Criteria

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|---|---|------------------------------|-----------------------------|--------|
| Chlorine Meter | | | | |
| • Calibration Frequency / Documentation | • pH / millivolt meter read to 0.1 mV ¹⁵ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples) ³ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Calibration Method | • Calibration using three iodate solutions 0.2, 1.0, 5.0 milliliters or calibration per manufacturer specification ¹⁶ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Standards used for calibration not expired | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Slope Documentation / Acceptability | • Calibration curve (acceptable slope) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Other | • Electrode free of deposits and foreign material | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Log book being maintained. ² | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Instrument manual available | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Comments: : | | | | |

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|---|---|------------------------------|-----------------------------|--------|
| Ammonia Meter | | | | |
| • Calibration Frequency / Documentation | • Calibration verification required for testing over long period of time (e.g. 12 hrs.), or after a large number of samples (every 10 samples) ³ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Log book being maintained ² | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Slope acceptability | • Verify calibration slope is acceptable (per mfg. spec.). | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Calibration Method | • Standards used for calibration (3 ammonia solutions of 10 mg/l, 1 mg/l, and 0.1 mg/l) or per mfg. spec. ¹⁷ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Standards used for calibration not expired | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Other | • Electrode free of deposits and foreign material | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Teflon covered magnetic stirrer or equivalent for mixing ¹⁸ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Instrument manual available | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Comments: : | | | | |

General Lab Criteria

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|-----------------------------------|---|---|-----------------------------|----------|
| Sample Collection/Handling | | | | A |
| • Sample Labeling | • Samples container labeled (description, date, time, preservative added, initialed). ¹⁹ | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Chain of Custody | • Chain of custody (description, date, time, signature). ¹⁹ | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Other | • Composite samples refrigerated during sample collection ¹⁴ | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Equipment blanks utilized ¹⁴ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • SOP for cleaning of sampling equipment | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Logbook being maintained ² | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |

Comments: Masi uses a system that includes all the required information on the Analysis Request Sheet. A specific number is provided for each parameter and that number is noted on the sample bottle. The autosampler is cleaned on an as needed basis. An SOP for cleaning the autosampler needs to be developed.

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|--------------------|--|------------------------------|-----------------------------|--------|
| Desiccator | | | | |
| • General criteria | • Properly working seals. | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Desiccant fresh (blue color) | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| • Documentation | • Log book being maintained ² | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |

Comments:

| Criteria | Standard Methods Requirement | Acceptable? | | Rating |
|---------------------|--|---|-----------------------------|----------|
| Bench sheets | | | | A |
| • General criteria | • Date(s) ² | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Analyst initials ² | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | • Blue or black ink pen ² | <input checked="" 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:

General Lab Criteria

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| 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 accurate to 0.2° C)²¹ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | |
| | | <ul style="list-style-type: none"> • Incubator temperature 44.5° C ± 0.2° 21/24 | | |
| <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 maintained² | <input type="checkbox"/> Yes | |
| <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 | |
| | | <ul style="list-style-type: none"> • 10 to 30 minutes time based on material being sterilized²⁶ | <input type="checkbox"/> Yes | |
| <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 used¹ | <input type="checkbox"/> Yes | |
| <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 maintained² | <input type="checkbox"/> Yes | |
| <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 | | | | | |
| • General Criteria | • Thermometer calibrated annually with NIST traceable thermometer ^{1,2} | <input type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| | • Thermometer scaled to 0.1° Celsius and accurate to 0.5° C ⁵ | <input type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| | • Log book being maintained ² | <input type="checkbox"/> Yes | <input type="checkbox"/> No | | |
| Comments: | | | | | |
| Number of Criteria Rated: | | | | Acceptable | 3 |
| | | | | Marginal | 0 |
| | | | | Unacceptable | 0 |
| | | | | 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: | | >60% of ratings are Marginal >45% of ratings are a combination of Marginal or Unacceptable >30% of ratings are Unacceptable | | | |

Notation of Referenced Method

- | | |
|----------------------------|------------------------------|
| 1 Method 9020-B, Item 3 | 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-A, 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 |

General Lab Criteria

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 |

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 |