



**Department of
Environmental Protection
Bureau of Land & Water Quality February 2004**

O&M Newsletter

A monthly newsletter for wastewater discharge licensees, treatment facility operators, and associated persons

Laboratory Inspection Seminar

Recently the inspectors of wastewater treatment plants in Maine attended a one-day training class on the inspection of laboratories. The EPA handed out a list of "Red Flags". Red Flags are potential deficiencies that are identified during an inspection of a wastewater laboratory. The following is that list. If you have any questions, please call your inspector.

General issues

- Lack of current quality manual (lab QA plan)
- Standard Methods, are they from the 18th, 19th or 20th editions?
- No bench sheets/records
- Incorrect calculations
- No SOP(s)

pH

- No buffers
- Expired buffers
- No temperature compensator
- Probe stored in DI water or pH buffer
- One point calibration
- Two-point calibration, but buffers do not bracket sample values
- pH data always 7
- No calibration records
- No time of analyses

TRC

Expired reagent

- Old style pillow (not packages this way for over 5 years and expired) for HACH DPD reagent
- Reagent packets for 25-ml vile when 10 ml vile used
- Old visual color comparator unit used (unapproved)
- Data always one number such as 0.4 when permit limit is 0.45 mg/l
- Effluent data always "0" even though facility does not dechlorinate
- Amperometric titration reagent not stored in amber bottle
- No time of analyses

TSS

- Balance not calibrated at least 1/yr
- Balance not to 4 decimal places (0.XXXX)
- Drying oven not at 103-105 C
- No record of drying temperature
- Pink desiccant in desiccator
- Filters not prewashed
- No second weighing
- Not enough samples filtered to obtain at least 2 mg on filter

BOD

- D.O. meter not calibrated correctly
- No record of D.O. meter calibration
- D.O. probe stored submerged in DI water
- No mixer on D.O. probe

Air bubble in D.O. probe
D.O. meter does not work properly when turned on
Incubator not at 20 C
No thermometer in incubator
No record of incubator temperature
No water seals on BOD bottles
BOD bottles in incubator have air bubbles in them
BOD bottles read after 4 days for 5 day BOD test
BOD blanks greater than 0.2 mg/l
Dirty BOD bottles
No glucose/glutamic acid standards run or equivalent
Effluent samples not seeded when effluent sample obtained after disinfection
Final D.O. reading less than 1.0 mg/l
Less than 2.0 mg/l depletion
Initial bottle D.O. greater than 9.2 mg/l

Fecal Coliform

No thiosulfate preservative in sample collection bottles
Sample not collected directly in sample bottle
Incubator not at 44.5 C
No record of incubator temperature during analyses
Expired growth media
No autoclave or other method for sterilizing equipment
Data always "0"; no positive control sample run
Dilution/wash water not buffered
Insufficient volumes run to obtain results (i.e., TNTC or less than 100 col./100 ml data)
6 hour holding time exceeded

Don Albert

Standard Conditions

This is the first in a series of articles that will run for the entire year and will ultimately cover all of the "STANDARD CONDITIONS" found in all permits. The articles will refer to the current set of Standard Conditions, but will apply similarly to previous versions and editions; they've always copied or closely tracked DEP and EPA regulations. Regardless of when your permit was issued, you need to dig out the Standard Conditions (a separate, apparently generic attachment to your "SPECIAL CONDITIONS") and review them. If you're like a lot of other treatment facility owners or operators, this may be your first time! It may seem like pretty dull, "boilerplate" stuff, but the Standard Conditions are important to assuring that your treatment facility is in full compliance with its permit and all applicable laws and statutes. The complete list of Standard Conditions may be found on line at:

<http://www.state.me.us/dep/blwq/docstand/wastepage.htm#gen>

A. GENERAL PROVISIONS

.1. General compliance. *All discharges shall be consistent with the terms and conditions of this permit; any changes in production capacity or process modifications which result in changes in the quantity or the characteristics of the discharge must be authorized by an additional license or by modifications of this permit; it shall be a violation of the terms and conditions of this permit to discharge any pollutant not identified and authorized herein or to discharge in excess of the rates or quantities authorized herein or to violate any other conditions of this permit.*

If you plan on making any quantitative or qualitative changes to your production or treatment processes, you need to contact the Department *in advance* to determine if any permit modifications are needed. Such permit modifications must be made before you actually put any changes in place. Some examples of these changes would be:

For POTWs – Plant process chemical or equipment changes, engineering projects, picking up or dropping significant users, significant user discharge parameter changes, impact of community development on flow, BOD/TSS loading, toxicity, etc.

For industrial dischargers – Changes in production or WTP processes or process chemistry, significant production rate changes, new products or processes, maintenance or production shutdown conditions.

2. Other materials. *Other materials ordinarily produced or used in the operation of this facility, which have been specifically identified in the application, may be discharged at the maximum frequency and maximum level identified in the application, provided:*

(a) *They are not*

(i) *Designated as toxic or hazardous under the provisions of Sections 307 and 311, respectively, of the Federal Water Pollution Control Act; Title 38, Section 420, Maine Revised Statutes; or other applicable State Law;*

or

(ii) *Known to be hazardous or toxic by the licensee.*

(b) *The discharge of such materials will not violate applicable water quality standards.*

You need to look at the permit application and permit conditions as the ‘blueprint’ that defines what you are allowed to discharge. All dischargers, especially industrial sources, must make sure their applications accurately and fully reflect *all* proposed discharges. Substances identified in an application, even if not ultimately listed in the permit, may be discharged up to the amounts specified. One exception to this is toxic pollutants. If you suspect one or more of these may potentially be present in your process waters, you must contact the Department. Substances specifically designated as toxic under the provisions of Sections 307 and 311 of the Federal Water Pollution Control Act (Priority Pollutants) may be found listed in the tables of DEP Rules, Chapter 521: Applications for Waste Discharge Licenses. Other prohibited activities and discharges may be found in Title 38 MRSA, Chapter 3, Sections 420 and 420-A. Any substance not specifically listed anywhere that you suspect to be hazardous or toxic must be considered and included. Also, you have an obligation to notify the Department if you become aware of the discharge of a pollutant that is not listed or described in the application or is not mentioned in the permit. Finally, it must be demonstrated that a facility’s discharge will not violate applicable water quality standards in the receiving waters.

3. Duty to comply. *The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of State law and the Clean Water Act and is*

grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

- (a) *The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act, and 38 MRSA, §420 or Chapter 530.5 for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement. An example of this would be if you come up with hits on a WET test or Priority Pollutant scan; you would be expected to begin focussed mitigation right away, ahead of any licensing action*
- (b) *Any person who violates any provision of the laws administered by the Department, including without limitation, a violation of the terms of any order, rule license, permit, approval or decision of the Board or Commissioner is subject to the penalties set forth in 38 MRSA, §349.*

All permittees *by definition* accept responsibility for reading, understanding, and adhering to *all* of the terms and conditions of their permits. This includes reporting requirements, sampling and monitoring schedules, completion of any required site-specific studies or reports, and any narrative conditions. Though we tend to focus on the numeric limits pages, there is in fact much more to successful permit compliance. While the Department attempts to work with all license holders to ensure full compliance, it is ultimately the facility's responsibility to meet all permit conditions.

As always, if you have any questions or concerns regarding your license or any other water compliance issues, contact your facility Inspector. He or she will be able to work with you, or direct you to the appropriate departmental resources.

All water quality laws and regulations can be accessed at: <http://www.maine.gov/dep/envIRONLrr.htm>
Jim Crowley

For Practice

1) Short circuiting in clarifiers may be caused by

- A) density differences
- B) high pH levels
- C) nutrient deficiency
- D) solids loading

2) What is the best first aid for a first degree burn?

- A) Bandage the wound tightly.
- B) Spread a greasy salve on the wound.

C) immerse the wound in cold water.

D) submerge the wound in warm water.

3) Your unseeded dilution water samples in a BOD test show an oxygen depletion of more than 0.2 mg/L in five days. What is the most likely cause of the problem?

- A) The initial D.O. was less than 9.0 mg/L
- B) The buffers are contaminated.
- C) Not enough seed is being used.
- D) Toxic substances are present.

- 4) Why should sludge be digested or treated before land spreading?
- A) To reduce odors and BOD.
 - B) To disinfect the sludge and return the supernatant for additional treatment.
 - C) To reduce the bacterial population and produce gas.
 - D) To reduce the volume of solids and stabilize the solids for odor and vector control.

Approved Training

February 18, 2004 in Farmington, ME – Chemical Feed Pumps - Sponsored by MRWA – 729-6569 – Approved for 4 hours.

February 19, 2004 in Presque Isle, ME - Electric Motor Fundamentals, Application & Troubleshooting - Sponsored by JETCC, (207) 253-8020 – Approved for 6 hours.

February 19, 2004 in Boothbay, ME – Chemical Feed Pumps - Sponsored by MRWA – 729-6569 – Approved for 4 hours.

February 24, 2004 in Brewer, ME - Utility Safety Essentials for Working around Electricity, Gas & Dig Safe - Sponsored by JETCC, (207) 253-8020 – Approved for 6 hours.

February 24, 2004 in Bangor, ME – Time Management - Sponsored by MRWA – 729-6569 – Approved for 3 hours.

February 25, 2004 in Augusta, ME - Water Bureau Issues Briefing - Sponsored by JETCC, (207) 253-8020 – Approved for 6 hours.

February 25, 2004 in Topsham, ME – Line Location and Leak Detection - Sponsored by MRWA – 729-6569 – Approved for 4 hours.

February 26, 2004 in North Vassalboro, ME - Electric Motor Fundamentals, Application & Troubleshooting - Sponsored by JETCC, (207) 253-8020 – Approved for 6 hours.

February 26, 2004 in Augusta, ME – Time Management - Sponsored by MRWA – 729-6569 – Approved for 3 hours.

February 26, 2004 in Presque Isle, ME – Line Location and Leak Detection - Sponsored by MRWA – 729-6569 – Approved for 4 hours.

March 3,4,5, 2004 in Portland, ME O & M of Wastewater Collection Systems- Sponsored by JETCC/NEIWPC, (207) 253-8020 – Approved for 6 hours.

March 8, 2004 in Mexico, ME Road Opening Permits/Work Zone Safety - Sponsored by MRWA – 729-6569 – Approved for 4 hours.

March 9, 2004 in Bangor, ME - Pipe Maintenance for Root & Clay Infiltration - Sponsored by JETCC, (207) 253-8020 – Approved for 6 hours.

March 9, 2004 in Augusta, ME Road Opening Permits/Work Zone Safety - Sponsored by MRWA – 729-6569 – Approved for 4 hours.

March 10, 2004 in Scarborough, ME
Road Opening Permits/Work Zone
Safety - Sponsored by MRWA – 729-
6569 – Approved for 4 hours.

March 16, 2004 in Calais, ME -
BOD, Seeded BOD, E.Coli,
Solids & Microscopic Examination -
Sponsored by JETCC, (207) 253-8020 –
Approved for 6 hours.

March 16, 2004 in Caribou, ME –
Chemical Handling and PPE -
Sponsored by MRWA – 729-6569 –
Approved for 4 hours.

March 17, 2004 in Bangor, ME –
Chemical Handling and PPE -
Sponsored by MRWA – 729-6569 –
Approved for 4 hours.

March 18, 2004 in Augusta, ME -
SCADA System Management &
Maintenance - Sponsored by JETCC,
(207) 253-8020 – Approved for 6 hours.

March 19, 2004 in Lincoln, ME, Math
Review for Process Control in Activated
Sludge, Lagoon & Fixed Film
Operations - Sponsored by JETCC,
(207) 253-8020 – Approved for 6 hours.

March 23, 2004 in N. Vassalboro, ME -
pH, ISE & Dissolved Oxygen Probes -
Sponsored by JETCC, (207) 253-8020 –
Approved for 3 hours.

March 23, 2004 in N Vassalboro, ME -
How to Read my WET Test
Report - Sponsored by JETCC, (207)
253-8020 – Approved for 3 hours.

March 24, 2004 in Portland, ME - pH,
ISE & Dissolved Oxygen Probes -
Sponsored by JETCC, (207) 253-8020 –
Approved for 3 hours.

March 24, 2004 in Portland, ME -
How to Read my WET Test
Report Sponsored by JETCC, (207) 253-
8020 – Approved for 3 hours.

March 25, 2004 in Boothbay, ME –
Excavation Safety & Competent Person
- Sponsored by MRWA – 729-6569 –
Approved for 4 hours.

March 31, 2004 in Rumford, ME –
Excavation Safety & Competent Person
- Sponsored by MRWA – 729-6569 –
Approved for 4 hours.

April 6, 2004 in Orono, ME –
Excavation Safety & Competent Person
- Sponsored by MRWA – 729-6569 –
Approved for 4 hours.

April 13, 2004 in Bangor, ME - New
Technologies for Phosphorus Removal -
Sponsored by JETCC, (207) 253-8020 –
Approved for 6 hours.

April 27, 2004 in Bangor, ME – LOTO,
Low Voltage & Fall Protection -
Sponsored by MRWA – 729-6569 –
Approved for 4 hours.

April 28, 2004 in Houlton, ME – LOTO,
Low Voltage & Fall Protection -
Sponsored by MRWA – 729-6569 –
Approved for 4 hours.

May 4, 2004 in Livermore Falls, ME –
LOTO, Low Voltage & Fall Protection -
Sponsored by MRWA – 729-6569 –
Approved for 4 hours.

May 6, 2004 in Norway, ME – LOTO,
Low Voltage & Fall Protection -
Sponsored by MRWA – 729-6569 –
Approved for 4 hours.

May 10, 2004 in Hallowell, ME -
Operation, Troubleshooting, & Upgrade
of Municipal and Industrial Lagoons
with Dr. Michael Richard - Sponsored
by JETCC, (207) 253-8020 – Approved
for 6 hours.

May 11, 2004 in Hallowell, ME -
Identification of Filamentous Organisms
in Activated sludge
with Dr. Michael Richard - Sponsored
by JETCC, (207) 253-8020 – Approved
for 6 hours.

May 20, 2004 in Livermore Falls, ME -
Residuals Management & Storage
Options with Proven Beneficial Uses for
Biosolids (*followed by a round of golf*) -
Sponsored by JETCC, (207) 253-8020 –
Approved for 6 hours.

Certification News

Every certified wastewater operator should receive a letter from us. For those of you with even certification numbers, the letter is your renewal notice for 2004. For those with odd certification numbers, the form is a reminder. Both forms will be accompanied by a sheet showing our records of the training you have taken toward your next renewal.

If your certification is due for renewal in 2004, you must return the renewal form, with a check or money order for \$20.00. If we show that you have taken the required 18 hours of training, this is all you need to do. If you have taken training that we do not show on the form you receive, send a copy of the training certificate(s) with your renewal form. If you haven't taken the required 18 hours of training and can't get the training before March 1, 2004, *please* send in the renewal form with your renewal fee and something that tells us when you expect to complete the 18 hours of training. *If we don't hear from you by March 1, 2004, your certification will become inactive and, if you are the operator of record for your facility, you will not be able to legally sign the DMRs or 49 Forms for March.*

Certification Exam

The Spring wastewater operator certification exam will be given on May 12, 2004 in the usual locations. Applications must be postmarked by March 27, 2004 or hand delivered to the Augusta office on March 29, 2004.

Answers to For Practice:

1. (a) The mixed liquor entering the stilling well of the clarifier is more dense than the “clean” water in the clarifier and will sink to the bottom. This can set up a density current that sweeps sludge from the bottom of the clarifier up along the outer wall and over the effluent weirs.
 2. (c) The best first aid for a 1st degree burn is to run cold water over the burned area.
 3. (b) Contaminated buffers can contain materials that will cause an oxygen depletion of more than 0.2 mg/L.
 4. (d) The main reason for digesting or treating sludge is to remove water to reduce the cost of trucking the sludge to the disposal site and make the sludge easier to handle.
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