



Maine Department of Environmental Protection

Bureau of Land & Water Quality

O&M Newsletter

May 2008

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

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Maine CSO 2007 Status Report

Thanks to the Combined Sewer Overflow (CSO) Communities that submitted their Annual CSO Progress reports this year. Overall, electronic submission of the report is working well for most of the communities. A few communities did mention issues with entering data into the report. I will take a look at these areas and see if any changes can be made to the database program to make this process easier.

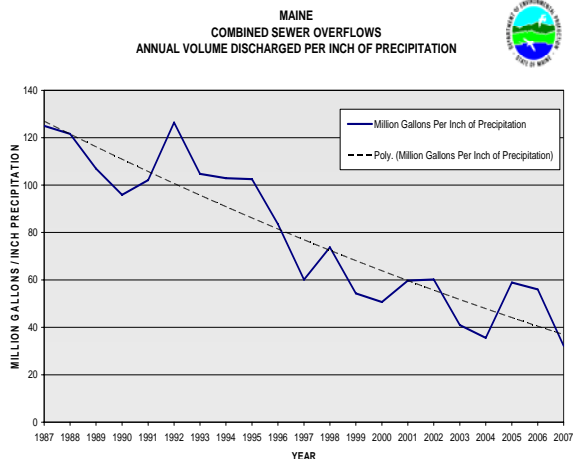
For the second year, I have taken the information submitted by the CSO Communities and compiled it into one report, *Maine CSO 2007 Status Report*. The full report may be viewed and downloaded at: <http://www.mainedep.com> - keyword "cso". This article highlights some of the information from that report.

In 2007, the average annual precipitation for the CSO Communities was about 48 inches. This is near or slightly above the yearly average of 45 inches and was significantly less than the previous two years. With the exception of the Patriot's Day storm that caused localized flooding, storm patterns were also closer to what we normally experience. Nineteen (19) of the communities reported discharging less in 2007 than in 2006, thirteen (13) reported discharging more, while three (3) reported no overflows.

Statewide overflow volumes decreased from 3.21 billion gallons in 2006 to 1.53 billion gallons in 2007. This equates to a decrease of 60 – 70% in overflow volume since the CSO Communities started tracking these discharges. During this timeframe, the number of overflow days has also decreased from more than 1,600 to fewer than 600 days per year. Below is a table showing the precipitation averages and overflow volumes for the past six years.

YEAR	PRECIPITATION (INCHES)	CSO VOLUME (BILLION GALLONS)
2002	45	2.7
2003	45	1.8
2004	40	1.4
2005	65	3.8
2006	57	3.2
2007	48	1.5

Although wet weather overflows are influenced by a number of factors, mostly specific storm events, snow melt, and ground water conditions; there is a general correlation between yearly precipitation and the volume of overflow discharges. The following chart unitizes the overflow volume discharged by the yearly precipitation amount. Ideally, as the CSO communities progress with their abatement plans we would want to see an overall decrease in the volume of overflow per inch of precipitation. The following chart illustrates this downward trend from approximately 120 million gallons per inch of precipitation to less than 35 million gallons in 2007.



We ended 2007 with 35 CSO Communities, down by two from 2006 as Dover-Foxcroft and East Millinocket completed their abatement plans and were not relicensed for CSOs. CSO abatement is a costly and timely endeavor. Maine’s CSO Communities have reported expending \$304 million in CSO abatement since 1987 and estimate expending another \$140 million in projects over the next five years.

What’s in store for 2008? Well, I’m optimistic that another community or two will complete their plans and totally eliminate their CSOs. A number of communities are finishing significant phases of their abatement plans and should be able to block up some of their CSOs, 10 were closed this year. The quality of overflow data should continue to increase as a number of communities are working hard at improving their compliance monitoring plans. And lastly, I am expecting a number of Updated Master Plans this year as the CSO permittees assess where they are in their abatement level of control and what is left to be done to meet Water Quality Standards.

John True

For Practice

Note: For Practice was on vacation fishing last month, so we made up for the absence by doubling the number of questions this month

1. The purpose of an air-gap device is to:
 - a. Put more oxygen in the waste in sewers to avoid odors
 - b. Lessen vibration in pipes.
 - c. Prevent cross connections between wastewater and potable water.
 - d. Ventilate wet wells at pump stations

2. A BOD test was run using three dilutions of the same sample. Which dilution gives the most valid results?

Sample	Initial DO	Final DO
BOD		
Volume		

- | | | | |
|----|------|----------|----------|
| a. | 3 mL | 8.0 mg/L | 6.7 mg/L |
| b. | 5 mL | 7.9 mg/L | 4.0 mg/L |
| c. | 8 mL | 8.1 mg/L | 0.9 mg/L |
3. If the return sludge rate increases and the influent flow and BOD concentration remain constant, the F/M ratio in the aeration basin will most likely...
- Remain the same
 - Increase
 - Decrease
 - Depend on the air temperature
4. If an operator has a stock solution of acid that is 10N and he mixes 2.0 mL of that acid with 998 mL of distilled water, what will the normality of the resulting solution be?
- 0.02N
 - 0.8N
 - 8.0N
 - 2.0N

5. What is the sludge concentration at which pumping becomes difficult?

- 10%
- 5%
- 2%
- 1%

6. An operator doses the effluent from his plant with 4 mg/l of chlorine. If the flow through the plant averages 1.25 MGD, how much chlorine will be used in 30 days?

- 146 pounds
- 525 pounds
- 1,251 pounds
- 2,378.5 pounds

7. To control an Activated Sludge Process using MLVSS, the operator must maintain

- A constant concentration of suspended solids in the aeration tank.
- A constant concentration of volatile suspended solids in the return sludge.
- A constant concentration of volatile suspended solids in the waste sludge.
- A constant concentration of volatile suspended solids in the aeration tank.

8. The common parameter mg/L (milligrams per liter) is the same as

- Grains/Gallon
- parts per million (p.p.m.)
- ounces per pound
- grams per cubic foot

Clean Watershed Needs Survey Reminder

Everyone should have received a mass mailing envelope containing a pre-populated 'Facility Fact Sheet' for your facility and a 'Small Community Needs Survey' form, if your community has a population of 10,000 or less. This is a reminder that the requested return date is Friday, May 16th. At this time, we have only received a handful of the forms back. If you have not received the envelope, please contact me at (207) 287-7766 or e-mail at david.p.breau@maine.gov. Otherwise, please try to complete and return by the 16th.

The purpose behind these two documents is to verify existing system information and try to gather additional information about water quality improvement needs associated with your system or identified within your community.

New to this survey is the ability to request log-in approval and thereby gain direct access to the database containing information about your system. If you want to explore this option, please visit the EPA web-site at <http://www.epa.gov/owmitnet/mtb/cwns/index.htm>, click on the CWNS 2008 link, and fill out the required information. If you have questions about the process, give me a call or drop me an e-mail

David P. Breau, P.E.
CWNS Coordinator.

Certification News

Not to beat the dead horse, but... operators who renewed their certifications in March should have received their notification of renewal letters by now. If you have an *even*

certificate number and you mailed your renewal form and check in and have not received a renewal confirmation and pocket certificate renewal card, please contact us as soon as possible.

Any of you who were due for renewal but didn't file with JETCC should have received a letter stating that your certificate is now inactive. If you paid your fee but were short on training hours, you should have received a letter to that effect. If you have an *even* numbered certificate and you haven't heard from JETCC, let them know immediately at 253-8020.

Dick Darling



Approved Training

May 22, 2008 in Orono, ME - Advanced Microsoft Excel – Sponsored by JETCC – Approved for 6 hours

Note: Efficiency Maine is a program of the Maine Public Utilities Commission - 18 State House Station, Augusta, ME 04333-0018 Tel: 207-287-8350

JETCC stands for Joint Environmental Training Coordinating Committee – PO Box 487 – Scarborough, ME 04070-0487 – Tel (207) 253-8020

MRWA stands for Maine Rural Water Association - 14 Maine Street, Box 36 - Brunswick, ME 04011 – Tel (207) 729-6569

NEIWPC stands for New England Interstate Water Pollution Control Commission – 116 John St. – Lowell, MA 01852-1124 – Tel (978) 323-7929

Answers to *For Practice*:

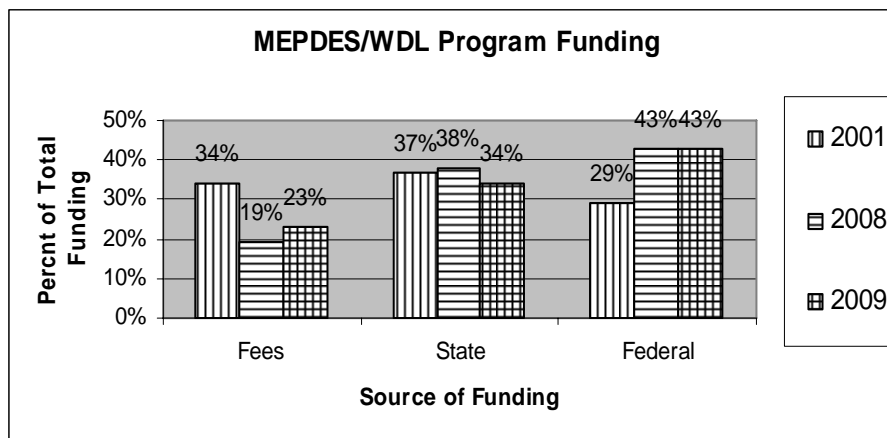
1. c. An air-gap is the only acceptable method to prevent cross-connections between wastewater and potable water.
2. b. In sample A, the depletion of DO in the sample bottle is less than 2.0 mg/L indicating that there was not enough biological activity for a valid test. In sample C, the DO was depleted to less than 1.0 mg/L. There might not have been enough DO available to complete the biological reduction of the organic material in the wastewater.
3. c. The F/M ratio is the ratio of the pounds of food to the pounds of microorganisms. If the flow and BOD concentration coming into the plant remain constant the plant will receive a constant amount of BOD. If the return sludge rate increases, there will be more sludge for the same amount of food. Thus, the F/M ratio decreases
4. a. The normality of the final solution is given by (Volume of Acid X Normality of Acid)/Total Volume
$$\text{Normality of Solution} = (2.0 \text{ mL} \times 10\text{N}) / (2.0\text{mL} + 998\text{mL}) = 0.02\text{N}$$
5. a. It becomes very difficult to pump sludge, even using positive displacement pumps, when the concentration reached 10%.
6. d Pounds = dosage (in mg/L) x Flow (in MGD) x 8.34 lbs/gal x days
$$\text{Pounds} = 4 \text{ mg/l} \times 1.25 \text{ MGD} \times 8.34 \text{ lbs/gal} \times 30 \text{ days} = 1,251 \text{ pounds}$$
7. b MLVSS stands for Mixed Liquor Volatile Suspended Solids. The MLVSS is a gross measure of the portion of the sludge in the aeration basin, which is alive and actually taking up waste from the influent. By maintaining a constant concentration of MLVSS in the aeration basin, the operator ensures that there is a population of live, hungry bugs ready to eat the pollutants in the influent
8. b 1 mg (milligram) is 1/1000 of a gram. 1 liter of water has, by definition, a mass of 1000 grams. 1000 grams equals 1,000,000 milligrams. Thus, 1 milligram is 1/1,000,000 of a liter so 1 mg/L = 1 part per million

MEPDES/WDL Fee Increase

This past legislative session the legislature enacted, and the Governor signed in to law, *An Act to Sustain Maine's Core Wastewater Licensing Program and Adjust Related Provisions*. This law modifies existing permit fees for the MEPDES/WDL program and becomes effective on June 30, 2008. Permit fee bills sent out after this date will include increases specified under the new law.

The current permit fee system has been in place without change since it was enacted in 1998. The permit fees partially support vital functions of the MEPDES/WDL program to protect and improve the waters of the State from the potentially negative effects of wastewater discharges. Program staff includes licensing, compliance, enforcement, administration, clerical, data management, and water quality monitoring/modeling.

The program is also supported by federal grants and state general fund. The Department has actively managed the fee system and program over the last several years to delay any increase in fees. The program currently operates with fewer positions than originally approved under MEPDES delegation, and the Department has shifted positions supported by permit fees onto other funds. The table below shows the relative contribution of each fund over time. 2001 represents funding under the original program, 2008 is just prior to the new law, 2009 represents funding under the new law.



In 2005, due to a projected permit fee account shortfall, the Department moved two permit writers from permit fees to general fund in order to prevent a fee increase. While this funding change was temporarily successful in preventing a fee increase it did not solve the long term needs of the program.

In 2006 the federal EPA eliminated one of their grants to the Department. This loss of funds has prevented the hiring of a currently vacant Senior Environmental Engineer position that was previously funded by this grant. This vacancy has severely limited the Department's ability to provide technical assistance and pollution prevention assistance to municipal, commercial, and industrial dischargers. As a result, the Department plans to move one of the permit writer positions noted in the paragraph above back onto fees in order to free up general fund dollars to fund this vacancy.

After meeting with a workgroup comprised of representatives from MWWCA, MRWA, Maine Pulp and Paper, and various environmental groups that have an interest in the

MEPDES/WDL program, the Department developed the following proposal that was ultimately adopted into law.

The current fee system with base fees and pollutant charges will stay in place unchanged. 38 MRSA Sec. 353-B has been amended to allow the Department to collect an additional license renewal service fee based on the approximate average time staff takes to evaluate and render a license decision. Costs were developed in each category to reflect the average amount of hours to process that type of application based on past experience. This fee will be assessed annually, rather than every five years, to facilitate permittee budgeting and Department billing. Categories and new annual license renewal service fees are shown in the table below.

This fee increase is projected to ensure fee account solvency for at least five years and enable the Department to fill the vacant technical assistance position.

If you have any questions regarding this issue please contact Dennis Merrill at 287-7788 or dennis.l.merrill@maine.gov

New Annual MEPDES/WDL License Renewal Service Fees

Category	New Annual License Renewal Service Fee
Major industrial	\$650
POTW <0.01	\$150
POTW 0.01 - 0.1	\$150
POTW 0.1 - 1.0	\$225
POTW 1.0 - 5.0	\$450
POTW >5MGD or Ind. Waste	\$650
Cooling water	\$60
Non-process wastes	\$150
Food processing	\$150
Fish rearing >0.1 MGD	\$300
Fish rearing ≤0.1 MGD	\$0
Other industrial	\$300
Commercial sanitary	\$300
CSO	\$150
Snow dump	\$150
Log storage	\$150
Salt and sand storage	\$225
General permit NOI	\$30
General permit NOI aquaculture	\$0
Marine aquaculture facility	\$0
Experimental permit	\$225
Create sanitary district	\$0
Create mixing zone	\$0
Pesticides	\$370

Brian Kavanah