



STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



PAUL R. LEPAGE  
GOVERNOR

PAUL MERCER  
COMMISSIONER

May 4, 2016

Ms. Catherine Conlow  
City of Bangor  
73 Harlow St.  
Bangor, ME. 04401  
[Cathy.Conlow@bangormaine.com](mailto:Cathy.Conlow@bangormaine.com)

*Sent via electronic mail  
Delivery confirmation requested*

**RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0100781  
Maine Waste Discharge License (WDL) Application #W001041-5M-J-R  
Proposed Draft MEPDES Permit - Renewal**

Dear Ms. Conlow:

Attached is a proposed draft MEPDES permit and Maine WDL which the Department proposes to issue for your facility as a final document after opportunity for your review and comment. By transmittal of this letter, you are provided with an opportunity to comment on the proposed draft permit and its special and standard conditions. If it contains errors or does not accurately reflect present or proposed conditions, please respond to this Department so that changes can be considered.

By copy of this letter, the Department is requesting comments on the proposed draft permit from various state and federal agencies and from any other parties who have notified the Department of their interest in this matter.

The comment period begins on May 4, 2016 and ends on June 7, 2016. All comments on the proposed draft permit must be received in the Department of Environmental Protection office on or before the close of business Tuesday, June 7, 2016. Failure to submit comments in a timely fashion will result in the proposed draft/license permit document being issued as drafted.

AUGUSTA  
17 STATE HOUSE STATION  
AUGUSTA, MAINE 04333-0017  
(207) 287-7688 FAX: (207) 287-7826

BANGOR  
106 HOGAN ROAD, SUITE 6  
BANGOR, MAINE 04401  
(207) 941-4570 FAX: (207) 941-4584

PORTLAND  
312 CANCO ROAD  
PORTLAND, MAINE 04103  
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE  
1235 CENTRAL DRIVE, SKYWAY PARK  
PRESQUE ISLE, MAINE 04769  
(207) 764-0477 FAX: (207) 760-3143

City of Bangor  
May 4, 2016  
Page 2 of 2

Comments in writing should be submitted to my attention at the following address:

Maine Department of Environmental Protection  
Bureau of Water Quality  
Division of Water Quality Management  
17 State House Station  
Augusta, ME 04333-0017  
[Cindy.L.Dionne@maine.gov](mailto:Cindy.L.Dionne@maine.gov)

If you have any questions regarding the matter, please feel free to contact me.

Sincerely,



Cindy L. Dionne  
Division of Water Quality Management  
Bureau of Water Quality  
ph: 207-557-5950

Enc.

cc: Barry Mower, DEP  
Pamela Parker, DEP  
Clarissa Trasko, DEP  
Dave Breau, DEP  
James Crowley, DEP  
Sean Mahoney, CLF  
Environmental Review, DMR  
David Webster, USEPA  
David Pincumbe, USEPA  
Alex Rosenberg, USEPA  
Olga Vergara, USEPA  
Marelyn Vega, USEPA  
Richard Carvalho, USEPA  
Environmental Review, IFW  
Dan Kusnierz, Penobscot Indian Nation



DEPARTMENT ORDER

IN THE MATTER OF

CITY OF BANGOR	)	MAINE POLLUTANT DISCHARGE
PUBLICLY OWNED TREATMENT WORKS	)	ELIMINATION SYSTEM PERMIT
BANGOR, PENOBSCOT COUNTY, MAINE	)	AND
ME0100781	)	WASTE DISCHARGE LICENSE
W001041-5M-J-R	)	<b>RENEWAL</b>
<b>APPROVAL</b>		

In compliance with the applicable provisions of *Pollution Control*, 38 M.R.S. §§ 411 – 424-B, *Water Classification Program*, 38 M.R.S. §§ 464 – 470 and *Federal Water Pollution Control Act*, Title 33 U.S.C. § 1251, and applicable rules of the Department of Environmental Protection (Department), the Department has considered the application of the City of Bangor (Bangor), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

**APPLICATION SUMMARY**

On January 20, 2016, the Department accepted as complete for processing an application from Bangor for renewal of combination Waste Discharge License (WDL) # W001041-5M-F-R / Maine Pollutant Discharge Elimination System (MEPDES) permit # ME0100781, which was issued by the Department on May 26, 2011 for a five-year term. The May 26, 2011 permit authorized the monthly average discharge of 18.0 million gallons per day (MGD) of secondary treated sanitary wastewater from a publicly owned treatment works (POTW) to the Penobscot River, Class B, in Bangor, Maine.

The 5/26/11 MEPDES permit also authorized Bangor to discharge an unspecified quantity of primary treated municipal wastewater from a POTW when the influent to the wastewater treatment facility exceeded a sustained daily flow rate of 30 MGD and authorized the discharge of an unspecified quantity of untreated combined sanitary and storm water from nine (9) combined sewer overflow (CSO) outfalls to the Kenduskeag Stream, Class C and the Penobscot River, Class B in Bangor, Maine.

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## PERMIT SUMMARY

### Terms and conditions

**This permitting action is different from the May 26, 2011 permit in that:**

#### For Secondary Treated Wastewater (Outfall #001A)

1. Eliminates the seasonal, bimonthly effluent total phosphorus reporting condition;
2. Incorporates monitoring and reporting requirements for the interim mercury limitations established by the Department for this facility pursuant to *Certain deposits and discharges prohibited*, 38 M.R.S. § 420 and *Waste discharge licenses*, 38 M.R.S. § 413 and *Interim Effluent Limitations and Controls for the Discharge of Mercury*, 06-096 C.M.R. 519 (last amended October 6, 2001);
3. Reduces the monitoring and reporting requirement for biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), and *Escherichia coli* (*E. coli* Bacteria) from 5/Week to 3/Week;
4. Establishes a monthly average water quality based limit for total lead based on the results of facility testing;
5. Eliminates numeric limits for total copper as well as total arsenic and inorganic arsenic in response to facility testing results;
6. Eliminates surveillance level whole effluent testing (WET) in response to facility testing results;
7. Reduces the monitoring and reporting requirement for total residual chlorine (TRC) from 2/Day to 1/Day;
8. Reduces the monitoring and reporting requirement for settleable solids from 1/Day to 4/Week;

#### For Primary Treated Wastewater (Outfall #001B)

9. Eliminates Surface Overflow Rate, BOD<sub>5</sub> and TSS percent removal, settleable solids, and pH monitoring requirements;
10. Establishes Minimum Influent Flow Rate monitoring; and

#### For Blended Wastewater (Outfall #001C)

11. Establishes end-of-pipe limitations and reporting requirements for administrative outfall #001C to comply with U.S. Environmental Protection Agency (USEPA) CSO Control Policy and Clean Water Act section 402(q)(1);

## CONCLUSIONS

BASED on the findings in the attached and incorporated Fact Sheet dated May 4, 2016, and subject to the Conditions listed below, the Department makes the following CONCLUSIONS:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.
2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with State law.
3. The provisions of the State's antidegradation policy, *Classification of Maine waters*, 38 M.R.S. § 464(4)(F), will be met, in that:
  - (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;
  - (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;
  - (c) Where the standards of classification of the receiving waterbody are not met, the discharge will not cause or contribute to the failure of the waterbody to meet the standards of classification;
  - (d) Where the actual quality of any classified receiving waterbody exceeds the minimum standards of the next highest classification that higher water quality will be maintained and protected; and
  - (e) Where a discharge will result in lowering the existing water quality of any waterbody, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.
4. The discharges (including the nine CSOs and the CSO related bypasses of secondary treatment) will be subject to effluent limitations that require application of best practicable treatment as defined in *Conditions of licenses*, 38 M.R.S. § 414-A(1)(D).

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**ACTION**

THEREFORE, the Department APPROVES the application of the CITY of BANGOR to discharge a monthly average flow of 18.0 MGD of secondary treated sanitary wastewater and allow the discharge of an unspecified quantity of excess combined sanitary and storm water receiving primary treatment only from a municipal wastewater treatment facility to the Penobscot River, Class B, and untreated combined sanitary and storm water from six (6) CSO outfalls to Kenduskeag Stream, Class C, and three (3) CSO outfalls to the Penobscot River, Class B, in Bangor, Maine, SUBJECT TO ALL APPLICABLE STANDARDS AND REGULATIONS AND THE FOLLOWING CONDITIONS:

1. *“Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable to All Permits,”* revised July 1, 2002, copy attached.
2. The attached Special Conditions, including any effluent limitations and monitoring requirements.
3. This permit becomes effective upon the date of signature below and expires at midnight five (5) years after that date. If a renewal application is timely submitted and accepted as complete for processing prior to the expiration of this permit, the terms and conditions of this permit and all subsequent modifications and minor revisions thereto remain in effect until a final Department decision on the renewal application becomes effective. *Maine Administrative Procedure Act, 5 M.R.S. § 10002 and Rules Concerning the Processing of Applications and Other Administrative Matters, 06-096 C.M.R. 2(21)(A)* (amended October 19, 2015).

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

DONE AND DATED AT AUGUSTA, MAINE, THIS \_\_\_ DAY OF \_\_\_\_\_ 2016.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: \_\_\_\_\_  
PAUL MERCER, Commissioner

Date of initial receipt of application January 19, 2016

Date of application acceptance January 20, 2016

Date filed with Board of Environmental Protection \_\_\_\_\_

This Order prepared by Cindy L. Dionne, Bureau of Water Quality

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS**

- The permittee is authorized to discharge secondary treated sanitary wastewater from **Outfall #001A** to the Penobscot River in Bangor. These limitations and monitoring requirements apply to all flows conveyed through the secondary treatment system at all times except as otherwise noted in the associated footnotes <sup>(1)</sup> on pages 9-13.

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>	<u>Monthly Average</u>	<u>Weekly Average</u>	<u>Daily Maximum</u>	<u>Measurement Frequency</u>	<u>Sample Type</u>
Flow [50050]	18.0 MGD [03]	---	Report MGD [03]	---	---	---	Continuous [99/99]	Recorder [RC]
BOD <sub>5</sub> [00310]	4,504 lbs./day [26]	6,755 lbs./day [26]	Report lbs./day [26]	30 mg/L <sup>(2)</sup> [19]	45 mg/L <sup>(2)</sup> [19]	50 mg/L <sup>(2)</sup> [19]	3/Week [03/07]	Composite [24]
BOD <sub>5</sub> [00310] (When bypass is active)	4,504 lbs./day [26]	6,755 lbs./day [26]	Report lbs./day [26]	30 mg/L <sup>(2)</sup> [19]	45 mg/L <sup>(2)</sup> [19]	Report mg/L <sup>(2)</sup> [19]	3/Week [03/07]	Composite [24]
BOD <sub>5</sub> Percent Removal <sup>(3)</sup> [81010]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
TSS [00530]	4,504 lbs./day [26]	6,755 lbs./day [26]	Report lbs./day [26]	30 mg/L <sup>(2)</sup> [19]	45 mg/L <sup>(2)</sup> [19]	50 mg/L <sup>(2)</sup> [19]	3/Week [03/07]	Composite [24]
TSS [00530] (When bypass is active)	4,504 lbs./day [26]	6,755 lbs./day [26]	Report lbs./day [26]	30 mg/L <sup>(2)</sup> [19]	45 mg/L <sup>(2)</sup> [19]	Report mg/L <sup>(2)</sup> [19]	3/Week [03/07]	Composite [24]
TSS Percent Removal <sup>(3)</sup> [81011]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Settleable Solids [00545]	---	---	---	---	---	0.3 ml/L [25]	4/Week [04/07]	Grab [GR]
<i>E. coli</i> Bacteria <sup>(4,5)</sup> [31633] May 15 <sup>th</sup> – September 30 <sup>th</sup>	---	---	---	64/100 ml <sup>(5)</sup> [13]	---	427/100 ml [13]	3/Week [03/07]	Grab [GR]
TRC <sup>(6)</sup> [50060]	---	---	---	0.1 mg/L [19]	---	0.3 mg/L [19]	1/Day [01/01]	Grab [GR]
pH [00400]	---	---	---	---	---	6.0 – 9.0 SU [12]	1/Day [01/01]	Grab [GR]
Mercury (Total) <sup>(7)</sup> [71900]	---	---	---	11.3 ng/L [3M]	---	16.9 ng/L [3M]	1/Year [01/YR]	Grab [GR]
Lead (Total) [01051]	4.2 lbs./day [26]	---	---	60 µg/L [28]	---	---	1/Year [01/YR]	Composite [24]

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports (DMRs).

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

2. The permittee is authorized to discharge **secondary treated municipal wastewaters from Outfall #001A** to the Penobscot River in Bangor. Such discharges must be limited and monitored by the permittee as specified below <sup>(1)</sup>:

**SCREENING LEVEL** - Beginning 24 months prior to permit expiration and lasting through 12 months prior to permit expiration (Year 4 of the term of the permit) and every five years thereafter if a timely request for renewal has been made and the permit continues in force, or is replaced by a permit renewal containing this requirement.

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
<b><u>WET Acute – No Observed Effect Level (NOEL)</u></b> <sup>(8)</sup>						
<i>Ceriodaphnia dubia</i> (Water flea) [TDA3B]	---	---	---	Report % [23]	1/Year [01/YR]	Composite [24]
<i>Salvelinus fontinalis</i> (Brook trout) [TDA6F]	---	---	---	Report % [23]	1/Year [01/YR]	Composite [24]
<b><u>Chronic – NOEL</u></b>						
<i>Ceriodaphnia dubia</i> (Water flea) [TBP3B]	---	---	---	Report % [23]	1/Year [01/YR]	Composite [24]
<i>Salvelinus fontinalis</i> (Brook trout) [TBQ6F]	---	---	---	Report % [23]	1/Year [01/YR]	Composite [24]
Analytical chemistry <sup>(9)</sup> [51477]	---	---	---	Report µg/L [28]	1/Quarter [01/90]	Composite/Grab [24]
Priority Pollutant <sup>(9)</sup> [50008]	---	---	---	Report µg/L [28]	1/Year [01/YR]	Composite/Grab [24]

Footnotes: See Pages 9-13 of this permit for applicable footnotes.



**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

**3. PRIMARY TREATED WASTEWATER (Administrative OUTFALL #001B – Primary Treatment Only)**

Consistent with CSO bypass regulations, the permittee is allowed to bypass secondary treatment and provide primary treatment only prior to combining with secondary treated wastewater. Bypassing secondary treatment is allowed when the influent to the wastewater treatment facility exceeds 30 MGD. Allowance to bypass secondary treatment will be reviewed and may be modified or terminated pursuant to Special Condition O, *Reopening of Permit for Modification*, if there is substantial change in the volume or character of pollutants in the collection/treatment system. Also see supplemental report form, *DEP-49-CSO Form For Use With Dedicated CSO Primary Clarifier*, **Attachment E** of this permit. Outfall 001B must be monitored as follows <sup>(1)</sup>:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Influent Flow Rate Minimum [00058]	---	Report (gpm) <sup>(10)</sup> [78]	---	---	Instantaneous [01/99]	Recorder [RC]
Flow [50050]	Report (Total MGD) [03]	Report (MGD) [03]	---	---	Continuous [99/99]	Recorder [RC]
BOD <sub>5</sub> [00310]	---	Report lbs./day [26]	---	Report mg/L [19]	1/Discharge Day <sup>(11,14)</sup> [01/DD]	Composite [24]
TSS [00530]	---	Report lbs./day [26]	---	Report mg/L [19]	1/Discharge Day <sup>(11,14)</sup> [01/DD]	Composite [24]
Overflow Occurrence <sup>(12)</sup> [74062]	---	---	Report (# of days) [93]	---	1/Discharge Day <sup>(11)</sup> [01/DD]	Record Total [RT]
<i>E. coli</i> Bacteria [31633] (May 15 – September 30)	---	---	---	Report col/100 ml [13]	1/Discharge Day <sup>(11,14)</sup> [01/DD]	Grab [GR]
TRC [50060]	---	---	--	Report mg/L [19]	1/Discharge Day <sup>(11,14)</sup> [01/DD]	Grab [GR]

Footnotes: See Pages 9-13 of this permit for applicable footnotes.

**SPECIAL CONDITIONS**

**A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

**4. BLENDED EFFLUENT (Administrative OUTFALL #001C)**

Consistent with CSO bypass regulations, the permittee is allowed to discharge primary and secondary treated wastewater (blended effluent - Outfall #001C (administrative outfall)) to the Penobscot River. Bypassing secondary treatment is allowed when the influent to the wastewater treatment facility exceeds 30 MGD. Allowance to bypass secondary treatment will be reviewed and may be modified or terminated pursuant to Special Condition O, *Reopening of Permit for Modification*, if there is substantial change in the volume or character of pollutants in the collection/treatment system. Also see supplemental report form, *DEP-49-CSO Form For Use With Dedicated CSO Primary Clarifier*, **Attachment E** of this permit. Outfall 001C must be monitored as follows <sup>(1)</sup>:

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow [50050]	Report (Total MGD) [03]	Report (MGD) [03]	---	---	1/Discharge Day <sup>(11)</sup> [01/DD]	Calculate [CA]
BOD <sub>5</sub> <sup>(13)</sup> [00310]	---	9,243 lbs./day [26]	---	Report mg/L [19]	1/Discharge Day <sup>(11,14)</sup> [01/DD]	Calculate [CA]
TSS <sup>(13)</sup> [00530]	---	13,470 lbs./day [26]	---	Report mg/L [19]	1/Discharge Day <sup>(11,14)</sup> [01/DD]	Calculate [CA]
<i>E. coli</i> Bacteria <sup>(4)</sup> [31633] (May 15 – September 30)	---	---	---	427 col/100 ml [13]	1/Discharge Day <sup>(11,14)</sup> [01/DD]	Calculate [CA]
TRC <sup>(6)</sup> [50060]	---	---	---	1.0 mg/L [19]	1/Discharge Day <sup>(11)</sup> [01/DD]	Calculate [CA]

Footnotes: See Pages 9-13 of this permit for applicable footnotes.

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

#### Footnotes

- 1. Sampling** – The permittee must conduct all effluent sampling and analysis in accordance with; a) methods approved by 40 Code of Federal Regulations (CFR) Part 136, b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136, or c) as otherwise specified by the Department. Samples that are sent out for analysis must be analyzed by a laboratory certified by the State of Maine's Department of Health and Human Services. Samples that are sent to another POTW licensed pursuant to *Waste discharge licenses*, 38 M.R.S. § 413 are subject to the provisions and restrictions of *Maine Comprehensive and Limited Environmental Laboratory Certification Rules*, 10-144 C.M.R. 263 (last amended April 1, 2010). If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the DMR.

**Sampling Locations** – Any change in sampling location(s) other than those specified below must be reviewed and approved by the Department in writing.

#### Influent

BOD<sub>5</sub> and TSS must be sampled at the discharge of the main lift station prior to degritting.

#### Effluent receiving secondary treatment (Outfall #001A)

BOD<sub>5</sub>, TSS, WET testing, analytical chemistry and TRC must be sampled at the drop box prior to discharge to the river. Sampling for pH, settleable solids, and *E.coli* bacteria must be at the influent end of the Parshall flume.

#### Effluent receiving primary treatment (Internal Waste Stream - Outfall #001B)

BOD<sub>5</sub>, TSS, TRC, pH, settleable solids and *E. coli* bacteria must be collected immediately downstream from the effluent launders of Primary Clarifier #1.

- 2. BOD<sub>5</sub> & TSS** – When the bypass of secondary treatment is active, sample results obtained for these parameters are not to be included in calculations to determine compliance with monthly or weekly average limitations. Also, when the bypass of secondary treatment is active, the daily maximum concentration limit of 50 mg/L for BOD<sub>5</sub> and TSS at Outfall #001A is not in effect.
- 3. Percent Removal** – The permittee must achieve a minimum of 85 percent removal of both TSS and BOD<sub>5</sub> for all flows receiving secondary treatment. The percent removal is calculated based on influent and effluent concentration values. The percent removal will be waived if the calculated percent removal is less than 85% and when the monthly

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

#### Footnotes (cont'd)

average influent concentration is less than 200 mg/L. For instances when this occurs, the facility may report "N9" on the monthly Discharge Monitoring Report (DMR).

4. ***E. coli* bacteria** – *E. coli* bacteria limits and monitoring requirements are seasonal and apply between May 15th and September 30th of each year. In accordance with 38 M.R.S. § 414-A(5), the Department may, at any time and with notice to the permittee, modify this permit to establish bacteria limitations on a year-round basis to protect the health and welfare of the public.
5. **Bacteria Reporting** – The monthly average *E. coli* bacteria limitation is a geometric mean limitation and sample results must be reported as such.
6. **TRC** – Limitations and monitoring requirements are applicable whenever elemental chlorine or chlorine based compounds are being used to disinfect the discharge. The permittee must utilize approved test methods that are capable of bracketing the limitations in this permit.
7. **Mercury** – The permittee must conduct all mercury monitoring required by this permit or required to determine compliance with interim limitations established pursuant to 06-096 C.M.R. 519 in accordance with the USEPA's "clean sampling techniques" found in USEPA Method 1669, *Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels*. All mercury analysis must be conducted in accordance with USEPA Method 1631, *Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry*. See **Attachment A** of this permit for a Department report form for mercury test results. Compliance with the monthly average limitation established in Special Condition A of this permit will be based on the cumulative arithmetic mean of all mercury tests results that were conducted utilizing sampling Methods 1669 and analysis Method 1631E on file with the Department for this facility.
8. **WET Testing** – Definitive WET testing is a multi-concentration testing event (a minimum of five dilutions set at levels to bracket the modified acute and chronic critical water quality thresholds of 3.7% and 0.9%, respectively), which provides a point estimate of toxicity in terms of NOEL. A-NOEL is defined as the acute no observed effect level with survival as the end point. C-NOEL is defined as the chronic no observed effect level with survival, reproduction and growth as the end points. The critical acute and chronic thresholds were derived as the mathematical inverse of the applicable acute and chronic dilution factors of 27.0:1 and 116.1:1, respectively, for Outfall #001A.

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

#### Footnotes (cont'd)

Test results must be submitted to the Department no later than the next DMR required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their availability before submitting them. The permittee must evaluate test results being submitted and identify to the Department possible exceedences of the critical acute and chronic water quality thresholds of 3.7% and 0.9%, respectively.

Toxicity tests must be conducted by an experienced laboratory approved by the Department. The laboratory must follow procedures as described in the following USEPA methods manuals as modified by Department protocol for salmonids. See **Attachment C** of this permit for the Department protocol.

- a. U.S. Environmental Protection Agency. 2002. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, 5<sup>th</sup> ed. USEPA 821-R-02-012. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., October 2002 (the acute method manual).
- b. U.S. Environmental Protection Agency. 2002. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, 4th ed. USEPA 821-R-02-013. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., October 2002 (the freshwater chronic method manual).

Results of WET tests must be reported on the “Whole Effluent Toxicity Report Fresh Waters” form included as **Attachment B** of this permit each time a WET test is performed.

The permittee must analyze the effluent for the analytical chemistry and priority pollutant parameters specified on the “WET and Chemical Specific Data Report Form” form included as **Attachment D** of this permit each time a WET test is performed.

- 9. Analytical chemistry and Priority Pollutant testing** – Refers to those pollutants listed in their respective categories on the form included as **Attachment D** of this permit.

Analytical chemistry and priority pollutant test results must be submitted to the Department not later than the next DMR required by the permit, provided, however, that the permittee may review the laboratory reports for up to 10 business days of their availability before submitting them. The permittee must evaluate test results being submitted and identify to the Department, possible exceedences of the acute, chronic or human health ambient water quality criteria (AWQC) as established in *Surface Water Quality Criteria for Toxic Pollutants*, 06-096 C.M.R. 584 (effective July 29, 2012). For

## SPECIAL CONDITIONS

### A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

#### Footnotes (cont'd)

the purposes of DMR reporting, enter a "1" for yes, testing done this monitoring period or "N-9" monitoring not required this period.

Analytical chemistry and priority pollutant testing must be conducted on samples collected at the same time as those collected for whole effluent toxicity tests, when applicable, and must be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve the most current minimum reporting levels of detection as specified by the Department.

**10. Influent Flow Rate Minimum** – The permittee must report the minimum instantaneous influent flow rate entering the headworks of the plant at the time each bypass of secondary treatment is activated.

**11. Discharge Day** – A discharge day is defined as a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling.

**12. Overflow Occurrence** – An overflow occurrence is defined as the period of time between initiation of flow from the primary bypass and ceasing discharge from the primary bypass. Overflow occurrences are reported in discharge days. Multiple intermittent overflow occurrences in one discharge day are reported as one overflow occurrence and are sampled according to the measurement frequency specified.

**13. BOD<sub>5</sub> & TSS** – As stated in Footnote #14, sampling of the bypass waste stream (blended primary plus secondary) is only required when it coincides with the scheduled sampling event for the secondary.

When quantifying the blended effluent, the permittee has the option to calculate the discharge characteristics of the final effluent discharged to the receiving water. To do this, the permittee must mathematically add the monthly average mass of BOD<sub>5</sub> and TSS of the secondary treated wastewater (Outfall #001A) to each of the daily BOD<sub>5</sub> and TSS mass values of the primary treated wastewater when the bypass is active and report the highest combined mass of BOD<sub>5</sub> and TSS values for each month. Example calculation is as follows:

$$\begin{aligned} & \text{BOD}_5 \text{ mass (monthly average for secondary)} + \text{BOD}_5 \text{ mass (highest for bypass)} \\ & = \text{BOD}_5 \text{ mass (blended effluent)} \end{aligned}$$

All calculations and data utilized must be submitted to the Department with the applicable monthly DMR.

## **SPECIAL CONDITIONS**

### **A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

#### **Footnotes (cont'd)**

**14. BOD<sub>5</sub>, TSS, *E. coli* bacteria, TRC** – Sampling to comply with the 1/Discharge Day monitoring requirement is only required if it coincides with the regularly scheduled 3/Week monitoring requirement on the secondary treated effluent waste stream.

### **B. NARRATIVE EFFLUENT LIMITATIONS**

1. The permittee must not discharge effluent that contains a visible oil sheen, foam or floating solids at any time which would impair the uses designated for the classification of the receiving waters.
2. The permittee must not discharge effluent that contains materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the uses designated for the classification of the receiving waters.
3. The permittee must not discharge effluent that causes visible discoloration or turbidity in the receiving waters or otherwise impairs the uses designated for the classification of the receiving waters.
4. The permittee must not discharge effluent that lowers the quality of any classified body of water below such classification, or lowers the existing quality of any body of water if the existing quality is higher than the classification.

### **C. TREATMENT PLANT OPERATOR**

The person who has management responsibility over the treatment facility must hold a Maine **Grade V**, Biological Treatment certificate (or higher) or must be a Maine Registered Professional Engineer pursuant to *Sewage Treatment Operators*, 32 M.R.S. § 4171-4182 and *Regulations for Wastewater Operator Certification*, 06-096 C.M.R. 531 (effective May 8, 2006). All proposed contracts for facility operation by any person must be approved by the Department before the permittee may engage the services of the contract operator.

### **D. NOTIFICATION REQUIREMENT**

In accordance with Standard Condition D, the permittee must notify the Department of the following:

1. Any introduction of pollutants into the wastewater collection and treatment system from an indirect discharger in a primary industrial category discharging process wastewater; and;

## SPECIAL CONDITIONS

### D. NOTIFICATION REQUIREMENT (cont'd)

2. Any substantial change (increase or decrease) in the volume or character of pollutants being introduced into the wastewater collection and treatment system by a source introducing pollutants into the system at the time of permit issuance.
3. For the purposes of this section, adequate notice must include information on:
  - (a) The quality and quantity of wastewater introduced to the wastewater collection and treatment system; and
  - (b) Any anticipated impact of the change in the quantity or quality of the wastewater to be discharged from the treatment system.

### E. MONITORING AND REPORTING

Monitoring results obtained during the previous month must be summarized for each month and reported on separate DMR forms provided by the Department and **postmarked on or before the thirteenth (13<sup>th</sup>) day of the month or hand-delivered to the Department's Regional Office such that the DMRs are received by the Department on or before the fifteenth (15<sup>th</sup>) day of the month** following the completed reporting period. A signed copy of the DMR and all other reports required herein must be submitted to the Department-assigned inspector (unless otherwise specified by the Department) at the following address:

Department of Environmental Protection  
Eastern Maine Regional Office  
Bureau of Water Quality  
Division of Water Quality Management  
106 Hogan Road  
Bangor, Maine 04401

Alternatively, if the permittee submits an electronic DMR, the completed DMR must be electronically submitted to the Department by a facility authorized DMR Signatory not later than close of business on the **15<sup>th</sup> day of the month** following the completed reporting period. Hard copy documentation submitted in support of the DMR must be postmarked on or before the **thirteenth (13<sup>th</sup>) day of the month or hand-delivered** to the Department's Regional Office such that it is received by the Department on or before the fifteenth (15<sup>th</sup>) day of the month following the completed reporting period. Electronic documentation in support of the DMR must be submitted not later than close of business on the 15<sup>th</sup> day of the month following the completed reporting period.



## SPECIAL CONDITIONS

### F. LIMITATIONS FOR INDUSTRIAL USERS

Pollutants introduced into the wastewater collection and treatment system by a non-domestic source (user) must not pass through or interfere with the operation of the treatment system. The permittee must conduct an Industrial Waste Survey (IWS) any time a new industrial user proposes to discharge within its jurisdiction; an existing user proposes to make a significant change in its discharge; or at an alternative minimum, once every permit cycle, and submit the results to the Department. The IWS must identify, in terms of character and volume of pollutants, any Significant Industrial Users discharging into the POTW subject to Pretreatment Standards under section 307(b) of the federal Clean Water Act, 40 CFR Part 403 (general pretreatment regulations) or *Pretreatment Program*, 06-096 C.M.R. 528 (last amended March 17, 2008).

### G. INDUSTRIAL PRETREATMENT PROGRAM

1. Pollutants introduced into POTW's by a non-domestic source (user) must not pass-through the POTW or interfere with the operation or performance of the works.
  - a. The permittee must develop and enforce specific effluent limits (local limits) or conditions (Best Management Practices) for Industrial User(s), and all other users, as appropriate, which together with appropriate changes in the POTW facilities or operation, are necessary to ensure continued compliance with the POTW's MEPDES permit or sludge use or disposal practices. Specific local limits must not be developed and enforced without individual notice to persons or groups who have requested such notice and an opportunity to respond.

**Within 180 days of the effective date of this permit, [ICIS code PR002]** the permittee must prepare and submit a written technical evaluation to the Department analyzing the need to revise local limits. As part of this evaluation, the permittee must assess how the POTW performs with respect to influent and effluent of pollutants, water quality concerns, sludge quality, sludge processing concerns/inhibition, biomonitoring results, activated sludge inhibition, worker health and safety and collection system concerns. In preparing this evaluation, the permittee must complete the "Re-Assessment of Technically Based Local Limits" form included as **Attachment F** of this permit with the technical evaluation to assist in determining whether existing local limits need to be revised. Justifications and conclusions should be based on actual plant data if available and should be included in the report. Should the evaluation reveal the need to revise local limits, the permittee must complete the revisions within 120 days of notification by the Department and submit the revisions to the Department for approval. The permittee must carry out the local limits revisions in accordance with EPA's document entitled, *Local Limits Development Guidance (July 2004)*.

## SPECIAL CONDITIONS

### G. INDUSTRIAL PRETREATMENT PROGRAM (cont'd)

2. The permittee must implement the Industrial Pretreatment Program in accordance with the legal authorities, policies, procedures, and financial provisions described in the permittee's approved Pretreatment Program, and the General Pretreatment Regulations, found at 40 CFR 403 and Pretreatment Program, Department rule 06-096 C.M.R. 528 (effective January 17, 2008). At a minimum, the permittee must perform the following duties to properly implement the Industrial Pretreatment Program (IPP):
  - a. Carry out inspection, surveillance, and monitoring procedures which will determine, independent of information supplied by the industrial user, whether the industrial user is in compliance with the Pretreatment Standards. At a minimum, all significant industrial users must be sampled and inspected at the frequency established in the approved IPP but in no case less than once per year and maintain adequate records.
  - b. Issue or renew all necessary industrial user control mechanisms within 90 days of their expiration date or within 180 days after the industry has been determined to be a significant industrial user.
  - c. Obtain appropriate remedies for noncompliance by an industrial user with any pretreatment standard and/or requirement.
  - d. Maintain an adequate revenue structure for continued implementation of the Pretreatment Program.
  - e. The permittee must provide the Department with an annual report describing the permittee's pretreatment program activities for the twelve-month period ending 60 days prior to the due date in accordance with federal regulation found at 40 CFR 403.12(i) and 06-096 C.M.R. 528(12)(i). **The annual report [ICIS code 53199] must be consistent with the format described in the "MEPDES Permit Requirements For Industrial Pretreatment Annual Report" form included as Attachment G of this permit and must be submitted no later than December 1 of each calendar year.**
  - f. The permittee must obtain approval from the Department prior to making any significant changes to the industrial pretreatment program in accordance with federal regulation found at 40 CFR 403.18(c) and 06-096 C.M.R. 528(18).
  - g. The permittee must assure that applicable National Categorical Pretreatment Standards are met by all categorical industrial users of the POTW. These standards are published in the federal regulations found at 40 CFR Parts 405 through 471.

## SPECIAL CONDITIONS

### G. INDUSTRIAL PRETREATMENT PROGRAM (cont'd)

- h. The permittee must modify its pretreatment program to conform to all changes in the federal regulations and State rules that pertain to the implementation and enforcement of the industrial pretreatment program. **Within 180 days of the effective date of this permit, [ICIS code 50799]** the permittee must provide the Department in writing, proposed changes to the permittee's pretreatment program deemed necessary to assure conformity with current federal regulations and State rules. At a minimum, the permittee must address in its written submission the following areas: (1) Enforcement response plan; (2) revised sewer use ordinances; and (3) slug control evaluations. The permittee will implement these proposed changes pending the Department's approval under federal regulation 40 CFR 403.18 and 06-096 C.M.R. 528(18). This submission is separate and distinct from any local limits analysis submission described in section 1(a) above.

### H. AUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with: 1) the permittee's General Application for Waste Discharge Permit, accepted for processing on January 20, 2015; 2) the terms and conditions of this permit; and 3) only from Outfall #001A, #001B, #001C and nine (9) combined sewer overflow outfalls listed in Special Condition L, *Combined Sewer Overflows*, of this permit. Discharges of wastewater from any other point source are not authorized under this permit, and must be reported in accordance with Standard Condition D(1)(f), *Twenty-four hour reporting*, of this permit.

### I. HIGH FLOW MANAGEMENT PLAN

The treatment facility staff must have a current written High Flow Management Plan to direct the staff on how to operate the facility effectively during periods of high flow. The Department acknowledges that the existing collection system may deliver flows in excess of the monthly average design capacity of the treatment plant during periods of high infiltration and rainfall.

The plan must conform to Department guidelines for such plans and must include operating procedures for a range of intensities, address solids handling procedures (including septic waste and other high strength wastes if applicable) and provide written operating and maintenance procedures during the events.

**The permittee must review their plan at least annually and record any necessary changes to keep the plan up to date.** The Department may require review and update of the plan as it is determined to be necessary.

## **SPECIAL CONDITIONS**

### **J. OPERATION & MAINTENANCE (O&M) PLAN**

The permittee must maintain a current written comprehensive Operation & Maintenance (O&M) Plan for the facility. The plan must provide a systematic approach by which the permittee must at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

**By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades**, the permittee must evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the wastewater treatment facility to ensure that it is up-to-date. The O&M Plan must be kept on-site at all times and made available to Department and USEPA personnel upon request.

**Within 90 days of completion of new and or substantial upgrades of the wastewater treatment facility**, the permittee must submit the updated O&M Plan to their Department inspector for review and comment.

### **K. DISPOSAL OF TRANSPORTED WASTES IN WASTEWATER TREATMENT FACILITY**

During the effective period of this permit, the permittee is authorized to receive and introduce into the treatment process or solids handling stream **a daily maximum of 20,000 gallons per day (and a monthly total of 600,000 gallons)** of transported wastes, subject to the following terms and conditions.

1. "Transported wastes" means any liquid non-hazardous waste delivered to a wastewater treatment facility by a truck or other similar conveyance that has different chemical constituents or a greater strength than the influent described on the facility's application for a waste discharge license. Such wastes may include, but are not limited to septage, industrial wastes or other wastes to which chemicals in quantities potentially harmful to the treatment facility or receiving water have been added.
2. The character and handling of all transported wastes received must be consistent with the information and management plans provided in application materials submitted to the Department.
3. At no time may the addition of transported wastes cause or contribute to effluent quality violations. Transported wastes may not cause an upset of or pass through the treatment process or have any adverse impact on the sludge disposal practices of the wastewater treatment facility.

Wastes that contain heavy metals, toxic chemicals, extreme pH, flammable or corrosive materials in concentrations harmful to the treatment operation must be refused. Odors

## **SPECIAL CONDITIONS**

### **K. DISPOSAL OF TRANSPORTED WASTES IN WASTEWATER TREATMENT FACILITY (cont'd)**

and traffic from the handling of transported wastes may not result in adverse impacts to the surrounding community. If any adverse effects exist, the receipt or introduction of transported wastes into the treatment process or solids handling stream must be suspended until there is no further risk of adverse effects.

4. The permittee must maintain records for each load of transported wastes in a daily log which must include at a minimum the following.
  - (a) The date;
  - (b) The volume of transported wastes received;
  - (b) The source of the transported wastes;
  - (d) The person transporting the transported wastes;
  - (e) The results of inspections or testing conducted;
  - (f) The volumes of transported wastes added to each treatment stream; and
  - (g) The information in (a) through (d) for any transported wastes refused for acceptance.These records shall be maintained at the treatment facility for a minimum of five years.
5. The addition of transported wastes into the treatment process or solids handling stream must not cause the treatment facility's design capacity to be exceeded. If, for any reason, the treatment process or solids handling facilities become overloaded, introduction of transported wastes into the treatment process or solids handling stream must be reduced or terminated in order to eliminate the overload condition.
6. Holding tank wastewater from domestic sources to which no chemicals in quantities potentially harmful to the treatment process have been added must not be recorded as transported wastes but should be reported in the treatment facility's influent flow.
7. During wet weather events, transported wastes may be added to the treatment process or solids handling facilities only in accordance with a current Wet Weather Flow Management Plan approved by the Department that provides for full treatment of transported wastes without adverse impacts.
8. In consultation with the Department, chemical analysis is required prior to receiving transported wastes from new sources that are not of the same nature as wastes previously received. The analysis must be specific to the type of source and designed to identify concentrations of pollutants that may pass through, upset or otherwise interfere with the facility's operation.
9. Access to transported waste receiving facilities may be permitted only during the times specified in the application materials and under the control and supervision of the person responsible for the wastewater treatment facility or his/her designated representative.

**SPECIAL CONDITIONS**

**K. DISPOSAL OF TRANSPORTED WASTES IN WASTEWATER TREATMENT FACILITY (cont'd)**

10. The authorization is subject to annual review and, with notice to the permittee and other interested parties of record, may be suspended or reduced by the Department as necessary to ensure full compliance with Chapter 555 of the Department's rules and the terms and conditions of this permit.

**L. COMBINED SEWER OVERFLOWS (CSO's)**

Pursuant to *Combined Sewer Overflow Abatement*, 06-096 C.M.R. 570 (last amended February 5, 2000), the permittee is authorized to discharge from the following locations of CSO's (stormwater and sanitary wastewater) subject to the conditions and requirements herein.

1. CSO locations

<u>Outfall #</u>	<u>Location</u>	<u>Receiving Water &amp; Class</u>
002	Barkersville	Penobscot River, Class B
003	Davis Brook	Penobscot River, Class B
006	Kenduskeag West	Kenduskeag Stream, Class C
007	Kenduskeag East	Kenduskeag Stream, Class C
009	Hammond Street	Kenduskeag Stream, Class C
011	Meadowbrook	Kenduskeag Stream, Class C
016	Cemetery	Kenduskeag Stream, Class C
020	Carr Brook	Penobscot River, Class B
023	Central Street	Kenduskeag Stream, Class C

2. Prohibited Discharges

- a) The discharge of dry weather flows is prohibited. All such discharges shall be reported to the Department in accordance with Standard Condition D (1) of this permit.
- b) No discharge may occur as a result of mechanical failure, improper design or inadequate operation or maintenance.
- c) No discharges may occur at flow rates below the maximum design capacities of the wastewater treatment facility, pumping stations or sewerage system.

3. Narrative Effluent Limitations

- a) The effluent must not contain a visible oil sheen, settled substances, foam, or floating solids at any time that impair the characteristics and designated uses ascribed to the classification of the receiving waters.

## SPECIAL CONDITIONS

### L. COMBINED SEWER OVERFLOWS (CSO's) (cont'd)

- b) The effluent must not contain materials in concentrations or combinations that are hazardous or toxic to aquatic life; or which would impair the usage designated by the classification of the receiving waters.
- c) The discharge must not impart color, turbidity, toxicity, radioactivity or other properties that cause the receiving waters to be unsuitable for the designated uses and other characteristics ascribed to their class.
- d) The effluent by itself or in combination with other discharges must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

#### 4. CSO Master Plan [see 06-096 C.M.R. 570(3) and 06-096 C.M.R. 570(4)]

On June 28, 1991, the USEPA, the U.S. Department of Justice, the State of Maine and City of Bangor entered into a Consent Decree superseding and incorporating the conditions of the June 30, 1987 Consent Decree and adding conditions to address combined sewer overflow control, including requirements for a CSO Facilities Plan and an implementation schedule. The CSO Master Plan entitled, *Final Draft Combined Sewer Overflow Facilities Plan for the City of Bangor*, dated December 1993, and abatement project schedule was approved by the USEPA on December 22, 1994. On November 13, 2015, the USEPA, the U.S. Department of Justice, the State of Maine and City of Bangor entered into a Consent Decree superseding the 1991 decree adding conditions to address combined sewer overflow control, including requirements for a Phase II CSO Long Term Control Plan and an implementation schedule.

**On or before January 31, 2017, (ICIS Code 81699)** in accordance with the current Consent Decree, the permittee shall submit to the USEPA and the Department for review and approval a revised final Phase II CSO Long Term Control Plan that includes an overall plan for CSO control consistent with the requirements in the Consent Decree. The abatement schedule may be amended based on mutual agreements between the permittee, the USEPA and the Department.

#### 5. Nine Minimum Controls (NMC) [see 06-096 C.M.R. 570(5)]

The permittee must implement and follow the Nine Minimum Controls documentation as approved by EPA on May 29, 1997. Work performed on the Nine Minimum Controls during the year must be included in the annual CSO Progress Report (see below).

## SPECIAL CONDITIONS

### L. COMBINED SEWER OVERFLOWS (CSO's) (cont'd)

6. CSO Compliance Monitoring Program [see 06-096 C.M.R. 570(6)]

The permittee must conduct block testing or flow monitoring according to an approved *Compliance Monitoring Program* on all CSO points, as part of the CSO Master Plan. Annual flow volumes for all CSO locations must be determined by actual flow monitoring, or by estimation using a model such as EPA's Storm Water Management Model (SWMM).

Results must be submitted annually as part of the annual *CSO Progress Report* (see below), and must include annual precipitation, CSO volumes (actual or estimated) and any block test data required. Any abnormalities during CSO monitoring must also be reported. The results must be reported on the Department form "*CSO Activity and Volumes*" (**Attachment H** of this permit) or similar format and submitted to the Department in electronic format.

CSO control projects that have been completed must be monitored for volume and frequency of overflow to determine the effectiveness of the project toward CSO abatement. This requirement must not apply to those areas where complete separation has been completed and CSO outfalls have been eliminated.

7. Additions of New Wastewater [see 06-096 C.M.R. 570(8)]

Chapter 570 Section 8 lists requirements relating to any proposed addition of wastewater to the combined sewer system. Documentation of the new wastewater additions to the system and associated mitigating measures shall be included in the annual *CSO Progress Report* (see below). Reports must contain the volumes and characteristics of the wastewater added or authorized for addition and descriptions of the sewer system improvements and estimated effectiveness.

8. Annual CSO Progress Reports [see 06-096 C.M.R. 570(7)]

**By March 1 of each year, (ICIS Code CS010)**, the permittee must submit *CSO Progress Reports* covering the previous calendar year (January 1 to December 31). The CSO Progress Report must include, but is not necessarily limited to, the following topics as further described in Chapter 570: CSO abatement projects, schedule comparison, progress on inflow sources, costs, flow monitoring results, CSO activity and volumes, nine minimum controls update, sewer extensions, and new commercial or industrial flows.

The CSO Progress Reports must be completed on a standard form entitled "*Annual CSO Progress Report*", furnished by the Department, and submitted in electronic form to the



**SPECIAL CONDITIONS**

**L. COMBINED SEWER OVERFLOWS (CSO's) (cont'd)**

following address:

CSO Coordinator  
Department of Environmental Protection  
Bureau of Water Quality  
Division of Water Quality Management  
17 State House Station  
Augusta, Maine 04333-0017  
e-mail: [CSOCoordinator@maine.gov](mailto:CSOCoordinator@maine.gov)

9. Signs

If not already installed, the permittee must install and maintain an identification sign at each CSO location as notification to the public that intermittent discharges of untreated sanitary wastewater occur. The sign must be located at or near the outfall and be easily readable by the public. The sign must be a minimum of 12" x 18" in size with white lettering against a green background and must contain the following information:

**CITY OF BANGOR  
WET WEATHER  
SEWAGE DISCHARGE  
CSO # AND NAME**

10. Definitions

For the purposes of this permitting action, the following terms are defined as follows:

- a. Combined Sewer Overflow - a discharge of excess wastewater from a municipal or quasi-municipal sewerage system that conveys both sanitary wastes and storm water in a single pipe system and that is in direct response to a storm event or snowmelt.
- b. Dry Weather Flows - flow in a sewerage system that occurs as a result of non-storm events or are caused solely by ground water infiltration.
- c. Wet Weather Flows - flow in a sewerage system that occurs as a direct result of a storm event, or snowmelt in combination with dry weather flows.

## **SPECIAL CONDITIONS**

### **M. 06-096 C.M.R. 530(2)(D)(4) STATEMENT FOR REDUCED/WAIVED TOXICS TESTING**

**By December 31 of each calendar year**, the permittee must provide the Department with a certification describing any of the following that have occurred since the effective date of this permit [*ICIS Code 75305*]. See **Attachment C** of the Fact Sheet for an acceptable certification form to satisfy this Special Condition.

- (a) Changes in the number or types of non-domestic wastes contributed directly or indirectly to the wastewater treatment works that may increase the toxicity of the discharge;
- (b) Changes in the operation of the treatment works that may increase the toxicity of the discharge;
- (c) Changes in industrial manufacturing processes contributing wastewater to the treatment works that may increase the toxicity of the discharge;

In addition, in the comments section of the certification form, the permittee must provide the Department with statements describing;

- (d) Changes in stormwater collection or inflow/infiltration affecting the facility that may increase the toxicity of the discharge; and
- (e) Increases in the type or volume of transported (hailed) wastes accepted by the facility.

The Department may require that annual testing be re-instated if it determines that there have been changes in the character of the discharge or if annual certifications described above are not submitted.

### **N. AMBIENT WATER QUALITY MONITORING**

**Between July 1 and September 30 of each year**, the permittee is required to participate in the monitoring of ambient water quality on the Penobscot River pursuant to a Department prepared monitoring plan. The total cost to the permittee for the monitoring program must not exceed a five-year (term of the permit) cap of \$1,000.

## **SPECIAL CONDITIONS**

### **O. REOPENING OF PERMIT FOR MODIFICATIONS**

In accordance with 38 M.R.S. § 414-A(5) and upon evaluation of the test results in the Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at any time and with notice to the permittee, modify this permit to: (1) include effluent limitations necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded; (2) require additional monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

### **P. SEVERABILITY**

In the event that any provision or part thereof, of this permit is declared to be unlawful by a reviewing court, the remainder of the permit must remain in full force and effect, and must be construed and enforced in all aspects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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CONTENTS

SECTION	TOPIC	PAGE
A	GENERAL PROVISIONS	
1	General compliance	2
2	Other materials	2
3	Duty to Comply	2
4	Duty to provide information	2
5	Permit actions	2
6	Reopener clause	2
7	Oil and hazardous substances	2
8	Property rights	3
9	Confidentiality	3
10	Duty to reapply	3
11	Other laws	3
12	Inspection and entry	3
B	OPERATION AND MAINTENANCE OF FACILITIES	
1	General facility requirements	3
2	Proper operation and maintenance	4
3	Need to halt reduce not a defense	4
4	Duty to mitigate	4
5	Bypasses	4
6	Upsets	5
C	MONITORING AND RECORDS	
1	General requirements	6
2	Representative sampling	6
3	Monitoring and records	6
D	REPORTING REQUIREMENTS	
1	Reporting requirements	7
2	Signatory requirement	8
3	Availability of reports	8
4	Existing manufacturing, commercial, mining, and silvicultural dischargers	8
5	Publicly owned treatment works	9
E	OTHER PROVISIONS	
1	Emergency action - power failure	9
2	Spill prevention	10
3	Removed substances	10
4	Connection to municipal sewer	10
F	DEFINITIONS	10

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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**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.

**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.

**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.
- (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.

**4. Duty to provide information.** The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

**5. Permit actions.** This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

**6. Reopener clause.** The Department reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedule of compliance or other provisions which may be authorized under 38 MRSA, §414-A(5).

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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**7. Oil and hazardous substances.** Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under section 311 of the Federal Clean Water Act; section 106 of the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980; or 38 MRSA §§ 1301, et. seq.

**8. Property rights.** This permit does not convey any property rights of any sort, or any exclusive privilege.

**9. Confidentiality of records.** 38 MRSA §414(6) reads as follows. "Any records, reports or information obtained under this subchapter is available to the public, except that upon a showing satisfactory to the department by any person that any records, reports or information, or particular part or any record, report or information, other than the names and addresses of applicants, license applications, licenses, and effluent data, to which the department has access under this subchapter would, if made public, divulge methods or processes that are entitled to protection as trade secrets, these records, reports or information must be confidential and not available for public inspection or examination. Any records, reports or information may be disclosed to employees or authorized representatives of the State or the United States concerned with carrying out this subchapter or any applicable federal law, and to any party to a hearing held under this section on terms the commissioner may prescribe in order to protect these confidential records, reports and information, as long as this disclosure is material and relevant to any issue under consideration by the department."

**10. Duty to reapply.** If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

**11. Other laws.** The issuance of this permit does not authorize any injury to persons or property or invasion of other property rights, nor does it relieve the permittee of its obligation to comply with other applicable Federal, State or local laws and regulations.

**12. Inspection and entry.** The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the EPA Administrator), upon presentation of credentials and other documents as may be required by law, to:

- (a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
- (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
- (d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

**B. OPERATION AND MAINTENANCE OF FACILITIES**

**1. General facility requirements.**

- (a) The permittee shall collect all waste flows designated by the Department as requiring treatment and discharge them into an approved waste treatment facility in such a manner as to

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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- maximize removal of pollutants unless authorization to the contrary is obtained from the Department.
- (b) The permittee shall at all times maintain in good working order and operate at maximum efficiency all waste water collection, treatment and/or control facilities.
  - (c) All necessary waste treatment facilities will be installed and operational prior to the discharge of any wastewaters.
  - (d) Final plans and specifications must be submitted to the Department for review prior to the construction or modification of any treatment facilities.
  - (e) The permittee shall install flow measuring facilities of a design approved by the Department.
  - (f) The permittee must provide an outfall of a design approved by the Department which is placed in the receiving waters in such a manner that the maximum mixing and dispersion of the wastewaters will be achieved as rapidly as possible.

**2. Proper operation and maintenance.** The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

**3. Need to halt or reduce activity not a defense.** It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

**4. Duty to mitigate.** The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

**5. Bypasses.**

- (a) Definitions.
  - (i) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.
  - (ii) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.
- (b) Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c) and (d) of this section.
- (c) Notice.
  - (i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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- (ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D(1)(f), below. (24-hour notice).
- (d) Prohibition of bypass.
  - (i) Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:
    - (A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
    - (B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
    - (C) The permittee submitted notices as required under paragraph (c) of this section.
  - (ii) The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three conditions listed above in paragraph (d)(i) of this section.

**6. Upsets.**

- (a) Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.
- (b) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph (c) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- (c) Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
  - (i) An upset occurred and that the permittee can identify the cause(s) of the upset;
  - (ii) The permitted facility was at the time being properly operated; and
  - (iii) The permittee submitted notice of the upset as required in paragraph D(1)(f) , below. (24 hour notice).
  - (iv) The permittee complied with any remedial measures required under paragraph B(4).
- (d) Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.



MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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**C. MONITORING AND RECORDS**

**1. General Requirements.** This permit shall be subject to such monitoring requirements as may be reasonably required by the Department including the installation, use and maintenance of monitoring equipment or methods (including, where appropriate, biological monitoring methods). The permittee shall provide the Department with periodic reports on the proper Department reporting form of monitoring results obtained pursuant to the monitoring requirements contained herein.

**2. Representative sampling.** Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. If effluent limitations are based wholly or partially on quantities of a product processed, the permittee shall ensure samples are representative of times when production is taking place. Where discharge monitoring is required when production is less than 50%, the resulting data shall be reported as a daily measurement but not included in computation of averages, unless specifically authorized by the Department.

**3. Monitoring and records.**

- (a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.
- (b) Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years, the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.
- (c) Records of monitoring information shall include:
  - (i) The date, exact place, and time of sampling or measurements;
  - (ii) The individual(s) who performed the sampling or measurements;
  - (iii) The date(s) analyses were performed;
  - (iv) The individual(s) who performed the analyses;
  - (v) The analytical techniques or methods used; and
  - (vi) The results of such analyses.
- (d) Monitoring results must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in the permit.
- (e) State law provides that any person who tampers with or renders inaccurate any monitoring devices or method required by any provision of law, or any order, rule license, permit approval or decision is subject to the penalties set forth in 38 MRSA, §349.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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**D. REPORTING REQUIREMENTS**

**1. Reporting requirements.**

- (a) Planned changes. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:
  - (i) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or
  - (ii) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under Section D(4).
  - (iii) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;
- (b) Anticipated noncompliance. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.
- (c) Transfers. This permit is not transferable to any person except upon application to and approval of the Department pursuant to 38 MRSA, § 344 and Chapters 2 and 522.
- (d) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
  - (i) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Department for reporting results of monitoring of sludge use or disposal practices.
  - (ii) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Department.
  - (iii) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Department in the permit.
- (e) Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- (f) Twenty-four hour reporting.
  - (i) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

---

has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(ii) The following shall be included as information which must be reported within 24 hours under this paragraph.

(A) Any unanticipated bypass which exceeds any effluent limitation in the permit.

(B) Any upset which exceeds any effluent limitation in the permit.

(C) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit to be reported within 24 hours.

(iii) The Department may waive the written report on a case-by-case basis for reports under paragraph (f)(ii) of this section if the oral report has been received within 24 hours.

(g) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (d), (e), and (f) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (f) of this section.

(h) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

**2. Signatory requirement.** All applications, reports, or information submitted to the Department shall be signed and certified as required by Chapter 521, Section 5 of the Department's rules. State law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained by any order, rule, permit, approval or decision of the Board or Commissioner is subject to the penalties set forth in 38 MRSA, §349.

**3. Availability of reports.** Except for data determined to be confidential under A(9), above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by State law, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal sanctions as provided by law.

**4. Existing manufacturing, commercial, mining, and silvicultural dischargers.** In addition to the reporting requirements under this Section, all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Department as soon as they know or have reason to believe:

(a) That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(i) One hundred micrograms per liter (100 ug/l);

(ii) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

(iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Chapter 521 Section 4(g)(7); or

(iv) The level established by the Department in accordance with Chapter 523 Section 5(f).

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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- (b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
- (i) Five hundred micrograms per liter (500 ug/l);
  - (ii) One milligram per liter (1 mg/l) for antimony;
  - (iii) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with Chapter 521 Section 4(g)(7); or
  - (iv) The level established by the Department in accordance with Chapter 523 Section 5(f).

**5. Publicly owned treatment works.**

- (a) All POTWs must provide adequate notice to the Department of the following:
- (i) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA or Chapter 528 if it were directly discharging those pollutants.
  - (ii) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
  - (iii) For purposes of this paragraph, adequate notice shall include information on (A) the quality and quantity of effluent introduced into the POTW, and (B) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.
- (b) When the effluent discharged by a POTW for a period of three consecutive months exceeds 80 percent of the permitted flow, the permittee shall submit to the Department a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

**E. OTHER REQUIREMENTS**

**1. Emergency action - power failure.** Within thirty days after the effective date of this permit, the permittee shall notify the Department of facilities and plans to be used in the event the primary source of power to its wastewater pumping and treatment facilities fails as follows.

- (a) For municipal sources. During power failure, all wastewaters which are normally treated shall receive a minimum of primary treatment and disinfection. Unless otherwise approved, alternate power supplies shall be provided for pumping stations and treatment facilities. Alternate power supplies shall be on-site generating units or an outside power source which is separate and independent from sources used for normal operation of the wastewater facilities.
- (b) For industrial and commercial sources. The permittee shall either maintain an alternative power source sufficient to operate the wastewater pumping and treatment facilities or halt, reduce or otherwise control production and or all discharges upon reduction or loss of power to the wastewater pumping or treatment facilities.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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**2. Spill prevention.** (applicable only to industrial sources) Within six months of the effective date of this permit, the permittee shall submit to the Department for review and approval, with or without conditions, a spill prevention plan. The plan shall delineate methods and measures to be taken to prevent and or contain any spills of pulp, chemicals, oils or other contaminants and shall specify means of disposal and or treatment to be used.

**3. Removed substances.** Solids, sludges trash rack cleanings, filter backwash, or other pollutants removed from or resulting from the treatment or control of waste waters shall be disposed of in a manner approved by the Department.

**4. Connection to municipal sewer.** (applicable only to industrial and commercial sources) All wastewaters designated by the Department as treatable in a municipal treatment system will be cosigned to that system when it is available. This permit will expire 90 days after the municipal treatment facility becomes available, unless this time is extended by the Department in writing.

**F. DEFINITIONS.** For the purposes of this permit, the following definitions shall apply. Other definitions applicable to this permit may be found in Chapters 520 through 529 of the Department's rules

**Average** means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For bacteria, the average shall be the geometric mean.

**Average monthly discharge limitation** means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. Except, however, bacteriological tests may be calculated as a geometric mean.

**Average weekly discharge limitation** means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

**Best management practices ("BMPs")** means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

**Composite sample** means a sample consisting of a minimum of eight grab samples collected at equal intervals during a 24 hour period (or a lesser period as specified in the section on monitoring and reporting) and combined proportional to the flow over that same time period.

**Continuous discharge** means a discharge which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

**Daily discharge** means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.

# MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

## STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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**Discharge Monitoring Report ("DMR")** means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by approved States as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

**Flow weighted composite sample** means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

**Grab sample** means an individual sample collected in a period of less than 15 minutes.

**Interference** means a Discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

- (1) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
- (2) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

**Maximum daily discharge limitation** means the highest allowable daily discharge.

**New source** means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:

- (a) After promulgation of standards of performance under section 306 of CWA which are applicable to such source, or
- (b) After proposal of standards of performance in accordance with section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.

**Pass through** means a discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

**Permit** means an authorization, license, or equivalent control document issued by EPA or an approved State to implement the requirements of 40 CFR parts 122, 123 and 124. Permit includes an NPDES general permit (Chapter 529). Permit does not include any permit which has not yet been the subject of final agency action, such as a draft permit or a proposed permit.

**Person** means an individual, firm, corporation, municipality, quasi-municipal corporation, state agency, federal agency or other legal entity.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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**Point source** means any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft, from which pollutants are or may be discharged.

**Pollutant** means dredged spoil, solid waste, junk, incinerator residue, sewage, refuse, effluent, garbage, sewage sludge, munitions, chemicals, biological or radiological materials, oil, petroleum products or byproducts, heat, wrecked or discarded equipment, rock, sand, dirt and industrial, municipal, domestic, commercial or agricultural wastes of any kind.

**Process wastewater** means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

**Publicly owned treatment works ("POTW")** means any facility for the treatment of pollutants owned by the State or any political subdivision thereof, any municipality, district, quasi-municipal corporation or other public entity.

**Septage** means, for the purposes of this permit, any waste, refuse, effluent sludge or other material removed from a septic tank, cesspool, vault privy or similar source which concentrates wastes or to which chemicals have been added. Septage does not include wastes from a holding tank.

**Time weighted composite** means a composite sample consisting of a mixture of equal volume aliquots collected over a constant time interval.

**Toxic pollutant** includes any pollutant listed as toxic under section 307(a)(1) or, in the case of sludge use or disposal practices, any pollutant identified in regulations implementing section 405(d) of the CWA. Toxic pollutant also includes those substances or combination of substances, including disease causing agents, which after discharge or upon exposure, ingestion, inhalation or assimilation into any organism, including humans either directly through the environment or indirectly through ingestion through food chains, will, on the basis of information available to the board either alone or in combination with other substances already in the receiving waters or the discharge, cause death, disease, abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in such organism or their offspring.

**Wetlands** means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

**Whole effluent toxicity** means the aggregate toxic effect of an effluent measured directly by a toxicity test.

# **ATTACHMENT A**





Data Date Range: 25/Feb/2001 - 25/Feb/2016

Facility: BANGOR

Permit Number: ME0100781

Max (ug/l): 0.0156

Average (ug/l): 0.0052

Sample Date	Result (ng/l)	Lsthan	Clean
01/27/2009	8.90	N	T
02/05/2009	8.90	N	T
05/08/2009	5.40	N	T
09/15/2009	5.20	N	T
11/03/2009	5.80	N	T
02/11/2010	1.50	N	T
05/03/2010	3.33	N	T
08/10/2010	4.31	N	T
11/15/2010	3.20	N	T
02/15/2011	4.40	N	T
05/02/2011	2.80	N	T
07/11/2011	6.90	N	T
10/31/2011	7.80	N	T
02/07/2012	6.46	N	T
04/24/2012	8.43	N	T
08/07/2012	4.37	N	T
11/05/2012	3.93	N	T
05/06/2013	15.60	N	T
08/05/2013	2.44	N	T
10/21/2013	5.31	N	T
02/12/2014	3.39	N	T
05/12/2014	3.18	N	T
07/21/2014	6.39	N	T
10/04/2014	3.91	N	T
03/16/2015	3.82	N	T
06/15/2015	3.04	N	T
08/10/2015	3.31	N	T
11/02/2015	3.93	N	T

# **ATTACHMENT B**

**MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION  
WHOLE EFFLUENT TOXICITY REPORT  
FRESH WATERS**

Facility Name \_\_\_\_\_ MEPDES Permit # \_\_\_\_\_  
Pipe # \_\_\_\_\_

Facility Representative \_\_\_\_\_ Signature \_\_\_\_\_

By signing this form, I attest that to the best of my knowledge that the information provided is true, accurate, and complete.

Facility Telephone # \_\_\_\_\_ Date Collected \_\_\_\_\_ Date Tested \_\_\_\_\_  
mm/dd/yy mm/dd/yy

Chlorinated? \_\_\_\_\_ Dechlorinated? \_\_\_\_\_

Results	% effluent		Effluent Limitations	
	water flea	trout	A-NOEL	C-NOEL
A-NOEL				
C-NOEL				

Data summary	water flea			trout		
	% survival		no. young	% survival		final weight (mg)
QC standard	A>90	C>80	>15/female	A>90	C>80	> 2% increase
lab control						
receiving water control						
conc. 1 ( %)						
conc. 2 ( %)						
conc. 3 ( %)						
conc. 4 ( %)						
conc. 5 ( %)						
conc. 6 ( %)						
stat test used						

place \* next to values statistically different from controls

for trout show final wt and % incr for both controls

Reference toxicant	water flea		trout	
	A-NOEL	C-NOEL	A-NOEL	C-NOEL
toxicant / date				
limits (mg/L)				
results (mg/L)				

Comments \_\_\_\_\_

**Laboratory conducting test**

Company Name \_\_\_\_\_ Company Rep. Name (Printed) \_\_\_\_\_

Mailing Address \_\_\_\_\_ Company Rep. Signature \_\_\_\_\_

City, State, ZIP \_\_\_\_\_ Company Telephone # \_\_\_\_\_

**Report WET chemistry on DEP Form "ToxSheet (Fresh Water Version), March 2007."**

# **ATTACHMENT C**

## Salmonid Survival and Growth Test

The Salmonid survival and growth test must follow the procedures for the fathead minnow larval survival and growth tests detailed in USEPA's freshwater acute and chronic methods manuals with the following Department modifications:

**Species** - Brook Trout, *Salvelinus fontinalis*, or other salmonid approved by the Department.

**Age** - Less than six months old for the first test each year and less than twelve months for subsequent tests.

**Size** - The largest fish must not be greater than 150% of the smallest.

**Loading Rate** - < 0.5 g/l/day

**Feeding rate** - 5% of body weight 3 times daily (15%/day)

**Temperature** -  $12^{\circ} \pm 1^{\circ}\text{C}$

**Dissolved Oxygen** - 6.5 mg/l ,aeration if needed with large bubbles (> 1 mm diameter) at a rate of <100/min

**Dilution Water** - Receiving water upstream of discharge (or other ambient water approved by the Department)

**Dilution Series** - A minimum of 5 effluent concentrations (including the instream waste concentrations bracketing acute and chronic dilutions calculated pursuant to Section D); a receiving water control; and control of known suitable water quality

**Duration** - Acute = 48 hours  
- Chronic = 10 days minimum

**Test acceptability** - Acute = minimum of 90% survival in 2 days  
Chronic = minimum of 80% survival in 10 days; minimum growth of 20 mg/gm/d dry weight in controls, (individual fish weighed, dried at 100°C to constant weight and weighed to 3 significant figures)

# **ATTACHMENT D**

**Maine Department of Environmental Protection  
WET and Chem**

**This form is for reporting laboratory data and facility information. Official compliance reviews will be done by DEP.**

Facility Name \_\_\_\_\_ MEPDES # \_\_\_\_\_ Facility Representative Signature \_\_\_\_\_  
 Pipe # \_\_\_\_\_ To the best of my knowledge this information is true, accurate and complete.

Licensed Flow (MGD)   
 Acute dilution factor   
 Chronic dilution factor   
 Human health dilution factor   
 Criteria type: M(arine) or F(resh)

Flow for Day (MGD)<sup>(1)</sup>  Flow Avg. for Month (MGD)<sup>(2)</sup>   
 Date Sample Collected  Date Sample Analyzed

Laboratory \_\_\_\_\_ Telephone \_\_\_\_\_  
 Address \_\_\_\_\_  
 Lab Contact \_\_\_\_\_ Lab ID # \_\_\_\_\_

**Last Revision - July 1, 2015**

**ERROR WARNING ! Essential facility information is missing. Please check required entries in bold above.**

**FRESH WATER VERSION**

Please see the footnotes on the last page.

Parameter	Reporting Limit	Effluent Limits, %			Receiving Water or Ambient	Effluent Concentration (ug/L or as noted)	WET Result, % Do not enter % sign	Reporting Limit Check	Possible Exceedence <sup>(7)</sup>		
		Acute	Chronic						Acute	Chronic	
<b>WHOLE EFFLUENT TOXICITY</b>											
Trout - Acute											
Trout - Chronic											
Water Flea - Acute											
Water Flea - Chronic											
<b>WET CHEMISTRY</b>											
pH (S.U.) <sup>(9)</sup>											
Total Organic Carbon (mg/L)					(8)						
Total Solids (mg/L)											
Total Suspended Solids (mg/L)											
Alkalinity (mg/L)					(8)						
Specific Conductance (umhos)											
Total Hardness (mg/L)					(8)						
Total Magnesium (mg/L)					(8)						
Total Calcium (mg/L)					(8)						
<b>ANALYTICAL CHEMISTRY <sup>(3)</sup></b>											
Also do these tests on the effluent with WET. Testing on the receiving water is optional	Reporting Limit	Effluent Limits, ug/L						Reporting Limit Check	Possible Exceedence <sup>(7)</sup>		
		Acute <sup>(6)</sup>	Chronic <sup>(6)</sup>	Health <sup>(6)</sup>					Acute	Chronic	Health
TOTAL RESIDUAL CHLORINE (mg/L) <sup>(9)</sup>	0.05				NA						
AMMONIA	NA				(8)						
M ALUMINUM	NA				(8)						
M ARSENIC	5				(8)						
M CADMIUM	1				(8)						
M CHROMIUM	10				(8)						
M COPPER	3				(8)						
M CYANIDE, TOTAL	5				(8)						
<b>CYANIDE, AVAILABLE <sup>(3a)</sup></b>	5				(8)						
M LEAD	3				(8)						
M NICKEL	5				(8)						
M SILVER	1				(8)						
M ZINC	5				(8)						

Maine Department of Environmental Protection  
WET and Chem

This form is for reporting laboratory data and facility information. Official compliance reviews will be done by DEP.

PRIORITY POLLUTANTS <sup>(4)</sup>		Effluent Limits				Reporting Limit Check	Possible Exceedence <sup>(7)</sup>		
	Reporting Limit	Acute <sup>(6)</sup>	Chronic <sup>(6)</sup>	Health <sup>(6)</sup>			Acute	Chronic	Health
M	ANTIMONY	5							
M	BERYLLIUM	2							
M	MERCURY (5)	0.2							
M	SELENIUM	5							
M	THALLIUM	4							
A	2,4,6-TRICHLOROPHENOL	5							
A	2,4-DICHLOROPHENOL	5							
A	2,4-DIMETHYLPHENOL	5							
A	2,4-DINITROPHENOL	45							
A	2-CHLOROPHENOL	5							
A	2-NITROPHENOL	5							
A	4,6 DINITRO-O-CRESOL (2-Methyl-4,6-dinitrophenol)	25							
A	4-NITROPHENOL	20							
A	P-CHLORO-M-CRESOL (3-methyl-4-chlorophenol)+B80	5							
A	PENTACHLOROPHENOL	20							
A	PHENOL	5							
BN	1,2,4-TRICHLOROENZENE	5							
BN	1,2-(O)DICHLOROENZENE	5							
BN	1,2-DIPHENYLHYDRAZINE	20							
BN	1,3-(M)DICHLOROENZENE	5							
BN	1,4-(P)DICHLOROENZENE	5							
BN	2,4-DINITROTOLUENE	6							
BN	2,6-DINITROTOLUENE	5							
BN	2-CHLORONAPHTHALENE	5							
BN	3,3'-DICHLOROENZIDINE	16.5							
BN	3,4-BENZO(B)FLUORANTHENE	5							
BN	4-BROMOPHENYLPHENYL ETHER	5							
BN	4-CHLOROPHENYL PHENYL ETHER	5							
BN	ACENAPHTHENE	5							
BN	ACENAPHTHYLENE	5							
BN	ANTHRACENE	5							
BN	BENZIDINE	45							
BN	BENZO(A)ANTHRACENE	8							
BN	BENZO(A)PYRENE	5							
BN	BENZO(G,H,I)PERYLENE	5							
BN	BENZO(K)FLUORANTHENE	5							
BN	BIS(2-CHLOROETHOXY)METHANE	5							
BN	BIS(2-CHLOROETHYL)ETHER	6							
BN	BIS(2-CHLOROISOPROPYL)ETHER	6							
BN	BIS(2-ETHYLHEXYL)PHTHALATE	10							
BN	BUTYLBENZYL PHTHALATE	5							
BN	CHRYSENE	5							
BN	DI-N-BUTYL PHTHALATE	5							
BN	DI-N-OCTYL PHTHALATE	5							
BN	DIBENZO(A,H)ANTHRACENE	5							
BN	DIETHYL PHTHALATE	5							
BN	DIMETHYL PHTHALATE	5							
BN	FLUORANTHENE	5							





**Maine Department of Environmental Protection  
WET and Chem**

**This form is for reporting laboratory data and facility information. Official compliance reviews will be done by DEP.**

V	BROMOFORM	5								
V	CARBON TETRACHLORIDE	5								
V	CHLOROBENZENE	6								
V	CHLORODIBROMOMETHANE	3								
V	CHLOROETHANE	5								
V	CHLOROFORM	5								
V	DICHLOROBROMOMETHANE	3								
V	ETHYLBENZENE	10								
V	METHYL BROMIDE (Bromomethane)	5								
V	METHYL CHLORIDE (Chloromethane)	5								
V	METHYLENE CHLORIDE	5								
V	TETRACHLOROETHYLENE (Perchloroethylene or Tetrachloroethene)	5								
V	TOLUENE	5								
V	TRICHLOROETHYLENE (Trichloroethene)	3								
V	VINYL CHLORIDE	5								

Notes:

- (1) Flow average for day pertains to WET/PP composite sample day.
- (2) Flow average for month is for month in which WET/PP sample was taken.
- (3) Analytical chemistry parameters must be done as part of the WET test chemistry.
- (3a) Cyanide, Available (Cyanide Amenable to Chlorination) is not an analytical chemistry parameter, but may be required by certain discharge permits .
- (4) Priority Pollutants should be reported in micrograms per liter (ug/L).
- (5) Mercury is often reported in nanograms per liter (ng/L) by the contract laboratory, so be sure to convert to micrograms per liter on this spreadsheet.
- (6) Effluent Limits are calculated based on dilution factor, background allocation (10%) and water quality reserves (15% - to allow for new or changed discharges or non-point sources).
- (7) Possible Exceedence determinations are done for a single sample only on a mass basis using the actual pounds discharged. This analysis does not consider watershed wide allocations for fresh water discharges.
- (8) These tests are optional for the receiving water. However, where possible samples of the receiving water should be preserved and saved for the duration of the WET test. In the event of questions about the receiving water's possible effect on the WET results, chemistry tests should then be conducted.
- (9) pH and Total Residual Chlorine must be conducted at the time of sample collection. Tests for Total Residual Chlorine need be conducted only when an effluent has been chlorinated or residual chlorine is believed to be present for any other reason.

Comments:

# **ATTACHMENT E**



# **ATTACHMENT F**

## **RE-ASSESSMENT OF TECHNICALLY BASED INDUSTRIAL DISCHARGE LIMITS**

Pursuant to federal regulation 40 CFR §122.21(j)(4) and Department rule *Chapter 528*, all Publicly Owned Treatment Works (POTWs) with approved Industrial Pretreatment Programs (IPPs) shall provide the Department with a written evaluation of the need to revise local industrial discharge limits under federal regulation 40 CFR §403.5(c)(1) and Department rule *Chapter 528, 6*.

Below is a form designed by the U.S. Environmental Protection Agency (EPA - New England) to assist POTWs with approved IPPs in evaluating whether their existing Technically Based Local Limits (TBLLs) need to be recalculated. The form allows the permittee and Department to evaluate and compare pertinent information used in previous TBLLs calculations against present conditions at the POTW.

**Please read the directions below before filling out the attached form.**

### **ITEM I.**

- \* In Column (1), list what your POTW's influent flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present influent flow rate. Your current flow rate should be calculated using the POTW's average daily flow rate from the previous 12 months.
- \* In Column (1) list what your POTW's SIU flow rate was when your existing TBLLs were calculated. In Column (2), list your POTW's present SIU flow rate.
- \* In Column (1), list what dilution ratio and/or 7Q10 value was used in your previous NPDES permit. In Column (2), list what dilution ratio and/or 7Q10 value is presently being used in your new/reissued MEPDES permit.

The 7Q10 value is the lowest seven day average flow rate, in the river, over a ten year period. The 7Q10 value and/or dilution ratio used by the Department in your MEPDES permit can be found in your MEPDES permit "Fact Sheet."

- \* In Column (1), list the safety factor, if any, that was used when your existing TBLLs were calculated.
- \* In Column (1), note how your bio-solids were managed when your existing TBLLs were calculated. In Column (2), note how your POTW is presently disposing of its biosolids and how your POTW will be disposing of its biosolids in the future.

## **ITEM II.**

- \* List what your existing TBLLs are - as they appear in your current Sewer Use Ordinance (SUO).

## **ITEM III.**

- \* Identify how your existing TBLLs are allocated out to your industrial community. Some pollutants may be allocated differently than others, if so please explain.

## **ITEM IV.**

- \* Since your existing TBLLs were calculated, identify the following in detail:
  - (1) if your POTW has experienced any upsets, inhibition, interference or pass-through as a result of an industrial discharge.
  - (2) if your POTW is presently violating any of its current MEPDES permit limitations - include toxicity.

## **ITEM V.**

- \* Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in pounds per day) received in the POTW's influent. Current sampling data is defined as data obtained over the last 24 month period.

All influent data collected and analyzed must be in accordance with federal regulation 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

- \* Based on your existing TBLLs, as presented in Item II., list in Column (2) each Maximum Allowable Industrial Headworks Loading (MAIHL) value corresponding to each of the local limits derived from an applicable environmental criteria or standard, e.g. water quality, sludge, NPDES, inhibition, etc. For each pollutant, the MAIHL equals the calculated Maximum Allowable Headwork Loading (MAHL) minus the POTW's domestic loading source(s). For more information, please see p., 3-28 in EPA's Guidance Manual on the Development and Implementation of Local Limits Under the Pretreatment Program, 12/87.

## **ITEM VI.**

- \* Using current sampling data, list in Column (1) the average and maximum amount of pollutants (in micrograms per liter) present your POTW's effluent. Current sampling data is defined as data obtained during the last 24 month period.

All effluent data collected and analyzed must be in accordance with federal regulation 40 CFR §136. Sampling data collected should be analyzed using the lowest possible detection method(s), e.g. graphite furnace.

- \* List in Column (2A) what the Water Quality Standards (WQS) were (in micrograms per liter) when your TBLLs were calculated, please note what hardness value was used at that time. Hardness should be expressed in milligram per liter of Calcium Carbonate.

List in Column (2B) the current WQSs or "Chronic Gold Book" values for each pollutant multiplied by the dilution ratio used in your new/reissued MEPDES permit. For example, with a dilution ratio of 25:1 at a hardness of 20 mg/l - Calcium Carbonate (copper's chronic WQS equals 2.99 ug/l) the chronic MEPDES permit limit for copper would equal 75 ug/l.

## **ITEM VII.**

- \* In Column (1), list all pollutants (in micrograms per liter) limited in your new/reissued MEPDES permit. In Column (2), list all pollutants limited in your old/expired NPDES permit.

## **ITEM VIII.**

- \* Using current sampling data, list in Column (1) the average and maximum amount of pollutants in your POTW's biosolids. Current data is defined as data obtained during the last 24 month period. Results are to be expressed as total dry weight.

All biosolids data collected and analyzed must be in accordance with federal 40 CFR §136.

In Column (2A), list current State and/or Federal sludge standards that your facility's biosolids must comply with. Also note how your POTW currently manages the disposal of its biosolids. If your POTW is planning on managing its biosolids differently, list in Column (2B) what your new biosolids criteria will be and method of disposal.

In general, please be sure the units reported are correct and all pertinent information is included in your evaluation. If you have any questions, please contact your pretreatment representative at the Maine Department of Environmental Protection, Bureau of Land & Water Quality, Division of Engineering, Compliance & Technical Assistance, State House Station #17, Augusta, ME. 04333. The telephone number is (207) 287-3901.



**REASSESSMENT OF TECHNICALLY BASED LOCAL LIMITS  
(TBLLs)**

POTW Name & Address \_\_\_\_\_

NPDES PERMIT # \_\_\_\_\_

Date EPA approved current TBLLs \_\_\_\_\_

Date EPA approved current Sewer Use Ordinance \_\_\_\_\_

**ITEM I.**

In Column (1) list the conditions that existed when your current TBLLs were calculated. In Column (2), list current conditions or expected conditions at your POTW.

	<b>Column (1)</b> <u>EXISTING TBLLs</u>	<b>Column (2)</b> <u>PRESENT CONDITIONS</u>
POTW Flow (MGD)	_____	_____
SIU Flow (MGD)	_____	_____
Dilution Ratio or 7Q10 from the NPDES and MEPDES Permit)	_____	_____
Safety Factor	_____	_____
Biosolids Disposal Method(s)	_____	_____

**ITEM II.**

EXISTING TBLLs

<u>POLLUTANT</u>	<u>NUMERICAL LIMIT</u> (mg/l)	<u>POLLUTANT</u>	<u>NUMERICAL LIMIT</u> (mg/l)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**ITEM III.**

Note how your existing TBLLs, listed in Item II., are allocated to your Significant Industrial Users (SIUs), i.e. **uniform concentration**, contributory flow, mass proportioning, other. Please specify by circling. –

**ITEM IV.**

Has your POTW experienced any upsets, inhibition, interference or pass-through from industrial sources since your existing TBLLs were calculated?

If yes, explain \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Has your POTW violated any of its MEPDES permit limits and/or toxicity test requirements?

If yes, explain \_\_\_\_\_  
\_\_\_\_\_

**ITEM V.**

Using current POTW influent sampling data fill in Column (1). In Column (2), list your Maximum Allowable Industrial Headwork Loading (MAIHL) values used to derive your TBLs listed in Item II. In addition, please note the environmental criteria for which each MAIHL value was established, i.e. water quality, sludge, MEPDES etc.

<u>Pollutant</u>	<b>Column (1)</b>		<b>Column (2)</b>	
	<u>Influent</u>	<u>Data</u>	<u>MAIHL Values</u>	<u>Criteria</u>
	<u>Analyses</u>			
	<u>Maximum</u>	<u>Average</u>		
	(lb/day)	(lb/day)	(lb/day)	
Arsenic	_____	_____	_____	_____
Cadmium	_____	_____	_____	_____
Chromium	_____	_____	_____	_____
Copper	_____	_____	_____	_____
Cyanide	_____	_____	_____	_____
Lead	_____	_____	_____	_____
Mercury	_____	_____	_____	_____
Nickel	_____	_____	_____	_____
Silver	_____	_____	_____	_____
Zinc	_____	_____	_____	_____
Other (List)	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

**ITEM VI.**

Using current POTW effluent sampling data, fill in Column (1). In Column (2A) list what the Water Quality Standards (Gold Book Criteria) were at the time your existing TBLLs were developed. List in Column (2B) current Gold Book values multiplied by the dilution ratio used in your new/reissued NPDES permit.

<u>Pollutant</u>	<b>Column (1)</b>		<b>Columns (2A)</b>	<b>(2B)</b>
	<u>Effluent Data Analyses</u> <u>Maximum</u> (ug/l)	<u>Average</u> (ug/l)	<u>Water Quality Criteria</u> <u>(Gold Book)</u> <u>From TBLLs</u> (ug/l)	<u>Today</u> (ug/l)
Arsenic	_____	_____	_____	_____
Cadmium*	_____	_____	_____	_____
Chromium*	_____	_____	_____	_____
Copper*	_____	_____	_____	_____
Cyanide	_____	_____	_____	_____
Lead*	_____	_____	_____	_____
Mercury	_____	_____	_____	_____
Nickel*	_____	_____	_____	_____
Silver	_____	_____	_____	_____
Zinc*	_____	_____	_____	_____
Other (List)	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

\*Hardness Dependent (mg/l-CaCO3)

**ITEM VII.**

In Column (1), identify all pollutants limited in your new/reissued MEPDES permit. In Column (2), identify all pollutants that were limited in your old/expired NPDES permit.

<b>Column (1)</b> NEW PERMIT		<b>Column (2)</b> OLD PERMIT	
<u>Pollutants</u>	<u>Limitations</u> (ug/l)	<u>Pollutants</u>	<u>Limitations</u> (ug/l)
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

**ITEM VIII.**

Using current POTW biosolids data, fill in Column (1). In Column (2A), list the biosolids criteria that was used at the time your existing TBLLs were calculated. If your POTW is planning on managing its biosolids differently, list in Column (2B) what your new biosolids criteria would be and method of disposal.

<b>Pollutant</b>	<b>Column (1)</b>	<b>(2A)</b>	<b>Columns (2B)</b>
	Biosolids Data Analyses <u>Average</u> (mg/kg)	Biosolids Criteria From TBLLs <u>(mg/kg)</u>	New <u>(mg/kg)</u>
Arsenic	_____	_____	_____
Cadmium	_____	_____	_____
Chromium	_____	_____	_____
Copper	_____	_____	_____
Cyanide	_____	_____	_____
Lead	_____	_____	_____
Mercury	_____	_____	_____
Nickel	_____	_____	_____
Silver	_____	_____	_____
Zinc	_____	_____	_____
Molybdenum	_____	_____	_____
Selenium	_____	_____	_____
Other (List)	_____	_____	_____
	_____		

# **ATTACHMENT G**

**MEPDES PERMIT REQUIREMENT**  
**FOR**  
**INDUSTRIAL PRETREATMENT ANNUAL REPORT**

1/ A narrative description (**paragraph**) of program effectiveness including the following:

- **present and proposed changes** to the program
  - Funding
  - Staffing
  - Ordinances
  - Regulations
  - Statutory authority
  - Other

*Our pretreatment program is very effective as indicated by the SIU compliance rate and the reduction in pollutant loading to the POTW.*

*The program is adequately funded and staffed to provide for annual training and completion of our regulatory responsibilities.*

*No changes have been made, or are proposed, to \_\_\_\_\_'s Sewer Use Ordinance. The SUO provides adequate statutory authority to enforce in Local, State and Federal courts.*

2/ The **date** of the latest adoption of Local Limits and a statement as to whether the municipality is under a State or Federal compliance schedule that includes steps to be taken to revise Local Limits.

**If yes, Compliance Schedule; if no, schedule not needed.**

*\_\_\_\_\_ 's Local Limits were last adopted (by local authority) on \_\_\_\_\_ and \_\_\_\_\_ is under no State or Federal compliance schedule that includes steps to be taken to revise Local Limits.*

3/ A description of actions taken to reduce the incidence of violations by SIU's;

**Example: Inspections - Notifications - Information/Education**

4/ A description of monitoring, sewer inspections and evaluations which were done during the past year to detect Interference and Pass Through, specifying parameters and frequencies;

**Example: Evaluations/investigations as a result of Monitoring, Sewer Inspections, and Evaluations, Influent - Effluent results, Spills, Dumps, Toxicity, or Unusual events.**

5/ A detailed description of all Interference and Pass Through that occurred during the past year; **[statement of: Event, Parameter, Violation, Cause, IU, POTW action, IU action, Result (see NOV #)].**

\_\_\_\_\_ experienced no events of Interference or Pass-Through in this reporting period. If "Yes" then describe.

6/ A thorough description of all investigations into Interference and Pass-Through during the past year; **A paragraph: Violation, Problem, Steps to resolve, Result.**

(same as 5/ or describe investigations.)

7/ An updated **list** of all industrial users by category (40 CFR 403.8(f)(2)(i), indicating compliance or non-compliance with the following:

- baseline monitoring reporting requirements for newly promulgated industries
- compliance status reporting requirements for newly promulgated industries
- periodic (semi-annual) monitoring reporting requirements
- categorical standards, and
- local limits

**Example:**

<b>SIU</b>	<b>New Promulgated Cat Limits</b>	<b>Local Limits</b>	<b>Semi-annual Reports</b>
	<b>BMR/Compliance</b>	<b>Compliance</b>	<b>Compliance</b>
	<b>Y/N)</b>	<b>(Y/N)</b>	<b>(Y/N)</b>

8/ A summary of compliance and enforcement activities during the preceding year including a:



- **list** of SIU's inspected by the POTW (dates, compliance status),
- **list** of SIU's sampled by the POTW (dates, compliance status),

**Example:**

**SIU Inspected Sampled/self Sampled/POTW Compliance Y/N**

- **list** of SIU's to which compliance schedules were issued, [SIU] - Violation - Compliance - Schedule  
**N/A or schedule plus Progress Reporting Dates]**
- **summary list** of NOV's written to SIU's by name  
**[statement],**
- **summary list** of AO's written to SIU's by name  
**[statement],**
- **list** of criminal and/or civil suits filed by SIU,  
**[usually a simple statement]**
- **list** of penalty amounts obtained (by SIU) **[a statement].**

**NOTE:** Some items in numbers 9 & 10 may be combined in a chart, or charts. Be sure that any charts are logical, not cluttered, and don't contain an unreasonable amount of information.

Any violations should be shown separately, in summary, for each item.

**9/ List** of violating industries required to be published in a local newspaper (40 CFR 403.8(f)(2)(vii). **[Statement]**

**10/ A summary** of all pollutant analytical results for:

- Influent **[Annual average - show violations]**
- Effluent **[Annual average - show violations]**
- Sludge **[Annual average- show violations]**
- Toxicity/Bioassay **[Annual Average - show violations]**
- **comparison** of influent sampling results versus threshold inhibitory concentrations for the POTW's wastewater treatment system.
- **comparison** of effluent sampling results versus water quality standards, considering the permitted dilution factor of the POTW.

NOTE: The sampling program shall be as described below OR any similar sampling program described in the NPDES permit.  
- At a minimum, annual sampling and analysis of/ the influent and effluent of the POTW's wastewater treatment plant shall be conducted on the following pollutants:

**Example:**

	<i>Influent</i>	<i>Inhibition</i>	<i>Effluent</i>	<i>AWC</i>
				<i>Acute Chronic</i>
- Total Cadmium				
- Total Chromium				
- Total Copper				
- Total Lead				
- Total Mercury (Methods 1669 & 1631)				
- Total Nickel				
- Total Silver				
- Total Zinc				
- Total Cyanide				
- Total Arsenic				

The sampling program shall consist of one 24-hour flow-proportioned composite that is representative of the flow received by the POTW.

The composite shall consist of accurately flow-proportioned grab samples taken over a discharge day if the samples are collected manually, or shall consist of a minimum of 48 accurately flow-proportioned samples if an automatic sampler is used. Sampling and preservation shall be according to 40 CFR part 136.

# **ATTACHMENT H**

**MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION  
CSO ACTIVITY AND VOLUMES**

MUNICIPALITY OR DISTRICT												MEPDES / NPDES PERMIT NO.	
REPORTING YEAR												SIGNED BY:	
YEARLY TOTAL PRECIPITATION				INCHES								DATE:	
CSO EVENT NO.	START DATE OF STORM	PRECIP. DATA		FLOW DATA (GALLONS PER DAY) OR BLOCK ACTIVITY("1")								EVENT OVERFLOW GALLONS	EVENT DURATION HRS
		TOTAL INCHES	MAX. HR. INCHES	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:	LOCATION: NUMBER:		
1													
2													
3													
4													
5													
6													
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22													
23													
24													
25													
TOTALS													

Note 1: Flow data should be listed as gallons per day. Storms lasting more than one day should show total flow for each day.

Note 2: Block activity should be shown as a "1" if the block floated away.

**MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT  
AND  
WASTE DISCHARGE LICENSE**

**PROPOSED DRAFT FACT SHEET**

Date: **May 4, 2016**

MEPDES PERMIT: **ME0100781**  
WASTE DISCHARGE LICENSE: **W001041-5M-J-R**

NAME AND ADDRESS OF APPLICANT:

**CITY OF BANGOR  
73 HARLOW STREET  
BANGOR, ME 04401**

COUNTY: **PENOBSCOT**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

**760 LOWER MAIN STREET  
BANGOR, MAINE 04401**

RECEIVING WATER / CLASSIFICATION: **PENOBSCOT RIVER/CLASS B  
KENDUSKEAG STREAM, CLASS C**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER:

**CATHERINE CONLOW  
(207) 992-4201  
[Cathy.Conlow@bangormaine.gov](mailto:Cathy.Conlow@bangormaine.gov)**

## 1. APPLICATION SUMMARY

- a. Application: On January 20, 2016, the Department of Environmental Protection (Department) accepted as complete for processing an application from the City of Bangor (Bangor) for renewal of combination Waste Discharge License (WDL) # W001041-5M-F-R / Maine Pollutant Discharge Elimination System (MEPDES) permit # ME0100781, which was issued by the Department on May 26, 2011 for a five-year term. The May 26, 2011 permit authorized the monthly average discharge of 18.0 million gallons per day (MGD) of secondary treated sanitary wastewater from a publicly owned treatment works (POTW) to the Penobscot River, Class B, in Bangor, Maine.

The 5/26/11 MEPDES permit also authorized Bangor to discharge an unspecified quantity of primary treated municipal wastewater from a POTW when the influent to the wastewater treatment facility exceeded a sustained daily flow rate of 30 MGD and authorized the discharge of an unspecified quantity of untreated combined sanitary and storm water from nine (9) combined sewer overflow (CSO) outfalls to the Kenduskeag Stream, Class C and the Penobscot River, Class B in Bangor, Maine.

## 2. PERMIT SUMMARY

- a. Terms and conditions

**This permitting action is different from the May 26, 2011 permit in that it:**

For Secondary Treated Wastewater (Outfall #001A)

1. Eliminates the seasonal, bimonthly effluent total phosphorus reporting condition;
2. Incorporates monitoring and reporting requirements for the interim mercury limitations established by the Department for this facility pursuant to *Certain deposits and discharges prohibited*, 38 M.R.S. § 420 and *Waste discharge licenses*, 38 M.R.S. § 413 and *Interim Effluent Limitations and Controls for the Discharge of Mercury*, 06-096 C.M.R. 519 (last amended October 6, 2001);
3. Reduces the monitoring and reporting requirement for biochemical oxygen demand (BOD<sub>5</sub>), total suspended solids (TSS), and *Escherichia coli* (*E. coli* Bacteria) from 5/Week to 3/Week;
4. Establishes a monthly average water quality based limit for total lead based on the results of facility testing;
5. Eliminates numeric limits for total copper as well as total arsenic and inorganic arsenic in response to facility testing results;
6. Eliminates surveillance level whole effluent testing (WET) in response to facility testing results;

## 2. PERMIT SUMMARY (cont'd)

### a. Terms and conditions

7. Reduces the monitoring and reporting requirement for total residual chlorine (TRC) from 2/Day to 1/Day;
8. Reduces the monitoring and reporting requirement for settleable solids from 1/Day to 4/Week;

#### For Primary Treated Wastewater (Outfall #001B)

9. Eliminates Surface Overflow Rate, BOD<sub>5</sub> and TSS percent removal, settleable solids, and pH monitoring requirements;
10. Establishes Minimum Influent Flow Rate monitoring; and

#### For Blended Wastewater (Outfall #001C)

11. Establishes end-of-pipe limitations and reporting requirements for administrative outfall #001C to comply with U.S. Environmental Protection Agency (USEPA) CSO Control Policy and Clean Water Act section 402(q)(1);

### b. History: The most recent relevant licensing and permitting actions include the following:

*April 22, 1981* – The Department issued renewal WDL #1041 which authorized Bangor to discharge 9.0 MGD of primary treated wastewater to the Penobscot River.

*September 14, 1983* – The Department issued renewal WDL #1041 which authorized Bangor to discharge 9.0 MGD of primary treated wastewater to the Penobscot River.

*December 30, 1986* – The U.S. Environmental Protection Agency (USEPA) issued National Pollutant Discharge Elimination System (NPDES) permit #ME0100781 with secondary treatment requirements as specified by the Clean Water Act (CWA).

*June 30, 1987* – The Department and Bangor entered into a Consent Decree ordering the upgrade of the wastewater treatment facility from a primary to secondary level of treatment and rehabilitation of the sanitary sewer collection system. The Consent Decree was amended in December of 1987.

*June 28, 1991* - USEPA, the U.S. Department of Justice, the State of Maine and City of Bangor entered into a consent Decree superseding and incorporating the conditions of the June 30, 1987 Consent Decree and adding conditions to address combined sewer overflow control, including requirements for a CSO Facilities Plan and an implementation schedule.

## 2. PERMIT SUMMARY (cont'd)

*September 29, 1992* – USEPA re-issued NPDES permit #ME0100781 with secondary treatment requirements.

*December 17, 1992* – Bangor completed construction of the plant upgrade and expansion (to secondary treatment) and commenced operations of the new treatment facility.

*December 1993* – Bangor submitted a document to the USEPA and Department entitled Final Draft Combined Sewer Overflow Facilities Plan For the City of Bangor. The facilities plan proposed a four (4) phase implementation schedule.

*January 25, 1994* – USEPA issued a modification of NPDES permit #ME0100781 to include a new attachment in regards to implementation of the Region I CSO Policy for Tier I Communities.

*December 22, 1994* – USEPA conditionally approved Phases I and II of Bangor's CSO facility plan. Approval of Phases III and IV were contingent upon the results achieved in Phases I & II.

*April 2, 1996* – USEPA approved Bangor's proposal to provide a CSO bypass at the treatment plant. Flows in excess of 30 MGD, up to a peak flow of 43 MGD, would receive primary treatment and disinfection and would be blended with the secondary treated waste stream prior to discharge through a common outfall. It should be noted that this request and approval was based on a blended effluent (CSO bypass and secondary) with the blended effluent discharge expected to meet water quality standards at all times.

*September 30, 1996* – USEPA issued a modification of NPDES permit #ME0100781 that authorized a bypass of secondary treatment for flows exceeding 30 MGD. The permit required any wastewaters bypassing secondary treatment be given primary treatment and disinfected prior to discharge.

*November 1, 1996* – The Department issued WDL #W001041-47-B-R for five year term.

*March 20, 1997* – USEPA issued a modification of NPDES permit ME0100781 (issued on 9/29/92) to waive the 85% removal requirement for monthly average BOD and TSS when the influent is < 200 mg/L.

*May 11, 1998* – USEPA approved Bangor's request to construct the Davis Brook CSO Storage Facility (a Phase IV project).

*May 19, 2000* – The Department approved Bangor's request to construct the Kenduskeag East CSO Storage Facility (a Phase III project), other improvements that incorporate the intent of the Kenduskeag West Floating Solids Trap (a Phase III project) and improved monitoring capabilities at Kenduskeag East and West CSO discharge locations.



## 2. PERMIT SUMMARY (cont'd)

*May 23, 2000* – Pursuant to 38 M.R.S. §420 and §413 and *Interim Effluent Limitations and Controls for the Discharge of Mercury*, 06-096 C.M.R. Chapter 519, the Department issued a *Notice of Interim Limits for the Discharge of Mercury* to the permittee thereby administratively modifying WDL #W001041-47-B-R by establishing interim monthly average and daily maximum effluent concentration limits of 11.3 parts per trillion (ppt) and 16.9 ppt, respectively, and a minimum monitoring frequency requirement of 4 tests per year for mercury.

*June 6, 2000* – USEPA approved Bangor's request to construct the Kenduskeag East CSO Storage Facility (a Phase III project) other improvements that incorporate the intent of the Kenduskeag West Floating Solids Trap (a Phase III project) and improved monitoring capabilities at Kenduskeag East and West CSO discharge locations.

*September 19, 2000* – USEPA re-issued NPDES permit #ME0100781.

*January 12, 2001* – The Department received authorization from the USEPA to administer the NPDES permit program in Maine. From that date forward, the permit program has been referred to as the MEPDES permit program and #ME0100781 (same as the NPDES permit) will be the primary reference number for the facility.

*September 24, 2001* – USEPA approved Bangor's proposed modification to the consent Decree schedule that authorizes Bangor to proceed with all remaining Phase III and Phase IV projects.

*February 12, 2002* – The Department issued WDL #W001041-5M-E-R/#ME0100781 for a five-year term.

*April 10, 2006* - The Department issued a modification of WDL #W001041-5M-E-R by incorporating WET and chemical specific testing requirements pursuant to 06-096 C.M.R. 530.

*July 12, 2006* – Bangor submitted a timely application for permit renewal. The application was accepted as complete on 7/12/06 and was assigned WDL #W001041-5M-F-R.

*December 16, 2008* – The Department issued minor revision WDL #W001041-5M-G-R by establishing a deadline of December 31, 2009 for the submission of an updated CSO Master Plan.

*May 26, 2011* – The Department issued combination MEPDES permit #ME0100781/WDL W001041-5M-F-R for a five-year term.

*January 8, 2013* – The Department initiated a modification of the 5/26/11 permit to reduce the monitoring frequency for mercury to once per year.

## 2. PERMIT SUMMARY (cont'd)

*September 10, 2013* – The Department issued modification #ME0100781/WDL#W001401-5M-I-M for the revision of the inorganic arsenic limit.

*November 13, 2015* – The USEPA, the U.S. Department of Justice, the State of Maine and City of Bangor entered into a Consent Decree superseding the 1991 decree and adding conditions to address combined sewer overflow control, including requirements for a CSO Facilities Plan and an implementation schedule.

*January 19, 2016* – The permittee submitted a timely and complete General Application to the Department for renewal of the May 26, 2011 permit (including subsequent minor permit revisions and permit modifications). The application was accepted for processing on January 20, 2016 and was assigned WDL #W001041-5M-J-R / MEPDES #ME0100781.

- c. Source Description: The City of Bangor is 32.9 square miles with a population of 33,000 people. Bangor consists of an urbanized core made up of residential, commercial and light industrialized areas totaling approximately 16 square miles. The POTW receives sanitary and process wastewaters from residential, commercial and industrial facilities within the City of Bangor and the Towns of Hampden and Hermon. Bangor serves eleven (11) Significant Industrial Users (SIUs) and is required to implement an Industrial Pretreatment Program as a condition of the NPDES permit issued on October 1, 1992. A map showing the location of the facility and the receiving waters is included as Fact Sheet **Attachment A**.
- d. Wastewater Treatment: The following information was included as part of the permittee's application materials.

Early sewer records date back to the 1850's. To date the permittee maintains 151.5 miles of collector sewers and 9.0 miles of interceptor sewer. In 1968 the permittee started operating a primary treatment plant. In 1987 the permittee began working on a multimillion-dollar program to abate and control CSOs. In 1992 the permittee finished constructing and began operating a secondary treatment plant. That same year the permittee undertook a program to develop a CSO Control Plan. The plan outlines projects in the sewer system to control CSO discharges and improve water quality. Three underground tanks have been constructed to further control CSOs. Since the program inception, the permittee has eliminated 13 of the original CSO points.

The permittee provides a secondary level of treatment by way of a dual stage activated bio-filter system (ABF) consisting of a fixed film bio-tower process followed by a high rate suspended growth phase. The treatment process includes coarse tanks, two re-aeration tanks, two circular final clarifiers, two chlorine contact basins, two sludge thickening tanks and two belt filter presses. The facility uses sodium hypochlorite and sodium bi-sulfate for chlorination and de-chlorination of the effluent. The facility is designed to provide secondary treatment for a monthly average flow of 18 MGD and a daily maximum flow of 30 MGD.

## 2. PERMIT SUMMARY (cont'd)

The permittee maintains a combined sewer system, which conveys both domestic wastewater and storm water runoff to the treatment facility. During wet weather periods, the combined sewer collection system is periodically overloaded. The permittee maintains nine (9) combined sewer overflow points (identified in Special Condition L of this permit) in the collection system through which excess flows are periodically discharged to receiving waters.

As part of its combined sewer overflow abatement programs, the facility treats a portion of the excess flows at the wastewater treatment plant. To the extent possible, combined sewer flows will receive secondary treatment along with normal dry weather flows. However, in order to prevent damage to the treatment system by upsetting the biological process, the volume of water receiving secondary treatment is limited. The influent pipe to the treatment plant is capable of conveying 43 MGD to the treatment plant under optimal conditions. The maximum combined flow to receive secondary treatment is at the rate of 30 MGD. Due to seasonal variations and the need to maintain stable treatment for dry weather flows, the amount of combined sewer flow receiving secondary treatment may vary at any given time. Flows received at the treatment plant exceeding 30 MGD will receive primary treatment via screening, primary clarification and disinfection. The primary treated portion of the total flow will then be combined with secondary treated wastewater prior to discharge to the Penobscot River via a 48-inch outfall pipe at a depth of 18 feet below mean low water. The outfall pipe is fitted with a two-port diffuser to enhance mixing of the discharge with receiving waters.

The 5/26/11 permit authorized the permittee to accept up to 20,000 gallons per day of transported wastes.

See **Attachment B** of this Fact Sheet for a facility schematic.

## 3. CONDITIONS OF PERMIT

*Conditions of licenses*, 38 M.R.S. § 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require the application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, *Certain deposits and discharges prohibited*, 38 M.R.S. § 420 and Department rule *Surface Water Toxics Control Program*, 06-096 C.M.R. 530 (effective March 21, 2012), require the regulation of toxic substances not to exceed levels set forth in *Surface Water Quality Criteria for Toxic Pollutants*, 06-096 C.M.R. 584 (effective July 29, 2012), and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

#### 4. RECEIVING WATER QUALITY STANDARDS

*Classification of major river basins*, 38 M.R.S. § 467(7)(A)(7) classifies the Penobscot River at the point of discharge (from the Maine Central Railroad bridge in Bangor to a line extended in an east-west direction from a point 1.25 miles upstream of the confluence of Reeds Brook in Hampden) as Class B water. Furthermore, the statute states "...the Legislature finds that the free-flowing habitat of this river segment provides irreplaceable social and economic benefits and that this use must be maintained." *Standards for classification of fresh surface waters*, 38 M.R.S. § 465(3) describes the standards for Class B waters.

38 M.R.S., Section 467(7)(F)(3) indicates the Kenduskeag Stream at the point of discharge is classified as a Class C waterway. *Standards for classification of fresh surface waters*, 38 M.R.S. § 465(4) describes the standards for Class C waters.

#### 5. RECEIVING WATER QUALITY CONDITIONS

The following is an excerpt from the *State of Maine 2012 Integrated Water Quality Monitoring and Assessment Report*, prepared by the Department pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act.

"In May 2011, MDEP completed the "Penobscot River Phosphorus Wasteload Allocation" (WLA) report which covered the area from Millinocket to Medway (West Branch Penobscot River) and further down to Bangor/Brewer (mainstem Penobscot River). The WLA report identified a total of four industrial dischargers and six significant municipal dischargers that contribute phosphorus to these segments and in combination cause the observed aquatic life impairments. The report established phosphorus limits for the industrial dischargers and MDEP determined that these reduced loadings would be sufficient to eliminate eutrophic conditions along the entire freshwater portion of the river. Between March and May 2011, MDEP issued MEPDES (Maine Pollutant Discharge Elimination System) permits to all ten dischargers identified in the WLA report. It is expected that the phosphorus limits established in the permits to industrial dischargers will result in the elimination of the aquatic life use impairments by 2016. Monitoring data collected in 2011 showed DO (dissolved oxygen) attainment in two critical reaches of the river; preliminary analysis of 2012 data covering the majority of the river also indicate attainment of DO criteria."

An excerpt from the *2014 Penobscot River Phosphorus Waste Load Allocation Ambient Monitoring Plan Report* dated June 2015 by the Department, states:

"No DO non-attainment was measured in association with the Penobscot River Ambient Monitoring Report (PRAMP) during 2014. All data were well above appropriate classification criteria. There were no measured diurnal DO swings that would suggest excessive nutrient enrichment (i.e., > 2.0 mg/L). The 2014 results provide good reason to be optimistic about continued DO attainment, but continued monitoring is recommended..."

## 5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

The Department therefore delisted five Penobscot River segments, including the segment that contains the City of Bangor discharge, Assessment Unit ME0102000513\_234R02 (Main Stem (Penobscot), Veazie Dam to Reeds Brook) as “Category 4-B: Rivers and Streams Impaired by Pollutants – Pollution Control Requirements Reasonably Expected to Result in Attainment” for dissolved oxygen and nutrient/eutrophication biological indicators. A comment in the report states that the segment is “Expected to attain in 2016. Preliminary data from 2011 looks promising” for dissolved oxygen and nutrient/eutrophication biological indicators. The report also lists the segment in question in Category 4-B for dioxin (including 2,3,7,8-TCDD) and states “4-B Dioxin license limits in 38 MRSA Section 420. Compliance is measured by (1) no detection of dioxin in any internal waste stream (at 10 pg/L detection limit), (2) no detection in fish tissue sampled below a mill’s outfall greater than upstream reference. Expected to attain standards in 2020.” This segment is also listed under “Category 5-D: Rivers and Streams Impaired by Legacy Pollutants” for polychlorinated biphenyls (PCBs).

The Kenduskeag Stream and its tributaries (Assessment ID# ME0102000510\_224R02) in Bangor (from Bullseye Bridge to Penobscot River) is listed in the *2012 Integrated Water Quality Monitoring and Assessment Report Appendices* under Category 2: Rivers and Streams Attaining Some Designated Uses – Insufficient Information for Other Uses.

The Report lists all of Maine’s fresh waters as, “Category 4-A: Waters Impaired by Atmospheric Deposition of Mercury.” Impairment in this context refers to a statewide fish consumption advisory due to elevated levels of mercury in some fish tissues. The Report states, “All freshwaters are listed in Category 4A (Total Maximum Daily Load (TMDL) Completed) due to USEPA approval of a Regional Mercury TMDL.” Maine has a fish consumption advisory for fish taken from all freshwaters due to mercury. Many fish from any given waters do not exceed the action level for mercury. However, because it is impossible for someone consuming a fish to know whether the mercury level exceeds the action level, the Maine Department of Human Services decided to establish a statewide advisory for all freshwater fish that recommends limits on consumption.

Maine has already instituted statewide programs for removal and reduction of mercury sources. Pursuant to 38 M.R.S. § 420(1-B)(B), “a facility is not in violation of the ambient criteria for mercury if the facility is in compliance with an interim discharge limit established by the Department pursuant to section 413 subsection 11.” The Department has established interim monthly average and daily maximum mercury concentration limits and reporting requirements for this facility pursuant to 06-096 C.M.R. 519.

Under Category 4-A: Rivers and Streams with Impaired Use other than mercury, TMDL Completed, segment ME0102000513\_234R (Penobscot River at Bangor-Brewer including the Kenduskeag Stream) is listed for impaired Primary and Secondary Contact Recreation due to the presence of *E. coli*.

**5. RECEIVING WATER QUALITY CONDITIONS (cont'd)**

Bangor has developed and implemented a CSO Master Plan for the elimination of all CSO points associated with the Bangor POTW. The Department acknowledges that elimination of all CSO points is a costly and long-term project. As Bangor’s treatment plant and sewer collection system are upgraded and maintained according to the CSO Master Plan and Nine Minimum Controls, there should be reductions in the frequency and volume of CSO and primary treatment activities and, over time, improvement in the quality of the wastewater discharged to the receiving waters.

**6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS**

- a. Flow: The previously established monthly average discharge flow limitation of 18.0 MGD, which is based on the dry weather design criterion for this facility, is being carried forward in this permitting action.

The Department reviewed 53 Discharge Monitoring Reports (DMRs) that were submitted for the period of June 1, 2011 through December 1, 2015. A review of data indicates the following:

**Flow (DMRs=53)**

Value	Limit (MGD)	Range (MGD)	Mean (MGD)
Monthly Average	18.0	4 – 17	8
Daily Maximum	Report	5 – 33	20

- b. Dilution Factors: The Department established applicable dilution factors for the discharge in accordance with freshwater protocols established in *Surface Water Toxics Control Program*, 06-096 C.M.R. 530 (last amended March 21, 2012). With a monthly average flow limit of 18.0 MGD, dilution factors for the facility are as follows:

$$\text{Modified Acute} = 723 \text{ cfs} \Rightarrow \frac{(723 \text{ cfs})(0.6464) + (18.0 \text{ MGD})}{(18.0 \text{ MGD})} = 27.0:1$$

$$\text{Acute: 1Q10} = 2,892 \text{ cfs} \Rightarrow \frac{(2,892 \text{ cfs})(0.6464) + (18.0 \text{ MGD})}{(18.0 \text{ MGD})} = 104.9:1$$

$$\text{Chronic: 7Q10} = 3,206 \text{ cfs} \Rightarrow \frac{(3,206 \text{ cfs})(0.6464) + (18.0 \text{ MGD})}{(18.0 \text{ MGD})} = 116.1:1$$

$$\text{Harmonic Mean:} = 9,101 \text{ cfs} \Rightarrow \frac{(9,101 \text{ cfs})(0.6464) + (18.0 \text{ MGD})}{(18.0 \text{ MGD})} = 327.8:1$$

**6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

06-096 C.M.R. 530(4)(B)(1) states that analyses using numeric acute criteria for aquatic life must be based on ¼ of the 1Q10 stream design flow to prevent substantial acute toxicity within any mixing zone. The regulation goes on to say that where it can be demonstrated that a discharge achieves rapid and complete mixing with the receiving water by way of an efficient diffuser or other effective method, analyses may use a greater proportion of the stream design, up to including all of it.

The Department has made the determination the discharge does not receive rapid and complete mixing with the receiving water, therefore the default stream flow of ¼ of the 1Q10 is applicable in acute statistical evaluations.

- c. Biochemical Oxygen Demand (BOD<sub>5</sub>) and Total Suspended Solids (TSS): Previous permitting action established, and this permitting action is carrying forward, monthly average and weekly average BOD<sub>5</sub> and TSS concentration limits of 30 milligrams per liter (mg/L) and 45 mg/L, respectively, which were based on secondary treatment requirements pursuant to 40 CFR 133.102 and 06-096 C.M.R. 525(3)(III). Previous permitting action also established, and this permitting action is carrying forward, daily maximum BOD<sub>5</sub> and TSS concentration limits of 50 mg/L based on a Department best professional judgment (BPJ) of BPT for secondary treated wastewater. All three concentration limitations are being carried forward in this permitting action.

The previous permitting action established monthly average and weekly average mass limits based on a monthly average limit of 18.0 MGD, which are being carried forward in this permitting action. No daily maximum mass limitations (report only) for BOD<sub>5</sub> or TSS were established in previous permitting action as doing so may discourage Bangor from treating as much wastewater as possible through the secondary treatment system during wet weather events.

Mass limitations were derived as follows:

Monthly Average	(30 mg/L)(8.34 lbs./gallon)(18.0 MGD) =	4,504 lbs./day
Weekly Average	(45 mg/L)(8.34 lbs./gallon)(18.0 MGD) =	6,755 lbs./day

This permitting action is also carrying forward the requirement for a minimum of 85% removal of BOD<sub>5</sub> & TSS pursuant to 06-096 C.M.R. 525(3)(III)(a)(3) and (b)(3).

A summary of BOD<sub>5</sub> data as reported on the DMRs submitted to the Department for the period of June 1, 2011 – December 1, 2015 is as follows:

**BOD<sub>5</sub> Mass**

Value	Limit (lbs./day)	Range (lbs./day)	Average (lbs./day)
Monthly Average	4,504	201 – 2,054	749
Weekly Average	6,755	249 – 2,426	1,157
Daily Maximum	Report	553 – 6,709	2,435

**6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

**BOD<sub>5</sub> Concentration**

Value	Limit (mg/L)	Range (mg/L)	Average (mg/L)
Monthly Average	30	5 – 22	11
Weekly Average	45	6 – 26	14
Daily Maximum	50	8 – 37	20

A summary of TSS data as reported on the DMRs submitted to the Department for the period of June 1, 2011 – December 1, 2015 is as follows:

**TSS Mass**

Value	Limit (lbs./day)	Range (lbs./day)	Average (lbs./day)
Monthly Average	4,504	193 – 1,949	599
Weekly Average	6,755	273 – 3,231	1,076
Daily Maximum	Report	392 – 7,915	2,830

**TSS Concentration**

Value	Limit (mg/L)	Range (mg/L)	Average (mg/L)
Monthly Average	30	4 – 13	8
Weekly Average	45	5 – 18	10
Daily Maximum	50	7 – 34	19

Minimum monitoring frequency requirements in MEPDES permits are prescribed by 06-096 C.M.R. Chapter 523§5(i). The USEPA has published guidance entitled, *Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies* (USEPA Guidance April 1996). In addition, the Department has supplemented the USEPA guidance with its own guidance entitled, *Performance Based Reduction of Monitoring Frequencies - Modification of EPA Guidance Released April 1996* (Maine DEP May 22, 2014). Both documents are being utilized to evaluate the compliance history for each parameter regulated by the previous permit to determine if a reduction in the monitoring frequencies is justified.

Although USEPA’s 1996 Guidance recommends evaluation of the most current two years of effluent data for a parameter, the Department is considering 52 months of data (June 1, 2011 – October 31, 2015). A review of the mass monitoring data for BOD<sub>5</sub> & TSS indicates the ratios (expressed in percent) of the long term effluent average to the monthly average limits can be calculated as 17% for BOD<sub>5</sub> and 13% for TSS. According to Table I of the USEPA Guidance and Department Guidance, the monitoring requirement can be reduced to 1/Week for BOD<sub>5</sub> and TSS. However, taking into consideration both the USEPA and Department Guidance, this permitting action is reducing the monitoring frequency for BOD<sub>5</sub> and TSS from 5/Week to 3/Week.



**6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

- d. Settleable Solids: The previous permitting action established a daily maximum concentration limit of 0.3 milliliters per liter (mL/L) for settleable solids and is considered by the Department as a best professional judgment of BPT for secondary treated wastewater. A review of the DMR data for the period of June 1, 2011 through October 31, 2015 (n = 53) indicates the daily maximum settleable solids concentration values reported have ranged from < 0.10 mL/L to 0.3 mL/L. Due to the consistent nature of the results, this permitting action is reducing the monitoring frequency from 1/Day to 4/Week.
  
- e. Escherichia coli (E. coli) bacteria: The previous permitting action established, and this permitting action is carrying forward, seasonal monthly average and daily maximum *E. coli* bacteria limitations of 64 colonies/100 ml (geometric mean) and 427 colonies/100 ml (instantaneous), respectively, that are in effect between May 15 and September 30, inclusive, of each year.

During calendar year 2005, Maine’s Legislature approved a new daily maximum water quality standard of 236 colonies/100 ml for Class B and Class C waters. The Department has determined that end-of-pipe limitations for the instantaneous concentration standard of 427 colonies/100 mL will be achieved through available dilution of the effluent with the receiving waters and need not be revised in MEPDES permits for facilities with adequate dilution (at least 1.1:1 for facilities in Class B waters).

A review of the bacterial testing data as reported on the monthly DMRs for the period of June 30, 2011 – September 30, 2015 indicates the permittee to have been in compliance with the permit limits 100% of the time. A summary of the reported *E. coli* bacteria test results is as follows:

***E. coli* Bacteria (DMRs=24)**

<b>Value</b>	<b>Limit</b> (col/100 ml)	<b>Range</b> (col/100 ml)	<b>Mean</b> (col/100 ml)
Monthly Average	64	1 – 6	3
Daily Maximum	427	5 – 388	96

Based on the results of facility testing, this permitting action is reducing the monitoring requirement from 5/Week to 3/Week.

For blended effluent, this permitting action is establishing a daily maximum *E. coli* limit of 427 colonies/100 ml (instantaneous), effective between May 15 and September 30 to comply with USEPA’s CSO Control Policy and Clean Water Act section 402(q)(1).

**6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

- f. Total Residual Chlorine (TRC): TRC limits are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. Permitting actions by the Department impose the more stringent of water quality or technology based limits. End-of-pipe water quality based concentration thresholds may be calculated as follows:

<b>Criterion</b>		<b>Dilution Factors</b>	<b>Calculated Threshold</b>
Mod. Acute	0.019 mg/L	27:1 <sup>(1)</sup>	0.5 mg/L
Chronic	0.011 mg/L	116:1	1.3 mg/L

<sup>(1)</sup> Based on a ¼1Q10 stream flow of 723 cfs.

To meet the acute water quality based threshold calculated above, the permittee must dechlorinate the effluent prior to discharge. In April of 1999, the Department established a new daily maximum BPT limitation of 0.3 mg/L for facilities that need to dechlorinate their effluent unless calculated water quality based thresholds are lower than 0.3 mg/L. In the case of Bangor, the calculated acute water quality based threshold is higher than 0.3 mg/L, thus the BPT limit of 0.3 mg/L is imposed as the daily maximum limit. As for the monthly average limitation, the Department’s BPT limitation is 0.1 mg/L. Being that the calculated chronic water quality based limit is higher than the BPT limit of 0.1 mg/L, the BPT limit is imposed in this permitting action.

A summary of TRC data as reported on the monthly DMRs for the period of June 30, 2011 – September 30, 2015 is as follows:

**Total residual chlorine (DMRs=24)**

<b>Value</b>	<b>Limit (mg/L)</b>	<b>Range (mg/L)</b>	<b>Mean (mg/L)</b>	<b>Compliance</b>
Monthly Average	0.1	0.02 – 0.05	0.03	100%
Daily Maximum	0.3	0.03 – 0.107	0.22	100%

Based on the results of facility testing, this permitting action is reducing the monitoring requirement for TRC from 2/Day to 1/Day.

As stated above, when the Penobscot River is at the level of chronic dilution, a limit of 1.0 mg/L is protective of water quality. At times of wet weather, for blended effluent, the Department is making a BPJ that a TRC limit of 1.0 mg/L is protective of water quality standards. This permitting action is establishing a TRC daily maximum limit of 1.0 mg/L when discharging blended effluent.

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

- g. **pH:** The previous permitting action established a technology based pH range limitation of 6.0 – 9.0 standard units pursuant to 06-096 C.M.R. 525(3)(III)(c) along with a monitoring frequency of 1/Day, both of which are being carried forward in this permitting action. A review of the DMR data for the period of June 30, 2011 – October 31, 2015 (n = 53) indicates the pH range was 6.3 – 7.7 standard units.

### *Whole Effluent Toxicity (WET), Priority Pollutant, and Analytical Chemistry Testing*

38 M.R.S. § 414-A and 38 M.R.S. § 420 prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. 06-096 C.M.R. 530 sets forth effluent monitoring requirements and procedures to establish safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected and narrative and numeric water quality criteria are met. 06-096 C.M.R. 584 sets forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET, priority pollutant and analytical chemistry testing, as required by 06-096 C.M.R. 530, is included in this permit in order to characterize the effluent. WET monitoring is required to assess and protect against impacts upon water quality and designated uses caused by the aggregate effect of the discharge on specific aquatic organisms. Acute and chronic WET tests are performed on the water flea (*Ceriodaphnia dubia*) and the brook trout (*Salvelinus fontinalis*). Chemical-specific monitoring is required to assess the levels of individual toxic pollutants in the discharge, comparing each pollutant to acute, chronic, and human health water quality criteria. Priority pollutant testing refers to the analysis for levels of priority pollutants listed under “Priority Pollutants” on the form included as Attachment D of the permit. Analytical chemistry refers to those pollutants listed under “Analytical Chemistry” on the form included as Attachment D of the permit.

06-096 C.M.R. 530(2)(A) specifies the dischargers subject to the rule as:

All licensed dischargers of industrial process wastewater or domestic wastes discharging to surface waters of the State must meet the testing requirements of this section. Dischargers of other types of wastewater are subject to this subsection when and if the Department determines that toxicity of effluents may have reasonable potential to cause or contribute to exceedences of narrative or numerical water quality criteria.

**6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

Bangor discharges domestic (sanitary) and industrial process wastewater to surface waters and is therefore subject to the testing requirements of the toxics rule.

06-096 C.M.R. 530(2)(B) categorizes dischargers subject to the toxics rule into one of four levels (Levels I through IV).

The four categories for dischargers are as follows:

Level I	Chronic dilution factor of <20:1
Level II	Chronic dilution factor of $\geq 20:1$ but <100:1.
Level III	Chronic dilution factor $\geq 100:1$ but <500:1 or >500:1 and $Q \geq 1.0$ MGD
Level IV	Chronic dilution factor >500:1 and $Q \leq 1.0$ MGD

Based on the criteria, the permittee’s facility is considered a Level III discharger as the chronic dilution of the receiving water is 116.1:1 and the permitted flow is greater than or equal to 1.0 MGD. 06-096 C.M.R. 530(2)(D) specifies default WET, priority pollutant, and analytical chemistry test schedules for Level III dischargers as follows.

**Surveillance level testing**

Level	WET Testing	Priority pollutant testing	Analytical chemistry
III	1 per year	None required	1 per year

**Screening level testing**

Level	WET Testing	Priority pollutant testing	Analytical chemistry
III	1 per year	1 per year	4 per year

This permit provides for reconsideration of effluent limits and monitoring schedules after evaluation of toxicity testing results. The monitoring schedule includes consideration of results currently on file, the nature of the wastewater, existing treatment, and receiving water characteristics.

**6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

- h. Whole Effluent Toxicity (WET): 06-096 C.M.R. 530(3)(E) states:

For effluent monitoring data and the variability of the pollutant in the effluent, the Department shall apply the statistical approach in Section 3.3.2 and Table 3-2 of USEPA's "Technical Support Document for Water Quality-Based Toxics Control" (USEPA Publication 505/2-90-001, March, 1991, EPA, Office of Water, Washington, D.C.) to data to determine whether water-quality based effluent limits must be included in a waste discharge license. Where it is determined through this approach that a discharge contains pollutants or WET at levels that have a reasonable potential to cause or contribute to an exceedence of water quality criteria, appropriate water quality-based limits must be established in any licensing action.

On January 5, 2016, the Department conducted a statistical evaluation on the most recent 60 months of WET test results on file with the Department for the Bangor POTW in accordance with the statistical approach outlined above. The 1/5/16 statistical evaluation indicates the discharge from the Bangor POTW has not exceeded or demonstrated a reasonable potential to exceed the critical acute or chronic ambient water quality thresholds for the water flea (*Ceriodaphnia dubia*) or brook trout (*Salvelinus fontinalis*). See **Attachment D** of this Fact Sheet for a summary of the WET test results.

06-096 C.M.R. 530(2)(D)(3)(b) states, "Dischargers in Levels III and IV may be waived from conducting surveillance testing for individual WET species or chemicals provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedences....." Based on the provisions of 06-096 C.M.R. 530 and Department best professional judgment, this permitting action is waiving surveillance level WET testing requirements for this facility. Special Condition L. *06-096 C.M.R. 530(2)(D)(4) Statement For Reduced/Waived Toxics Testing* of this Permit explains the statement required by the discharger to waive WET testing.

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## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

### i. Analytical Chemistry & Priority Pollutant Testing Evaluation:

06-096 C.M.R. 530(4)(C) states:

The background concentration of specific chemicals must be included in all calculations using the following procedures. The Department may publish and periodically update a list of default background concentrations for specific pollutants on a regional, watershed or statewide basis. In doing so, the Department shall use data collected from reference sites that are measured at points not significantly affected by point and non-point discharges and best calculated to accurately represent ambient water quality conditions. The Department shall use the same general methods as those in section 4(D) to determine background concentrations. For pollutants not listed by the Department, an assumed concentration of 10% of the applicable water quality criteria must be used in calculations.

The Department has limited information on the background levels of metals in the water column in the Penobscot River in the vicinity of the permittee's outfall. Therefore, a default background concentration of 10% of the applicable water quality criteria is being used in the calculations of this permitting action.

Chapter 530(4)(E), states :

In allocating assimilative capacity for toxic pollutants, the Department shall hold a portion of the total capacity in an unallocated reserve to allow for new or changed discharges and non-point source contributions. The unallocated reserve must be reviewed and restored as necessary at intervals of not more than five years. The water quality reserve must be not less than 15% of the total assimilative quantity.

However, in May 2012, 38 M.R.S. §464(J) was enacted which states:

For the purpose of calculating waste discharge license limits for toxic substances, the department may use any unallocated assimilative capacity that the department has set aside for future growth if the use of that unallocated assimilative capacity would avoid an exceedance of applicable ambient water quality criteria or a determination by the department of a reasonable potential to exceed ambient water quality criteria.

## **6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

Chapter 530(4)(F) states in part:

Where there is more than one discharge into the same fresh or estuarine receiving water or watershed, the Department shall consider the cumulative effects of those discharges when determining the need for and establishment of the level of effluent limits. The Department shall calculate the total allowable discharge quantity for specific pollutants, less the water quality reserve and background concentration, necessary to achieve or maintain water quality criteria at all points of discharge, and in the entire watershed. The total allowable discharge quantity for pollutants must be allocated consistent with the following principles.

Evaluations must be done for individual pollutants of concern in each watershed or segment to assure that water quality criteria are met at all points in the watershed and, if appropriate, within tributaries of a larger river.

The total assimilative capacity, less the water quality reserve and background concentration, may be allocated among the discharges according to the past discharge quantities for each as a percentage of the total quantity of discharges, or another comparable method appropriate for a specific situation and pollutant. Past discharges of pollutants must be determined using the average concentration discharged during the past five years and the facility's licensed flow.

The amount of allowable discharge quantity may be no more than the past discharge quantity calculated using the statistical approach referred to in section 3(E) [Section 3.3.2 and Table 3-2 of USEPA's "Technical Support Document for Water Quality-Based Toxics Control"] of the rule, but in no event may allocations cause the water quality reserve amount to fall below the minimum referred to in 4(E) [15% of the total assimilative capacity]. Any difference between the total allowable discharge quantity and that allocated to existing dischargers must be added to the reserve.

The Penobscot River has multiple dischargers that are subject to the Department's Chapter 530 testing requirements above and below the permittee's facility. The City of Brewer Wastewater Control Facility is the most downstream freshwater discharger in the watershed.

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

06-096 C.M.R. 530(3)(E) states,

Where it is determined through [the statistical approach referred to in USEPA's Technical Support Document for Water Quality-Based Toxics Control] that a discharge contains pollutants or WET at levels that have a reasonable potential to cause or contribute to an exceedence of water quality criteria, appropriate water quality-based limits must be established in any licensing action.

06-096 C.M.R. 530(3)(D) states:

Where the need for effluent limits has been determined, limits derived from acute water quality criteria must be expressed as daily maximum values. Limits derived from chronic or human health criteria must be expressed as monthly average values.

On January 5, 2016, the Department conducted a statistical evaluation of the most recent 60 months of chemical-specific test results on file with the Department. The evaluation was based on 0% of the ambient water quality criteria being withheld (Report ID 818). The 1/5/16 evaluation indicates that test results from the Bangor facility discharge has a reasonable potential to exceed the chronic AWQC for lead established in 06-096 C.M.R. Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*. See **Attachment E** of this Fact Sheet for test dates and results for the pollutants of concern. Based on the most recent chemical evaluation, this permitting action is eliminating the effluent limitations for copper that were established in the previous permitting action.

The Department has prepared guidance that establishes protocols for establishing waste load allocations (see **Attachment F** of this Fact Sheet). The guidance states that the most protective of water quality becomes the facility's allocation. According to the 1/5/16 statistical evaluation, lead is to be limited based on the segment allocation method.

Chapter 530 §(3)(D)(1) states:

For specific chemicals, effluent limits must be expressed in total quantity that may be discharged and in effluent concentration. In establishing concentration, the Department may increase allowable values to reflect actual flows that are lower than permitted flows and/or provide opportunities for flow reductions and pollution prevention provided water quality criteria are not exceeded. With regard to concentration limits, the Department may review past and projected flows and set limits to reflect proper operation of the treatment facilities that will keep the discharge of pollutants to the minimum level practicable.

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)



In May 2012, 38 M.R.S. §464(4)(K) was enacted which reads as follows,

Unless otherwise required by an applicable effluent limitation guideline adopted by the department, any limitations for metals in a waste discharge license may be expressed only as mass-based limits.

There are no applicable effluent limitation guidelines adopted by the Department or the USEPA for metals from a publicly owned treatment works.

### **Segment allocation methodology**

For the segment allocation methodology, the historical average quantity (mass) for each pollutant of concern for each facility is calculated utilizing the arithmetic mean of the concentration values reported for each pollutant, a conversion factor of 8.34 lbs./gallon and the monthly average permit limit for flow. The historical mass discharged for each pollutant for each facility is summed to determine the total mass discharged for each pollutant in the watershed. Based on the individual discharger's historical average, each discharger is assigned a percentage of the whole which is then utilized to determine the percent of the segment allocation for each pollutant for each facility. For the permittee's facility, the historical average for lead is calculated as follows:

### **Lead**

Mean concentration (n=16) = 2 µg/L or 0.002 mg/L

Permit flow limit = 18.0 MGD

Historical average mass = (0.002 mg/L)(8.34)(18.0 MGD) = 0.3 lbs./day

Historically, larger, industrial users were allocated more of the assimilative capacity in the Penobscot River, leaving a smaller allocation for other dischargers. Due to the recent closure of these industries, the assimilative capacity can now be re-allocated. The previous permit stated Bangor's historical average mass for lead was 0.28 lbs./day. At that time, Bangor was allocated 7.4% of the assimilative capacity for lead. The 1/5/16 statistical evaluation (Report ID 818) indicates the historical average mass of lead discharged by Bangor is 0.3 lbs./day. Due to the re-allocation, Bangor is now assigned 65.285% of the total lead assimilative capacity on the main stem of the Penobscot River. The chronic assimilative capacity (AC) at Bangor was calculated based on 90% of the applicable chronic AWQC (taking into consideration the 10% reduction to account for background, 0% reduction for reserve, totaling 10%), at critical low flow (7Q10 = 3,243 cfs) less the assimilative capacity allocated to the Piscataquis River (critical low flow 7Q10 = 27.6962 cfs).

## **6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

The calculation for lead is as follows:

7Q10 at Brewer = 3,243 cfs or 2,096 MGD  
7Q10 at Milo = 27.6962 cfs or 17.9 MGD

Chronic AWQC = 0.41  $\mu\text{g/L}$   
0.41  $\mu\text{g/L}$  (0.90) = 0.369  $\mu\text{g/L}$  or 0.000369 mg/L

Flow = 3,243 MGD – 17.9 MGD = 2,078.1 MGD

(2,078.1 MGD)(8.34 lbs./gal)(0.000369 mg/L) = 6.395 lbs./day

Therefore, the chronic mass segment allocations for lead for the permittee can be calculated as follows:

Monthly average mass for lead:

(Chronic assimilative capacity mass)(% of total lead discharged)  
(6.395 lbs./day)(0.65285) = 4.17 lbs./day or **4.2 lbs./day**

Concentration limits

Monthly average concentration for lead;

$$\frac{4.2 \text{ lbs./day}}{(18.0 \text{ MGD})(8.34 \text{ lbs./gal.})} = 0.03 \text{ mg/L}$$

$$(0.03 \text{ mg/L})(1,000 \mu\text{g/mg})(2) = 60 \mu\text{g/L}$$

06-096 C.M.R. 530 does not establish monitoring frequencies for parameters that exceed or have a reasonable potential to exceed the chronic AWQC. Monitoring frequencies are established on case-by-case basis given the timing, severity and frequency of occurrences of the exceedances or reasonable potential to exceed applicable critical water quality thresholds. Therefore, this permitting action is making a best professional judgment to establish the monitoring frequency for lead at the routine surveillance level frequency of 1/Year specified in 06-096 C.M.R. 530.

**6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

- j. Mercury: Pursuant to 38 M.R.S. § 420 and 38 M.R.S. § 413 and 06-096 C.M.R. 519, the Department issued a *Notice of Interim Limits for the Discharge of Mercury* to the permittee thereby administratively modifying WDL # W001041-47-B-R by establishing interim monthly average and daily maximum effluent concentration limits of 11.3 parts per trillion (ppt) and 16.9 ppt, respectively, and a minimum monitoring frequency requirement of 4 tests per year for mercury.

38 M.R.S. § 420(1-B)(B)(1) provides that a facility is not in violation of the AWQC for mercury if the facility is in compliance with an interim discharge limit established by the Department. A review of the Department's database for the period January 2009 through December 2015 is as follows:

**Mercury (n = 27)**

Value	Limit (ng/L)	Range (ng/L)	Mean (ng/L)
Monthly Average	11.3	1.5 – 15.6	5
Daily Maximum	16.9		

On February 6, 2012, the Department issued a minor revision to the May 26, 2011 permit thereby revising the minimum monitoring frequency requirement from four times per year to once per year pursuant to 38 M.R.S. § 420(1-B)(F). This minimum monitoring frequency is being carried forward in this permitting action.

- k. Total Phosphorus: The previous permitting action established a seasonal (June-September) 2/Month monitoring and reporting condition for total phosphorus. Bangor was required to report both monthly average and daily maximum mass and concentration values. A review of the data for the period of June 2011 through September 2015 is as follows:

**Phosphorus Mass**

Value	Limit (lbs./day)	Range (lbs./day)	Average (lbs./day)
Monthly Average	Report	2 – 110	87
Daily Maximum	Report	3 – 122	96

**Phosphorus Concentration**

Value	Limit (mg/L)	Range (mg/L)	Average (mg/L)
Monthly Average	Report	2 – 107	7
Daily Maximum	Report	2 – 124	9

## 6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

*Waste Discharge License Conditions*, 06-096 C.M.R. 523 specifies that water quality based limits are necessary when it has been determined that a discharge has a reasonable potential to cause or contribute to an excursion above any State water quality standard including State narrative criteria.<sup>1</sup> In addition, 06-096 C.M.R. 523 specifies that water quality based limits may be based upon criterion derived from a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: USEPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data, information about the pollutant from the Food and Drug Administration, and current USEPA criteria documents.<sup>2</sup> USEPA's Quality Criteria for Water 1986 (Gold Book) puts forth an in-stream phosphorus concentration goal of less than 0.100 mg/L in streams or other flowing waters not discharging directly to lakes or impoundments, to prevent nuisance algal growth. The use of the 0.100 mg/L Gold Book value is consistent with the requirements of 06-096 C.M.R. 523 noted above for use in a reasonable potential (RP) calculation.

Based on the above rationale, the Department has chosen to utilize the Gold Book value of 0.100 mg/L. It is the Department's intent to continue to make determinations of actual attainment or impairment based upon environmental response indicators from specific water bodies. The use of the Gold Book value of 0.100 mg/L for use in the RP calculation will enable the Department to establish water quality based limits in a manner that is reasonable and that appropriately establishes the potential for impairment, while providing an opportunity to acquire environmental response indicator data, numeric nutrient indicator data, and facility data as needed to refine the establishment of site specific water quality based limits for phosphorus. This permit may be reopened during the term of the permit to modify any reasonable potential calculations, phosphorus limits, or monitoring requirements based on new site-specific data.

In 2007 a Waste Load Allocation (WLA) study was conducted on the Penobscot River in the vicinity of the discharge. Ambient phosphorus levels ranged from 15.7 ppb to 19.3 ppb. Therefore, for this calculation, we will be using the mean of the ambient data, 16.6 ppb (rounded to 17.0 ppb).

To characterize the effluent, the permittee conducted effluent total phosphorus testing during the summer from 2011 through 2015. Based upon the this data, the arithmetic mean effluent concentration was 7 mg/L (7,000 micrograms per liter ( $\mu\text{g/L}$ )) and is considered representative of the discharge from the facility.

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<sup>1</sup> *Waste Discharge License Conditions*, 06-096 CMR 523(5)(d)(1)(i) (effective date January 12, 2001)

<sup>2</sup> 06-096 CMR 523(5)(d)(1)(vi)(A)

**6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)**

Using the following calculation and criterion, Bangor does not have a reasonable potential to exceed the USEPA's Total P Ambient Water Quality Gold Book goal of 0.100 mg/L (100 µg/L) but it does have reasonable potential to exceed the Department's draft ambient water quality criterion of 0.030 mg/L for phosphorus in rivers and streams not feeding lakes. However, due to the proximity of the City of Brewer POTW discharge, the Department has analyzed the combined discharges of phosphorus in the following reasonable potential calculation.

$$Cr = \frac{Q_e C_e + Q_s C_s}{Q_r}$$

Q <sub>e</sub> = combined effluent flow	=	23.19 MGD
C <sub>e</sub> = weighted average effluent pollutant concentration	=	6 mg/L
Q <sub>s</sub> = 7Q10 flow of receiving water (Bangor)	=	2,072 MGD
C <sub>s</sub> = upstream concentration	=	0.017 mg/L
Q <sub>r</sub> = receiving water flow (2,072 MGD + 23.19 MGD)	=	2,095.19 MGD
Cr = receiving water concentration		

$$Cr = \frac{(23.19 \text{ MGD} \times 6 \text{ mg/L}) + (2,072 \text{ MGD} \times 0.017 \text{ mg/L})}{2,095.19 \text{ MGD}} = 0.083 \text{ mg/L}$$

Cr = 0.083 mg/L < 0.100 (EPA Gold Book) mg/L ⇒ **No Reasonable Potential**  
 Cr = 0.083 mg/L > 0.030 (Maine Draft Criterion) mg/L ⇒ **Has Reasonable Potential**

According to Department guidance, if there is reasonable potential at the Draft Criteria Rule, a discharger must conduct effluent monitoring for five years, as well as ambient monitoring for one year. The Department is also directed to conduct environmental indicator monitoring. However, taking into consideration the ongoing WLA monitoring effort by the Department as well as the permittee (in the permit under Special Condition *N. Ambient Water Quality Monitoring*), and the previously completed effluent characterization by the permittee, this permit is not requiring the discharger to perform effluent monitoring. No end-of-pipe limitations or monitoring requirements for total phosphorus are being established in this permit.

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

- l. Transported Wastes: The previous permitting action authorized the permittee to accept and treat up to 20,000 gpd of transported wastes. *Standards For The Addition of Transported Wastes to Wastewater Treatment Facilities*, C.M.R. 555 (last amended March 9, 2009), limits the quantity of transported wastes received at a facility to 1% of the design capacity of the treatment facility if the facility utilizes a side stream or storage method of introduction into the influent flow, or 0.5% of the design capacity of the facility if the facility does not utilize the side stream or storage method of introduction into the influent flow. A facility may receive more than 1% of the design capacity on a case-by-case basis. The permittee does not utilize a side stream storage method as transported wastes are introduced into the wetwell of the facility. With a design capacity of 18 MGD, 20,000 gpd represents 0.1% of said capacity. The Department has reviewed and approved the permittee’s most current Septage Management Plan and determined that under normal operating conditions, the addition of 20,000 gpd of transported wastes to the facility will not cause or contribute to upset conditions of the treatment process.
  
- m. CSO-Related Bypass of Secondary Treatment (Outfall #001B-Primary Treated Wastewater): For those flows received at the treatment facility which are greater than that which can be treated to a secondary level of treatment, the Department has made a BPJ that primary treatment and disinfection constitutes appropriate and BPT.

The reporting requirements for the parameters in Special Condition A(2) of this permit (Flow, Overflow Occurrences, *E. coli*, TRC, are being carried forward in this permitting action. These are parameters the Department has deemed necessary to evaluate the performance of the primary treatment process. It is noted this permitting action is not carrying forward the numeric limitations for *E.coli* and TRC based on the Department’s revised judgment on regulating internal waste streams. Surface Loading Rate, BOD<sub>5</sub> and TSS percent removal are not included in this permit based on best professional judgment that these technology-based metrics have not been particularly useful in assessing primary treatment system performance and are not necessary to ensure water quality standards are met.

A review of the DMR data for the period June 2011 – October 2015 indicates the following:

**Overflow occurrences**

<b>Year</b>	<b>Limit (# of days)</b>	<b>Total (# of days)</b>
2011	Report	7
2012	Report	17
2013	Report	13
2014	Report	24
2015	Report	10

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

**Flow - Total Gallons/Month**

<b>Year</b>	<b>Limit (MGD)</b>	<b>Range (MGD)</b>	<b>Total (MGD)</b>
2011	Report	2.855 – 4.896	7.751
2012	Report	1.175 – 14.13	37.131
2013	Report	0.595 – 4.941	15.126
2014	Report	0.064 – 15.636	52.293
2015	Report	0.009 – 3.196	6.972

**Flow – Daily Maximum Gallons**

<b>Year</b>	<b>Limit (MGD)</b>	<b>Range (MGD)</b>	<b>Total (MGD)</b>
2011	Report	1.889 – 2.02	3.909
2012	Report	1.175 – 6.06	22.997
2013	Report	1.131 – 4.941	12.237
2014	Report	0.064 – 7.230	29.411
2015	Report	0.009 – 3.196	6.024

The permittee maintains a combined sewer system from which wet weather overflows occur. Section 402(q)(1) of the Clean Water Act requires that “each permit, order or decree issued pursuant to this chapter after December 21, 2000 for a discharge from a municipal combined storm and sanitary sewer must conform to the Combined Sewer Overflow Control Policy signed by the Administrator on April 11, 1994 .....” 33 U.S.C. § 1342(q)(1). The Combined Sewer Overflow Control Policy (CSO Policy, 59 Fed. Reg. 18688-98), states that under USEPA’s regulations the intentional diversion of waste streams from any portion of a treatment facility, including secondary treatment, is a bypass and that 40 CFR 122.41(m), allows for a facility to bypass some or all the flow from its treatment process under specified limited circumstances. Under the regulation, the permittee must show that the bypass was unavoidable to prevent loss of life, personal injury or severe property damage, that there was no feasible alternative to the bypass and that the permittee submitted the required notices. The CSO Policy also provides that, for some CSO-related permits, the study of feasible alternatives in the control plan may provide sufficient support for the permit record and for approval of a CSO-related bypass to be included in an NPDES permit.<sup>3</sup> Such approvals will be re-evaluated upon the reissuance of the permit, or when new information becomes available that would represent cause for modifying the permit.

<sup>3</sup> 59 Fed. Reg. 18,688, at 18,693 and 40 CFR Part 122.41(m)(4) (April 19, 1994).

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

The CSO Policy indicates that the feasible alternative threshold may be met if, among other things, "... the record shows the secondary treatment system is properly operated and maintained, that the system has been designed to meet secondary limits for flows greater than peak dry weather flow, plus an appropriate quantity of wet weather flow, and that it is either technically or financially infeasible to provide secondary treatment at the existing facilities for greater amounts of wet weather flow."<sup>4</sup>

USEPA's CSO Control Policy and CWA section 402(q)(1) provide that the CSO-related bypass provision in the permit should make it clear that all wet weather flows passing through the headworks of the POTW will receive at least primary clarification and solids and floatables removal and disposal, and disinfection, where necessary, and any other treatment that can reasonably be provided.<sup>5</sup> Under section 402(q)(1) of the CWA and as stated in the CSO Policy, in any case, the discharge must not violate applicable water quality standards.<sup>6</sup> The Department will evaluate and establish on a case-by-case basis effluent limitations for discharges that receive only a primary level of clarification prior to discharge and those bypasses that are blended with secondary treated effluent prior to discharge to ensure applicable water quality standards will be met.

This permitting action allows a CSO-related bypass of secondary treatment at the Bangor facility based on an evaluation of feasible alternatives, which indicates it is technically and financially infeasible at this time to provide secondary treatment at the existing facilities as summarized in the original CSO Master Plan.

During wet weather events when flows to the treatment facility have exceeded an instantaneous flow rate of 30 MGD, secondary treatment of all wet weather flows is not practicable. Therefore, a portion of the primary effluent can be bypassed around the aeration basins and secondary clarifiers. The bypassed flow is recombined with the secondary clarifier effluent prior to chlorination and dechlorination and then discharged to the river via Outfall #001C (administrative outfall). This permitting action is establishing end-of-pipe limitations to comply with USEPA's CSO Control Policy and Clean Water Act section 402(q)(1).

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<sup>4</sup> 59 Fed. Reg. at 18,694.

<sup>5</sup> 59 Fed. Reg. at 18,693.

<sup>6</sup> 59 Fed. Reg. at 18694, col 1 (April 19, 1994).



## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

The CSO Control Policy does not define specific design criteria or performance criteria for primary clarification. The Department and USEPA agree that existing primary treatment infrastructure was constructed to provide primary clarification, and that for facilities that blend primary and secondary effluent prior to discharge, such as the permittee's facility, compliance must be evaluated at the point of discharge, unless impractical or infeasible.<sup>7</sup> Monitoring to assess compliance with limits based on secondary treatment and other applicable limits is to be conducted following recombination of flows at the point of discharge or, where not feasible, by mathematically combining analytical results for the two waste streams. Where a CSO-related bypass is directly discharged after primary settling and chlorination, monitoring will be at end of pipe if possible.

Due to the variability of CSO-related bypass treatment systems and wet weather related influent quality and quantity, a single technology-based standard cannot be developed for all of Maine's CSO-related bypass facilities.<sup>8</sup> To standardize how the Department will regulate these facilities to ensure compliance with the CSO Control Policy and CWA<sup>9</sup>, the Department has determined that limitations for blended effluent (the discharge of CSO-related bypass effluent combined with effluent from the secondary treatment system) should be based on the more stringent of either the past demonstrated performance of the properly operated and maintained treatment system(s) or site-specific water quality-based limits derived from calculations or best professional judgment of Department water quality engineers of assimilative capacity of the receiving water.

The federal secondary treatment regulation does not contain daily maximum effluent limitations for BOD<sub>5</sub> and TSS. The Department established a daily maximum concentration limit of 50 mg/L for secondary treated wastewater as BPJ of BPT prior to NPDES delegation and promulgation of secondary treatment regulations into State rule that are consistent with the Clean Water Act. Following consultation with USEPA, the Department has chosen to waive the requirement to comply with numeric daily maximum concentration limitations for BOD<sub>5</sub> and TSS for days with CSO-related bypass events.

During CSO-related bypasses, secondary treated wastewater is combined with wastewater from the primary treatment system, which is designed to provide primary clarification and solids and floatables removal and disposal, and disinfection. The permittee is not able to consistently achieve compliance with technology based effluent limits (TBELs) derived from the secondary treatment regulation during CSO-related bypasses. As part of its consideration of possible adverse effects resulting from the bypass, the Department must ensure that the bypass will not cause exceedance of water quality standards. CSO Control Policy at 59 Fed. Reg. 18694.

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<sup>7</sup> 40 CFR 122.45(h).

<sup>8</sup> Maine currently has 16 permitted facilities with a CSO-related bypass.

<sup>9</sup> In other words, that any other treatment that can reasonably be provided is, in fact, provided.

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

### **Analysis of Water Quality Impacts During Discharge of Blended Effluent**

Due to the close proximity of the City of Bangor POTW discharge to the Brewer discharge, and in consideration of the fact that the City of Bangor has a licensed flow rate that is three times that of Brewer's, the Department chose to evaluate water quality impacts based on the simultaneous influence of both discharges to the Penobscot River.

However, since the dischargers did not have comparatively elevated results on the same days, the Department identified the highest value for both BOD and TSS for Bangor and Brewer, individually, and then combined those results in the following calculations. In this way, we can evaluate the "worst case" for each discharger for both BOD and TSS in the last five years, and calculate a simulated combined discharge to assess the water quality impact in the Penobscot River.

In previous MEPDES permits, to calculate the change in water quality conditions due to a blended effluent addition, the lowest flow in the receiving waterbody that was recorded by the nearest USGS gauge for that month was applied. However, due to federal sequestration cuts, the USGS gauge in the vicinity of the Bangor/Brewer area is no longer monitoring flow rates. The closest gauge on the mainstem Penobscot with flow data is West Enfield, more than 30 miles north of the discharges. Therefore, the Department used data from the West Enfield gauge in the following calculations.

The calculations for BOD and TSS are as follows:

#### BOD

##### **Bangor**

1/31/14 Daily Maximum blended effluent Outfall 001C = 8,446 lbs./day

Parameters for 1/31/14 are as follows:

1/31/14 Daily Maximum flow for Outfall 001A (Secondary) = 31 MGD

1/31/14 Daily Maximum flow for Outfall 001B (Primary) = 4.959 MGD

1/31/14 Daily Maximum facility flow = 35.959 MGD

1/31/14 Daily Maximum concentration of blended effluent = 28 mg/L

##### **Brewer**

11/30/13 Daily Maximum concentration for Outfall 001A (Secondary) = 15 mg/L

11/30/13 Daily Maximum concentration for Outfall 001B (Primary) = 96 mg/L

11/30/13 Daily Maximum flow for Outfall 001A (Secondary) = 4.812 MGD

11/30/13 Daily Maximum flow for Outfall 001B (Primary) = 2.10 MGD

11/30/13 Daily Maximum facility flow = 6.912 MGD

Weighted average concentration of Primary and Secondary (blended effluent) = 40 mg/L

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

### **Combined BOD (Bangor and Brewer)**

The weighted average BOD concentration of the combined discharges = **30 mg/L**

From the months of January 2014 and November 2013, the lowest river flow was 4,460 cfs on November 26, 2013.

Dilution based on 4,460 cfs (or 2,883 MGD) to be applied to the discharge is:

$$\frac{2,883 \text{ MGD} + 42.871 \text{ MGD}}{42.871 \text{ MGD}} = 68:1$$

Therefore, the increase of instream BOD concentration given these conditions is:

$$\frac{30}{68} = \mathbf{0.5 \text{ mg/L}} \text{ (< 2 mg/L is not measurable)}$$

### TSS

#### **Bangor**

4/30/12 Daily Maximum blended effluent Outfall 001C = 13,562 lbs./day

Parameters for 4/30/12 are as follows:

4/30/12 Daily Maximum flow for Outfall 001A (Secondary) = 30.37 MGD

4/30/12 Daily Maximum flow for Outfall 001B (Primary) = 6.06 MGD

4/30/12 Daily Maximum facility flow = 36.43 MGD

4/30/12 Daily Maximum concentration of blended effluent = 44 mg/L

#### **Brewer**

12/31/11 Daily Maximum concentration for Outfall 001A (Secondary) = 12 mg/L

12/31/11 Daily Maximum concentration for Outfall 001B (Primary) = 227 mg/L

12/31/11 Daily Maximum flow for Outfall 001A (Secondary) = 4.673 MGD

12/31/11 Daily Maximum flow for Outfall 001B (Primary) = 1.818 MGD

12/31/11 Daily Maximum facility flow = 6.491 MGD

Weighted average concentration of Primary and Secondary (blended effluent) = 72 mg/L

### **Combined TSS (Bangor & Brewer)**

The weighted average TSS concentration of the combined discharges = **48 mg/L**

From the months of April 2012 and December 2011, the lowest river flow was 7,180 cfs on April 19, 2012.

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Dilution based on 7,180 cfs (or 4,641 MGD) to be applied to the discharge is:

$$\frac{4,641 \text{ MGD} + 42.921 \text{ MGD}}{42.921 \text{ MGD}} = 109:1$$

Therefore, the increase of instream TSS concentration given these conditions is:

$$\frac{48}{109} = \mathbf{0.4 \text{ mg/L}} \text{ (< 2 mg/L is not measurable)}$$

Based on the previous calculations and information from both dischargers, there was no measurable impact in the receiving water due to the addition of increased levels of BOD and TSS from blended effluent during a wet weather event in the previous five years.

### Establishing Blended Effluent Limits for Bangor

#### BOD

If we assume, during a wet weather event, that the facility is discharging secondary-treated water at full permitted flow (18.0 MGD), and in compliance with the daily maximum TBEL-derived discharge limit (50 mg/L), then the maximum effluent value for secondary treated wastewater is:

$$18.0 \text{ MGD} \times 50 \text{ mg/L} \times 8.34 \text{ (conversion factor)} = 7,506 \text{ lbs./day}$$

The highest BOD value from primary-treated water in the previous five years was 1,737 lbs./day (flow for that event was 4.959 MGD).

The combined mass from the secondary and primary is **9,243 lbs./day**. The combined flow for primary and secondary was 22.959 MGD.

The weighted average concentration of primary effluent at its highest values (in five years) and secondary effluent at full permitted flow = **48 mg/L**

In the absence of a practical and reasonable standard, the Department chose to evaluate the Bangor discharge at its proposed limits under chronic river flow conditions. Although a discharge of blended effluent during 7Q10 conditions is not likely to occur, using these extremely conservative conditions demonstrates compliance, and provides assurance that the discharge of blended effluent at proposed limits will not cause or contribute to a violation of water quality standards. The chronic dilution factor for the Penobscot River at Bangor is 3,206 cfs or 2,072 MGD.

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Therefore the dilution to be applied to the discharges is:

$$\frac{2,072 \text{ MGD} + 22.959 \text{ MGD}}{22.959 \text{ MGD}} = 91:1$$

Therefore, the increase of instream BOD concentration given this condition is:

$$\frac{48}{91} = \mathbf{0.5 \text{ mg/L}} \text{ (< 2 mg/L is not measurable)}$$

### TSS

If we follow the same methodology for TSS as BOD, the following maximum effluent values apply:

$$18.0 \text{ MGD} \times 50 \text{ mg/L} \times 8.34 \text{ (conversion factor)} = 7,506 \text{ lbs./day (secondary treatment)}$$

The highest TSS value from primary-treated water in the previous five years was 5,964 lbs./day in April 2012.

The combined mass from the secondary and primary is **13,470 lbs./day**.

The weighted average concentration of Primary effluent at its highest values (in five years) and Secondary effluent at full permitted flow = **67 mg/L**

The chronic dilution factor for the Penobscot River at Bangor is 3,206 cfs or 2,072 MGD. Therefore the dilution to be applied to the discharges is:

$$\frac{2,072 \text{ MGD} + 24.06 \text{ MGD}}{24.06 \text{ MGD}} = 87:1$$

Therefore, the increase of instream TSS concentration given this condition is:

$$\frac{67}{87} = \mathbf{0.8 \text{ mg/L}} \text{ (< 2 mg/L is not measurable)}$$

## 6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

### **Simulated Discharge of Blended Effluent from Bangor and Brewer at Calculated Limits**

The combined discharge of blended effluent from Bangor and Brewer at permitted limits is calculated as such:

#### **BOD**

Bangor BOD limit = 48 mg/L @ 22.959 MGD

Brewer BOD limit = 63 mg/L @ 7.29 MGD

The weighted average of the combined effluents = 52 mg/L @ 29.967 MGD

The chronic dilution factor for the Penobscot River at Brewer is 3,243 cfs or 2,096 MGD (furthest downstream). Therefore the dilution to be applied to the discharges is:

$$\frac{2,096 \text{ MGD} + 29.967 \text{ MGD}}{29.967 \text{ MGD}} = 71:1$$

Therefore, the increase of instream BOD concentration given this condition is:

$$\frac{52}{71} = \mathbf{0.7 \text{ mg/L}} \text{ (< 2 mg/L is not measurable)}$$

#### **TSS**

Bangor TSS limit = 67 mg/L @ 24.06 MGD

Brewer TSS limit = 96 mg/L @ 7.008 MGD

The weighted average of the combined effluents = 74 mg/L @ 31.068 MGD

The chronic dilution factor for the Penobscot River at Brewer is 3,243 cfs or 2,096 MGD. Therefore the dilution to be applied to the discharges is:

$$\frac{2,096 \text{ MGD} + 31.068 \text{ MGD}}{31.068 \text{ MGD}} = 68:1$$

Therefore, the increase of instream TSS concentration given this condition is:

$$\frac{74}{68} = \mathbf{1 \text{ mg/L}} \text{ (< 2 mg/L is not measurable)}$$

**6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)**

Based on the combined BOD<sub>5</sub> and TSS values (blended effluent) cited, the Department has made a best professional judgment, maximum effluent discharge limitations of 9,245 lbs./day for BOD<sub>5</sub> and 13,470 lbs./day for TSS established in this permit provides reasonable assurance that the discharge will not cause or contribute to a violation of an applicable water quality standard in the Penobscot River and complies with the State’s antidegradation policy at 38 M.R.S. § 464(4)(F).

These limitations are based on new information concerning treatment system performance data as well as a revised and corrected methodology for regulating CSO-related bypasses in Maine. As such, the Department concludes that the new daily maximum effluent limitations listed above for BOD<sub>5</sub> and TSS for the discharge of primary and secondary blended effluents when the flow rate through secondary treatment has exceeded an instantaneous flow rate of 30.0 MGD complies with the exceptions to antibacksliding at Section 402(o)(2)(B)(i) of the Clean Water Act. This permitting action is establishing monthly average and weekly average blended effluent mass reporting requirements for BOD<sub>5</sub> and TSS to assist in comparing the effluent quality against secondary treatment technology based effluent limits.

**7. COMBINED SEWER OVERFLOWS**

This permit contains effluent limitations and monitoring requirements for the following combined sewer overflow point source discharges.

<u>Outfall #</u>	<u>Location</u>	<u>Receiving Water &amp; Class</u>
002	Barkersville	Penobscot River, Class B
003	Davis Brook	Penobscot River, Class B
006	Kenduskeag West	Kenduskeag Stream, Class C
007	Kenduskeag East	Kenduskeag Stream, Class C
009	Hammond Street	Kenduskeag Stream, Class C
011	Meadowbrook	Kenduskeag Stream, Class C
016	Cemetery	Kenduskeag Stream, Class C
020	Carr Brook	Penobscot River, Class B
023	Central Street	Kenduskeag Stream, Class C

*Combined Sewer Overflow Abatement* 06-096 CMR 570 (last amended February 8, 1978) states that for discharges from overflows from combined municipal storm and sanitary sewer systems, the requirement of “best practicable treatment” specified in 38 M.R.S. § 414-A(1)(D) may be met by agreement with the discharger, as a condition of its permit, through development of a plan within a time period specified by the Department.

## **7. COMBINED SEWER OVERFLOWS (cont'd)**

On June 28, 1991, the USEPA, the U.S. Department of Justice, the State of Maine and City of Bangor entered into a Consent Decree superseding and incorporating the conditions of the June 30, 1987 Consent Decree and adding conditions to address combined sewer overflow control, including requirements for a CSO Facilities Plan and an implementation schedule. The CSO Master Plan entitled, Final Draft Combined Sewer Overflow Facilities Plan for the City of Bangor, dated December 1993, and abatement project schedule was approved by the USEPA on December 22, 1994. On November 13, 2015, the USEPA, the U.S. Department of Justice, the State of Maine and City of Bangor entered into a Consent Decree superseding the 1991 decree adding conditions to address combined sewer overflow control, including requirements for a CSO Facilities Plan and an implementation schedule.

The City has been actively implementing the recommendations of the Master Plan and to date has significantly reduced the volume of untreated combined sewer overflows to the receiving waters. Special Condition L, *Combined Sewer Overflows*, of this permit contains a schedule of compliance for items in the most current up-to-date abatement plan which must be completed.

The Department acknowledges that the elimination of the remaining CSOs in the collection system and the CSO-related bypass of secondary treatment is a costly, long-term project. As the Bangor treatment facility and the sewer collection system is upgraded and maintained in according to the CSO Master Plan and Nine Minimum Controls, there should be reductions in the frequency and volume of CSO activities and in the wastewater receiving primary treatment only at the treatment plant, and, over time, improvement in the quality of the wastewater discharged to the receiving waters.

## **8. DISCHARGE IMPACT ON RECEIVING WATER QUALITY**

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the waterbody to meet standards for Class B classification.

## **9. PUBLIC COMMENTS**

Public notice of this application was made in the *Bangor Daily News* newspaper on or about January 7, 2016. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits must have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to *Application Processing Procedures for Waste Discharge Licenses*, 06-096 C.M.R. 522 (effective January 12, 2001).



## **10. DEPARTMENT CONTACTS**

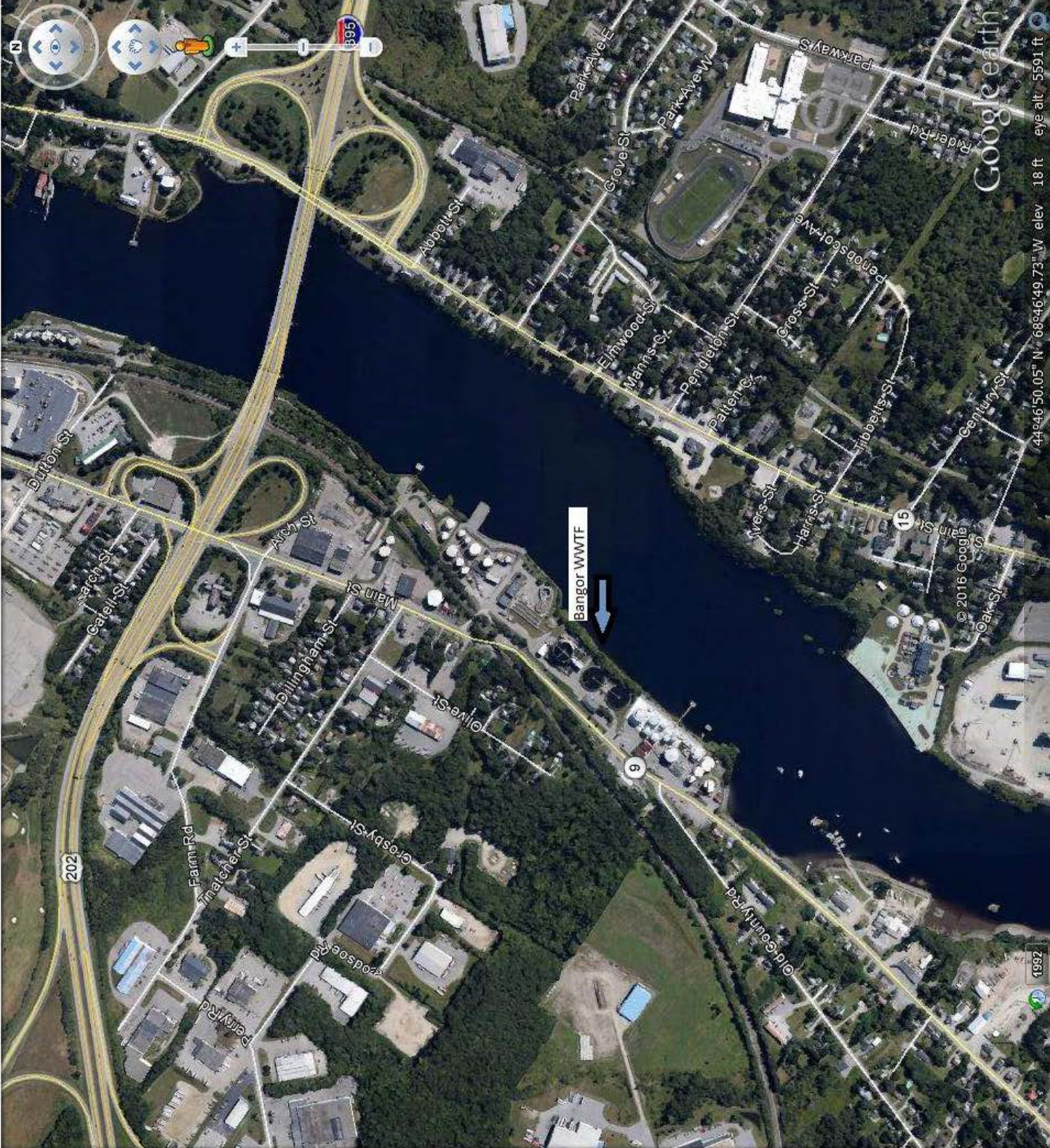
Additional information concerning this permitting action may be obtained from, and written comments sent to:

Cindy L. Dionne  
Division of Water Quality Management  
Bureau of Water Quality  
Department of Environmental Protection  
17 State House Station  
Augusta, Maine 04333-0017 Telephone: (207) 557-5950  
e-mail: [Cindy.L.Dionne@maine.gov](mailto:Cindy.L.Dionne@maine.gov)

## **11. RESPONSE TO COMMENTS**

*Reserved until the end of the formal 30-day public comment period.*

# **ATTACHMENT A**



Bangor WWTF

9

15

202

44°46'50.05" N 68°46'49.73" W elev 18 ft eye alt 5591 ft

Google earth

1992

# **ATTACHMENT B**



# **ATTACHMENT C**

STATE OF MAINE  
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAPTER 530.2(D)(4) CERTIFICATION

MEPDES# \_\_\_\_\_ Facility Name \_\_\_\_\_

Since the effective date of your permit, have there been;		NO	YES Describe in comments section
1	Increases in the number, types, and flows of industrial, commercial, or domestic discharges to the facility that in the judgment of the Department may cause the receiving water to become toxic?	<input type="checkbox"/>	<input type="checkbox"/>
2	Changes in the condition or operations of the facility that may increase the toxicity of the discharge?	<input type="checkbox"/>	<input type="checkbox"/>
3	Changes in storm water collection or inflow/infiltration affecting the facility that may increase the toxicity of the discharge?	<input type="checkbox"/>	<input type="checkbox"/>
4	Increases in the type or volume of hauled wastes accepted by the facility?	<input type="checkbox"/>	<input type="checkbox"/>

COMMENTS:

Name (printed): \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

**This document must be signed by the permittee or their legal representative.**

This form may be used to meet the requirements of Chapter 530.2(D)(4). This Chapter requires all dischargers having waived or reduced toxic testing to file a statement with the Department describing changes to the waste being contributed to their system as outlined above. As an alternative, the discharger may submit a signed letter containing the same information.

**Scheduled Toxicity Testing for the next calendar year**

Test Conducted	1 <sup>st</sup> Quarter	2 <sup>nd</sup> Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
WET Testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Priority Pollutant Testing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Analytical Chemistry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other toxic parameters <sup>1</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

*Please place an "X" in each of the boxes that apply to when you will be conducting any one of the three test types during the next calendar year.*

<sup>1</sup> This only applies to parameters where testing is required at a rate less frequently than quarterly.

# **ATTACHMENT D**





### FACILITY WET EVALUATION REPORT

**Facility:** BANGOR **Permit Number:** ME0100781 **Report Date:** 2/25/2016  
**Receiving Water:** PENOBSCOT RIVER **Rapidmix:** N  
**Dilution Factors:** 1/4 Acute: 26.9642 Acute: 104.857 Chronic: 116.1332  
**Effluent Limits:** Acute (%): 3.815 Chronic (%): 0.861 **Date range for Evaluation:** From 25/Feb/2011 **To:** 25/Feb/2016

**Test Type: A\_NOEL**

Test Species: WATER FLEA	Test Date	Result (%)	Status
	04/25/2012	20.000	OK
	10/20/2013	100.000	OK
	07/20/2014	100.000	OK
	03/16/2015	100.000	OK

**Species Summary:**

**Test Number:** 4 **RP:** 2.600 **Min Result (%):** 20.000 **RP factor (%):** 7.692 **Status:** OK

**Test Type: C\_NOEL**

Test Species: WATER FLEA	Test Date	Result (%)	Status
	04/25/2012	50.000	OK
	10/20/2013	100.000	OK
	07/20/2014	100.000	OK
	03/16/2015	100.000	OK

**Species Summary:**

**Test Number:** 4 **RP:** 2.600 **Min Result (%):** 50.000 **RP factor (%):** 19.231 **Status:** OK

# **ATTACHMENT E**

## PRIORITY POLLUTANT DATA SUMMARY

Date Range: 25/Feb/2011 - 25/Feb/2016

Facility Name: **BANGOR**NPDES: **ME0100781**

Test Date	Monthly (Flow MGD)	Daily	Total Test Number	Test # By Group						Clean	Hg
				M	V	BN	P	O	A		
05/03/2011	9.18	6.81	71	10	0	46	0	4	11	F	0
10/31/2011	7.06	8.39	70	10	0	46	0	4	10	F	0
02/07/2012	5.24	5.14	64	9	0	46	0	2	7	F	0
04/25/2012	7.28	19.00	77	14	0	46	0	6	11	F	0
08/09/2012	4.31	3.16	23	9	0	14	0	0	0	F	0
02/05/2013	6.81	4.99	66	9	0	46	0	0	11	F	0
05/07/2013	7.82	4.64	66	9	0	46	0	0	11	F	0
08/05/2013	6.56	5.24	66	9	0	46	0	0	11	F	0
10/20/2013	4.60	4.42	75	10	0	46	0	8	11	F	0
05/12/2014	8.72	5.84	66	9	0	46	0	0	11	F	0
07/21/2014	8.19	5.59	77	10	0	46	0	10	11	F	0
08/19/2014	4.83	4.48	1	1	0	0	0	0	0	F	0
10/14/2014	7.39	3.62	66	9	0	46	0	0	11	F	0

## Key:

A = Acid

O = Others

P = Pesticides

BN = Base Neutral

M = Metals

V = Volatiles

**PRIORITY POLLUTANT DATA SUMMARY**



Date Range: 25/Feb/2011 - 25/Feb/2016

Facility Name: **BANGOR**

NPDES: **ME0100781**

Test Date	Monthly (Flow MGD)	Daily	Total Test Number	Test # By Group						Clean	Hg
				M	V	BN	P	O	A		
03/16/2015	6.55	5.49	76	10	0	46	0	9	11	F	0

**Key:**

- A = Acid
- BN = Base Neutral
- O = Others
- M = Metals
- P = Pesticides
- V = Volatiles

# **ATTACHMENT F**

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMORANDUM

DATE: October 2008

TO: Interested Parties

FROM: Dennis Merrill, DEP

SUBJECT: DEP's system for evaluating toxicity from multiple discharges

\*\*\*\*\*

Following the requirements of DEP's rules, Chapter 530, section 4(F), the Department is evaluating discharges of toxic pollutants into a freshwater river system in order to prevent cumulative impacts from multiple discharges. This is being through the use of a computer program known internally as "DeTox". The enclosed package of information is intended to introduce you to this system.

Briefly, the DeTox program evaluates each wastewater facility within a watershed in three different ways in order to characterize its effluent: 1) the facility's past history of discharges, 2) its potential toxicity at the point of discharge on an individual basis, and 3) the facility's contribution to cumulative toxicity within a river segment in conjunction with other facilities. The value that is most protective of water quality becomes the value that is held in the DeTox system as an allocation for the specific facility and pollutant.

The system is not static and uses a five-year "rolling" data window. This means that, over time, old test results drop off and newer ones are added. The intent of this process is to maintain current, uniform facility data to estimate contributions to a river's total allowable pollutant loading prior to each permit renewal.

Many facilities are required to do only a relatively small amount of pollutant testing on their effluent. This means, statistically, the fewer tests done, the greater the possibility of effluent limits being necessary based on the facility's small amount of data. To avoid this situation, most facilities, especially those with low dilution factors, should consider conducting more than the minimum number of tests required by the rules.

Attached you will find three documents with additional information on the DeTox system:

- Methods for evaluating the effects of multiple discharges of toxic pollutants
- Working definitions of terms used in the DeTox system
- Reviewing DeTox Reports
- Prototype facility and pollutant reports

If you have questions as you review these, please do not hesitate to contact me at [Dennis.L.Merrill@maine.gov](mailto:Dennis.L.Merrill@maine.gov) or 287-7788.

## Maine Department of Environmental Protection

Methods for evaluating the effects of multiple discharges of toxic pollutants.

Reference: DEP Rules, Chapter 530, section 4(F)

To evaluate discharges of toxic pollutants into a freshwater river system and prevent cumulative impacts from multiple discharges, DEP uses a computer program called "DeTox" that functions as a mathematical evaluation tool.

It uses physical information about discharge sources and river conditions on file with the Department, established water quality criteria and reported effluent test information to perform these evaluations. Each toxic pollutant and associated water quality criterion for acute, chronic and/or human health effects is evaluated separately.

Each facility in a river drainage area has an assigned position code. This "address" is used to locate the facility on the river segment and in relation to other facilities and tributary streams. All calculations are performed in pounds per day to allow analysis on a mass balance. Pollutants are considered to be conservative in that once in the receiving water they will not easily degrade and have the potential to accumulate.

The process begins with establishing an assimilative capacity for each pollutant and water quality criterion at the most downstream point in the river segment. This calculation includes set-aside amounts for background and reserve quantities and assumed values for receiving water pH, temperature and hardness. The resulting amount of assimilative capacity is available for allocation among facilities on the river.

Each facility is evaluated to characterize its past discharge quantities. The historical discharge, in pounds per day, is figured using the average reported concentration and the facility's permitted flow. As has been past practice, a reasonable potential (RP) factor is used as a tool to estimate the largest discharge that may occur with a certain degree of statistical certainty. The RP factor is multiplied by the historical average to determine an allocation based on past discharges. The RP factor is also multiplied by the single highest test to obtain a maximum day estimate. Finally, the direct average without RP adjustment is used to determine the facility's percent contribution to the river segment in comparison to the sum of all discharges of the pollutant. This percent multiplied by the total assimilative capacity becomes the facility's discharge allocation used in evaluations of the segment loadings.

Additionally, individual facility discharges are evaluated as single sources, as they have been in the past to determine if local conditions are more limiting than a segment evaluation.

With all of this information, facilities are evaluated in three ways. The methods are:

1. The facility's past history. This is the average quantity discharged during the past five years multiplied by the applicable RP factor. This method is often the basis for an allocation when the discharge quantity is relatively small in comparison to the water quality based allocation.
2. An individual evaluation. This assumes no other discharge sources are present and the allowable quantity is the total available assimilative capacity. This method may be used when a local condition such as river flow at the point of discharge is the limiting factor.
3. A segment wide evaluation. This involves allocating the available assimilative capacity within a river segment based on a facility's percent of total past discharges. This method would be used when multiple discharges of the same pollutant to the same segment and the available assimilative capacity is relatively limited.

The value that is most protective of water quality becomes the facility's allocation that is held in the system for the specific facility and pollutant. It is important to note that the method used for allocation is facility and pollutant specific and different facilities on the same segment for the same pollutant can have different methods used depending on their individual situations.

Discharge amounts are always allocated to all facilities having a history of discharging a particular pollutant. This does not mean that effluent limits will be established in a permit. Limits are only needed when past discharge amounts suggest a reasonable potential to exceed a water quality based allocation, either on an individual or segment basis. Similar to past practices for single discharge evaluations, the single highest test value is multiplied by a RP factor and if product is greater than the water quality allowance, an effluent limit is established. It is important to remember an allocation is "banking" some assimilative capacity for a facility even if effluent limits are not needed.

Evaluations are also done for each tributary segment with the sum of discharge quantities in tributaries becoming a "point source" to the next most significant segment. In cases where a facility does not use all of its assimilative capacity, usually due to a more limiting individual water quality criterion, the unused quantity is rolled downstream and made available to other facilities.

The system is not static and uses a five-year rolling data window. Over time, old tests drop off and newer ones are added on. These changes cause the allocations and the need for effluent limits to shift over time to remain current with present conditions. The intent is to update a facility's data and relative contribution to a river's total assimilative capacity prior to each permit renewal. Many facilities are required to do only minimal testing to characterize their effluents. This creates a greater degree of statistical uncertainty about the true long-term quantities. Accordingly, with fewer tests the RP factor will be larger and result in a greater possibility of effluent limits being necessary. To avoid this situation, most facilities, especially those with relatively low dilution factors, are encouraged to conduct more than a minimum number of tests. It is generally to a facility's long-term benefit to have more tests on file since their RP factor will be reduced.



## Maine Department of Environmental Protection

### Working Definitions of Terms Used in the DeTox System.

*Allocation.* The amount of pollutant loading set aside for a facility. Separate amounts are set for each *water quality criterion*. Each pollutant having a history of being discharged will receive an allocation, but not all allocations become *effluent limits*. Allocation may be made in three ways: *historical allocation*, *individual allocation* or *segment allocation*.

*Assimilative capacity.* The amount of a pollutant that river segment can safely accept from point source discharges. It is determined for the most downstream point in a river segment using the *water quality criterion* and river flow. Separate capacities are set for acute, chronic and human health criteria as applicable for each pollutant. Calculation of this capacity includes factors for *reserve* and *background* amounts.

*Background.* A concentration of a pollutant that is assumed to be present in a receiving water but not attributable to discharges. By rule, this is set as a rebuttable presumption at 10% of the applicable *water quality criterion*.

*Effluent limit.* A numeric limit in a discharge permit specifically restricting the amount of a pollutant that may be discharged. An effluent limit is set only when the highest discharge, including an adjustment for *reasonable potential*, is greater than a facility's water quality based *allocation* for a pollutant.

*Historical allocation* (or *RP history*). One of three ways of developing an *allocation*. The facility's average history of discharges, in pounds at design flow, is multiplied by the appropriate *reasonable potential* factor. An allocation using this method does not become an *effluent limit*.

*Historical discharge percentage.* For each pollutant, the average discharge concentration for each facility in a segment is multiplied by the permitted flow (without including a *reasonable potential* factor). The amounts for all facilities are added together and a percent of the total is figured for each facility. When a facility has no detectable concentrations, that pollutant is assumed to be not present and it receives no percentage.

*Individual allocation.* One of three ways of developing an *allocation*. The facility's single highest discharge on record multiplied by the appropriate *reasonable potential* factor is compared to a water quality based quantity with an assumption that the facility is the only point source to that receiving water. If the RP-adjusted amount is larger, the water quality amount may become an *effluent limit*.

*Less than.* A qualification on a laboratory report indicating the concentration of a pollutant was below a certain concentration. Such a result is evaluated as being one half of the Department's reporting limit in most calculations.

*Reasonable potential (RP).* A statistical method to determine the highest amount of a pollutant likely to be present at any time based on the available test results. The method produces a value or RP factor that is multiplied by test results. The method relies on an EPA guidance document, and considers the coefficient of variation and the number of tests. Generally, the fewer number of tests, the higher the RP factor.

*Reserve.* An assumed concentration of a pollutant that set aside to account for non-point source of a pollutant and to allow new discharges of a pollutant. By rule this is set at 15% of the applicable *water quality criterion*.

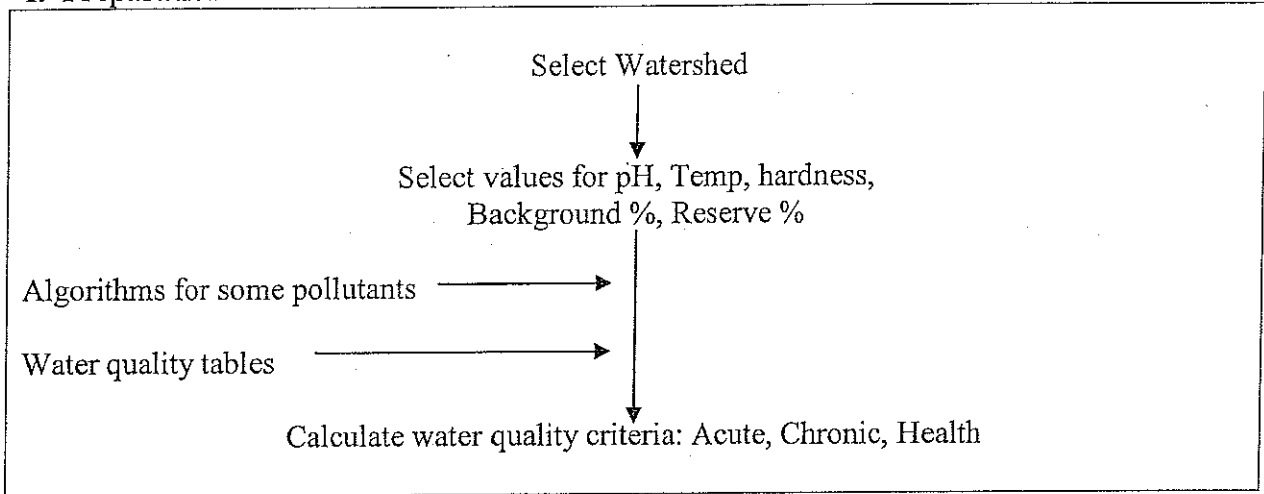
*Segment allocation.* One of three ways of developing an *allocation*. The amount is set by multiplying a facility's *historical discharge percentage* for a specific pollutant by the *assimilative capacity* for that pollutant and criterion. A facility will have different allocation percentages for each pollutant. This amount may become an *effluent limit*.

*Tributary.* A stream flowing into a larger one. A total pollutant load is set by adding the all facilities *allocations* on the tributary and treating this totaled amount as a "point source" to the next larger segment.

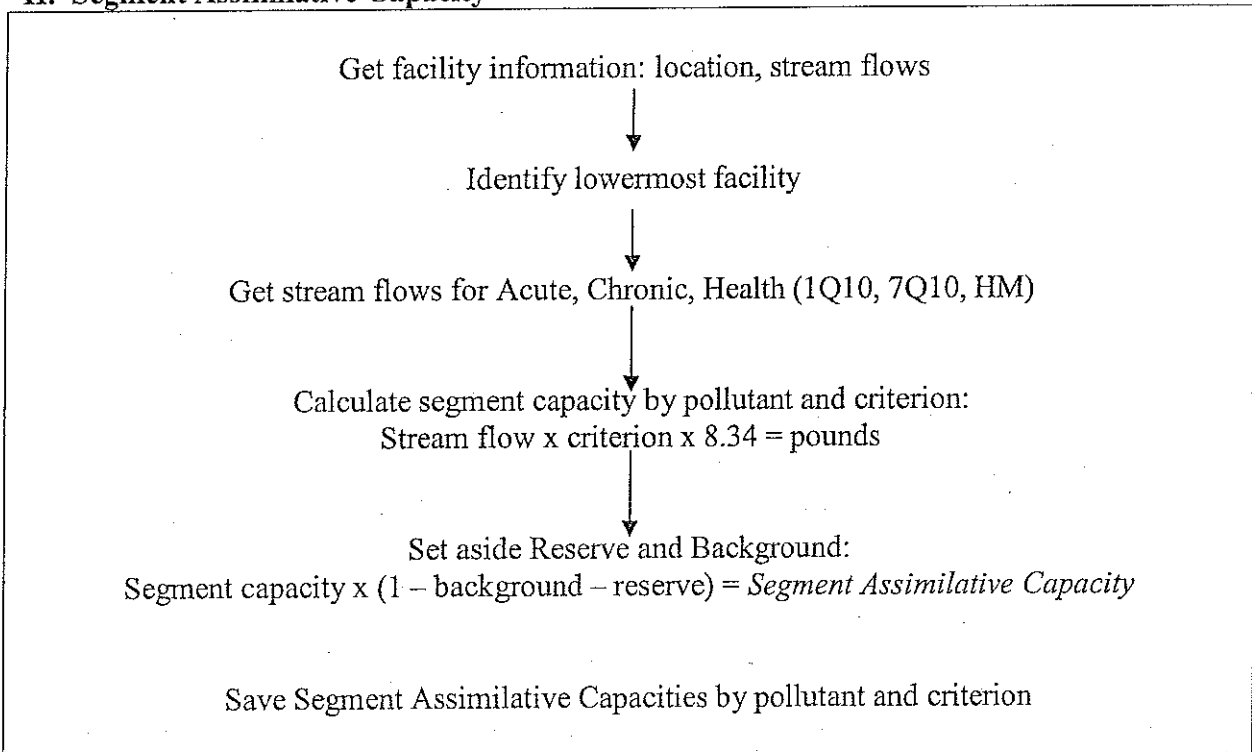
*Water quality criteria.* Standards for acceptable in-stream or ambient levels of pollutants. These are established in the Department's Chapter 584 and are expressed as concentrations in ug/L. There may be separate standards for acute and chronic protection aquatic life and/or human health. Each criterion becomes a separate standard. Different stream flows are used in the calculation of each.

Maine Department of Environmental Protection  
General Processing Steps in "DeTox"

**I. Preparation**

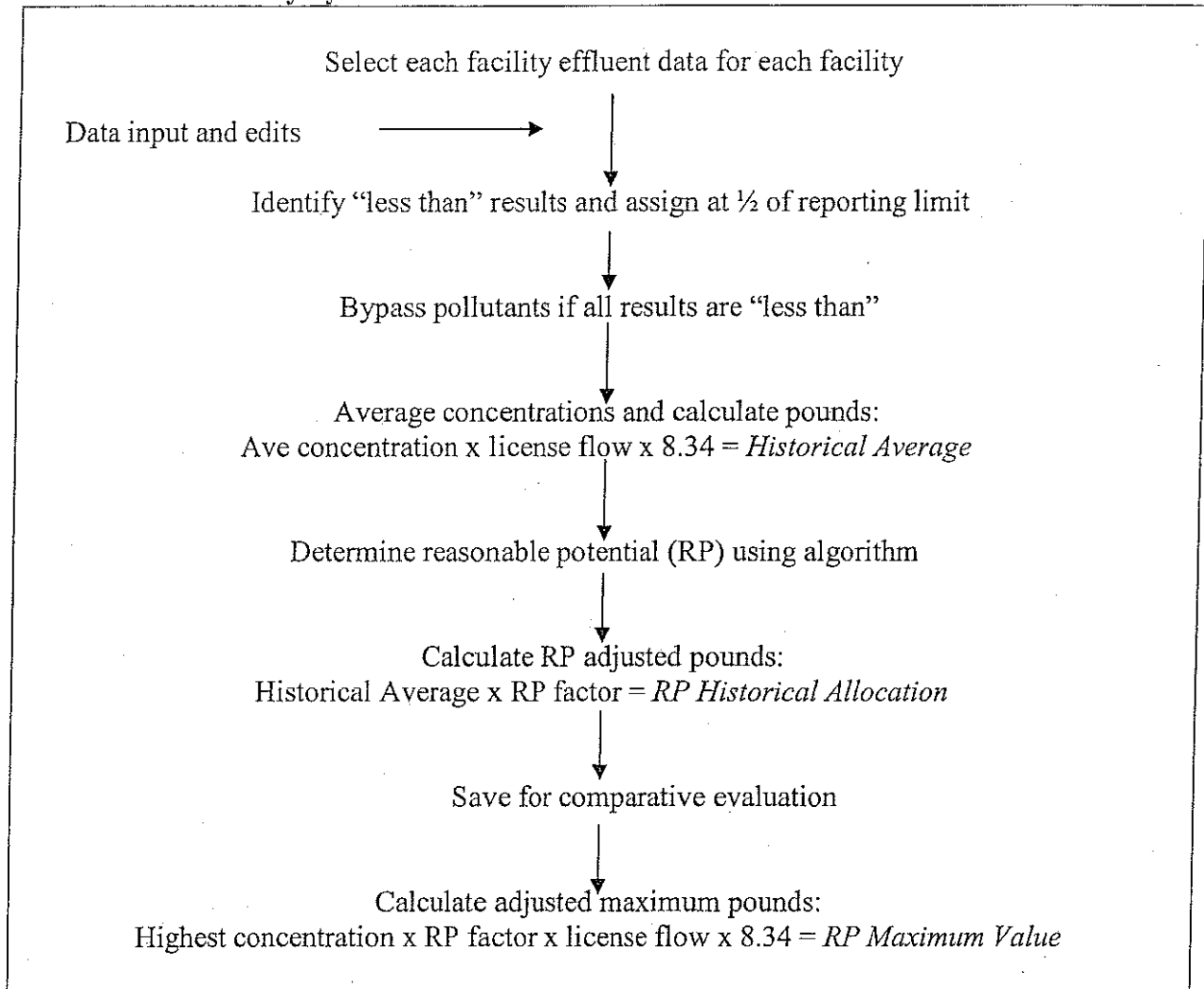


**II. Segment Assimilative Capacity**

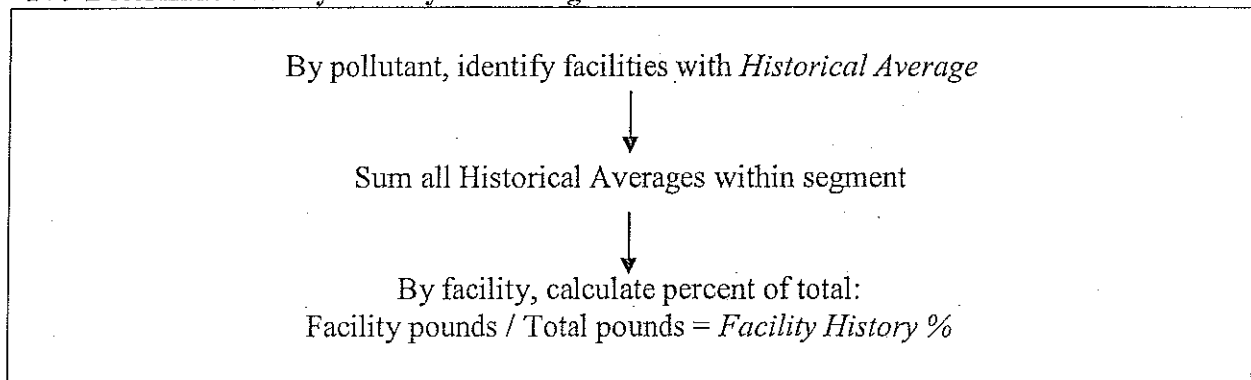


Maine Department of Environmental Protection  
General Processing Steps in "DeTox"

**III. Evaluate History by Pollutant**

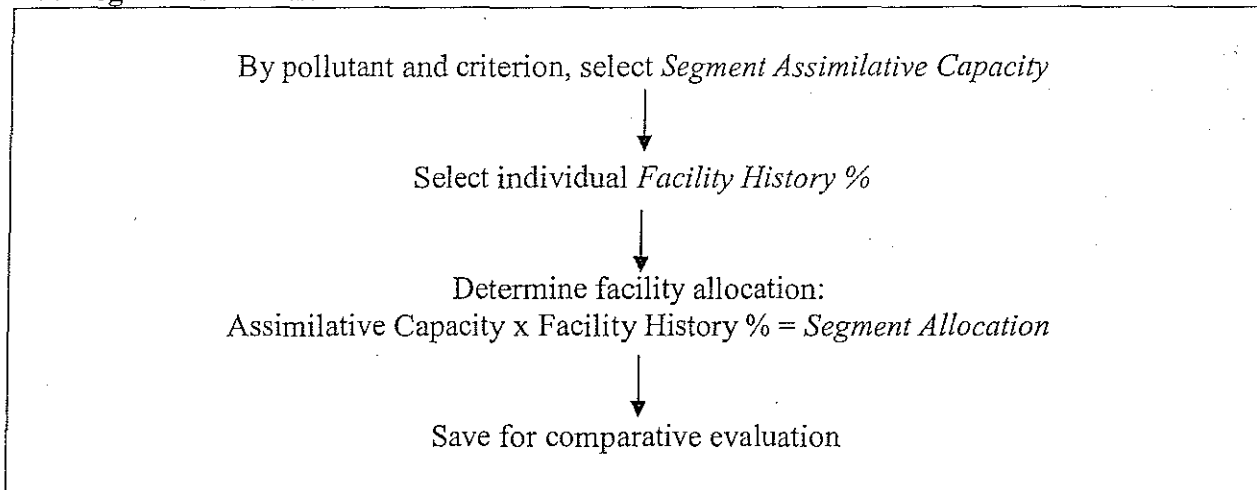


**IV. Determine Facility History Percentage**

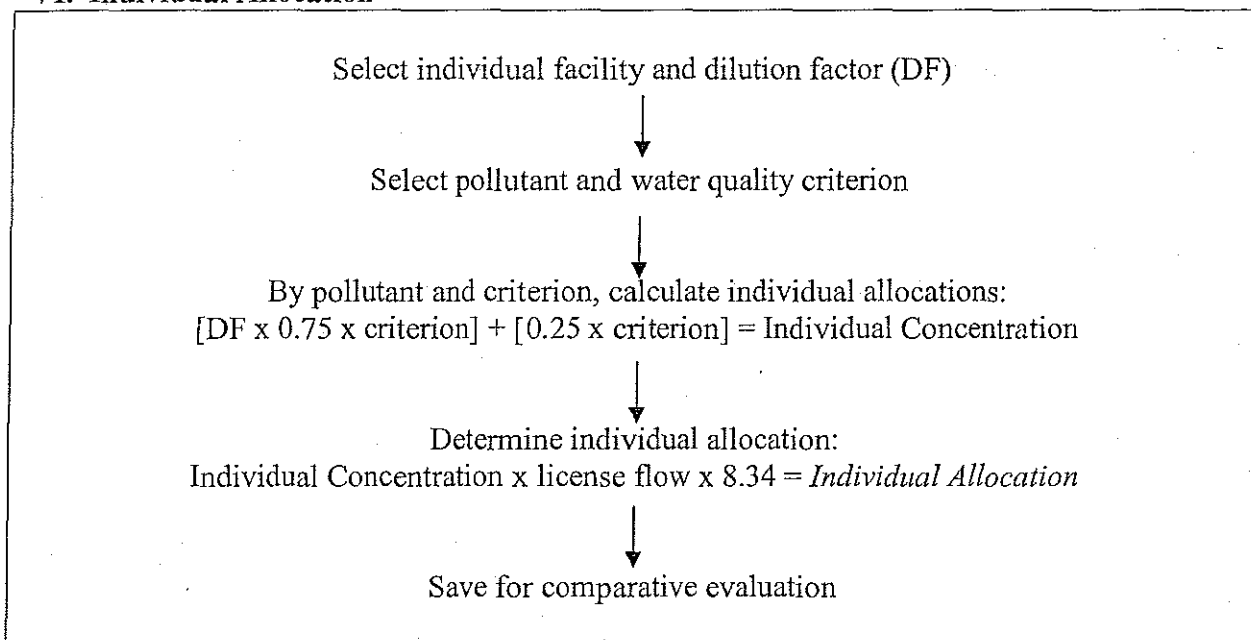


Maine Department of Environmental Protection  
General Processing Steps in "DeTox"

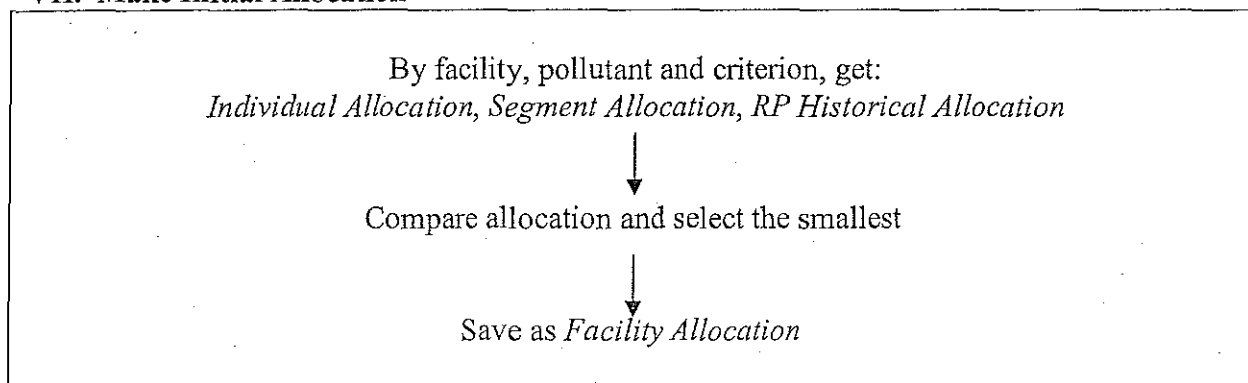
**V. Segment Allocation**



**VI. Individual Allocation**

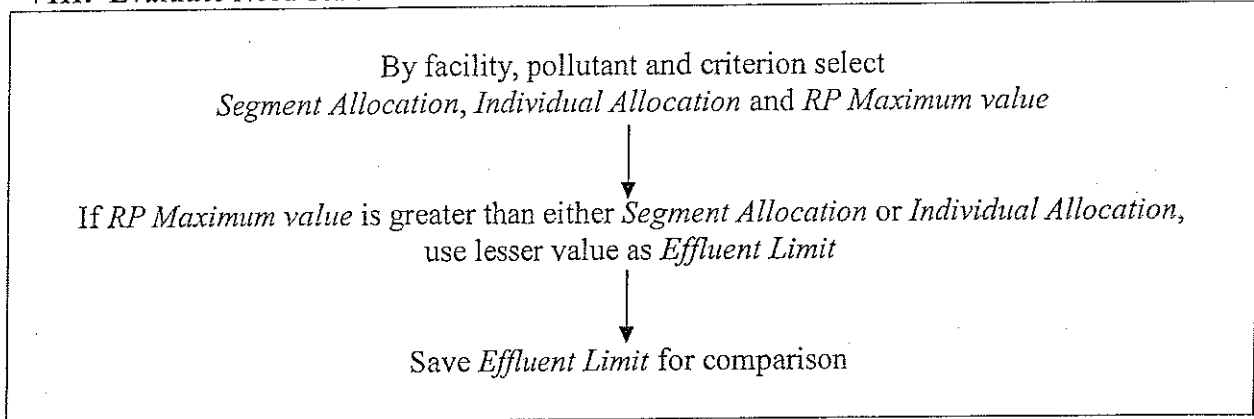


**VII. Make Initial Allocation**



Maine Department of Environmental Protection  
General Processing Steps in "DeTox"

**VIII. Evaluate Need for Effluent Limits**



**IX. Reallocation of Assimilative Capacity**

