STATE OF MAINE

Department of Environmental Protection

John Elias Baldacci
GOVERNOR

David P. Littell
COMMISSIONER

May 13, 2010

Mr. Thomas D. Gentner, P.E.
Vice President
Maine Electronics, Inc.
19 Saint Anne Street
Lisbon, ME. 04250

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0020427
Maine Waste Discharge License (WDL) #W007759-5S-E-R
Final Permit

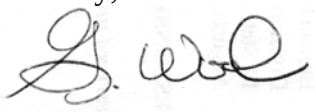
Dear Mr. Gentner:

Enclosed, please find a copy of your **final** MEPDES permit and Maine WDL which was approved by the Department of Environmental Protection. Please read the permit/license and its attached conditions carefully. You must follow the conditions in the order to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "*Appealing a Commissioner's Licensing Decision*."

If you have any questions regarding the matter, please feel free to call me at 287-7693.

Sincerely,



Gregg Wood
Division of Water Quality Management
Bureau of Land and Water Quality

Enc.
cc: Denise Behr, DEP/CMRO
Sandy Mojica, USEPA

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
17 STATE HOUSE STATION
AUGUSTA, ME 04333

DEPARTMENT ORDER

IN THE MATTER OF

MAINE ELECTRONICS INC.	)	MAINE POLLUTANT DISCHARGE
LISBON, ANDROSCOGGIN COUNTY, MAINE	)	ELIMINATION SYSTEM PERMIT
GROUND WATER REMEDIATION	)	AND
ME0020427	)	WASTE DISCHARGE LICENSE
W007759-5S-E-R **APPROVAL**	)	**RENEWAL**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, et seq. and Maine Law, 38 M.R.S.A., Section 414-A et seq., and applicable regulations, the Department of Environmental Protection (Department hereinafter) has considered the application of MAINE ELECTRONICS INC., (MEI or permittee hereinafter) with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

MEI has submitted a timely and complete application to the Department for the renewal of combination Maine Pollutant Discharge Elimination System (MEPDES) permit ME0020427/Maine Waste Discharge License (WDL) #W007759-5S-D-R, (permit hereinafter) which was issued by the Department on August 17, 2004, and expired on August 17, 2009. The permit authorized a discharge of up to a daily maximum of 79,000 gallons per day (gpd) or 0.079 million gallons per day (MGD) of treated ground water from a former electronic circuit board manufacturing complex to the Sabattus River, Class C, in Lisbon, Maine.

PERMIT SUMMARY

With the exception of dichloroethylene, this permit establishes monthly average and or daily maximum water quality based limitations for all the same parameters in the 8/17/04 permit. Some of the limitations are less stringent and some of the limitations are more stringent based on revised ambient water quality criteria (AWQC) and new permitting criteria established in a Department rules promulgated in October of 2005, subsequent to the previous permitting action.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated April 6, 2010, 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 which the Department expects to adopt in accordance with the state law.

3. The provisions of the State's antidegradation policy, 38 M.R.S.A., Section 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 water of the State constitute an outstanding national resource, that water quality will be maintained and protected;

    c. The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;

    d. Where the actual quality of any classified receiving water body 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 quality of any water body, 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 discharge will be subject to effluent limitations that require application of best practicable treatment.

ACTION

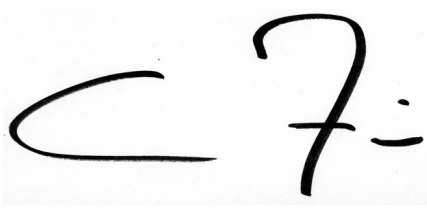
THEREFORE, the Department APPROVES the above noted application of MAINE ELECTRONICS INC., to discharge up to a daily maximum of 79,000 gallons per day (gpd) or 0.079 million gallons per day (MGD) of treated ground water to the Sabattus River, Class C, in Lisbon, Maine, and is SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

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 expires five years from the date of signature below.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES



This permit has been digitally signed by Andrew C. Fisk on behalf of Commissioner David P. Littell. It is digitally signed pursuant to authority under 10 M.R.S.A. § 9418. It has been filed with the Board of Environmental Protection as of the signature date. 2010.05.13 12:18:48 -04'00'

Date of initial receipt of application: July 16, 2009 .
Date of application acceptance: July 17, 2009 .

This order prepared by Gregg Wood, BUREAU OF LAND AND WATER QUALITY
M0020427 2010 5/13/10

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Beginning effective date of this permit, the permittee is authorized to discharge **treated ground water** from **Outfall 001** to the Sabattus River. Such discharges shall be limited and monitored by the permittee as specified below.

TIER I(1)

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow *[50050]*	66,000 gpd *[07]*	72,000 gpd *[07]*	---	---	Continuous *[99/99]*	Recorder *[RC]*
Temperature *[00011]* *June 1 – September 30*	---	---	---	70 ºF *[15]*	1/Month *[01/30]*	Grab *[GR]]*
Perchloroethylene *[34475]*	0.032 lbs/day *[26]*	---	118 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
1,1-Dichloroethane *[34496]*	3.8 lbs/day *[26]*	---	14,000 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
1,1,1 Trichloroethane *[34506]*	11 lbs/day *[26]*	---	40,000 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
Trichloroethylene *[78391]*	0.13 lbs/day *[26]*	---	474 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
Methylene Chloride *[34423]*	0.25 lbs/day *[26]*	---	920 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
Arsenic (Total) (2) *[01002]* *Beginning upon commencement of the discharge and lasting for 12 months thereafter*	0.036 lbs/day *[26]*	---	60 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
Arsenic (Total) (2) *[01002]* *Beginning 13 months after the commencement of the discharge.*	0.00029 lbs/day *[26]*	---	5 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
Arsenic (Inorganic) (3) *[01252]* *Beginning upon EPA method approval*	0.00029 lbs/day *[26]*	---	0.53 ug/L	---	1/Month *[01/30]*	Grab *[GR]*

SPECIAL CONDITIONS (cont'd)

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

TIER I[(1)]

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Cadmium (Total) *[01027]*	0.0015 lbs/day *[26]*	0.0072 lbs/day *[26]*	5.4 ug/L *[28]*	24 ug/L *[28]*	1/Month *[01/30]*	Grab *[GR]*
Chromium III *[01034]*	0.43 lbs/day *[26]*	7.8 lbs/day *[26]*	1,572 ug/L *[28]*	28,500 ug/L *[28]*	1/Month *[01/30]*	Grab *[GR]*
Copper (Total) *[01042]*	0.028 lbs/day *[26]*	0.021 lbs/day *[26]*	102 ug/L *[28]*	70 ug/L *[28]*	1/Month *[01/30]*	Grab *[GR]*
Iron (Total) *[01045]*	5.6 lbs/day *[26]*	---	20,400 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
Lead (Total) *[01051]*	0.0033 lbs/day *[26]*	0.19 lbs/day *[26]*	12 ug/L *[28]*	620 ug/L *[28]*	1/Month *[01/30]*	Grab *[GR]*
Manganese (Total) *[01055]*	2.7 lbs/day *[26]*	---	10,000 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
pH *[00400]*	---	---	---	6.0 – 8.5 S.U *[12]*	1/Month *[01/30]*	Grab *[GR]*
Analytical Chemistry[(4)] *[51168]*	---	---	---	Report ug/L *[28]*	1/Quarter *[01/90]*	Composite/ Grab *[24/GR)*

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. Beginning effective date of the permit, the permittee is authorized to discharge **treated ground water** from **Outfall 001** to the Sabattus River. Such discharges shall be limited and monitored by the permittee as specified below.

TIER II[(1)]

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow *[50050]*	72,000 gpd *[07]*	79,000 gpd *[07]*	---	---	Continuous *[99/99]*	Recorder *[RC]*
Temperature *[00011]* *June 1 – September 30*	---	---	---	70 ºF *[15]*	1/Month *[01/30]*	Grab *[GR]]*
Perchloroethylene *[34475]*	0.032 lbs/day *[26]*	---	108 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
1,1-Dichloroethane *[34496]*	3.8 lbs/day *[26]*		12,846 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
1,1,1 Trichloroethane *[34506]*	11 lbs/day *[26]*		36,700 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
Trichloroethylene *[78391]*	0.13 lbs/day *[26]*		435 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
Methylene Chloride *[34423]*	0.25 lbs/day *[26]*		844 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
Arsenic (Total) **(2)** *[01002]* *Beginning upon commencement of the discharge and lasting for 12 months thereafter*	0.036 lbs/day *[26]*	---	60 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
Arsenic (Total) **(2)** *[01002]* *Beginning 13 months after the commencement of the discharge.*	0.00029 lbs/day *[26]*	---	5 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
Arsenic (Inorganic) **(3)** *[01252]* *Beginning upon EPA method approvaL*	0.00029 lbs/day *[26]*	---	0.48 ug/L	---	1/Month *[01/30]*	Grab *[GR]*

SPECIAL CONDITIONS (cont'd)

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

TIER II[(1)]

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Cadmium (Total) *[01027]*	0.0015 lbs/day *[26]*	0.0072 lbs/day *[26]*	5 ug/L *[28]*	22 ug/L *[28]*	1/Month *[01/30]*	Grab *[GR]*
Chromium III *[01034]*	0.43 lbs/day *[26]*	7.7 lbs/day *[26]*	1,432 ug/L *[28]*	25,600 ug/L *[28]*	1/Month *[01/30]*	Grab *[GR]*
Copper (Total) *[01042]*	0.028 lbs/day *[26]*	0.021 lbs/day *[26]*	94 ug/L *[28]*	64 ug/L *[28]*	1/Month *[01/30]*	Grab *[GR]*
Iron (Total) *[01045]*	5.6 lbs/day *[26]*	---	18,600 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
Lead (Total) *[01051]*	0.0033 lbs/day *[26]*	0.18 lbs/day *[26]*	11 ug/L *[28]*	558 ug/L *[28]*	1/Month *[01/30]*	Grab *[GR]*
Manganese (Total) *[01055]*	2.8 lbs/day *[26]*	---	9,200 ug/L *[28]*	---	1/Month *[01/30]*	Grab *[GR]*
pH *[00400]*	---	---	---	6.0 – 8.5 S.U *[12]*	1/Month *[01/30]*	Grab *[GR]*
Analytical Chemistry[(4)] *[511688]*	---	---	---	Report ug/L *[28]*	1/Quarter *[01/90]*	Composite/ Grab *[24/GR)*

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd) – OUTFALL #001

SCREENING LEVEL TESTING – Beginning upon commencement of a continuous discharge (30 consecutive days or 45 days within any 12-month period) and lasting through a minimum of twelve (12) consecutive months;

Effluent Characteristic	Discharge Limitations				Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity (WET) **(5)**						
A-NOEL						
Ceriodaphnia dubia *[TDA3B]*	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Salvelinus fontinalis *[TDA6F]*	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
C-NOEL						
Ceriodaphnia dubia *[TBP3B]*	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Salvelinus fontinalis *[TBQ6F]*	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Analytical Chemistry **(4)** *[51477]*	---	---	---	Report ug/L ***[28]***	1/Quarter *[01/90]*	Composite/ Grab *[24/GR]*
Priority Pollutants **(6)** *[50008]*	---	---	---	Report ug/L *[28]*	1/Year *[01/YR]*	Composite/ Grab *[24/GR]*

SPECIAL CONDITIONS

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

Footnotes:

Sampling - Sampling and analysis must be conducted in accordance with; a) methods approved in 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 shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services. Samples that are sent to another POTW licensed pursuant to *Waste discharge licenses*, 38 M.R.S.A. § 413 or laboratory facilities that analyze compliance samples in-house are subject to the provisions and restrictions of *Maine Comprehensive and Limited Environmental Laboratory Certification Rules*, 10-144 CMR 263 (last amended February 13, 2000).

All analytical test results shall be reported to the Department including results which are detected below the respective reporting limits (RLs) specified by the Department or as specified by other approved test methods. See **Attachment A** of this permit for a list of the Department's RLs. If a non-detect analytical test result is below the respective RL, the concentration result shall be reported as <Y where Y is the detection limit achieved by the laboratory for each respective parameter. Reporting a value of <Y that is greater than an established RL is not acceptable and will be rejected by the Department. For mass, if the analytical result is reported as <Y or if a detectable result is less than a RL, report a <X lbs/day, where X is the parameter specific limitation established in the permit. See Attachment A of this permit for a list of the Department's RLs.

Sampling Location– Composite and grab sampling of the treatment plant effluent for compliance with this permit shall be conducted after the final neutralization tank but prior to the parshall flume. Any change in sampling location must be approved by the Department in writing.

1. **Tier I** - Limitations are in effect upon issuance of this permit. The permittee must formally request in writing, and receive written approval from the Department for authorization to discharge under limitations established in Tier II. Tier II limitations are not in effect until the monthly average discharge flow associated with the ground water remediation activities is >0.072 MGD for six (6) consecutive calendar months.

2. **Arsenic (Total) – Beginning upon commencement of the discharge and lasting for 12 months thereafter**, the permittee shall sample and analyze the discharge from the facility for total arsenic. The monthly average limits in this permitting action are based on a 12-month rolling average calculation.

SPECIAL CONDITIONS

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

Footnotes:

Beginning 13 months after commencement of the discharge, the permittee shall continue to sample and analyze the discharge from the facility for total arsenic. The monthly average limits are based on a 12-month rolling average calculation. The Department's most current reporting limit (RL) for total arsenic is 5 ug/L but may be subject to revision during the term of this permit. All detectable analytical test results shall be reported to the Department including results which are detected below the Department's most current RL at the time of sampling and reporting. Only the detectable results greater than or equal to the total arsenic RL of 5 ug/L or the Department's RL at the time (whichever is higher) will be considered as a possible exceedence of the water quality criteria for inorganic arsenic. If a test result is determined to be a possible exceedence, the permittee shall submit a toxicity reduction evaluation (TRE) to the Department for review and approval within 45 days of receiving the test result of concern from the laboratory.

3. **Arsenic (Inorganic)** – The limitations and monitoring requirements for inorganic arsenic are not in effect until the USEPA approves of a test method for inorganic arsenic. The monthly average limits in this permitting action are based on a 12-month rolling average calculation. See Special Condition F, *Arsenic Testing*, of this permit. Following USEPA approval of a test method for inorganic arsenic and based on recent available data, the permittee may request that the Department reopen this permit in accordance with Special Condition H, *Reopening on Permit For Modifications*, to establish a schedule of compliance for imposition of the numeric inorganic arsenic limitations. During the term of the schedule of compliance established under this section, the permit limitation for inorganic arsenic shall be monitor only.

4. **Analytical chemistry** – Pursuant to 06-096 CMR 530(2)(C)(4), Refers to a suite of chemical tests that include ammonia nitrogen (as N), total aluminum, total arsenic, total cadmium, total chromium, total copper, free cyanide (amenable to chlorination), total lead, total nickel, total silver, total zinc and total residual chlorine.

Screening level testing – **Beginning upon commencement of a continuous discharge (30 consecutive days or 45 days within any 12-month period) and lasting through a minimum of twelve (12) consecutive months**, the permittee shall conduct analytical chemistry testing at a minimum frequency of once per calendar quarter for four consecutive calendar quarters.

SPECIAL CONDITIONS

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

Footnotes:

5. **Whole effluent toxicity (WET) testing** - Definitive WET testing is a multi-concentration testing event which provides a point estimate of toxicity in terms of No Observed Effect Level, commonly referred to as NOEL or NOEC. Tests shall be conducted such that a minimum of five dilutions bracketing the critical acute and chronic dilutions of 39:1 and 45:1 respectively for Tier I, (2.6% and 2.2% respectively - mathematical inverse of the dilution factor) and 35:1 and 41:1 respectively for Tier II (2.8% and 2.4%) are performed. 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.

   Screening level testing - Beginning upon commencement of a continuous discharge (30 consecutive days or 45 days within any 12-month period) and lasting through a minimum of twelve (12) consecutive months, the permittee shall initiate screening level WET testing at a frequency of two per year. Testing shall be conducted on the water flea (*Ceriodaphnia dubia*) and the brook trout (*Salvelinus fontinalis*). Results shall be submitted to the Department within thirty (30) days of the permittee receiving the data report from the laboratory conducting the testing. See **Attachment B** of this permit for a copy of the Department's WET reporting form.

   Once the screening level of testing is completed, the Department will perform a statistical evaluation on the WET test results to determine if the discharge exceeds or has a reasonable potential to exceed the applicable acute and chronic critical ambient water quality thresholds cited in paragraph #1 of this footnote. WET testing thereafter (if necessary) will be determined by the Department and Special Condition H, *Reopening Of Permit For Modifications*, of this permit will be utilized to formally modify the permit accordingly.

   WET test results must be submitted to the Department not later than the next Discharge Monitoring Report (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 shall evaluate test results being submitted and identify to the Department possible exceedences of the critical acute and chronic water quality thresholds specified above.

SPECIAL CONDITIONS

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

Footnotes:

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.

a. Short Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002, EPA-821-R-02-013.

b. Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012.

The permittee is also required to analyze the effluent for the nine (9) parameters specified in the WET chemistry section, and the twelve (12) parameters specified in the analytical chemistry section of the form in **Attachment A** of this permit each time a WET test is performed.

6. **Priority pollutant testing** – Priority pollutants are those parameters specified at Effluent Guidelines and Standards, 06-096 CMR 525(4)(IV) (effective January 12, 2001).

Screening level testing – **Beginning upon commencement of a continuous discharge (30 consecutive days or 45 days within any 12-month period) and lasting through a minimum of twelve (12) consecutive months**, the permittee shall conduct screening level priority pollutant testing at a minimum frequency of once per year, except for those analytical chemistry parameter(s) otherwise regulated in this permit.

Surveillance level testing is not required pursuant to Department rule 06-096 CMR Chapter 530.

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

Test results must be submitted to the Department not later than the next Discharge Monitoring Report (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 shall evaluate test results being submitted and identify to the Department, possible exceedences of the acute, chronic or human health AWQC as

SPECIAL CONDITIONS

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

Footnotes:

established in *Surface Water Quality Criteria for Toxic Pollutants*, 06-096 CMR 584 (effective October 9, 2005). For the purposes of DMR reporting, enter a "1" for yes, testing done this monitoring period or "NODI-9" monitoring not required this period.

Once the screening level of chemical specific and priority pollutant testing is completed, the Department will perform a statistical evaluation on the chemical specific test results to determine if the discharge exceeds or has a reasonable potential to exceed the acute, chronic and or human health ambient water quality criteria (AWQC). Chemical specific testing thereafter (if necessary) will be determined by the Department and Special Condition H, *Reopening Of Permit For Modifications*, of this permit will be utilized to formally modify the permit accordingly.

B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated by the classification of the receiving waters.

2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated by the classification of the receiving waters.

3. The discharges shall not cause visible discoloration or turbidity in the receiving waters which would impair the usages designated by the classification of the receiving waters.

4. Notwithstanding specific conditions of this permit the effluent 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.

C. UNAUTHORIZED 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 August 17, 2009, 2) the terms and conditions of this permit; and 3) only from Outfall #001. Discharges of waste water from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5)(*Bypass*) of this permit.

SPECIAL CONDITIONS

D. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee shall notify the Department of any substantial change in the volume or character of pollutants being discharged.

E. MERCURY

All mercury sampling shall be conducted in accordance with EPA's "clean sampling techniques" found in EPA Method 1669, Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels. All mercury analysis shall be conducted in accordance with EPA Method 1631, Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry. See **Attachment C,** *Effluent Mercury Test Report*, of this permit for the Department's form for reporting mercury test results.

F. ARSENIC TESTING

Beginning upon issuance of this permit and lasting through a date on which the USEPA approves a test method for inorganic arsenic, the limitations and monitoring requirements for inorganic are not in effect. During this time frame, the permittee is required by Special Condition A, *Effluent Limitations and Monitoring Requirements*, of this permit to conduct 1/Month sampling and analysis for total arsenic.

Upon receiving written notification by the Department that a test method for inorganic arsenic has been approved by the USEPA, the limitations and monitoring requirements for inorganic arsenic become effective and enforceable and the permittee is relieved of their obligation to sample and analyze for total arsenic.

G. REOPENING OF PERMIT FOR MODIFICATIONS

Upon evaluation of the tests results or monitoring requirements specified in 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 anytime and with notice to the permittee, modify this permit to; 1) include effluent limits 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 effluent and or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

SPECIAL CONDITIONS

H. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and postmarked on or before the thirteenth (13^{th}) day of the month or hand-delivered to a Department Regional Office such that the DMR's are received by the Department on or before the fifteenth (15^{th}) day of the month following the completed reporting period. A signed copy of the DMR and all other reports required herein shall be submitted to the following address:

Department of Environmental Protection
Central Maine Regional Office
Bureau of Land and Water Quality
Division of Water Quality Management
17 Station House Station
Augusta, ME. 04333

Alternatively, if you are submitting an electronic DMR (eDMR), the completed eDMR must be electronically submitted to the Department by a facility authorized DMR Signatory not later than close of business on the 15^{th} day of the month following the completed reporting period. Hard Copy documentation submitted in support of the eDMR must be postmarked on or before the thirteenth (13^{th}) 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^{th}) day of the month following the completed reporting period. Electronic documentation in support of the eDMR must be submitted not later than close of business on the 15^{th} day of the month following the completed reporting period.

I. SEVERABILITY

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

ATTACHMENT A

Printed 1/22/2009

Maine Department of Environmental Protection
WET and Chemical Specific Data Report Form
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)		**Flow for Day (MGD)[1]**	**Flow Avg. for Month (MGD)[2]**
Acute dilution factor			
Chronic dilution factor		**Date Sample Collected**	Date Sample Analyzed
Human health dilution factor			
Criteria type: M(arine) or F(resh)			

Laboratory _____ Telephone _____
Address _____
Lab Contact _____ Lab ID # _____

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.

			Effluent Limits, %			Receiving Water or Ambient	**Effluent Concentration (ug/L or as noted)**		**Possible Exceedence [7]**		
			Acute	Chronic			WET Result, % Do not enter % sign	Reporting Limit Check	Acute	Chronic	
	WHOLE EFFLUENT TOXICITY										
	Trout - Acute										
	Trout - Chronic										
	Water Flea - Acute										
	Water Flea - Chronic										
	WET CHEMISTRY										
	pH (S.U.) (9)					(8)					
	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)					
	ANALYTICAL CHEMISTRY [3]										

	Also do these tests on the effluent with WET. Testing on the receiving water is optional	Reporting Limit	Effluent Limits, ug/L Acute[6]	Chronic[6]	Health[6]			Reporting Limit Check	**Possible Exceedence [7]** Acute	Chronic	Health
	TOTAL RESIDUAL CHLORINE (mg/L) (9)	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	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 Chemical Specific Data Report Form
This form is for reporting laboratory data and facility information. Official compliance reviews will be done by DEP.

	PRIORITY POLLUTANTS [4]										
			Effluent Limits					Reporting Limit Check	Possible Exceedence [7]		
		Reporting Limit	Acute[6]	Chronic[6]	Health[6]				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	3									
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-TRICHLOROBENZENE	5									
BN	1,2-(O)DICHLOROBENZENE	5									
BN	1,2-DIPHENYLHYDRAZINE	10									
BN	1,3-(M)DICHLOROBENZENE	5									
BN	1,4-(P)DICHLOROBENZENE	5									
BN	2,4-DINITROTOLUENE	6									
BN	2,6-DINITROTOLUENE	5									
BN	2-CHLORONAPHTHALENE	5									
BN	3,3'-DICHLOROBENZIDINE	16.5									
BN	3,4-BENZO(B)FLUORANTHENE	5									
BN	4-BROMOPHENYLPHENYL ETHER	2									
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	3									
BN	BENZO(G,H,I)PERYLENE	5									
BN	BENZO(K)FLUORANTHENE	3									
BN	BIS(2-CHLOROETHOXY)METHANE	5									
BN	BIS(2-CHLOROETHYL)ETHER	6									
BN	BIS(2-CHLOROISOPROPYL)ETHER	6									
BN	BIS(2-ETHYLHEXYL)PHTHALATE	3									
BN	BUTYLBENZYL PHTHALATE	5									
BN	CHRYSENE	3									
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									

Maine Department of Environmental Protection
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BN	FLUORANTHENE	5									
BN	FLUORENE	5									
BN	HEXACHLOROBENZENE	2									
BN	HEXACHLOROBUTADIENE	1									
BN	HEXACHLOROCYCLOPENTADIENE	10									
BN	HEXACHLOROETHANE	2									
BN	INDENO(1,2,3-CD)PYRENE	5									
BN	ISOPHORONE	5									
BN	N-NITROSODI-N-PROPYLAMINE	10									
BN	N-NITROSODIMETHYLAMINE	1									
BN	N-NITROSODIPHENYLAMINE	5									
BN	NAPHTHALENE	5									
BN	NITROBENZENE	5									
BN	PHENANTHRENE	5									
BN	PYRENE	5									
P	4,4'-DDD	0.05									
P	4,4'-DDE	0.05									
P	4,4'-DDT	0.05									
P	A-BHC	0.2									
P	A-ENDOSULFAN	0.05									
P	ALDRIN	0.15									
P	B-BHC	0.05									
P	B-ENDOSULFAN	0.05									
P	CHLORDANE	0.1									
P	D-BHC	0.05									
P	DIELDRIN	0.05									
P	ENDOSULFAN SULFATE	0.1									
P	ENDRIN	0.05									
P	ENDRIN ALDEHYDE	0.05									
P	G-BHC	0.15									
P	HEPTACHLOR	0.15									
P	HEPTACHLOR EPOXIDE	0.1									
P	PCB-1016	0.3									
P	PCB-1221	0.3									
P	PCB-1232	0.3									
P	PCB-1242	0.3									
P	PCB-1248	0.3									
P	PCB-1254	0.3									
P	PCB-1260	0.2									
P	TOXAPHENE	1									
V	1,1,1-TRICHLOROETHANE	5									
V	1,1,2,2-TETRACHLOROETHANE	7									
V	1,1,2-TRICHLOROETHANE	5									
V	1,1-DICHLOROETHANE	5									
V	1,1-DICHLOROETHYLENE (1,1-dichloroethene)	3									
V	1,2-DICHLOROETHANE	3									
V	1,2-DICHLOROPROPANE	6									
V	1,2-TRANS-DICHLOROETHYLENE (1,2-trans-dichloroethene)	5									
V	1,3-DICHLOROPROPYLENE (1,3-dichloropropene)	5									
V	2-CHLOROETHYLVINYL ETHER	20									

Maine Department of Environmental Protection
WET and Chemical Specific Data Report Form
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V	ACROLEIN	NA									
V	ACRYLONITRILE	NA									
V	BENZENE	5									
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.

(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 B

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
WHOLE EFFLUENT TOXICITY REPORT
FRESH WATERS

Facility Name _____ MEPDES Permit # _____

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 _____ (mm/dd/yy) Date Tested _____ (mm/dd/yy)

Chlorinated? _____ Dechlorinated? _____

Results	**% effluent**	
	water flea	**trout**
A-NOEL		
C-NOEL		

Effluent Limitations	
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

Maine Department of Environmental Protection

Effluent Mercury Test Report

Name of Facility: _____ Federal Permit # ME _____

Pipe # _____

Purpose of this test:
- ☐ Initial limit determination
- ☐ Compliance monitoring for: year _____ calendar quarter _____
- ☐ Supplemental or extra test

SAMPLE COLLECTION INFORMATION

Sampling Date: ___ ___ ___ (mm dd yy) Sampling time: _____ AM/PM

Sampling Location:

Weather Conditions: _____

Please describe any unusual conditions with the influent or at the facility during or preceding the time of sample collection:

Optional test - not required but recommended where possible to allow for the most meaningful evaluation of mercury results:

Suspended Solids _____ mg/L Sample type: _____ Grab (recommended) or _____ Composite

ANALYTICAL RESULT FOR EFFLUENT MERCURY

Name of Laboratory: _____

Date of analysis: _____ **Result:** _____ **ng/L (PPT)**

Please Enter Effluent Limits for your facility

Effluent Limits: **Average =** _____ ng/L **Maximum =** _____ ng/L

Please attach any remarks or comments from the laboratory that may have a bearing on the results or their interpretation. If duplicate samples were taken at the same time please report the average.

CERTIFICATION

I certifiy that to the best of my knowledge the foregoing information is correct and representative of conditions at the time of sample collection. The sample for mercury was collected and analyzed using EPA Methods 1669 (clean sampling) and 1631 (trace level analysis) in accordance with instructions from the DEP.

By: _____ Date: _____

Title: _____

PLEASE MAIL THIS FORM TO YOUR ASSIGNED INSPECTOR

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
MAINE WASTE DISCHARGE LICENSE

FACT SHEET

Date: **April 6, 2010**

PERMIT NUMBER: **ME0020427**
LICENSE NUMBER: **W007759-5S-E-R**

NAME AND ADDRESS OF APPLICANT:

MAINE ELECTRONICS, INC.
19 Saint Anne Street
Lisbon, ME. 04250

COUNTY: **Androscoggin County**

NAME AND ADRESS WHERE DISCHARGE OCCURS:

19 Saint Anne Street
Lisbon, ME. 04250

RECEIVING WATER/CLASSIFICATION: **Sabattus River/Class C**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Mr. Thomas D. Gentner, V.P.**
Mr. William Sanborn, Operator
(207) 353-8612

1. APPLICATION SUMMARY

a. Application – Maine Electronic Inc. (MEI hereinafter) has filed a timely and complete application to the Department for the renewal of combination Maine Pollutant Discharge Elimination System (MEPDES) permit ME0020247/Maine Waste Discharge License (WDL) #W007759-5S-D-R, (permit hereinafter) which was issued on by the Department on August 17, 2004, and expired on August 17, 2009. The permit approved a discharge of up to a daily maximum of 79,000 gallons per day (gpd) or 0.079 million gallons per day (MGD) of treated ground water from a former electronic circuit board manufacturing complex to the Sabattus River, Class C, in Lisbon, Maine. See **Attachment A** of this Fact Sheet for a location map for the facility.

b. Source Description: Maine Electronics manufactured circuit boards at the Lisbon facility from 1971 to 1989. In the late 1980's, ground water contamination was discovered on the Maine Electronics property and further investigation indicated that the contamination had migrated off-site and was detected in the public drinking water source on the Moody

Road. On July 29, 1991, the Department issued a Compliance Order to Maine Electronics that contained requirements to address ground water contamination, including

1. APPLICATION SUMMARY (cont'd)

investigation and remediation. The ground water investigation and remediation provisions of that Compliance Order have been largely superseded by the requirements contained in the Hazardous Waste Facility Post Closure Licenses issued by the Department, the most recent of which is O-000153-HG-C-R issued in September of calendar year 2003.

In June of 1991, Woodard and Curran, on behalf of Maine Electronics, submitted an application to the Department for a waste discharge license for the pump and treat remediation project.

On April 3, 1993, the EPA issued a NPDES permit exclusion, pursuant to 40 CFR, 122.3(d), authorizing the discharge for a pilot test of the recovery and treatment system. The permit exclusion specified a flow limitation of fifty-five (55) gallons per minute and established concentration limitations for specific elements and compounds expected to be present in the discharge from the treatment system. The permit exclusion was in effect until the EPA issued the NPDES permit on August 9, 1994.

On June 3, 1993, Maine Electronics received approval from the Department for the start-up and operation of the remedial pump and treat system over a short-term pilot test period. Maine Electronics had requested the pilot test operation in order to collect operational and treatability data to evaluate the long-term treatment requirements for the remediation of the ground water. During operation, influent and effluent water quality samples were collected for laboratory analysis and subsequently reported to EPA and Department. In addition, Maine Electronics engaged a firm to conduct one set of whole effluent toxicity (WET) tests (acute and chronic testing on vertebrate and invertebrate species) utilizing the treated effluent. Priority pollutant testing was conducted on an additional sample of effluent collected at the same time as the sample for WET testing. At the completion of the pilot test period in October 1993, Maine Electronics considered whether to continue operating the system or shut it down until the appropriate State WDL and federal NPDES permit were issued. Maine Electronics chose to suspend operation of the system in order to avoid an exceedence of the concentration limitations established in the EPA permit exclusion.

Based on the results of the pilot test operation, it became apparent in discussions between Maine Electronics and the Department that the issuance of a WDL would require the development of a site specific criterion for arsenic or the development of a new treatment technology for arsenic. In the absence of a State toxicologist in 1993, the Department obtained the services of a toxicologist in the State's Department of Agriculture. After a review of up-to-date scientific literature on the components that are factored into the equation for establishing water quality criteria that is protective of human health, the toxicologist rendered a decision on an interim effluent limitation for arsenic. The interim limitation for arsenic permitted Maine Electronics to continue operating the pump and

treat system, remediate ground water on-site and remove a potential threat to the adjacent aquifer that supplies water to the municipal well located at Moody Road while a site

1. APPLICATION SUMMARY (cont'd)

specific criterion or new treatment technology for arsenic were developed. Additional water quality data collected during the term of the license would provide further insight into the occurrence and variation of arsenic levels over time and aid in the toxicological assessment for the long term discharge.

c. Waste Water Treatment: The ground water treatment system consists of air stripping to remove volatile organic compounds (VOCs). Periodically, the air stripper is cleaned to maintain air-water flow conditions at optimum performance levels. The cleaning with a weak acid removes inorganics that precipitate out on the interior surfaces of the air stripper. Residue collected as a result of cleaning the air stripper media is properly disposed of in accordance with federal and State regulations. In addition to treating for VOCs, Maine Electronic has designed and constructed an arsenic treatment system in which a combination reverse osmosis and micro-filtration treatment system is believed to be able to reduce the levels of arsenic to meet the final water quality based limitations specified in this permit. The Department has made the determination the arsenic treatment system is the best available technology economically achievable (BAT) at this time. For a more detailed description and schematics of the waste water treatment facility, see **Attachment B** of this Fact Sheet. It is noted the permittee has not operated the arsenic treatment system at full scale so its level of performance in treating for arsenic is still unknown. After passing through the air stripper and arsenic treatment system, the treated ground water will be discharged to the Sabattus River via a concrete pipe measuring 18 inches in diameter that extends three to four feet out into the river.

It is noted the permittee has not discharged to the Sabattus River as of the date of this permitting action as the waste water generated to date has been conveyed to the Town of Lisbon's publicly owned treatment works. The permittee has requested to retain a permit to discharge to the Sabattus River due to clauses in a document entitled, Agreement For Sewer Use, Town of Lisbon Industrial Waste Water Discharge Permit #70799, dated July 7, 1994 and subsequently renewed several times with an expiration date of December 31, 2010. Under the agreement, the Town of Lisbon may unilaterally modify, suspend or revoke the aforementioned local permit if conditions warrant such action. Should the Town of Lisbon revoke the local permit and a discharge to the Sabattus River is realized, the terms and conditions of this MEPDES permit become effectively immediately.

2. PERMIT SUMMARY

With the exception of dichloroethylene, this permit establishes monthly average and or daily maximum water quality based limitations for all the same parameters in the 8/17/04 permit. Some of the limitations are less stringent and some of the limitations are more stringent based on revised ambient water quality criteria (AWQC) and new permitting criteria established in a Department rule promulgated subsequent to the previous permitting action

3. CONDITIONS OF PERMITS

Maine law, 38 M.R.S.A. Section 414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require 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, 38 M.R.S.A., Section 420 and Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program,* require the regulation of toxic substances not to exceed levels set forth in Department rule 06-096 CMR Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants,* and that ensure safe levels for the discharge of toxic pollutants.

5. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S.A., Section 467(4)(H)(2)(c) classifies the Sabattus River as a Class C waterway. Maine law 38 M.R.S.A., Section 465(4) describes the classification standards for Class C waterways.

6. RECEIVING WATER CONDITIONS

An 11.41-mile Class C segment of Sabattus River is listed in a table entitled, *Category 5-A: Rivers And Streams Impaired By Pollutants Other Than Those Listed In 5-B Through 5-D (TMDL Required)* in a document entitled The 2008 Integrated Water Quality Monitoring and Assessment Report, published by the Department. The table states that macro-invertebrate data collected by the Department indicates aquatic life standards are impaired. The impairment is due to insufficient dissolved oxygen and excessive nutrient loading due to Sabattus Lake's eutrophic state and point and non-point source loadings from the municipal waste water treatment facility and agricultural runoff. The Department collected additional ambient water quality data during the summer of calendar year 2002 to supplement a data set collected in August of calendar year 2000. To address the aforementioned water quality issues, the Department is required to prepare a Total Maximum Daily Load (TMDL) report for review and approval by the EPA. The Department has not completed the TMDL as of the date of this permitting action.

Given the nature of the discharge from the Maine Electronics facility (ground water), the Department has made a determination that the discharge will not cause or contribute to the failure of the Sabattus River to meet the standards of its assigned classification.

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

a. Flow: The previous permitting action established monthly average and daily maximum flow limitations of 0.066 MGD and 0.072 MGD respectively for Tier I and monthly average and daily maximum flow limitations of 0.072 MGD and 0.079 MGD respectively, for Tier II. All four flow limitations are being carried forward in this permitting action.

b. Temperature - Department regulation Chapter 582 – *Regulations Relating to Temperature*, states that no discharge shall cause the ambient temperature of any freshwater body such as a stream or river, as measured outside a mixing zone, to be raised more than 5°F. The regulation also limits a discharger to an in-stream temperature increase (ΔT) of 0.5° F above the ambient receiving water temperature when the weekly average temperature of the receiving water is greater than or equal to 66° F or when the daily maximum temperature is greater than or equal to 73° F. The temperature thresholds are based on EPA water quality criterion for the protection of brook trout and Atlantic salmon (both species indigenous to the Sabattus River). The weekly average temperature of 66° F was derived to protect for the growth of the brook trout and the daily maximum threshold temperature of 73° F protects for the survival of juveniles and adult Atlantic salmon during the summer months. As a point of clarification, the Department interprets the term "weekly average temperature" to mean a seven (7) day rolling average.

To promote consistency, the Department also interprets the ΔT of 0.5° F as a weekly rolling average criteria when the receiving water temperature is $\geq$66° F and <73° F. When the receiving water is $\geq$73°F the ΔT of 0.5° F is a daily criteria. The Department has determined that the 7Q10 low flow for the Sabattus River is 4.5 cfs or 1.62 MGD based on the required minimum low flow release from Sabattus Lake and low flow data collected by the Department in calendar year 2002.

This permitting action is carrying forward the seasonal (summer - June 1 through September 30) daily maximum temperature limitation of 70°F established in the previous licensing actions as it has been determined to be representative of the daily maximum temperature of the discharge during the summer months.

The Department has determined that these limitations are well within the criteria established in Chapter 582 as the maximum temperature increase in the receiving water during the critical time of the year (June 1 – September 30) is 0.11° F. This determination is based on the assumption that the discharge is at the Tier II daily maximum discharge flow limit of 0.079 MGD, the daily maximum discharge temperature limit of 70° F, the receiving water flow at the 1Q10 critical low flow of 4.2 cfs (2.71 MGD) and the receiving water is at the critical threshold of 66° F. The calculation is as follows:

$$\frac{(70° F)(0.079 \text{ MGD}) + (66° F)(2.71 \text{ MGD})}{(0.079 \text{ MGD}) + (2.71 \text{ MGD})} = 66.11° F$$

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

c. Dilution Factors - The Department establishes applicable dilution factors for discharges in accordance with freshwater protocols established in Department Rule Chapter 530, *Surface Water Toxics Control Program*, October 2005. With a monthly average and daily maximum permit flow limits of 0.066 MGD and 0.072 MGD for Tier I and 0.072 MGD and 0.079 MGD for Tier II respectively, and critical receiving water low flow values of 4.2 cfs[(1)] (1Q10), 4.5 cfs[(1)] (7Q10) and 13.5 cfs[(2)] (harmonic mean) the dilution factors are as follows:

Tier I

Acute: 1Q10 = 4.2 cfs $\Rightarrow \frac{(4.2 \text{ cfs})(0.6464) + (0.072 \text{ MGD})}{(0.072 \text{ MGD})} = 39:1$

Chronic: 7Q10 = 4.5 cfs $\Rightarrow \frac{(4.5 \text{ cfs})(0.6464) + (0.066 \text{ MGD})}{(0.066 \text{ MGD})} = 45:1$

Harmonic Mean: = 13.5 cfs $\Rightarrow \frac{(13.5 \text{ cfs})(0.6464) + (0.066 \text{ MGD})}{(0.066 \text{ MGD})} = 133:1$

Tier II

Acute: 1Q10 = 4.2 cfs $\Rightarrow \frac{(4.2 \text{ cfs})(0.6464) + (0.079 \text{ MGD})}{(0.079 \text{ MGD})} = 35:1$

Chronic: 7Q10 = 4.5 cfs $\Rightarrow \frac{(4.5 \text{ cfs})(0.6464) + (0.072 \text{ MGD})}{(0.072 \text{ MGD})} = 41:1$

Harmonic Mean: = 13.5 cfs $\Rightarrow \frac{(13.5 \text{ cfs})(0.6464) + (0.072 \text{ MGD})}{(0.072 \text{ MGD})} = 122:1$

Footnotes:

1) The 7Q10 and 1Q10 critical low flow values for the Sabattus River take into consideration the minimum low flow requirements in the April 16, 2001 Water Level Order approved for Sabattus Lake by the Sabattus Lake Dam Commission and low flow data for the Sabattus River collected by the Department in calendar year 2002.

2) The harmonic mean dilution factor is approximated by multiplying the chronic dilution factor by three (3). This multiplying factor is based on guidelines for estimation of human health dilution presented in the USEPA publication Technical Support Document for Water Quality-Based Toxics Control (Office of Water; EPA/505/2-90-001, page 88), and represents an estimation of harmonic mean flow.

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

d. Whole effluent toxicity (WET) testing - 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 invertebrate and vertebrate species. Priority pollutant and analytical chemistry testing is required to assess the levels of individual toxic pollutants in the discharge, comparing each pollutant to acute, chronic, and human health AWQC as established in Chapter 584.

Chapter 530 establishes four categories of testing requirements based predominately on the chronic dilution factor. The categories are as follows:

1) Level I – chronic dilution factor of <20:1.
2) Level II – chronic dilution factor of ≥20:1 but <100:1.
3) Level III – chronic dilution factor ≥100:1 but <500:1 or >500:1 and Q ≥1.0 MGD
4) Level IV – chronic dilution >500:1 and Q ≤1.0 MGD

Department rule Chapter 530 (1)(D) specifies the criteria to be used in determining the minimum monitoring frequency requirements for WET, priority pollutant and analytical chemistry testing. Based on the Chapter 530 criteria, the permittee's facility falls into the Level II frequency category as the facility has a chronic dilution factor of >20:1 but <100:1. Chapter 530(1)(D)(1) specifies that default screening and surveillance level testing requirements are as follows:

Screening level testing – Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter.

Level	WET Testing	Priority pollutant testing	Analytical chemistry
II	2 per year	1 per year	4 per year

Surveillance level testing – Beginning upon issuance of the permit and lasting through 12 months prior to permit expiration.

Level	WET Testing	Priority pollutant testing	Analytical chemistry
II	1 per year	None required	2 per year

Special Condition A, *Effluent Limitations and Monitoring Requirements*, of this permit requires the permittee to commence WET testing beginning upon commencement of a continuous discharge (30 consecutive days or 45 days within any 12-month period) and lasting through a minimum of twelve (12) consecutive months. Once the screening level of testing is completed, the Department will perform a statistical evaluation on the WET test results to determine if the discharge exceeds or has a reasonable potential to exceed the applicable acute and chronic critical ambient water quality thresholds of 2.6% and 2.2% respectively for Tier I and 2.8% and 2.4% respectively for Tier II. If necessary, this

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

permit may be reopened pursuant to Special Condition H, *Reopening of Permit For Modifications*, to establish applicable limitations and or additional monitoring requirements.

e. Chemical specific testing - Parameters that have been limited by this permit and the previous permit have been previously identified or expected to be present in the treated ground water. The compounds were identified in the October 1994 waste discharge license application and subsequent correspondence submitted to the Department by the permittee, as well as the State Compliance Order issued in 1991.

Maine Law, 38 M.R.S.A, Sections 414-A and 420, Maine Rules Chapter 523(5)(d)(i), prohibit the discharge of effluents containing substances in amounts which would cause the surface waters of the State to contain toxic substance above levels set forth in federal ambient water quality criteria (AWQC) as established by the U.S. EPA. Accordingly, the discharge is subject to effluent monitoring requirements pursuant to Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, and ambient water quality criteria (AWQC) established in Department rule 06-096 CMR Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, that ensure safe levels for the discharge of toxic pollutants.

Chapter 584 requires a risk level of (10^{-6}) be utilized in determining the human health criteria for toxic pollutants believed to be carcinogenic. Permit limitations based on human health criteria have been calculated utilizing an AWQC associated with the consumption of water and organisms from the receiving water, as one of the designated uses of the Sabattus River include *"…a drinking water supply after treatment, fishing...."*

The EPA, Technical Support Document for Water Quality Based Toxics Control, March 1991, recommends the harmonic mean river flow be used in calculating limitations for carcinogens. If there is insufficient data to calculate the harmonic flow of the river, permit writers are authorized to utilize a flow that is three (3) times the 7Q10 flow. The 7Q10 is defined as the lowest observed seven (7) consecutive days of flow recorded over a ten (10) year reoccurrence interval.

Limitations for non-carcinogenic constituents were established to protect the aquatic community from acute and chronic effects of the discharge. Maximum daily limits are based on the maximum daily flow limitation (0.072 MGD for Tier I and 0.079 MGD for Tier II) from the facility, the 1Q10 river flow (lowest observed one (1) day flow recorded over a ten (10) year reoccurrence interval) and the criteria maximum concentration (CMC - acute). The monthly average limitations are based on the monthly average flow limitation (0.066 MGD for Tier I and 0.072 MGD for Tier II) from the facility, the 7Q10 river flow and the criteria continuous concentration (CCC - chronic). For parameters without an established CMC and or CCC, the next most stringent criteria, maximum

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

contamination levels (MCL) were utilized to derive the effluent limitation. In the absence of a CMC, CCC or MCL the State's human health maximum exposure guidelines (MEG) July 28, 2008, that utilizes a risk level of (10^{-5}) and a harmonic mean river flow were used to derive monthly average limitations.

The Fact Sheet of the 8/17/04 permit contained the following text "*The mass and concentration limits calculated for the VOCs in this Fact Sheet are less stringent than the previous State WDL issued on February 2, 1999 and the federal NPDES issued by the EPA on August 5, 1994. The Fact Sheet attached to the 8/5/94 NPDES permit states that the calculated end-of-pipe mass and concentration limits "…have been reduced by 80% so that the permitted discharge utilizes no more 20% of the total maximum daily load allowable in the Sabattus River." This methodology for establishing permit limits originated with a mid-1980's Department practice of limiting new or increased discharges to not consuming more than 20% of the remaining assimilative capacity of a receiving water. The intent was to always reserve a portion of the remaining assimilative capacity for future discharges. It remains Department practice to consider any discharge that consumes 20% or more of the remaining assimilative capacity of a receiving water to be a significant lowering of water quality under the State's antidegradation policy described more fully below."*

Chapter 530 (promulgated on October 12, 2005) §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 Sabattus 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."* Therefore, the Department is reserving 15% of the applicable water quality criteria in the calculations of this permitting action.

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Due to the Chapter 530 criteria regarding withholding 10% of the assimilative capacity of the receiving water for background and 15% of the assimilative capacity for reserve, this permitting action is not carrying forward the additional withholding of 20% of the assimilative capacity as this would be considered "double counting" the withholdings.

Chapter 530 §(3)(E) states *"... 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."*

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 previous permitting action established monthly average and or daily maximum mass limits for the volatile organic compounds based on allocating 100% of the assimilative capacity of the Sabattus River and established monthly average and or daily maximum mass limits for metals based on allocating 20% of the assimilative capacity of the Sabattus River. Pursuant to Chapter 530, this permitting action is establishing the

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

monthly average and daily maximum water quality based mass limitations for all parameters based on 75% of the assimilative capacity of the Sabattus River or something less taking into consideration the discharge of toxic pollutants of concern being discharged from the Sabattus Sanitary District's waste water treatment facility located approximately 5 miles upstream of the MEI facility.

The Sabattus River is a tributary to the Androscoggin River. One municipal waste water treatment facility that is subject to the Department's Chapter 530 testing requirements discharges to the Sabattus River. The waste water treatment facility is the Sabattus Sanitary District located approximately 5 miles upstream from the MEI facility. As previously cited, Chapter 530 requires that AWQC must be met at the confluence of the Sabattus River and the Androscoggin River as well as at the individual discharge points on the Sabattus River after taking into consideration historic discharge levels for the two facilities as well as an allocation dedicated to background (10% of AWQC) and a reserve (15% of AWQC).

See **Attachment C** of this Fact Sheet Based on Department guidance that establishes protocols for establishing waste load allocations. The guidance states that the most protective of water quality becomes the facility's allocation.

Volatile Organic Compounds (VOCs)

Based on the fact the volatile organic compounds regulated by this permit and the last permitting action are unique to this discharge, the Department is utilizing the individual allocation method for determining limitations in this permit. The monthly average limitations for VOCs in this permitting action were derived utilizing the following equation.

EOP concentration = [Dilution factor x 0.75 x AWQC in ug/L] + [0.25 x AWQC in ug/L]

$$\text{Mass limit} = \frac{(\text{EOP concentration in ug/L})(8.34 \text{ lbs/gal})(\text{Permit flow limit in MGD})}{1000 \text{ ug/mg}}$$

f. Perchloroethylene (Tetrachloroethylene) – The 8/17/04 permitting action established water quality based monthly average mass and concentration limits as follows:

Tier I	Mass: 0.058 lbs/day	Concentration: 106 ug/L
Tier II	Mass: 0.058 lbs/day	Concentration: 98 ug/L

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

The limits were based on the human health AWQC of 0.8 ug/L (associated with the consumption of water and organisms), the harmonic mean dilution factor of 133:1 (Tier I) and 122:1 (Tier II) and the monthly average permit flow limit of 0.066 MGD (Tier I) and 0.072 MGD (Tier II). The mass limitations for perchloroethylene (tetrachloroethylene) in the 8/17/04 permit were derived as follows:

Tier I
Concentration: (0.8 ug/L)(133) = 106 ug/L

Mass: $\frac{(106 \text{ ug/L})(8.34)(0.066 \text{ MGD})}{1000 \text{ ug/mg}} = 0.058$ lbs/day

Tier II
Concentration: (0.8 ug/L)(122) = 98 ug/L

Mass: $\frac{(98 \text{ ug/L})(8.34)(0.072 \text{ MGD})}{1000 \text{ ug/mg}} = 0.058$ lbs/day

Department rule Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, promulgated on October 12, 2005 (subsequent to the previous permitting action) adopted a more stringent human health criteria of 0.59 ug/L. Based on the new AWQC and the new individual allocation methodology for establishing limits in permits, new water quality based mass limitations for perchloroethylene in this permitting action were derived as follows:

Tier I
EOP concentration: (133)(0.75)(0.59 ug/L) + (0.25)(0.59 ug/L) = 59 ug/L

Mass: $\frac{(59 \text{ ug/L})(8.34)(0.066 \text{ MGD})}{1000 \text{ ug/mg}} = 0.032$ lbs/day

Tier II
Concentration(122)(0.75)(0.59 ug/L) + (0.25)(0.59 ug/L) = 54 ug/L

Mass: $\frac{(54 \text{ ug/L})(8.34)(0.072 \text{ MGD})}{1,000 \text{ ug/mg}} = 0.032$ lbs/day

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Volatile Organic Compounds (VOCs)

As for concentration, 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.*"

Since the adoption of Chapter 530, the Department has a developed a policy by which to establish equitable concentration limits in permits that are greater than calculated end-of-pipe concentrations. In general, most dischargers subject to the Chapter 530 testing requirements are discharging at or about 50% of the flow limitations established in their permits. This provides the Department with the flexibility to establish higher concentration limits in the permit while still maintaining compliance with the water quality based mass limitations. With an actual discharge flow at ½ (0.5) of permitted flow rate, a concentration limit of two times (mathematical inverse of 0.5) the calculated end-of-pipe concentration, will maintain compliance with water quality based mass limits. Therefore, this permitting action is establishing concentration limitations that are two (2) times higher than the calculated end-of-pipe concentrations. The permittee must keep in mind, if flows greater than 50% of the permitted flow are realized, the concentration in the effluent must be reduced proportional to maintain compliance with the mass limitations.

Concentration limitations for perchloroethylene in this permitting action were derived as follows;

Tier I
Permit concentration limit: (59 ug/L)(2.0) = 118 ug/L

Tier II
Permit concentration limit: (54 ug/L)(2.0) = 108 ug/L

g. Dichloroethylene – The 8/17/04 permitting action established water quality based monthly average mass and concentration limits as follows:

Tier I	Mass: 0.0042 lbs/day	Concentration: 7.6 ug/L
Tier II	Mass: 0.0042 lbs/day	Concentration: 7.0 ug/L

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Volatile Organic Compounds (VOCs)

The water quality based monthly average mass and concentration limits were established based on the human health AWQC of 0.057 ug/L (associated with the consumption of water and organisms), the harmonic mean dilution factor of 133:1 (Tier I) and 122:1 (Tier II) and the monthly average permit flow limit of 0.066 MGD (Tier I) and 0.072 MGD (Tier II). The mass limitations for dichloroethylene) in the 8/17/04 permit were derived as follows:

Tier I
Concentration: (0.057 ug/L)(133) = 7.6 ug/L

Mass: $\frac{(7.6 \text{ ug/L})(8.34)(0.066 \text{ MGD})}{1000 \text{ ug/mg}}$ = 0.0042 lbs/day

Tier II
Concentration: (0.057 ug/L)(122) = 7.0 ug/L

Mass: $\frac{(7.0 \text{ ug/L})(8.34)(0.072 \text{ MGD})}{1000 \text{ ug/mg}}$ = 0.0042 lbs/day

Chapter 584 adopted on October 12, 2005 did not establish AWQC for dichloroethylene. Therefore, this permitting action is eliminating water quality based limitations for dichloroethylene.

h. 1,1 Dichloroethane – The 8/17/04 permitting action established water quality based monthly average mass and concentration limits as follows:

Tier I	Mass: 5.1 lbs/day	Concentration: 9.3 mg/L
Tier II	Mass: 5.1 lbs/day	Concentration: 8.5 mg/L

The limits were based on the State of Maine's January 2000 MEG of 70 ug/L, the harmonic mean dilution factor of 133:1 (Tier I) and 122:1 (Tier II) and the monthly average permit flow limit of 0.066 MGD (Tier I) and 0.072 MGD (Tier II). The mass limitations for 1,1 dichloroethane in the 8/17/04 permit were derived as follows:

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Volatile Organic Compounds (VOCs)

Tier I
Concentration: (70 ug/L)(133) = 9,300 ug/L or 9.3 mg/L

Mass: (9.3 mg/L)(8.34)(0.066 MGD) = 5.1 lbs/day

Tier II
Concentration: (70 ug/L)(122) = 8,500 ug/L or 8.5 mg/L

Mass: (8.5 mg/L)(8.34)(0.072 MGD) = 5.1 lbs/day

The MEG's were modified on July 28, 2008 but the interim MEG for 1,1 dichloroethane remained at 70 ug/L. Therefore, mass limitations for 1,1 dichloroethane in this permitting action were derived as follows:

Tier I
EOP concentration: (133)(0.75)(70 ug/L) + (0.25)(70 ug/L) = 7,000 ug/L

Mass: $\frac{(7{,}000 \text{ ug/L})(8.34)(0.066 \text{ MGD})}{1{,}000 \text{ ug/mg}}$ = 3.8 lbs/day

Tier II
Concentration(122)(0.75)(70 ug/L) + (0.25)(70 ug/L) = 6,423 ug/L

Mass: $\frac{(6{,}423 \text{ ug/L})(8.34)(0.072 \text{ MGD})}{1000 \text{ ug/mg}}$ = 3.8 lbs/day

Concentration limitations for 1,1 dichloroethane in this permitting action were derived as follows;

Tier I
Permit concentration limit: (7,000 ug/L)(2.0) = 14,000 ug/L

Tier II
Permit concentration limit: (6,423 ug/L)(2.0) = 12,846 ug/L

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Volatile Organic Compounds (VOCs)

i. 1,1,1 Trichloroethane – The 8/17/04 permitting action established water quality based monthly average mass and concentration limits as follows:

Tier I	Mass: 15 lbs/day	Concentration: 27 mg/L
Tier II	Mass: 15 lbs/day	Concentration: 24 mg/L

The limits were based on the State of Maine's January 2000 MEG of 200 ug/L, the harmonic mean dilution factor of 133:1 (Tier I) and 122:1 (Tier II) and the monthly average permit flow limit of 0.066 MGD (Tier I) and 0.072 MGD (Tier II). The mass limitations for 1,1,1 trichloroethane in the 8/17/04 permit were derived as follows:

Tier I
Concentration: (200 ug/L)(133) = 26.6 mg/L

Mass: (26.6 mg/L)(8.34)(0.066 MGD) = 14.6 lbs/day

Tier II
Concentration: (200 ug/L)(122) = 24.4 mg/L

Mass: (24.4 mg/L)(8.34)(0.072 MGD) = 14.6 lbs/day

The MEG's were modified on July 28, 2008 but the interim MEG for 1,1,1 trichloroethane remained at 200 ug/L. Therefore, mass limitations for 1,1,1 trichloroethane in this permitting action were derived as follows:

Tier I
EOP concentration: (133)(0.75)(200 ug/L) + (0.25)(200 ug/L) = 20,000 ug/L

Mass: $\frac{(20{,}000 \text{ ug/L})(8.34)(0.066 \text{ MGD})}{1{,}000 \text{ ug/mg}}$ = 11 lbs/day

Tier II
EOP concentration: (122)(0.75)(200 ug/L) + (0.25)(200 ug/L) = 18,350 ug/L

Mass: $\frac{(18{,}350 \text{ ug/L})(8.34)(0.072 \text{ MGD})}{1{,}000 \text{ ug/mg}}$ = 11 lbs/day

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Volatile Organic Compounds (VOCs)

Concentration limitations for 1,1,1 trichloroethane in this permitting action were derived as follows;

Tier I
Permit concentration limit: (20,000 ug/L)(2.0) = 40,000 ug/L

Tier II
Permit concentration limit: (18,350 ug/L)(2.0) = 36,700 ug/L

j. Trichloroethylene – The 8/17/04 permitting action established water quality based monthly average mass and concentration limits as follows:

Tier I	Mass: 0.2 lbs/day	Concentration: 359 ug/L
Tier II	Mass: 0.2 lbs/day	Concentration: 329 ug/L

The limits were established based on the human health AWQC of 2.7 ug/L (associated with the consumption of water and organisms), the harmonic mean dilution factor of 133:1 (Tier I) and 122:1 (Tier II) and the monthly average permit flow limit of 0.066 MGD (Tier I) and 0.072 MGD (Tier II). The mass limitations for trichloroethylene in the 8/17/04 permit were derived as follows:

Tier I
Concentration: (2.7 ug/L)(133) = 359 ug/L

Mass: $\frac{(359 \text{ ug/L})(8.34)(0.066 \text{ MGD})}{1000 \text{ ug/mg}}$ = 0.20 lbs/day

Tier II
Concentration: (2.7 ug/L)(122) = 329 ug/L

Mass: $\frac{(329 \text{ ug/L})(8.34)(0.072 \text{ MGD})}{1000 \text{ ug/mg}}$ = 0.20 lbs/day

Department rule Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, promulgated on October 12, 2005 (subsequent to the previous permitting action) adopted a more stringent human health criteria of 2.37 ug/L for trichloroethylene. Mass limits for trichloroethylene in this permitting action were derived as follows:

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Volatile Organic Compounds (VOCs)

Tier I
EOP concentration: (133)(0.75)(2.37 ug/L) + (0.25)(2.37ug/L) = 237 ug/L

Mass: (237 ug/L)(8.34)(0.066 MGD) = 0.13 lbs/day
1,000 ug/mg

Tier II
EOP concentration: (122)(0.75)(2.37 ug/L) + (0.25)(2.37ug/L) = 217 ug/L

Mass: (217 ug/L)(8.34)(0.072 MGD) = 0.13 lbs/day
1,000 ug/mg

Concentration limitations for trichloroethylene in this permitting action were derived as follows;

Tier I
Permit concentration limit: (237 ug/L)(2.0) = 474 ug/L

Tier II
Permit concentration limit: (217 ug/L)(2.0) = 435 ug/L

k. Methylene Chloride – The 8/17/04 permitting action established water quality based monthly average mass and concentration limits as follows:

Tier I	Mass: 0.34 lbs/day	Concentration: 618 ug/L
Tier II	Mass: 0.34 lbs/day	Concentration: 567 ug/L

The limits were established based on the human health AWQC of 4.65 ug/L (associated with the consumption of water and organisms), the harmonic mean dilution factor of 133:1 (Tier I) and 122:1 (Tier II) and the monthly average permit flow limit of 0.066 MGD (Tier I) and 0.072 MGD (Tier II). The mass limitations for methylene chloride in the 8/17/04 permit were derived as follows:

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Volatile Organic Compounds (VOCs)

Tier II
Concentration: (4.65 ug/L)(133) = 618 ug/L

Mass: $\frac{(618 \text{ ug/L})(8.34)(0.066 \text{ MGD})}{1000 \text{ ug/mg}}$ = 0.34 lbs/day

Tier II
Concentration: (4.65 ug/L)(122) = 567 ug/L

Mass: $\frac{(567 \text{ ug/L})(8.34)(0.072 \text{ MGD})}{1000 \text{ ug/mg}}$ = 0.34 lbs/day

Department rule Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, promulgated on October 12, 2005 (subsequent to the previous permitting action) adopted a more stringent human health criteria of 4.6 ug/L. Mass limits for methylene chloride in this permitting action were derived as follows:

Tier I
EOP concentration: (133)(0.75)(4.6 ug/L) + (0.25)(4.6 ug/L) = 460 ug/L

Mass: $\frac{(460 \text{ ug/L})(8.34)(0.066 \text{ MGD})}{1{,}000 \text{ ug/mg}}$ = 0.25 lbs/day

Tier II
EOP concentration: (122)(0.75)(4.6 ug/L) + (0.25)(4.6 ug/L) = 422 ug/L

Mass: $\frac{(422 \text{ ug/L})(8.34)(0.072 \text{ MGD})}{1{,}000 \text{ ug/mg}}$ = 0.25 lbs/day

Concentration limitations for methylene chloride in this permitting action were derived as follows;

Tier I
Permit concentration limit: (460 ug/L)(2.0) = 920 ug/L

Tier II
Permit concentration limit: (422 ug/L)(2.0) = 844 ug/L

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Volatile Organic Compounds (VOCs)

Metals

Based on the fact metals are being regulated in this permit and the permit for the Sabattus Sanitary District, the Department is utilizing the segment allocation method for determining limitations in this permit. However, given the fact the MEI facility has never discharged to the Sabattus River, it has no historical discharge levels to be used in calculations pursuant to the Department's protocol. See Attachment C of this Fact Sheet for a copy of the Department protocol. Therefore, the monthly average and/or daily maximum water quality based mass limitations for metals in this permitting action were derived by calculating the end-of-pipe limitations for pollutants of concern for the Sabattus Sanitary District and then assigning the remainder of the allocation to the MEI facility or calculating an individual allocation if the pollutant of concern is specific to the MEI facility only.

It is noted the Sabattus River flows of 1Q10 of 4.2 cfs, the 7Q10 of 4.5 cfs and the harmonic mean of 13.5 cfs are applicable to both facilities as this is a regulated flow limit from Sabattus Pond. See the discussion in Section 6(c) of this Fact Sheet.

k. **Arsenic** (Total/Inorganic) – The 8/17/04 permitting action established water quality based monthly average mass and concentration limits for total arsenic as follows:

Beginning upon commencement of the discharge and lasting through 12 months thereafter:

Tier I
Mass: 0.033 lbs/day Concentration: 60 ug/L

Tier II
Mass: 0.036 lbs/day Concentration: 60 ug/L

Beginning 13 months after the commencement of the discharge;

Tier I
Mass: 0.00026 lbs/day Concentration: 2.4 ug/L

Tier II
Mass: 0.00026 lbs/day Concentration: 2.2 ug/L

Compliance with the concentration limits were to be based on the Department's reporting level of 5.0 ug/L

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

The 12-month schedule of compliance in the previous permitting action was based on the following text from the Fact Sheet of the 8/17/04 permit "*The Department acknowledges that Maine Electronics may not be able to comply with the arsenic limitations calculated above upon the commencement of the discharge to the Sabattus River as the new treatment system for arsenic removal has been designed and constructed but has not been tested as a full scale treatment system. Therefore, in accordance with Maine law, 38 M.R.S.A.,§414(A)(2), this permit is establishing a schedule of compliance of 12 months for the arsenic limitations established in this permitting action. Should the treatment system fail to reduce the arsenic levels to meet the monthly average water quality based limitations in this permitting action, the permittee has the option to petition the Department and EPA to develop a site specific AWQC for arsenic for the Sabattus River.*

Due to the aforementioned schedule of compliance, interim limitations for arsenic are based on a 1994 technical review and approval by a toxicologist in the State's Department of Agriculture. It was determined that an instream concentration of less than or equal to 60 ug/L would be protective of human health for the term of the compliance schedule. Department regulation Chapter 530.5, Section 2(b)(i)(BB), requires that site specific criteria protective of human health with national water quality criteria must be established by the Department in consultation with the Department of Human Services. The Department received written approval (2/18/94) of the interim effluent limitation by the Director of the Bureau of Health at the Department of Human Services. The approval stated "…will not threaten human health, and will be beneficial in that ground water will be protected from the VOCs current migration toward the Town of Lisbon's water supply."

It is noted that past test results indicate arsenic levels in the ground water are in the range of 35 ug/L to 50 ug/L. To minimize the quantity of arsenic being discharged during the 12-month schedule of compliance, the previous WDL established a monthly average discharge concentration limit equal to the approved interim instream concentration limit of 60 ug/L that is being carried forward in this permitting action.

In other words, limiting the discharge to 60 ug/L will result in an instream concentration (after dilution) of 0.5 ug/L (Tier I) and 0.4 ug/L (Tier II), both of which are below to MCL of 10 ug/L.

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

This permitting action is carrying forward the site specific mass limitation for arsenic for the first 12 months of commencement of the discharge. The water quality based monthly average mass and concentration limits that were to go into affect 13 months after the commencement of the discharge were established based on the human health AWQC of 0.018 ug/L (associated with the consumption of water and the monthly and organisms), the harmonic mean dilution factor of 133:1 (Tier I) and 122:1 (Tier II) average permit flow limit of 0.066 MGD (Tier I) and 0.072 MGD (Tier II). The mass limitations for total arsenic in the 8/17/04 permit were derived as follows:

Tier I
Concentration: (0.018 ug/L)(133) = 2.4 ug/L

Mass: $\frac{(2.4 \text{ ug/L})(8.34)(0.066 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.00026 lbs/day

Tier II
Concentration: (0.018 ug/L)(122) = 2.2 ug/L

Mass: $\frac{(2.2 \text{ ug/L})(8.34)(0.072 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.00026 lbs/day

Department rule Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, promulgated on October 12, 2005 (subsequent to the previous permitting action) adopted a more stringent human health criteria of 0.012 ug/L for inorganic arsenic. A statistical evaluation was conducted on December 4, 2009 (Report ID 194) on the data for the Sabattus Sanitary District to establish limitations of concern and the remaining balance of the allocation for each pollutant was apportioned to the MEI facility.

The 12/4/09 statistical evaluation indicates arsenic is a pollutant of concern at the Sabattus Sanitary District and therefore, water quality based limitations will need to imposed on both facilities. A new mass limit for inorganic arsenic has been derived utilizing the segment allocation methodology outlined in the Department's guidance in **Attachment C** of this Fact Sheet. The inorganic arsenic limit for the MEI facility was calculated as follows:

Harmonic mean = 13.5 cfs (0.6464) = 8.73 MGD

Human Health (w & o) AWQC = 0.012 ug/L or 0.000012 mg/L

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Taking into consideration 15% of the AWQC reserve and 10% for background for a total of 25%, the assimilative capacity of the Sabattus River at the confluence of the Androscoggin River can be calculated as follows:

(0.000012 mg/L)(0.75)(8.34 lbs/gal)(8.73 MGD) = 0.000655 lbs/day

Based on the 12/4/09 statistical evaluation utilizing the segment allocation methodology, the Sabattus Sanitary District has been given a mass allocation of 0.000364 lbs for inorganic arsenic. Thus, the balance of the assimilative capacity is being allocated to the MEI facility. The calculation is as follows:

0.000655 lbs/day – 0.000364 lbs/day = 0.000291 lbs/day

For concentration, this permitting action is deriving the concentration by back-calculating from the mass limit and the monthly average permit flow limits of 0.066 MGD (Tier I) and 0.072 MGD (Tier II). The calculations are as follows:

Tier I

$$\frac{0.000291 \text{ lbs/day}}{(0.066 \text{ MGD})(8.34 \text{ gal/lb})} = 0.00053 \text{ mg/L or } 0.53 \text{ ug/L}$$

Tier II

$$\frac{0.000291 \text{ lbs/day}}{(0.072 \text{ MGD})(8.34 \text{ gal/lb})} = 0.00048 \text{ mg/L or } 0.48 \text{ ug/L}$$

The USEPA has not approved a test method for inorganic arsenic as of the date of issuance of this permit. Therefore, there is no way for the permittee to formally demonstrate compliance with the monthly average water quality based mass and concentration limits for inorganic arsenic established in this permitting action. Therefore, beginning 13 months after the commencement of the discharge and lasting through the date in which the USEPA approves a test method for inorganic arsenic the permittee is being required to monitor for total arsenic. Once a test method is approved, the Department will notify the permittee in writing and the limitations and monitoring requirements for inorganic arsenic become effective thereafter.

As of the date of this permitting action, the Department has limited data on the percentage of inorganic arsenic (approximately 50%) in total arsenic test results. Based on a literature search conducted by the Department, the inorganic fraction can range from 1% - 99% depending on the source of the arsenic. Generally speaking, ground water supplies derived from bedrockwells will likely tend to have higher fractions of inorganic arsenic (As^{+3}-arsentite and/or As^{+5}- arsenate) than one may find in a food processing

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

facility where the inorganic fraction is low and the organic fraction (arsenobetaine, arsenoribosides) is high. Until the Department and the regulated community in Maine develop a larger database to establish statistically defensible ratios of inorganic and organic fractions in total arsenic test results, the Department is making a rebuttable presumption that the effluent contains a ratio of 50% inorganic arsenic and 50% organic arsenic in total arsenic results.

Maine law, 38 M.R.S.A., §414-A(2), Schedules of Compliance states "*Within the terms and conditions of a license, the department may establish a schedule of compliance for a final effluent limitation based on a water quality standard adopted after July 1, 1977. When a final effluent limitation is based on new or more stringent technology-based treatment requirements, the department may establish a schedule of compliance consistent with the time limitations permitted for compliance under the Federal Water Pollution Control Act, Public Law 92-500, as amended. A schedule of compliance may include interim and final dates for attainment of specific standards necessary to carry out the purposes of this subchapter and must be as short as possible, based on consideration of the technological, economic and environmental impact of the steps necessary to attain those standards*." Special Condition F, *Schedule of Compliance*, of this permit modification establishes a schedule as follows:

Beginning upon issuance of this permit and lasting through a date on which the USEPA approves a test method for inorganic arsenic, the limitations and monitoring requirements for inorganic are not in effect. During this time frame, the permittee is required by Special Condition A, Effluent Limitations and Monitoring Requirements, of this permit to conduct 1/Quarter sampling and analysis for total arsenic.

Upon receiving written notification by the Department that a test method for inorganic arsenic has been approved by the USEPA, the limitations and monitoring requirements for inorganic arsenic become effective and enforceable and the permittee is relieved of their obligation to sample and analyze for total arsenic.

The schedule of compliance reserves the final date for compliance with the limit for inorganic arsenic. This reservation stems from the fact the EPA has no schedule for approving a test method for inorganic arsenic nor does the Department have any authority to require the EPA to do so. Therefore, the Department considers the aforementioned schedule for inorganic arsenic to be as short as possible given the technological (or lack thereof) issue of not being able to sample and analyze for inorganic arsenic with an approved method.

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Department rule Chapter 523, Waste Discharge License Conditions, § Section 7, *Schedules of Compliance* sub-§3, *Interim dates*, states in part, "*if a permit establishes a schedule of compliance which exceeds 1 year from the date of permit issuance, the schedule shall set forth interim requirements and the dates for their achievement.*

(i) The time between interim dates shall not exceed 1 year, except that in the case of a schedule for compliance with standards for sewage sludge use and disposal, the time between interim dates shall not exceed six months.

(ii) If the time necessary for completion of any interim requirement (such as the construction of a control facility) is more than 1 year and is not readily divisible into stages for completion, the permit shall specify interim dates for the submission of reports of progress toward completion of the interim requirements and indicate a projected completion date.

Special Condition A, *Effluent Limitations and Monitoring Requirements*, of this permit requires that beginning upon issuance of this permit and lasting through USEPA approval of a test method for inorganic arsenic, the permittee shall conduct 1/month monitoring for total arsenic. The site specific limitation of 0.036 lbs/day will be in effect until the EPA approves a test method approval for inorganic arsenic. Following USEPA approval of a test method for inorganic arsenic and based on recent available data, the permittee may request that the Department reopen this permit in accordance with Special Condition H, *Reopening on Permit For Modifications*, to establish a schedule of compliance for imposition of the numeric inorganic arsenic limitations. Sampling and analysis for total arsenic will serve to satisfy the interim requirements specified by Department rule, Chapter 523, *Waste Discharge License Conditions*, Section 7, *Schedules of Compliance*, Sub-section 3, *Interim dates.*

l. **Cadmium** – The 8/17/04 permitting action established water quality based monthly average and daily maximum mass and concentration limits as follows:

Tier I

	Mass	Concentration
Monthly Avg.	0.0017 lbs/day	14 ug/L
Daily Max.	0.0030 lbs/day	25 ug/L

Tier II

	Mass	Concentration
Monthly Avg.	0.0017 lbs/day	13 ug/L
Daily Max.	0.0030 lbs/day	22 ug/L

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

The water quality based monthly average mass and concentration limits in the 8/14/04 permitting action were derived utilizing the CCC (chronic) of 0.32 ug/L, the chronic dilution factor of 45:1 (Tier I) and 41:1 (Tier II), the monthly average flow limitation of 0.066 MGD (Tier I) and 0.072 MGD (Tier II) and 20% of the assimilative capacity of the receiving waters. The limits in the 8/17/04 permit were derived in accordance with the following calculations:

Tier I
Concentration: (0.32 ug/L)(45) = 14 ug/L

Mass: $\frac{(14 \text{ ug/L})(8.34)(0.066 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.0017 lbs/day

Tier II
Concentration: (0.32 ug/L)(41) = 13 ug/L

Mass: $\frac{(13 \text{ ug/L})(8.34)(0.072 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.0017 lbs/day

The water quality based daily maximum mass and concentration limits established in the 8/17/04 permitting action were derived utilizing the CMC (acute) of 0.64 ug/L, the acute dilution factor of 39:1 (Tier I) and 35:1 (Tier II) and the daily maximum flow limitation of 0.072 MGD (Tier I) and 0.079 MGD (Tier II) and 20% of the assimilative capacity of the receiving waters for mass. The limits in the 8/17/04 permit were derived in accordance with the following calculations:

Tier I
Concentration: (0.64 ug/L)(39) = 25 ug/L

Mass: $\frac{(25 \text{ ug/L})(8.34)(0.072 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.0030 lbs/day

Tier II
Concentration: (0.64 ug/L)(35) = 22 ug/L

Mass: $\frac{(22 \text{ ug/L})(8.34)(0.079 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.0030 lbs/day

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Department rule Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, promulgated on October 12, 2005 (subsequent to the previous permitting action) adopted more stringent acute and chronic AWQC for cadmium. The CCC (chronic) is 0.08 ug/L and CMC (acute) is 0.42 ug/L. It is noted the 12/4/09 statistical evaluation for the Sabattus River indicates the discharge of cadmium is not of a concern for the Sabattus Sanitary District. Therefore, the MEI facility is being allocated 75% of the assimilative capacity of the receiving water at this time.

The monthly average mass and concentration limits established in this permitting action were derived utilizing the chronic dilution factor of 45:1 (Tier I) and 41:1 (Tier II) and the monthly average flow limitations of 0.066 MGD (Tier I) and 0.072 MGD (Tier II).

The daily maximum mass and concentration limits established in this permitting action were derived utilizing the acute dilution factor of 39:1 (Tier I) and 35:1 (Tier II) and the daily maximum flow limitations of 0.072 MGD (Tier I) and 0.079 MGD (Tier II).

The monthly average and daily maximum limitations for total cadmium established in this permit were derived as follows:

Monthly Average

Tier I

EOP concentration: (45)(0.75)(0.08 ug/L) + (0.25)(0.08 ug/L) = 2.7 ug/L

Mass: $\frac{(2.7 \text{ ug/L})(8.34)(0.066 \text{ MGD})}{1{,}000 \text{ ug/mg}}$ = 0.0015 lbs/day

Tier II

EOP concentration: (41)(0.75)(0.08 ug/L) + (0.25)(0.08 ug/L) = 2.5 ug/L

Mass: $\frac{(2.5 \text{ ug/L})(8.34)(0.072 \text{ MGD})}{1{,}000 \text{ ug/mg}}$ = 0.0015 lbs/day

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Daily Maximum

Tier I

EOP concentration: (39)(0.75)(0.42 ug/L) + (0.25)(0.42 ug/L) = 12 ug/L

Mass: $\frac{(12 \text{ ug/L})(8.34)(0.072 \text{ MGD})}{1{,}000 \text{ ug/mg}}$ = 0.0072 lbs/day

Tier II

EOP concentration: (35)(0.75)(0.42 ug/L) + (0.25)(0.42 ug/L) = 11 ug/L

Mass: $\frac{(11 \text{ ug/L})(8.34)(0.079 \text{ MGD})}{1{,}000 \text{ ug/mg}}$ = 0.0072 lbs/day

Concentration limitations for total cadmium in this permitting action were derived as follows;

Monthly Average

Tier I
Permit concentration limit: (2.7 ug/L)(2.0) = 5.4 ug/L

Tier II
Permit concentration limit: (2.5 ug/L)(2.0) = 5.0 ug/L

Daily Maximum

Tier I
Permit concentration limit: (12 ug/L)(2.0) = 24 ug/L

Tier II
Permit concentration limit: (11 ug/L)(2.0) = 22 ug/L

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

m. **Chromium III** - The 8/17/04 permitting action established water quality based monthly average and daily maximum mass and concentration limits as follows:

Tier I

	Mass	Concentration
Monthly Avg.	0.27 lbs/day	2.5 mg/L
Daily Max.	2.2 lbs/day	18 mg/L

Tier II

	Mass	Concentration
Monthly Avg.	0.27 lbs/day	2.3 mg/L
Daily Max.	2.1 lbs/day	16 mg/L

The water quality based monthly average mass and concentration limits in the 8/17/04 permitting action derived utilizing the CCC (chronic) of 55.39 ug/L, the chronic dilution factor of 45:1 (Tier I) and 41:1 (Tier II) and the monthly average flow limitation of 0.066 MGD (Tier I) and 0.072 MGD (Tier II) and 20% of the assimilative capacity of the receiving waters for mass.

Tier I
Concentration: (55.39 ug/L)(45) = 2,492 ug/L or 2.5 mg/L

Mass: (2.492 mg/L)(8.34)(0.066 MGD)(0.20) = 0.27 lbs/day

Tier II
Concentration: (55.39 ug/L)(41) = 2,271 ug/L or 2.3 mg/L

Mass: (2.271 mg/L)(8.34)(0.072 MGD)(0.20) = 0.27 lbs/day

The water quality daily maximum mass and concentration limits in the 8/17/04 permitting action were derived utilizing the CMC (acute) of 464.75 ug/L, the acute dilution factor of 39:1 (Tier I) and 35:1 (Tier II) and the daily maximum flow limitation of 0.072 MGD (Tier I) and 0.079 MGD (Tier II) and 20% of the assimilative capacity of the receiving waters for mass.

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Tier I
Concentration: (464.75 ug/L)(39) = 18,125 ug/L or 18 mg/L

Mass: (18.125 mg/L)(8.34)(0.072 MGD)(0.20) = 2.2 lbs/day

Tier II
Concentration: (464.75 ug/L)(35) = 16,266 ug/L or 16 mg/L

Mass: (16.266 mg/L)(8.34)(0.079 MGD)(0.20) = 2.1 lbs/day

Department rule Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, promulgated on October 12, 2005 (subsequent to the previous permitting action) adopted more stringent chronic and less stringent acute and AWQC for chromium III. The CCC (chronic) is 23.1 ug/L and CMC (acute) is 483 ug/L. It is noted the 12/4/09 statistical evaluation for the Sabattus River indicates the discharge of chromium III is not of a concern for the Sabattus Sanitary District. Therefore, the MEI facility is being allocated 75% of the assimilative capacity of the receiving water at this time.

The monthly average mass and concentration limits established in this permitting action were derived utilizing the chronic dilution factor of 45:1 (Tier I) and 41:1 (Tier II) and the daily maximum flow limitation of 0.066 MGD (Tier I) and 0.072 MGD (Tier II).

The daily maximum mass and concentration limits established in this permitting action were derived utilizing the acute dilution factor of 39:1 (Tier I) and 35:1 (Tier II) and the daily maximum flow limitation of 0.072 MGD (Tier I) and 0.079 MGD (Tier II).

Monthly Average

Tier I

EOP concentration: (45)(0.75)(23.1 ug/L) + (0.25)(23.1 ug/L) = 785 ug/L

Mass: $\frac{(785 \text{ ug/L})(8.34)(0.066 \text{ MGD})}{1{,}000 \text{ ug/mg}}$ = 0.43 lbs/day

Tier II

EOP concentration: (41)(0.75)(23.1 ug/L) + (0.25)(23.1 ug/L) = 716 ug/L

Mass: $\frac{(716 \text{ ug/L})(8.34)(0.072 \text{ MGD})}{1{,}000 \text{ ug/mg}}$ = 0.43 lbs/day

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Daily Maximum

Tier I

EOP concentration: (39)(0.75)(483 ug/L) + (0.25)(483 ug/L) = 14,248 ug/L

Mass: (14.248 mg/L)(8.34)(0.066 MGD) = 7.8 lbs/day

Tier II

EOP concentration: (35)(0.75)(483 ug/L) + (0.25)(483 ug/L) = 12,800 ug/L

Mass: (13 mg/L)(8.34)(0.072 MGD) = 7.7 lbs/day

Concentration limitations for chromium III in this permitting action were derived as follows;

Monthly Average

Tier I
Permit concentration limit: (786 ug/L)(2.0) = 1,572 ug/L

Tier II
Permit concentration limit: (716 ug/L)(2.0) = 1,432 ug/L

Daily Maximum

Tier I
Permit concentration limit: (14,248 ug/L)(2.0) = 28,500 ug/L

Tier II
Permit concentration limit: (12,800 ug/L)(2.0) = 25,600 ug/L

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

n. **Copper** – The 8/17/04 permitting action established water quality based monthly average and daily maximum mass and concentration limits as follows:

Tier I

	Mass	Concentration
Monthly Avg.	0.015 lbs/day	134 ug/L
Daily Max.	0.018 lbs/day	152 ug/L

Tier II

	Mass	Concentration
Monthly Avg.	0.015 lbs/day	122 ug/L
Daily Max.	0.018 lbs/day	136 ug/L

The water quality based monthly average mass and concentration limits in the 8/17/04 permitting action were derived utilizing the CCC (chronic) of 2.99 ug/L, the chronic dilution factor of 45:1 (Tier I) and 41:1 (Tier II) and the monthly average flow limitation of 0.066 MGD (Tier I) and 0.072 MGD (Tier II) and 20% of the assimilative capacity of the receiving waters for mass. The limitations in the 8/17/04 permit were derived as follows:

Tier I
Concentration: (2.99 ug/L)(45) = 134 ug/L

Mass: $\frac{(134 \text{ ug/L})(8.34)(0.066 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.015 lbs/day

Tier II
Concentration: (2.99 ug/L)(41) = 122 ug/L

Mass: $\frac{(122 \text{ ug/L})(8.34)(0.072 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.015 lbs/day

The water quality based daily maximum mass and concentration limits in this permitting action were derived utilizing the CMC (acute) of 3.89 ug/L, the acute dilution factor of 39:1 (Tier I) and 35:1 (Tier II) and the daily maximum flow limitation of 0.072 MGD (Tier I) and 0.079 MGD (Tier II) and 20% of the assimilative capacity of the receiving waters for mass. The limitations in the 8/17/04 permit were derived as follows:

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Tier I

Concentration: (3.89 ug/L)(39) = 152 ug/L

Mass: $\frac{(152 \text{ ug/L})(8.34)(0.072 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.018 lbs/day

Tier II

Concentration: (3.89 ug/L)(35) = 136 ug/L

Mass: $\frac{(136 \text{ ug/L})(8.34)(0.079 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.018 lbs/day

Department rule Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, promulgated on October 12, 2005 (subsequent to the previous permitting action) adopted more stringent chronic and acute AWQC for copper. The CCC (chronic) is 2.36 ug/L and CMC (acute) is 3.07 ug/L. It is noted the 12/4/09 statistical evaluation for the Sabattus River indicates the discharge of copper is also a concern for the Sabattus Sanitary District. Therefore, new mass limits for total copper are being been derived utilizing the segment allocation methodology outlined in the Department's guidance in **Attachment C** of this Fact Sheet. A statistical evaluation was conducted on December 4, 2009 (Report ID 194) on the data for the Sabattus Sanitary District to establish limitations of concern and the remaining balance of the allocation for each pollutant was apportioned to the MEI facility. The total copper limits established in this permit for the MEI facility was calculated as follows:

Monthly Average
Chronic - 7Q10 = 4.5 cfs (0.6464) = 2.91 MGD
Chronic AWQC = 2.36 ug/L or 0.00236 mg/L

Taking into consideration 15% of the AWQC reserve and 10% for background for a total of 25%, the assimilative capacity of the Sabattus River at the confluence of the Androscoggin River can be calculated as follows:

(0.00236 mg/L)(0.75)(8.34 lbs/gal)(2.91 MGD) = 0.0520 lbs/day

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Based on the 12/4/09 statistical evaluation utilizing the segment allocation methodology, the Sabattus Sanitary District has been given a daily maximum allocation of 0.023821 lbs for total copper. Thus, the balance of the assimilative capacity is being allocated to the MEI facility. The calculation is as follows:

0.0520 lbs/day – 0.023821 lbs/day = 0.0282 lbs/day

Daily Maximum
Acute - 1Q10 = 4.2 cfs (0.6464) = 2.71 MGD
Acute AWQC = 3.07 ug/L or 0.00307 mg/L

Taking into consideration 15% of the AWQC reserve and 10% for background for a total of 25%, the assimilative capacity of the Sabattus River at the confluence of the Androscoggin River can be calculated as follows:

(0.00307 mg/L)(0.75)(8.34 lbs/gal)(2.71 MGD) = 0.0520 lbs/day

Based on the 12/4/09 statistical evaluation utilizing the segment allocation methodology, the Sabattus Sanitary District has been given a daily maximum allocation of 0.031041 lbs for total copper. Thus, the balance of the assimilative capacity is being allocated to the MEI facility. The calculation is as follows:

0.0520 lbs/day – 0.031041 lbs/day = 0.0210 lbs/day

For concentration this permitting action is deriving the monthly average and daily maximum end-of pipe concentrations by back-calculating from the mass limit and the monthly average permit flow limits of 0.066 MGD (Tier I) and 0.072 MGD (Tier II). The calculations are as follows:

Monthly average

Tier I

$$\frac{0.0282 \text{ lbs/day}}{(0.066 \text{ MGD})(8.34 \text{ gal/lb})} = 0.051 \text{ mg/L or } 51 \text{ ug/L}$$

Tier II

$$\frac{0.0282 \text{ lbs/day}}{(0.072 \text{ MGD})(8.34 \text{ gal/lb})} = 0.047 \text{ mg/L or } 47 \text{ ug/L}$$

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Daily maximum

Tier I

$$\frac{0.021 \text{ lbs/day}}{(0.072 \text{ MGD})(8.34 \text{ gal/lb})} = 0.035 \text{ mg/L or } 35 \text{ ug/L}$$

Tier II

$$\frac{0.021 \text{ lbs/day}}{(0.079 \text{ MGD})(8.34 \text{ gal/lb})} = 0.032 \text{ mg/L or } 32 \text{ ug/L}$$

Concentration limitations for copper in this permitting action were derived as follows;

Monthly Average

Tier I
Permit concentration limit: (51 ug/L)(2.0) = 102 ug/L

Tier II
Permit concentration limit: (47 ug/L)(2.0) = 94 ug/L

Daily Maximum

Tier I
Permit concentration limit: (35 ug/L)(2.0) = 70 ug/L

Tier II
Permit concentration limit: (32 ug/L)(2.0) = 64 ug/L

o. Iron – The 8/17/04 permit established water quality based monthly average limits as follows:

Tier I

	Mass	Concentration
Monthly Avg.	1.5 lbs/day	13.5 mg/L

Tier II

	Mass	Concentration
Monthly Avg.	1.5 lbs/day	12.3 mg/L

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

At the time of the issuance of the 8/17/04 permit, the EPA had not established a CMC or CCC for iron nor had the State of Maine established a MEG for iron. The EPA has however established a MCL of 300 ug/l that was utilized in the previous permitting action to establish monthly average mass and concentration limitations for iron.

The water quality based monthly average mass and concentration limits established in the 8/17/04 permitting action were derived utilizing the MCL of 300 ug/L, the chronic dilution factor of 45:1 (Tier I) and 41:1 (Tier II) and the monthly average flow limitation of 0.066 MGD (Tier I) and 0.072 MGD (Tier II) and 20% of the assimilative capacity of the receiving waters for mass. The limitations for iron in the 8/17/04 permit were derived in accordance with following calculations:

Tier I
Concentration: (300 ug/L)(45) = 13,500 ug/L or 13.5 mg/L

Mass: (13.5 mg/L)(8.34)(0.066 MGD)(0.20) = 1.5 lbs/day

Tier I
Concentration: (300 ug/L)(41) = 12,300 ug/L or 12.3 mg/L

Mass: (12.3 mg/L)(8.34)(0.072 MGD)(0.20) = 1.5 lbs/day

Department rule Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, promulgated on October 12, 2005 (subsequent to the previous permitting action) did not adopt AWQC for iron so the EPA MCL of 300 ug/L remains the criteria by which the limitations for iron are being established. It is noted the 12/4/09 statistical evaluation for the Sabattus River indicates the discharge of iron is not of a concern for the Sabattus Sanitary District. Therefore, the MEI facility is being allocated 75% assimilative capacity of the receiving water at this time. The monthly average limits for total iron limits in this permitting action were calculated as follows:

Monthly Average

Tier I

EOP concentration: (45)(0.75)(300 ug/L) + (0.25)(300 ug/L) = 10,200 ug/L

Mass: (10.2 mg/L)(8.34)(0.066 MGD) = 5.6 lbs/day

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Tier II

EOP concentration: (41)(0.75)(300 ug/L) + (0.25)(300 ug/L) = 9,300 ug/L

Mass: (9.3 mg/L)(8.34)(0.072 MGD) = 5.6 lbs/day

Concentration limitations for total iron in this permitting action were derived as follows;

Tier I
Permit concentration limit: (10,200 ug/L)(2.0) = 20,400 ug/L

Tier II
Permit concentration limit: (9,300 ug/L)(2.0) = 18,600 ug/L

p. Lead – The 8/17/04 permit established water quality based monthly average and daily maximum mass and concentration limits as follows

Tier I

	Mass	Concentration
Monthly Avg.	0.002 lbs/day	18 ug/L
Daily Max.	0.049 lbs/day	410 ug/L

Tier II

	Mass	Concentration
Monthly Avg.	0.02 lbs/day	17 ug/L
Daily Max.	0.048 lbs/day	368 ug/L

The water quality based monthly average mass and concentration limits in the 8/17/04 permitting action were derived utilizing the CCC (chronic) of 0.4101 ug/L, the chronic dilution factor of 45:1 (Tier I) and 41:1 (Tier II) and the monthly average flow limitation of 0.066 MGD (Tier I) and 0.072 MGD (Tier II) and 20% of the assimilative capacity of the receiving waters for mass. The monthly average limitations for lead in the 8/17/04 permit were derived in accordance with following calculations:

Tier I
Concentration: (0.4101 ug/L)(45) = 18 ug/L

Mass: $\frac{(18.4 \text{ ug/L})(8.34)(0.066 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.0020 lbs/day

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Tier II
Concentration: (0.4101 ug/L)(41) = 17 ug/L

Mass: $\frac{(16.8 \text{ ug/L})(8.34)(0.072 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.0020 lbs/day

The water quality based daily maximum mass and concentration limits in the 8/17/04 permitting action were derived utilizing the CMC (acute) of 10.52 ug/L, the acute dilution factor of 39:1 (Tier I) and 35:1 (Tier II) and the daily maximum flow limitation of 0.072 MGD (Tier I) and 0.079 MGD (Tier II) and 20% of the assimilative capacity of the receiving waters for mass. The daily maximum limitations for lead in the 8/17/04 permit were derived in accordance with following calculations:

Tier I
Concentration: (10.523 ug/L)(39) = 410 ug/L

Mass: $\frac{(410 \text{ ug/L})(8.34)(0.072 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.049 lbs/day

Tier II
Concentration: (10.523 ug/L)(35) = 368 ug/L

Mass: $\frac{(368 \text{ ug/L})(8.34)(0.079 \text{ MGD})(0.20)}{1000 \text{ ug/mg}}$ = 0.048 lbs/day

The 12/4/09 statistical evaluation for the Sabattus River indicates the discharge of lead (chronic) is also a concern for the Sabattus Sanitary District. Therefore, new monthly average mass limits for total lead are being been derived utilizing the segment allocation methodology outlined in the Department's guidance in **Attachment C** of this Fact Sheet and daily maximum mass limits for the MEI facility are being allocated based on 75% of the assimilative capacity of the receiving water at this time. A statistical evaluation was conducted on December 4, 2009 (Report ID 194) on the data for the Sabattus Sanitary District to establish limitations of concern and the remaining balance of the allocation for each pollutant was apportioned to the MEI facility. The total lead limits established in this permitting action for the MEI facility were calculated as follows:

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Monthly Average
Chronic - 7Q10 = 4.5 cfs (0.6464) = 2.91 MGD
Chronic AWQC = 0.41 ug/L or 0.00041 mg/L

Taking into consideration 15% of the AWQC reserve and 10% for background for a total of 25%, the assimilative capacity of the Sabattus River at the confluence of the Androscoggin River can be calculated as follows:

(0.00041 mg/L)(0.75)(8.34 lbs/gal)(2.91 MGD) = 0.007463 lbs/day

Based on the 12/4/09 statistical evaluation utilizing the segment allocation methodology, the Sabattus Sanitary District has been given a monthly average allocation of 0.004142 lbs for total lead. Thus, the balance of the assimilative capacity is being allocated to the MEI facility. The calculation is as follows:

0.007463 lbs/day – 0.004142 lbs/day = 0.003321 lbs/day

For concentration. this permitting action is deriving the monthly average end-of pipe concentrations by back-calculating from the mass limit and the monthly average permit flow limits of 0.066 MGD (Tier I) and 0.072 MGD (Tier II). The calculations are as follows:

Monthly Average

Tier I

$$\frac{0.003321 \text{ lbs/day}}{(0.066 \text{ MGD})(8.34 \text{ gal/lb})} = 0.0060 \text{ mg/L or } 6.0 \text{ ug/L}$$

Tier II

$$\frac{0.003321 \text{ lbs/day}}{(0.072 \text{ MGD})(8.34 \text{ gal/lb})} = 0.0055 \text{ mg/L or } 5.5 \text{ ug/L}$$

Tier I
Permit concentration limit: (6 ug/L)(2.0) = 12 ug/L

Tier II
Permit concentration limit: (5.5 ug/L)(2.0) = 11 ug/L

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Daily Maximum

The daily maximum mass limits for the MEI facility are being allocated based on 75% of the assimilative capacity of the receiving water at this time.

Tier I
EOP concentration: (39)(0.75)(10.52 ug/L) + (0.25)(10.52 ug/L) = 310 ug/L

Mass: $\frac{(310 \text{ ug/L})(8.34)(0.072 \text{ MGD})}{1000 \text{ ug/mg}}$ = 0.19 lbs/day

Tier II

EOP Concentration: (35)(0.75)(10.52 ug/L) + (0.25)(10.52 ug/L) = 279 ug/L

Mass: $\frac{(279 \text{ ug/L})(8.34)(0.079 \text{ MGD})}{1000 \text{ ug/mg}}$ = 0.18 lbs/day

Daily maximum concentration limitations for total lead in this permitting action were derived as follows;

Daily Maximum

Tier I
Permit concentration limit: (310 ug/L)(2.0) = 620 ug/L

Tier II
Permit concentration limit: (279 ug/L)(2.0) = 558 ug/L

q. Manganese – The 8/17/04 permit established water quality based monthly average mass and concentration limits as follows:

Tier I

	Mass	Concentration
Monthly Avg.	0.73 lbs/day	6.6 mg/L

Tier II

	Mass	Concentration
Monthly Avg.	0.73 lbs/day	6.1 mg/L

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

The water quality based monthly average mass and concentration limits in the 8/17/04 permitting action were derived based on the human health AWQC of 50 ug/L (associated with the consumption of water and organisms), the harmonic mean dilution factor of 133:1 (Tier I) and 122:1 (Tier I) and the monthly average permit limit of 0.066 MGD (Tier I) and 0.072 MGD (Tier II) and 20% of the assimilative capacity of the receiving waters for mass. The monthly average limitations for manganese in the 8/17/04 permit were derived in accordance with following calculations:

Tier I
Concentration: (50 ug/L)(133) = 6,650 ug/L or 6.6 mg/L

Mass: (6.6 mg/L)(8.34)(0.066 MGD)(0.2) = 0.73 lbs/day

Tier II
Concentration: (50 ug/L)(122) = 6,100 ug/L or 6.1 mg/L

Mass: (6.1 mg/L)(8.34)(0.072 MGD)(0.2) = 0.73 lbs/day

Department rule Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, promulgated on October 12, 2005 (subsequent to the previous permitting action) carried forward the human health AWQC of 50 ug/L for manganese by which the limitations for manganese are being established in this permitting action. It is noted the 12/4/09 statistical evaluation for the Sabattus River indicates the discharge of manganese is not of a concern for the Sabattus Sanitary District. Therefore, the MEI facility is being allocated 75% of the assimilative capacity of the receiving water at this time. Monthly average mass limits for manganese in this permitting action were derived in accordance with the following calculations:

Tier I

EOP concentration: (133)(0.75)(50 ug/L) + (0.25)(50 ug/L) = 5,000 ug/L or 5.0 mg/L

Mass: (5.0 mg/L)(8.34)(0.066 MGD) = 2.7 lbs/day

Tier II

EOP concentration: (122)(0.75)(50 ug/L) + (0.25)(50 ug/L) = 4,600 ug/L or 4.6 mg/L

Mass: (4.6 mg/L)(8.34)(0.072 MGD) = 2.8 lbs/day

7. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Metals

Monthly average concentration limitations for manganese in this permitting action were derived as follows;

Tier I
Permit concentration limit: (5,000 ug/L)(2.0) = 10,000 ug/L

Tier II
Permit concentration limit: (4,600 ug/L)(2.0) = 9,200 ug/L

8. ANTI-BACKSLIDING

Federal regulation 40 CFR, §122(l) contains the criteria for what is often referred to as the anti-backsliding provisions of the Federal Water Pollution Control Act (Clean Water Act). In general, the regulation states that except for provisions specified in the regulation, effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards or conditions in the previous permit. Applicable exceptions include(1) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation and(2) information is available which was not available at the time of the permit issuance (other than revised regulations, guidance or test methods) and which would justify the application of less stringent effluent limitations at the time of permit issuance.

This permitting action is establishing less stringent water quality based mass and concentration limitations for a number of parameters in the previous permitting action based on new information/criteria established in Department rules 06-096 CMR Chapter 530, *Surface Water Toxics Control Program,* and 06-096 CMR Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*. The Department has made the determination that authorizing these less stringent limitations is necessary to comply with said rules.

9. ANTI-DEGREDATION - IMPACT ON RECEIVING WATER QUALITY

Maine's anti-degradation policy is included in 38 M.R.S.A., Section 464(4)(F) and addressed in the *Conclusions* section of this permit. Pursuant to the policy, where a new or increased discharge is proposed, the Department shall determine whether the discharge will result in a significant lowering of existing water quality. Increased discharge means a discharge that would add one or more new pollutants to an existing effluent, increase existing levels of pollutants in an effluent, or cause an effluent to exceed one or more of its current licensed discharge flow or effluent limits, after the application of applicable best practicable treatment technology. The Department has made a determination that as permitted, the discharge will not cause of contribute to the failure of the water body to meet the standards of Class C classification and the discharge will be subject to effluent limitations that require application of best practicable treatment.

10. PUBLIC COMMENTS

Public notice of this application was made in the Lewiston `Sun Journal newspaper on July 14, 2009. The Department receives public comments on an application until the date a final agency action is taken on that application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

11. DEPARTMENT CONTACTS

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

Gregg Wood
Bureau of Land and Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone (207) 287-7693
E-mail: gregg.wood@maine.gov

12. RESPONSE TO COMMENTS

During the period of April 6, 2010, through the issuance date of this permit, the Department solicited comments on the proposed draft permit to be issued for the discharge from the Maine Electronics facility. The only comments received were from the permittee's consultant, Drumlin Environmental. LLC in two separate letters, both dated May 4, 2010. As a result, the Department has prepared a response to comments as follows:

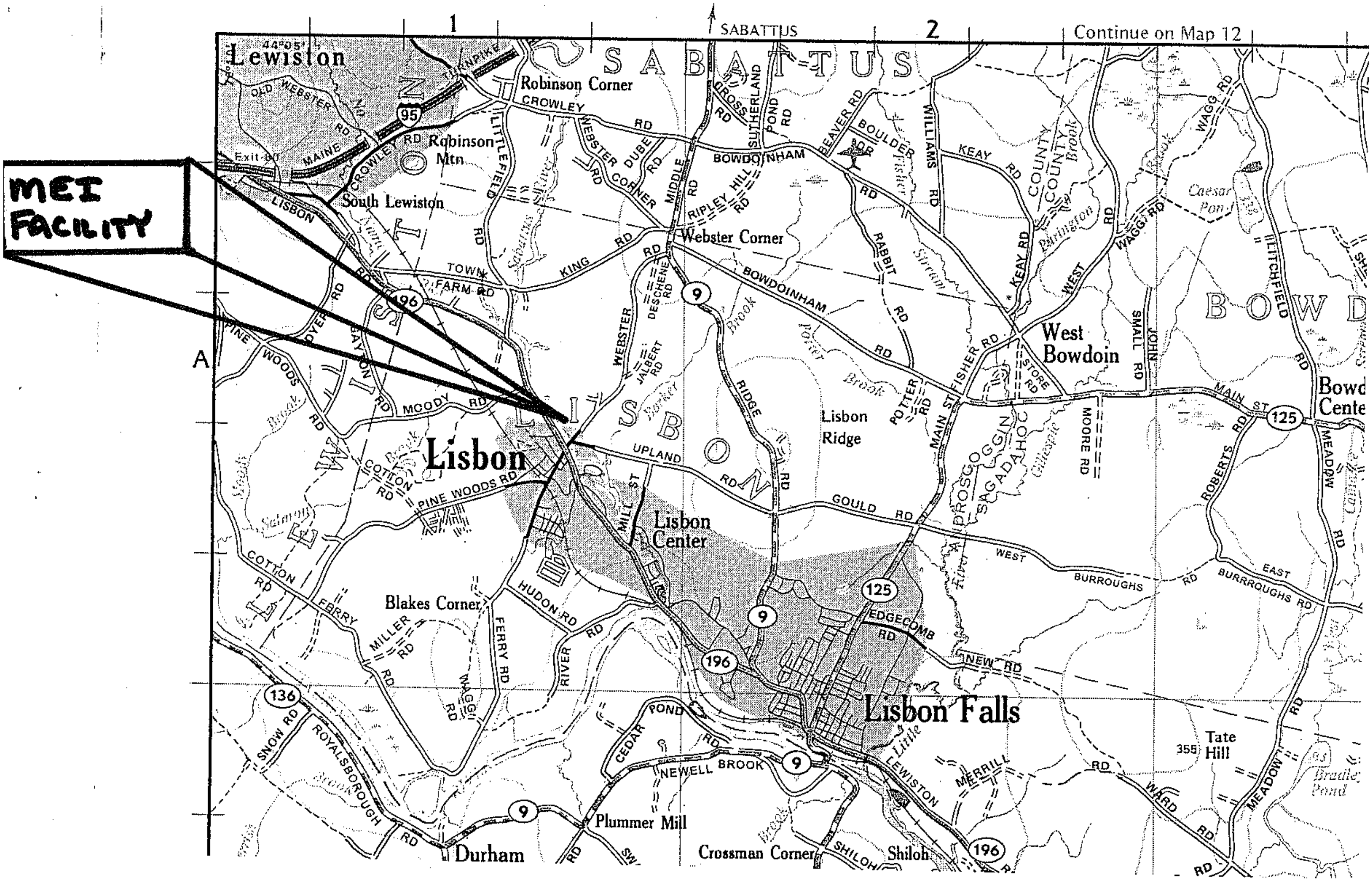
Comment #1: The permittee requested Special Condition F of the draft permit entitled *Schedule of Compliance – Inorganic Arsenic* be renamed to *Arsenic Testing* as this condition does not appear to pertain directly to the compliance schedule. In addition, the permittee requested a modification in the language in footnote #3 entitled *Arsenic (Inorganic)* to coincide with the name change for Special Condition F and clarify that during the schedule of compliance period, the permit limitation for inorganic arsenic shall be monitor only. Imposition of the numeric inorganic arsenic limitation would apply at the end of the schedule of compliance period.

Response #1: The permittee's request for the language changes is acceptable to the Department and has been incorporated into the final permit.

Comment #2 – The permittee requests concurrence from the Department that the arsenic treatment system as currently designed, or an alternate BAT design, does not need to be operated during the compliance schedule period or during any toxicity reduction evaluation (TRE) that may be undertaken concurrent with the schedule of compliance.

Response #2 – The Department concurs.

ATTACHMENT A


MEI FACILITY
Continue on Map 12
SABATTUS
Lewiston
Robinson Corner
Robinson Mtn
South Lewiston
Webster Corner
West Bowdoin
Lisbon
Lisbon Ridge
Lisbon Center
Lisbon Falls
Blakes Corner
Plummer Mill
Durham
Crossman Corner
Shiloh
Tate Hill
CROWLEY RD
BOWDOINHAM RD
WEBSTER RD
UPLAND RD
GOULD RD
WEST BURROUGHS RD
EAST BURROUGHS RD
MAIN ST
FERRY RD
RIVER RD
HUDON RD
PINE WOODS RD
MOODY RD
KING RD
RIDGE RD
MOORE RD
ROYALSBOROUGH RD
LEWISTON RD

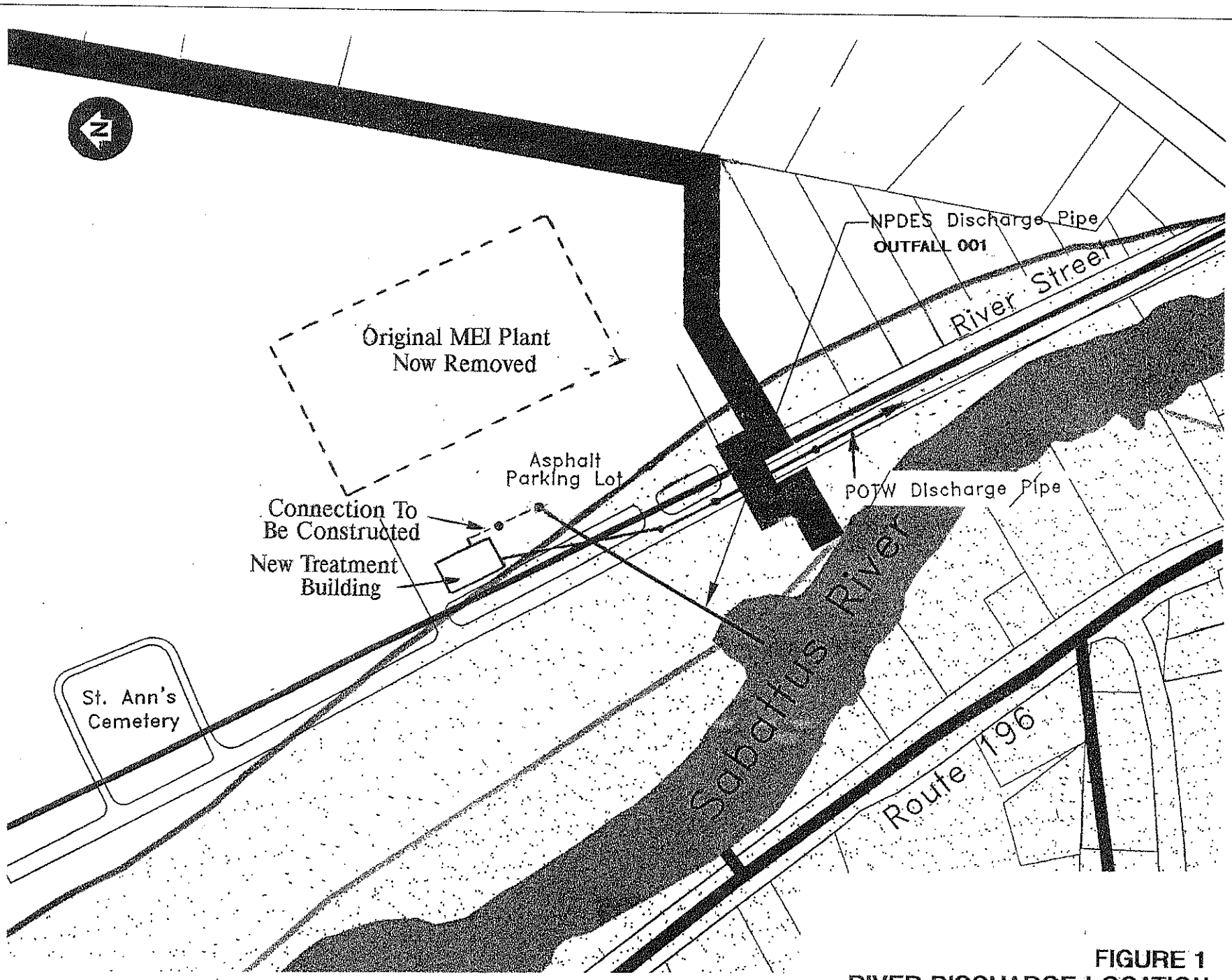
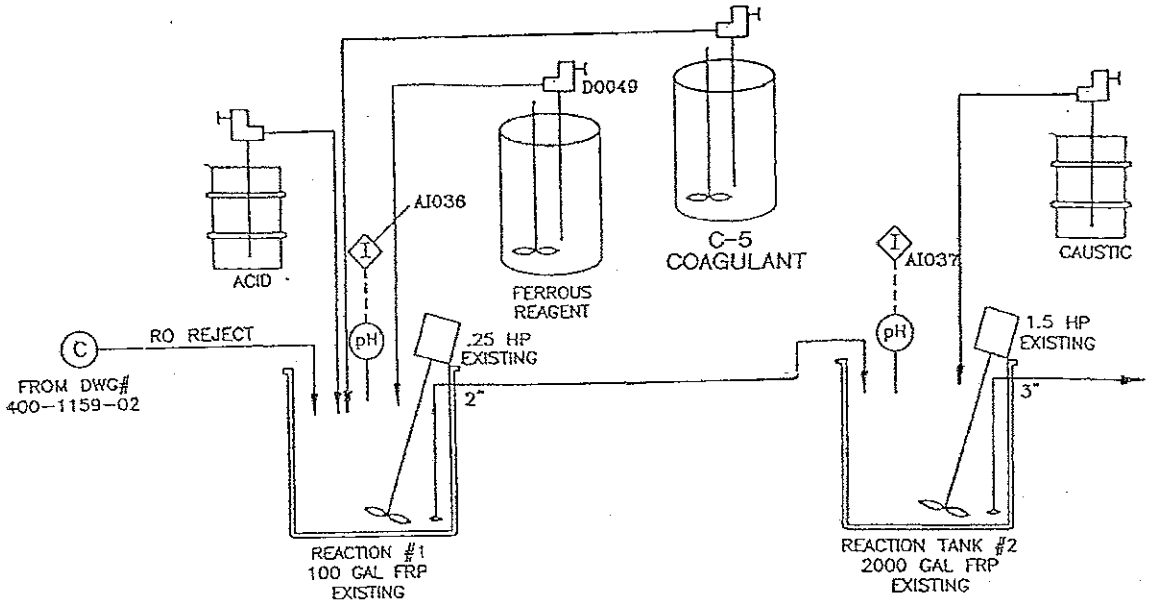
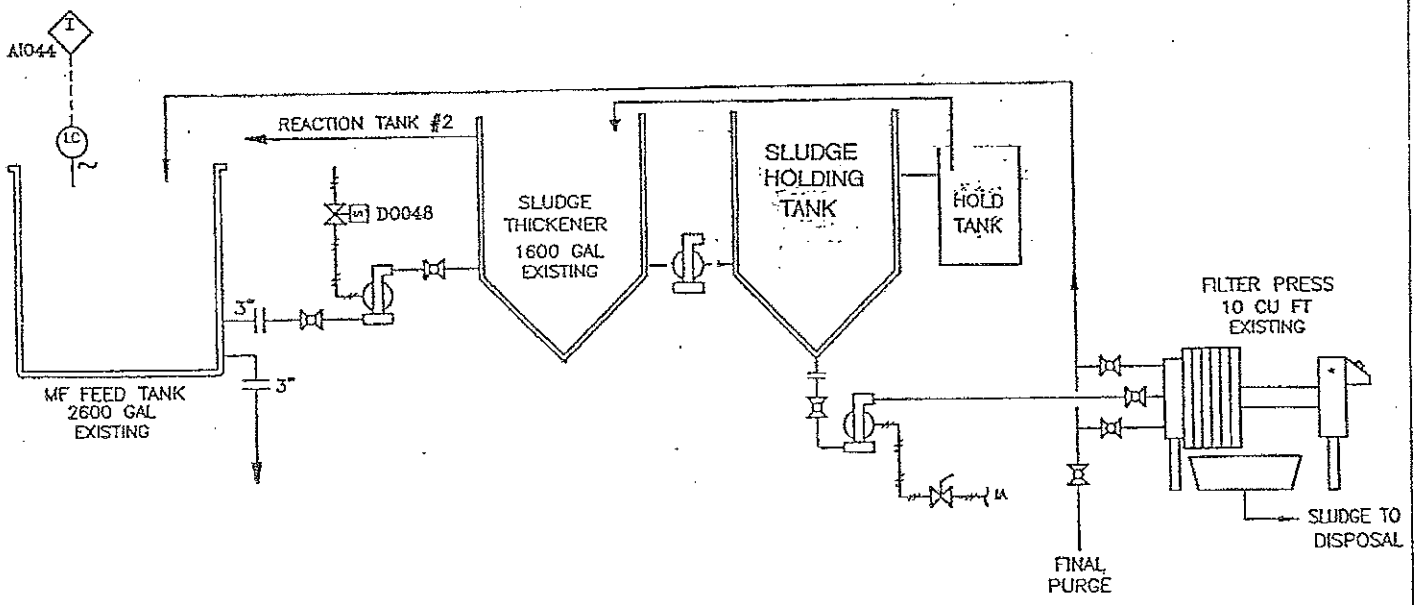


FIGURE 1
RIVER DISCHARGE LOCATION
MAINE ELECTRONICS, INC.

ATTACHMENT B

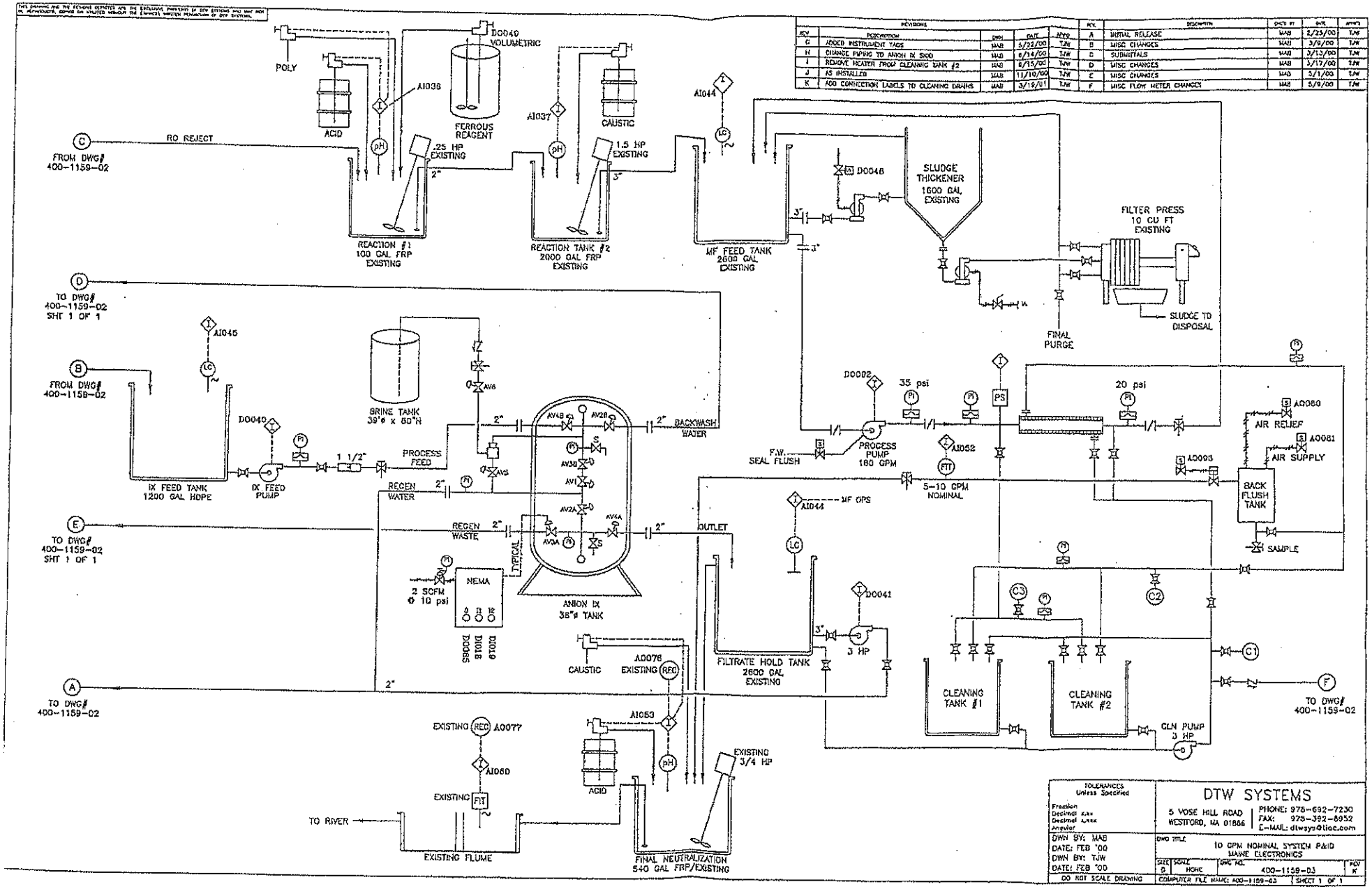


MODIFICATION: ADD COAGULANT FEED TO REACTION #1



MODIFICATION: ADD SLUDGE HOLDING TANK AFTER SLUDGE THICKENER

ARSENIC TREATMENT SYSTEM
MODIFICATIONS DURING PILOT PHASE
MAINE ELECTRONICS SITE
Drumlin Environmental, LLC



REVISIONS					ECN	DESCRIPTION	CHK'D BY	DATE	APP'D
REV	DESCRIPTION	DWN	DATE	APP'D	A	INITIAL RELEASE	MAB	2/25/00	TJW
G	ADDED INSTRUMENT TAGS	MAB	5/22/00	TJW	B	MISC CHANGES	MAB	3/9/00	TJW
H	CHANGE PIPING TO ANION IN SKID	MAB	6/14/00	TJW	C	SUBMITTALS	MAB	3/13/00	TJW
I	REMOVE HEATER FROM CLEANING TANK #2	MAB	6/15/00	TJW	D	MISC CHANGES	MAB	3/17/00	TJW
J	AS INSTALLED	MAB	11/10/00	TJW	E	MISC CHANGES	MAB	5/1/00	TJW
K	ADD CONNECTION LABELS TO CLEANING DRAINS	MAB	3/19/01	TJW	F	MISC FLOW METER CHANGES	MAB	5/8/00	TJW

TOLERANCES Unless Specified
Fraction
Decimal .xx
Decimal .xxx
Angular

DWN BY: MAB
DATE: FEB '00
DWN BY: TJW
DATE: FEB '00
DO NOT SCALE DRAWING

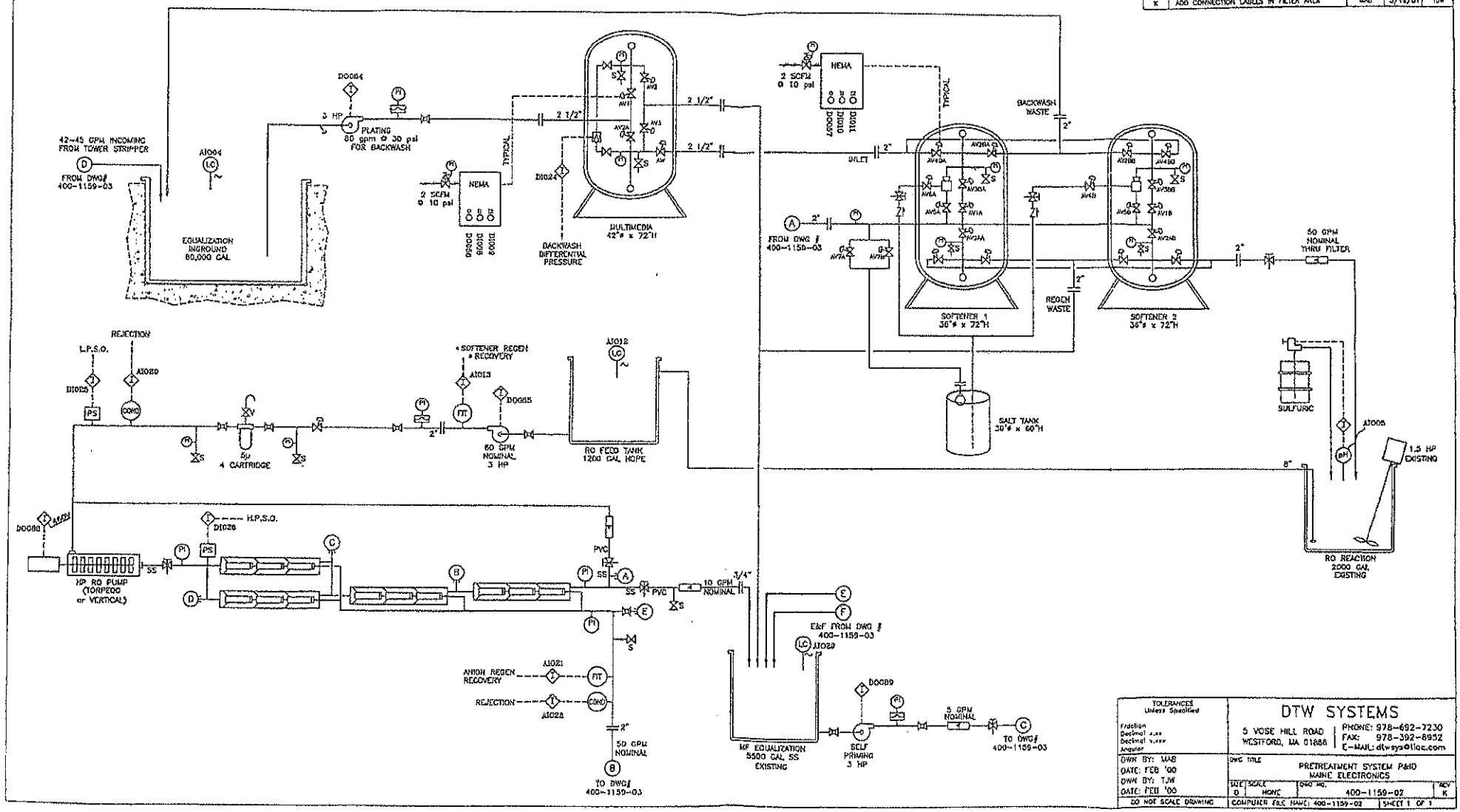
DTW SYSTEMS
5 VOSE HILL ROAD
WESTFORD, MA 01886
PHONE: 978-692-7230
FAX: 978-392-8952
E-MAIL: dtwsys@tiac.com

DWG TITLE
10 GPM NOMINAL SYSTEM P&ID
MAINE ELECTRONICS

SIZE D | SCALE NONE | DWG NO. 400-1159-03 | REV K

COMPUTER FILE NAME: A00-1159-03 | SHEET 1 OF 1

REV.	DESCRIPTION	DRAWN BY	DATE	APVD'D
A	INITIAL RELEASE	MAB	2/23/00	TJW
B	MISC CHANGES	MAB	3/9/00	TJW
C	SUBMITTALS	MAB	3/13/00	TJW
D	MISC CHANGES	MAB	3/17/00	TJW
E	MISC CHANGES	MAB	5/1/00	TJW
F	MISC FLOW METER CHANGES	MAB	5/9/00	TJW
G	ADD INSTRUMENT TAGS	MAB	5/22/00	TJW
H	CHG PIPING TO MULTIMEDIA & SOFTENER TANKS	MAB	6/14/00	TJW
J	AS INSTALLED	MAB	11/10/00	TJW
K	ADD CONNECTION LABELS IN FILTER AREA	MAB	3/19/01	TJW



TOLERANCES Unless Specified	DTW SYSTEMS	
Fraction Decimal x.xx Decimal x.xxx Angular	5 VOSE HILL ROAD WESTFORD, MA 01886	PHONE: 978-692-7230 FAX: 978-392-8952 E-MAIL: dtwsys@tiac.com
DWN BY: MAB DATE: FEB '00 DWN BY: TJW DATE: FEB '00	DWG TITLE: PRETREATMENT SYSTEM P&ID MAINE ELECTRONICS	
DO NOT SCALE DRAWING	SIZE: D; SCALE: NONE; DWG NO.: 400-1159-02; REV: K COMPUTER FILE NAME: 400-1159-02; SHEET 1 OF 1	

ATTACHMENT C

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 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 that 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.

CONTENTS

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).

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 if 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 MAINTENACE 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

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.

(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.

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.

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

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).

(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.

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 contaminates 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.

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.

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.

DEP INFORMATION SHEET

Appealing a Commissioner's Licensing Decision

Dated: May 2004 **Contact: (207) 287-2811**

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) in an administrative process before the Board of Environmental Protection (Board); or (2) in a judicial process before Maine's Superior Court. This INFORMATION SHEET, in conjunction with consulting statutory and regulatory provisions referred to herein, can help aggrieved persons with understanding their rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

DEP's *General Laws*, 38 M.R.S.A. § 341-D(4), and its *Rules Concerning the Processing of Applications and Other Administrative Matters* (Chapter 2), 06-096 CMR 2.24 (April 1, 2003).

HOW LONG YOU HAVE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written notice of appeal within 30 calendar days of the date on which the Commissioner's decision was filed with the Board. Appeals filed after 30 calendar days will be rejected.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, c/o Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017; faxes are acceptable for purposes of meeting the deadline when followed by receipt of mailed original documents within five (5) working days. Receipt on a particular day must be by 5:00 PM at DEP's offices in Augusta; materials received after 5:00 PM are not considered received until the following day. The person appealing a licensing decision must also send the DEP's Commissioner and the applicant a copy of the documents. All the information listed in the next section must be submitted at the time the appeal is filed. Only the extraordinary circumstances described at the end of that section will justify evidence not in the DEP's record at the time of decision being added to the record for consideration by the Board as part of an appeal.

WHAT YOUR APPEAL PAPERWORK MUST CONTAIN

The materials constituting an appeal must contain the following information at the time submitted:

1. *Aggrieved Status*. Standing to maintain an appeal requires the appellant to show they are particularly injured by the Commissioner's decision.
2. *The findings, conclusions or conditions objected to or believed to be in error.* Specific references and facts regarding the appellant's issues with the decision must be provided in the notice of appeal.
3. *The basis of the objections or challenge.* If possible, specific regulations, statutes or other facts should be referenced. This may include citing omissions of relevant requirements, and errors believed to have been made in interpretations, conclusions, and relevant requirements.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.

5. *All the matters to be contested.* The Board will limit its consideration to those arguments specifically raised in the written notice of appeal.

6. *Request for hearing.* The Board will hear presentations on appeals at its regularly scheduled meetings, unless a public hearing is requested and granted. A request for public hearing on an appeal must be filed as part of the notice of appeal.

7. *New or additional evidence to be offered.* The Board may allow new or additional evidence as part of an appeal only when the person seeking to add information to the record can show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process or show that the evidence itself is newly discovered and could not have been presented earlier in the process. Specific requirements for additional evidence are found in Chapter 2, Section 24(B)(5).

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license file is public information made easily accessible by DEP. Upon request, the DEP will make the material available during normal working hours, provide space to review the file, and provide opportunity for photocopying materials. There is a charge for copies or copying services.

2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer questions regarding applicable requirements.

3. *The filing of an appeal does not operate as a stay to any decision.* An applicant proceeding with a project pending the outcome of an appeal runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge initiation of the appeals procedure, including the name of the DEP project manager assigned to the specific appeal, within 15 days of receiving a timely filing. The notice of appeal, all materials accepted by the Board Chair as additional evidence, and any materials submitted in response to the appeal will be sent to Board members along with a briefing and recommendation from DEP staff. Parties filing appeals and interested persons are notified in advance of the final date set for Board consideration of an appeal or request for public hearing. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision. The Board will notify parties to an appeal and interested persons of its decision.

II. APPEALS TO MAINE SUPERIOR COURT

Maine law allows aggrieved persons to appeal final Commissioner licensing decisions to Maine's Superior Court, see 38 M.R.S.A. § 346(1); 06-096 CMR 2.26; 5 M.R.S.A. § 11001; & MRCivP 80C. Parties to the licensing decision must file a petition for review within 30 days after receipt of notice of the Commissioner's written decision. A petition for review by any other person aggrieved must be filed within 40-days from the date the written decision is rendered. The laws cited in this paragraph and other legal procedures govern the contents and processing of a Superior Court appeal.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, contact the DEP's Director of Procedures and Enforcement at (207) 287-2811.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.