



PAUL R. LEPAGE
GOVERNOR

STATE OF MAINE
DEPARTMENT OF
ENVIRONMENTAL PROTECTION



PAUL MERCER
COMMISSIONER

May 16, 2016

Mr. Kenneth Davis
Town of East Machias
P.O. Box 117
East Machias, ME 04630-0117
emclerk@roadrunner.com

*Sent via electronic mail
Delivery confirmation requested*

**RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit # ME0102156
Maine Waste Discharge License (WDL) Application # W006521-6B-F-R
Proposed Draft MEPDES Permit Renewal**

Dear Kenneth Davis:

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

By copy of this letter, the Department is requesting comments on the proposed draft permit from various state and federal agencies, as required by our new regulations, and from any other parties who have notified the Department of their interest in this matter. If you have any questions regarding the matter, please feel free to call me.

All comments must be received in the Department of Environmental Protection office on or before the close of business **Tuesday, June 14, 2016**. Failure to submit comments in a timely fashion will result in the final document being issued as drafted.

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

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

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

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

Town of East Machias
April 25, 2016
Page 2 of 2

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

Maine Department of Environmental Protection
Bureau of Water Quality
Division of Water Quality Management
17 State House Station
Augusta, ME 04333-0017
Aaron.A.Dumont@maine

If you have any questions regarding the matter, please feel free to call me at (207)-592-7161.

Sincerely,



Aaron Dumont
Division of Water Quality Management
Bureau of Water Quality
Aaron.A.Dumont@maine.gov
Phone: 207-592-7161

Enclosure

cc: Matt Young, DEP/EMRO
Alex Rosenberg, EPA
David Webster, EPA
David Pincumbe, EPA
Olga Vergara, EPA
Marelyn Vega, EPA
Richard Carvalho, EPA
DMR Environmental Review
IF&W Environmental Review
Dale Mitchell, Passamaquoddy Tribal Government



DEPARTMENT ORDER

IN THE MATTER OF

TOWN EAST MACHIAS) MAINE POLLUTANT DISCHARGE
EAST MACHIAS, WASHINGTON COUNTY, MAINE) ELIMINATION SYSTEM PERMIT
PUBLICLY OWNED TREATMENT WORKS) AND
ME0102156) WASTE DISCHARGE LICENSE
W006521-6B-F-R) **APPROVAL**) **RENEWAL**

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

APPLICATION SUMMARY

On November 4, 2015, the Department accepted as complete for processing an application from the Town of East Machias for the renewal of combination Maine Pollutant Discharge Elimination System (MEPDES) permit ME0102156/Maine Waste Discharge License (WDL) W006521-6B-D-R, which was issued by the Department on September 2, 2010, and expired on September 2, 2015. The permit authorized the discharge of up to 22,585 gallons per day collectively (0.022585 million gallons per day, MGD), of secondary treated sanitary wastewater from 17 sand filter systems. Seventeen of the systems are chlorinated for disinfection, while one outfall (#005) utilizes ultraviolet disinfection. Outfall #004 (Washington Academy) was replaced with a subsurface system during the summer of 2010, and Outfall #018 was discontinued all together. Two outfalls (#002, and #011) discharge to Meadow Brook and two outfalls (#015, and #019) discharge to an unnamed brook near the Cutler Road. Both of these brooks are tributaries of the East Machias River and are classified as Class B waters in East Machias, Maine. The East Machias River in the area of the discharges is both freshwater and also subject to tidal influences and is classified as Class B and SB waters, respectively.

It is noted that the Department made three permit revisions since issuing the 9/2/10 permit. On September 23, 2010, the permit was modified to correct a typographical error in Special Condition Table A.4. On October 22, 2010, the permit was modified to correct a typographical error and the omission of Footnote #5 and appropriate cross-reference in Special Conditions Tables A.1, A.2, A.3, and A.4. It also corrected the footnote reference on table A.4. On January 8, 2013, the permit was modified to reduce mercury monitoring requirements to once per year.

PERMIT SUMMARY

This permitting action is carrying forward all the terms and conditions of the September 2, 2010, permitting action and subsequent modifications except that it is:

1. Eliminating the waiver to achieve 85 percent removal of both biochemical oxygen demand and total suspended solids when the influent strength is less than 200 mg/L as there was no legal basis for such a waiver.
2. Establishing a requirement for the permittee to conduct an Industrial Waste Survey (IWS) any time a new industrial user proposes to discharge within its jurisdiction; an existing user proposes to make a significant change in its discharge; or at an alternative minimum, once every permit cycle, and submit the results to the Department.

CONCLUSIONS

Based on the findings summarized in the attached and incorporated draft Fact Sheet dated May 16, 2016, and subject to the special and standard conditions that follow, the Department makes the following CONCLUSIONS:

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

ACTION

Based on the findings and conclusions as stated above and incorporated fact sheet, the Department APPROVES the above noted application of the TOWN OF TOWN OF EAST MACHIAS to collectively discharge a monthly average total flow of up to 22,585 gallons per day of secondary treated sanitary wastewater to Meadow Brook (Class B), an unnamed brook (Class B), to non-tidal portions of the East Machias River (Class B) and to tidal portions of the East Machias River (Class SB), in East Machias, Maine. The discharges must be 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 becomes effective upon the date of signature below and expires at midnight five (5) years after that date. If a renewal application is timely submitted and accepted as complete for processing prior to the expiration of this permit, the terms and conditions of this permit and all subsequent modifications and minor revisions thereto remain in effect until a final Department decision on the renewal application becomes effective. *Maine Administrative Procedure Act*, 5 M.R.S.A. § 10002 and *Rules Concerning the Processing of Applications and Other Administrative Matters*, 06-096 CMR 2(21)(A) (amended October 19, 2015).

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

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
PAUL MERCER, Commissioner

Date filed with Board of Environmental Protection _____

Date of initial receipt of application November 2, 2015
Date of application acceptance November 4, 2015

This Order prepared by Aaron Dumont, BUREAU OF WATER QUALITY

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge secondary treated sanitary wastewater from **Outfall #001** to the East Machias River in East Machias. Such discharges are limited and must be monitored by the permittee as specified below⁽¹⁾:

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow ^(*) [50050]	3,575 GPD [07]	---	---	---	---	---	1/Month [01/30]	Estimate [ES]
BOD ₅ [00310]	1.0 lbs/day [26]	1.0 lbs/day [26]	1.0 lbs/day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	1/Month [01/30]	Estimate [ES]
BOD ₅ Percent Removal ⁽²⁾ [81010]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Total Suspended Solids (TSS) [00530]	1.0 lbs/day [26]	1.0 lbs/day [26]	1.0 lbs/day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	1/Month [01/30]	Composite [24]
TSS % Removal ⁽²⁾ [81011]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Fecal coliform ^(3,4) [31616] (year round)	---	---	---	15 col/100 ml [13]	---	50 col/100 ml [13]	2/Month [02/30]	Grab [GR]
Total Residual Chlorine ⁽⁵⁾ [50060]	---	---	---	---	---	1.0 mg/L [19]	1/Week [01/07]	Grab [GR]
pH (Std. Unit) ⁽⁶⁾ [00400]	---	---	---	---	---	6.0 – 9.0 SU [12]	1/Month [01/30]	Grab [GR]

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

(*) Note: Outfall #001 is located at Factory Road and serves 6 dwellings and one school.

Footnotes: See Pages 8-9 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. The permittee is authorized to discharge secondary treated sanitary wastewater from **Outfall #003** to the East Machias River. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow ^(*) [50050]	3,800 GPD [07]	---	---	---	---	---	1/Month [01/30]	Estimate [ES]
BOD ₅ [00310]	1.0 lbs/day [26]	1.0 lbs/day [26]	1.0 lbs/day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	1/Month [02/30]	Estimate [ES]
BOD ₅ Percent Removal ⁽²⁾ [81010]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Total Suspended Solids (TSS) [00530]	1.0 lbs/day [26]	1.0 lbs/day [26]	1.0 lbs/day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	1/Month [01/30]	Composite [24]
TSS % Removal ⁽²⁾ [81011]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Fecal coliform ^(3,4) [31616] (year round)	---	---	---	15 col/100 ml [13]	---	50 col/100 ml [13]	2/Month [02/30]	Grab [GR]
Total Residual Chlorine ⁽⁵⁾ [50060]	---	---	---	---	---	1.0 mg/L [19]	1/Week [01/07]	Grab [GR]
pH (Std. Unit) ⁽⁶⁾ [00400]	---	---	---	---	---	6.0 – 9.0 SU [12]	1/Month [01/30]	Grab [GR]

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

(*) Notes: Outfall 003 is located at Water Street at park and serves 19 dwellings.

Footnotes: See Pages 8-9 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd) – OUTFALL #005

3. The permittee is authorized to discharge secondary treated sanitary wastewater from **Outfall #005** to the East Machias River. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow ^(*) [50050]	6,900 GPD [07]	---	---	---	---	---	1/Month [01/30]	Estimate [ES]
BOD ₅ [00310]	2.0 lbs/day [26]	2.6 lbs/day [26]	2.9 lbs/day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	1/Month [02/30]	Estimate [ES]
BOD ₅ Percent Removal ⁽²⁾ [81010]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Total Suspended Solids (TSS) [00530]	2.0 lbs/day [26]	2.6 lbs/day [26]	2.9 lbs/day [26]	30 mg/L [19]	45 mg/L [19]	50 mg/L [19]	1/Month [02/30]	Composite [24]
TSS % Removal ⁽²⁾ [81011]	---	---	---	85% [23]	---	---	1/Month [01/30]	Calculate [CA]
Fecal coliform ^(3,4) [31616]	---	---	---	15 col/100 ml [13]	---	50 col/100 ml [13]	2/Month [02/30]	Grab [GR]
Total Residual Chlorine ⁽⁵⁾ [50060]	---	---	---	---	---	0.3 mg/L [19]	1/Week [01/07]	Grab [GR]
pH (Std. Unit) ⁽⁶⁾ [00400]	---	---	---	---	---	6.0 – 9.0 SU [12]	1/Month [01/30]	Grab [GR]
Mercury (Total) ⁽⁷⁾ [71900]	---	---	---	5.7 ng/L [3M]	---	8.6 ng/L [3M]	1/Year [01/01]	Grab [GR]

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

(*) Note: Outfall #005 is located on Main Street at the post office and serves up to 23 dwellings.

Footnotes: See Pages 8-9 of this permit for applicable footnotes.

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

4. The permittee is authorized to discharge secondary treated sanitary wastewater from **Outfalls #002 and #006 – #019 (except for discontinued outfall #018)** to the East Machias River. Such discharges shall be limited as specified below:

Discharge Limitations		
Outfall	Location/Source Generation	Limit
002	Rt 1 S (town property)/ 2 homes/1business	1,000
006	Rt. 1 old pharmacy/ 10 homes, 1 business	1,450
007	Rt 1 at Scotts Hill Rd/5 homes	1,100
008	Rt 1 N (town)/3 homes	900
009	River Road/1 barber shop	100
010	Rt 1 Scotts Hill-Hammond/1 home, store, cabins	1,200
011	Rt 1 Lincoln Co/1 home, 1 business	320
012	Rt 1 Vandergrift/1 home	300
013	River Rd-Young/1 home	300
014	Rt 1 Clark/1 home	300
015	River Rd Murphy/1 home	300
016	River Rd Archibald/1 home	300
017	Rt 1 Doucette/1 home	380
018	Discontinued	---
019	Wiswell Rd/1 home	360

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

NOTES: Flow shall not exceed the limits established in the table above for each outfall location. See Pages 8-9 of this permit for applicable footnotes.

SPECIAL CONDITIONS

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

FOOTNOTES

1. **Sampling** – Influent sampling must be conducted at the headworks building influent channel. Effluent sampling must be sampled at the end of the chlorine contact chamber but prior to the discharge pipe. Any change in sampling location must be approved by the Department in writing. The permittee must conduct sampling and analysis in accordance with; a) methods approved by 40 Code of Federal Regulations (CFR) Part 136, b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136, or c) as otherwise specified by the Department. Samples that are sent out for analysis must be analyzed by a laboratory certified by the State of Maine's Department of Health and Human Services for wastewater analysis. Samples that are sent to a POTW licensed pursuant to *Waste discharge licenses*, 38 M.R.S.A. § 413 are subject to the provisions and restrictions of *Maine Comprehensive and Limited Environmental Laboratory Certification Rules*, 10-144 CMR 263 (effective April 1, 2010). If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or as specified in this permit, the results of this monitoring must be included in the calculation and reporting of the data submitted in the Discharge Monitoring Report.
2. **Percent Removal** – The permittee must achieve a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand for all flows receiving secondary treatment. The percent removal is calculated based on monthly average influent and effluent concentration values.
3. **Bacteria Limits** – Fecal coliform bacteria limits and monitoring requirements are in effect year round in order to protect local shellfish resources near the outfalls and to protect the health, safety and welfare of the public.
4. **Bacteria Reporting** – The monthly average fecal coliform bacteria limitation is a geometric mean limitation and sample results must be reported as such.
5. **TRC Monitoring** – Limitations and monitoring requirements are applicable whenever elemental chlorine or chlorine based compounds are being used to disinfect the discharge. The permittee must utilize approved test methods that are capable of bracketing the limitations in this permit.
6. **pH Range Limitation** – Effluent pH results outside the range of 6.0–9.0 are not to be reported as exceptions provided the cause(s) for the exceedances are not as a result of inorganic chemicals added to the waste stream or contributions from industrial sources. The permittee shall provide the Department with written documentations as to the cause(s) of the pH results if determined to be outside the 6.0–9.0 SU range and shall provide documentation of ambient receiving water pH from a sampling location immediately above the point of discharge.

SPECIAL CONDITIONS

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

7. **Mercury** – All mercury sampling (1/Year) required to determine compliance with interim limitations established pursuant to *Interim Effluent Limitations and Controls for the Discharge of Mercury*, 06-096 CMR 519 (last amended October 6, 2001) must 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 analyses must be conducted in accordance with EPA Method 1631E, Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry. See **Attachment A**, *Effluent Mercury Test Report*, of this permit for the Department's form for reporting mercury test results. Compliance with the monthly average limitation established in Special Condition A.1 of this permit will be based on the cumulative arithmetic mean of all mercury tests results that were conducted utilizing sampling Methods 1669 and analysis Method 1631E on file with the Department for this facility.

B. NARRATIVE EFFLUENT LIMITATIONS

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

C. TREATMENT PLANT OPERATOR

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

D. LIMITATIONS FOR INDUSTRIAL USERS

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

E. AUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with: 1) the permittee's General Application for Waste Discharge Permit, accepted for processing on November 4, 2015; 2) the terms and conditions of this permit; and 3) only from Outfall #001 through Outfall #003, Outfall #005 through Outfall #017 and Outfall #019. Discharges of wastewater from any other point sources are not authorized under this permit, and must be reported in accordance with Standard Condition D(1)(f), *Twenty-four hour reporting*, of this permit.

F. NOTIFICATION REQUIREMENT

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

1. Any introduction of pollutants into the wastewater collection and treatment system from an indirect discharger in a primary industrial category discharging process wastewater; and
2. Any substantial change in the volume or character of pollutants being introduced into the wastewater collection and treatment system by a source introducing pollutants to the system at the time of permit issuance.
3. For the purposes of this section, notice regarding substantial change must include information on:
 - a. the quality and quantity of wastewater introduced to the wastewater collection and treatment system; and
 - b. any anticipated impact caused by the change in the quantity or quality of the wastewater to be discharged from the treatment system.

SPECIAL CONDITIONS

G. OPERATIONS AND MAINTENANCE (O&M) PLAN

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

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

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

H. 06-096 CMR 530(2)(D)(4) STATEMENT FOR REDUCED/WAIVED TOXICS TESTING

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

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

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

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

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

SPECIAL CONDITIONS

I. MONITORING AND REPORTING

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

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

Alternatively, if the permittee submits an electronic DMR, the completed DMR must be electronically submitted to the Department by a facility authorized DMR Signatory not later than close of business on the **15th day of the month** following the completed reporting period. Hard copy documentation submitted in support of the DMR must be postmarked on or before the **thirteenth (13th) 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 (15th) day of the month following the completed reporting period. Electronic documentation in support of the DMR must be submitted not later than close of business on the 15th day of the month following the completed reporting period.

J. REOPENING OF PERMIT FOR MODIFICATION

In accordance with 38 M.R.S.A. § 414-A(5) and 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 any time 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 monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

K. 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 must remain in full force and effect, and must be construed and enforced in all aspects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

ATTACHMENT A

Effluent Mercury Test Report

Name of Facility: _____ Federal Permit # ME _____

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

SAMPLE COLLECTION INFORMATION

Sampling Date:	<input type="text"/> <input type="text"/> <input type="text"/>	Sampling time:	<input type="text"/> AM/PM
	mm dd yy		
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	<input type="text"/> mg/L	Sample type:	<input type="text"/> Grab (recommended) or <input type="text"/> Composite

ANALYTICAL RESULT FOR EFFLUENT MERCURY

Name of Laboratory:	_____		
Date of analysis:	<input type="text"/>	Result:	<input type="text"/> ng/L (PPT)
Please Enter Effluent Limits for your facility			
Effluent Limits:	Average = <input type="text"/> ng/L	Maximum = <input type="text"/> 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 certify 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

ATTACHMENT B

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAPTER 530.2(D)(4) CERTIFICATION

MEPDES# _____ Facility Name _____

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

COMMENTS:

Name (printed): _____

Signature: _____ Date: _____

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

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

Scheduled Toxicity Testing for the next calendar year

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

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

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

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

FACT SHEET

DATE: **May 16, 2016**

PERMIT NUMBER: **ME0102156**

WASTE DISCHARGE LICENSE: **W006521-6B-F-R**

NAME AND ADDRESS OF APPLICANT:

**TOWN OF EAST MACHIAS
WASTEWATER TREATMENT FACILITY
P.O. BOX 117
EAST MACHAIS, ME 04630**

COUNTY: **WASHINGTON**

NAME AND ADDRESS WHERE DISCHARGE(S) OCCUR(S):

**WASTEWATER TREATMENT FACILITY
ROUTE 1
EAST MACHAIS, ME 04630**

RECEIVING WATER CLASSIFICATION: **MACHAIS RIVER/CLASS B**

COGNIZANT OFFICIAL CONTACT INFORMATION:

**MR. KENNETH DAVIS
(207) 255-8598
emclerk@roadrunner.com**

1. APPLICATION SUMMARY

On November 4, 2015, the Department accepted as complete for processing an application from the Town of East Machias for the renewal of combination Maine Pollutant Discharge Elimination System (MEPDES) permit ME0102156/Maine Waste Discharge License (WDL) W006521-6B-D-R, which was issued by the Department on September 2, 2010, and expired on September 2, 2015. The permit authorized the discharge of up to 22,585 gallons per day collectively (0.022585 million gallons per day, MGD), of secondary treated sanitary wastewater from 17 sand filter systems. Seventeen of the systems are chlorinated for disinfection, while one outfall (#005) utilizes ultraviolet disinfection. Outfall #004 (Washington Academy) was replaced with a subsurface system during the summer of 2010, and Outfall #018 was discontinued all together. Two outfalls (#002, and #011) discharge to Meadow Brook and two outfalls (#015, and #019) discharge to an unnamed brook near the Cutler Road. Both of these brooks are tributaries of the East Machias River and are classified as Class B waters in East Machias, Maine.

1. APPLICATION SUMMARY (cont'd)

The East Machias River in the area of the discharges is freshwater and also subject to tidal influences and is classified as Class B and SB waters, respectively.

It is noted that the Department made three permit revisions since issuing the 9/2/10 permit. On September 23, 2010, the permit was modified to correct a typographical error in Special Condition Table A.4. On October 22, 2010, the permit was modified to correct a typographical error and the omission of Footnote #5 and appropriate cross-reference in Special Conditions Tables A.1, A.2, A.3, and A.4. It also corrected the footnote reference on table A.4. On January 8, 2013, the permit was modified to reduce mercury monitoring requirements to once per year.

2. PERMIT SUMMARY

a. Terms and Conditions:

This permitting action is carrying forward all the terms and conditions of the October 22, 2010, permitting action and subsequent modifications except that it is:

1. Eliminating the waiver to achieve 85 percent removal of both biochemical oxygen demand and total suspended solids when the influent strength is less than 200 mg/L as there was no legal basis for such a waiver.
2. Establishing a requirement for the permittee to conduct an Industrial Waste Survey (IWS) any time a new industrial user proposes to discharge within its jurisdiction; an existing user proposes to make a significant change in its discharge; or at an alternative minimum, once every permit cycle, and submit the results to the Department.

b. History: This section provides a summary of significant licensing/permitting actions and milestones that have been completed for the permittee.

September 24, 1986 – The Department issued WDL #W006521-45-A-N. The license expired on September 24, 1991.

October 3, 1986 – The EPA issued NPDES permit #ME0102156, establishing limitations and monitoring requirements for all nineteen outfall locations.

March 27, 1992 – The EPA accepted the Town's application for renewal of permit #ME0102156.

February 15, 1995 – The Department issued a letter to the Town that exempted the facilities from the *Surface Water Toxics Control Program* (Chapter 530.5).

March 28, 1997 – The Department issued a Notice of Violation (NOV) to the Town for failure to (i) submit effluent data on licensed point source discharges, (ii) properly disinfect several discharges, and (iii) submit an annual summary report as required. The issues outlined in the NOV were subsequently addressed by the Town to the satisfaction of the Department.

2. PERMIT SUMMARY (cont'd)

May 23, 2000 – Pursuant to 38 M.R.S.A. § 420 and *Interim Effluent Limitations and Controls for the Discharge of Mercury*, 06-096 CMR 519, the Department issued a *Notice of Interim Limits for the Discharge of Mercury* to the permittee thereby administratively modifying WDL permit #W006521-5L-B-R by establishing interim monthly average and daily maximum effluent concentration limits of 56.3 parts per trillion (ppt) and 84.5 ppt, respectively, and a minimum monitoring frequency requirement of 2 tests per year for mercury.

December 8, 2000 – The Department issued WDL #W006521-5L-B-R that renewed authorization to discharge secondarily treated wastewater as described in WDL #W006521-45-A-N.

The December 2, 2002 – amendment corrected the interim limits calculated in the May 23, 2000 *Notice of Interim Limits*. The December 2, 2002, amendment established a corrected average concentration of 5.74 ppt, and 8.6 ppt.

October 5, 2005 – The Department issued WDL #W006521-5L-C-R for a five-year period.

September 2, 2010 – The Department issued WDL #W006521-6B-D-R for a five year period.

November 4, 2016 – The Town of East Machias submitted a timely and complete General Application to the Department for renewal of the September 2, 2010, permit (including subsequent minor revisions and permit modifications). The application was accepted for processing on November 4, 2015, and was assigned WDL #W006521-6B-F-R / MEPDES ME0102156.

- c. Source Description: The permittee's wastewater disposal system is comprised of 36 residential subsurface disposal systems, 43 residential sand filters and 4 cluster sand filter systems. The sand filter systems discharge from 17 points throughout the system. Previously permitted Outfalls #004 and #018 have been discontinued. There are no combined sewer overflows associated with the permittee. The permittee is not authorized to treat or receive septage from local septage haulers. Site location maps showing the location of the treatment system and the receiving waters is included as **Attachment A** of this Fact Sheet.
- d. Wastewater Treatment: The wastewater treatment system consists of small-diameter gravity sewers and pumping systems that convey wastewater onto conventional sand filters, beds or chamber disposal systems after treatment in septic tanks. The permittee owns three of the sandfilter systems; all other sand filter systems are privately owned and maintained. Septic tank solids are periodically collected and disposed of via land application. The treated wastewater from the sand filters is directed through subsurface piping and conveyed to a tablet chlorination system for disinfection in 16 out of the 17 systems. The system associated with Outfall #005 utilizes ultraviolet disinfection technology. The effluent is then discharged to the receiving water via four-inch diameter PVC pipes for the 16 chlorinated systems and a six-inch diameter pipe for discharge outfall #005. Outfall #004 (Washington Academy) was replaced with a subsurface system in the summer of 2010.

3. CONDITIONS OF PERMIT

Conditions of licenses, 38 M.R.S.A. § 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, *Certain deposits and discharges prohibited*, 38 M.R.S.A. § 420 and *Surface Water Toxics Control Program*, 06-096 CMR 530 (effective March 21, 2012) require the regulation of toxic substances not to exceed levels set forth in *Surface Water Quality Criteria for Toxic Pollutants*, 06-096 CMR 584 (last amended July 29, 2012), and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

4. RECEIVING WATER QUALITY STANDARDS

Classification of Major River Basins, 38 M.R.S.A. §467(3)(A)(2)/(B)(1) and *Classifications of Estuarine and Marine Waters*, 38 M.R.S.A §469, classify the East Machias River and its tributaries at the point of discharge as Class B and Class SB waters, respectively. *Standards for classification of estuarine and marine waters*, 38 M.R.S.A. §465-B(2) and §465-B(3), describes the standards for Class B and SB waters, respectively.

5. RECEIVING WATER QUALITY CONDITIONS

The State of Maine 2012 Integrated Water Quality Monitoring and Assessment Report, prepared by the Department pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act, lists this segment of the East Machias River (AU_ID ME0105000204_509R) "Category 2: Rivers and Streams Attaining Some Designated Uses - Insufficient Information for Other Uses."

The Report lists all of Maine's fresh waters as, "Category 4-A: Waters Impaired by Atmospheric Deposition of Mercury." Impairment in this context refers to a statewide fish consumption advisory due to elevated levels of mercury in some fish tissues. The Report states, "All freshwaters are listed in Category 4-A (TMDL Completed) due to USEPA approval of a Regional Mercury TMDL. Maine has a fish consumption advisory for fish taken from all freshwaters due to mercury. Many waters, and many fish from any given water, do not exceed the action level for mercury. However, because it is impossible for someone consuming a fish to know whether the mercury level exceeds the action level, the Maine Department of Health and Human Services decided to establish a statewide advisory for all freshwater fish that recommends limits on consumption. Maine has already instituted statewide programs for removal and reduction of mercury sources." Pursuant to 38 M.R.S.A. § 420(1-B)(B), "a facility is not in violation of the ambient criteria for mercury if the facility is in compliance with an interim discharge limit established by the Department pursuant to section 413 subsection 11." The Department has established interim monthly average and daily maximum mercury concentration limits and reporting requirements for this facility pursuant to 06-096 CMR 519.

The Department has no information at this time that the discharge from the Town of East Machias, as permitted, will cause or contribute to the failure of the receiving water to meet the designated uses of its ascribed classification.

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

- a. **Flow:** The previous permitting action established, and this permitting action is carrying forward, a collective monthly average discharge flow limit of 22,585 gallons per day (GPD) based on the dry weather design capacity for the treatment facilities. Each outfall has been assigned its own limitation based upon its design capacity.

The Department reviewed 60 Discharge Monitoring Reports (DMRs) that were submitted for the period of September 2011 – December 2015. A review of data indicates the following:

Flow (DMR=60)

Outfall #	Value	Limit (MGD)	Range (MGD)	Mean (MGD)
001	Monthly Average	3,575	1,500 – 3,575	2962
002	Monthly Average	1,000	---	---
003	Monthly Average	3,800	1,500–3,800	3,105
005	Monthly Average	6,900	2,000–6,900	5,288
006	Monthly Average	1,450	---	---
007	Monthly Average	1,100	---	---
008	Monthly Average	900	---	---
009	Monthly Average	100	---	---
010	Monthly Average	1,200	---	---
011	Monthly Average	320	---	---
012	Monthly Average	300	---	---
013	Monthly Average	300	---	---
014	Monthly Average	300	---	---
015	Monthly Average	300	---	---
016	Monthly Average	300	---	---
017	Monthly Average	380	---	---
018	Discontinued	---	---	---
019	Monthly Average	360	---	---

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

- b. Dilution Factors: The Department established applicable dilution factors for the discharge in accordance with freshwater protocols established in *Surface Water Toxics Control Program*, 06-096 CMR 530 (last amended March 21, 2012). This permitting action is calculating dilution factors associated with the discharge flow limit of 0.022585 (MGD) as follows.

$$\text{Mod. Acute: } \frac{1}{4} Q_{10} = 3.93 \text{ cfs} \Rightarrow \frac{(3.93 \text{ cfs})(0.6464) + 0.022585 \text{ MGD}}{0.022585 \text{ MGD}} = 113.2:1$$

$$\text{Acute: } 1Q_{10} = 15.7 \text{ cfs} \Rightarrow \frac{(15.7 \text{ cfs})(0.6464) + 0.022585 \text{ MGD}}{0.022585 \text{ MGD}} = 450:1$$

$$\text{Chronic: } 7Q_{10} = 17.7 \text{ cfs} \Rightarrow \frac{(17.7 \text{ cfs})(0.6464) + 0.022585 \text{ MGD}}{0.022585 \text{ MGD}} = 508:1$$

$$\text{Harmonic Mean}^1 = 53.1 \Rightarrow \frac{(53.1 \text{ cfs})(0.6464) + 0.022585 \text{ MGD}}{0.022585 \text{ MGD}} = 1,521:1$$

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

FOOTNOTE:

¹The 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 U.S. EPA 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 on which human health dilutions are based in a riverine 7Q10 flow situation.

- c. Biochemical Oxygen Demand (BOD₅) and Total Suspended Solids (TSS): For Outfalls #001, #003, and #005 (three largest outfall locations) the previous permitting action established, and this permitting action is carrying forward, monthly average and weekly average technology-based effluent limits of 30 mg/L and 45 mg/L, respectively, for BOD₅ and TSS pursuant to the secondary treatment regulation at 40 CFR 133.102 and 06-096 CMR 525(3)(III). The previous permit also established a daily maximum technology-based effluent limit of 50 mg/L for both BOD₅ and TSS based on a Department best professional judgment (BPJ) of best practicable treatment (BPT) for secondary treated wastewater.

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

Example calculations, Outfall #001:

The mass-based limits were calculated as follows:

Monthly Average Mass Limit: $(30 \text{ mg/L})(8.34 \text{ lbs./gallon})(0.003575 \text{ MGD})=0.89 \text{ lbs./day} \sim 1.0 \text{ lbs.}$

Weekly Average Mass Limit: $(45 \text{ mg/L})(8.34 \text{ lbs./gallon})(0.003575 \text{ MGD})=1.34 \text{ lbs./day} \sim 1.0 \text{ lbs.}$

Daily Maximum Mass Limit: $(50 \text{ mg/L})(8.34 \text{ lbs./gallon})(0.003575 \text{ MGD})=1.49 \text{ lbs./day} \sim 1.5 \text{ lbs.}$

This permitting action is carrying forward a requirement for a minimum of 85% removal of BOD₅ & TSS pursuant to 06-096 CMR 525(3)(III)(a&b)(3). The permittee has not demonstrated that it qualifies for special considerations pursuant to 06-096 CMR 525(3)(IV) to maintain a waiver from the 85% removal requirement when influent concentration is less than 200 mg/L, which was established in the previous permit. Therefore, this permitting action is eliminating the waiver from the 85% removal requirement provided in the previous permitting action when influent concentration is less than 200 mg/L.

Mass Limits, BOD₅ and TSS

Outfall	Flow Limit MGD	Monthly Average	Weekly Average	Daily Max
001	0.003575	1.0	1.0	1.5
002	0.003800	1.0	1.0	1.6
003	0.006900	2.0	2.6	2.9

The Department reviewed 60 DMRs that were submitted for outfall 001, 003, and 005 for the period October 2010 – December 2015 for BOD₅. A review of data indicates the following:

BOD₅ Mass (DMRs=60)

Value	Outfall	Limit (lbs./day)	Range (lbs/day)	Mean (lbs/day)
Monthly Average	001	30	0.00 – 0.30	0.06
Weekly Average	001	45	0.00 – 0.30	0.06
Daily Maximum	001	50	0.00 – 0.30	0.11
Monthly Average	003	30	0.00 – 0.20	0.47
Weekly Average	003	45	0.00 – 0.20	0.05
Daily Average	003	50	0.00 – 0.20	0.09
Monthly Average	005	30	0.00 – 0.50	0.08
Weekly Average	005	45	0.00 – 0.50	0.08
Daily Average	005	50	0.00 – 0.50	0.14

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

BOD₅ Concentration (DMRs=60)

Value	Outfall	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly Average	001	30	1.00 – 9.00	2.78
Weekly Average	001	45	1.00 – 9.00	2.78
Daily Maximum	001	50	1.00 – 9.00	2.78
Monthly Average	003	30	1.00 – 11.00	2.54
Weekly Average	003	45	1.00 – 11.00	2.54
Daily Average	003	50	1.00 – 11.00	2.54
Monthly Average	005	30	1.00 – 16.00	3.47
Weekly Average	005	45	1.00 – 16.00	3.47
Daily Average	005	50	1.00 – 16.00	3.47

The Department reviewed 60 DMRs that were submitted for the period October 2010 – December 2015, for TSS. A review of data indicates the following:

TSS Mass (DMRs=60)

Value	Outfall	Limit (lbs./day)	Range (lbs/day)	Mean (lbs/day)
Monthly Average	001	30	0.00 – 1.00	0.20
Weekly Average	001	45	0.00 – 1.00	0.20
Daily Maximum	001	50	0.05 – 1.00	0.21
Monthly Average	003	30	0.00 – 1.90	0.18
Weekly Average	003	45	0.00 – 1.90	0.18
Daily Average	003	50	0.00 – 1.90	0.20
Monthly Average	005	30	0.00 – 1.50	0.29
Weekly Average	005	45	0.00 – 1.50	0.31
Daily Average	005	50	0.00 – 2.10	0.33

TSS Concentration (DMRs=60)

Value	Outfall	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly Average	001	30	2.00 – 49.00	8.98
Weekly Average	001	45	2.00 – 49.00	8.98
Daily Maximum	001	50	2.00 – 49.00	8.89
Monthly Average	003	30	0.03 – 59.00	6.75
Weekly Average	003	45	0.03 – 59.00	6.75
Daily Average	003	50	0.03 – 59.00	6.75
Monthly Average	005	30	1.00 – 26.00	7.01
Weekly Average	005	45	1.00 – 26.00	7.30
Daily Average	005	50	1.00 – 36.00	7.57

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

- e. Fecal Coliform Bacteria: The previous permitting action established, and this permitting action carrying forward, year round average and daily maximum concentration limits of 15 colonies/100 ml and 50 colonies/100 ml, respectively, for Outfalls #001, #003, and #005, for fecal bacteria, which are consistent with the National Shellfish Sanitation Program.

The Department reviewed 59 DMRs that were submitted for the period October 2010 – September 2015. A review of this data for this time period indicates the following:

Fecal Coliform Bacteria (DMRs=59)

Value	Outfall #	Limit (col/100 ml)	Range (col/100 ml)	Mean (col/100 ml)
Monthly Average	001	15	1 – 30	7
Daily Maximum	001	50	1 – 93	20
Monthly Average	003	15	1 – 2,000	40
Daily Maximum	003	50	1 – 2,000	74
Monthly Average	005	15	1 – 1,183	26
Daily Maximum	005	50	1 – 2,000	70

- f. Total Residual Chlorine (TRC): Limitations on TRC are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. Department permitting actions impose the more stringent of either a water quality-based or best practicable treatment-based limit. With acute and chronic dilution factors associated with the discharge water quality-based concentration thresholds the discharge from all 16 sandfilter systems may be calculated as follows:

Acute (A) Criterion	Chronic (C) Criterion	A & C Dilution Factors	Calculated	
			Acute Threshold	Chronic Threshold
0.019 mg/L	0.011 mg/L	450:1(A) 508:1 (C)	8.55 mg/L	5.59 mg/L

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

The Department has established a daily maximum BPT limitation of 1.0 mg/L for facilities that disinfect their effluent with elemental chlorine or chlorine-based compounds. The BPT-based standard of 1.0 mg/L is more stringent than the calculated acute water quality-based threshold of 8.55 mg/L and is therefore being carried forward for each outfall in this permitting action except for Outfall #003 where the limit is 0.3 mg/L and Outfall #005 which uses ultraviolet disinfection. The Department has identified Outfall #003 as being located in the section of the East Machias River most potentially sensitive to over chlorination due to the physical nature of the river at this location and the volume of discharge; therefore, the December 2000 permitting action required effluent dechlorination for Outfall #003.

For facilities that must dechlorinate their effluent in order to consistently achieve compliance with water quality based thresholds, the Department has established a daily maximum BPT limit of 0.3 mg/L unless calculated water quality based limits are lower than 0.3 mg/L. In the case of Outfall #003, the calculated acute water quality based threshold of 8.55 mg/L is higher than 0.3 mg/L. Therefore, the BPT limitation of 0.3 mg/L is being carried forward in this permitting action.

The Department reviewed 60 DMRs that were submitted for the period October 2010 – September 2015. A review of data indicates the following:

Total Residual Chlorine (DMRs=60)

Value	Outfall #	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Daily Maximum	001	1.0	0.19 – 1.86	0.33
Daily Maximum	003	0.3	0.00 – 0.10	0.27

This permitting action is carrying forward the TRC minimum monitoring frequency of 1/Week for Outfalls #001 and #003.

- g. **pH:** The previous permitting action established, and this permitting action is carrying forward, a technology-based pH limit of 6.0 – 9.0 standard units (SU), which is based on 06-096 CMR 525(3)(III)(c), and a minimum monitoring frequency requirement of 1/Month. This permitting action is carrying forward the limitation and the monitoring frequency requirement of 1/Month.

The Department reviewed 60 DMRs that were submitted for the period June 2010 – May 2015. A review of data indicates the following:

pH (DMRs=60)

Value	Outfall #	Limit (SU)	Range (SU)	Maximum (SU)
Daily Maximum	001	6.0 – 9.0	5.50 – 7.60	7.60
Daily Maximum	003	6.0 – 9.0	3.70 – 6.90	6.90
Daily Maximum	005	6.0 – 9.0	5.50 – 8.00	8.00

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

- h. Mercury: Pursuant to *Certain deposits and discharges prohibited*, Maine law, 38 M.R.S.A. § 420 and *Waste Discharge Licenses*, 38 M.R.S.A. § 413 and *Interim Effluent Limitations and Controls for the Discharge of Mercury*, 06-096 CMR 519 (last amended October 6, 2001), the Department issued a Notice of Interim Limits for the Discharge of Mercury to the permittee on August 28, 2000, thereby administratively modifying MEPDES ME0102156/WDL W006521-6B-F-R by establishing interim average and daily maximum effluent concentration limits of 5.74 parts per trillion (ppt) and 8.6, respectively, and a minimum monitoring frequency requirement of two (2) tests per year for mercury. 38 M.R.S.A. § 420(1-B)(B)(1) provides that a facility is not in violation of the AWQC for mercury if the facility is in compliance with an interim discharge limit established by the Department. A review of the Department’s data base for the period of years 2010 – 2015 indicates the permittee has been in compliance with the interim limits for mercury as results have been reported as follows:

Mercury (DMRs=6)

Value	Limit (ng/L)	Range (ng/L)	Mean (ng/L)
Average	5.74	1.00 – 1.53	1.26
Daily Maximum	8.6		

Pursuant to 38 M.R.S.A. § 420(1-B)(F), the Department issued a minor revision on February 6, 2012 to the August 2, 2010, permit thereby revising the minimum monitoring frequency requirement from twice per year to once per year given the permittee has maintained at least 5 years of mercury testing data. Pursuant to 38 M.R.S.A. § 420(1-B)(F), this permitting action is carrying forward the 1/Year monitoring frequency established in the February 6, 2012, permit modification.

- i. Total Phosphorus: *Waste Discharge License Conditions*, 06-096 CMR 523 (effective January 12, 2001) specifies that water quality based limits are necessary when it has been determined that a discharge has a reasonable potential to cause or contribute to an excursion above any State water quality standard including State narrative criteria¹. In addition, 06-096 CMR 523 specifies that water quality based limits may be based upon criterion derived from a proposed State criterion, or an explicit State policy or regulation interpreting its narrative water quality criterion, supplemented with other relevant information which may include: EPA's Water Quality Standards Handbook, October 1983, risk assessment data, exposure data, information about the pollutant from the Food and Drug Administration, and current EPA criteria documents².

USEPA’s Quality Criteria for Water 1986 (Gold Book) puts forth an in-stream phosphorus concentration goal of less than 0.100 mg/L in streams or other flowing waters not discharging directly to lakes or impoundments, to prevent nuisance algal growth. The use of the 0.100 mg/L Gold Book value is consistent with the requirements of 06-096 CMR Chapter 523 noted above for use in a reasonable potential (RP) calculation.

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

² 06-096 CMR 523(5)(d)(1)(vi)(A)

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

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

The Town of East Machias has not submitted any total phosphorus effluent data to the Department. However, the Department does have effluent data from other sandfilter systems around the state. That Department has made a best professional judgment that a properly functioning sandfilter system discharges an effluent concentration of 0.5 mg/L of total phosphorus. For the background concentration in the East Machias River, the Department is using and assumed value for background total phosphorus concentration is 0.017 mg/L.

Using the following calculation the Town does not exhibit a reasonable potential to exceed the EPA's Gold Book ambient water quality goal of 0.100 mg/L (100 µg/L) the Department's 06-096 CMR 583 draft goal of 0.030 mg/L (30 ug/L).

$$Cr = \frac{QeCe + QsCs}{Qr}$$

- Qe = effluent flow i.e. facility design flow = 0.022 MGD
- Ce = effluent pollutant concentration = 0.5 mg/L
- Qs = 7Q10 flow of receiving water = 11.44 MGD
- Cs = upstream concentration = 0.017 mg/L
- Qr = receiving water flow (Qs + Qe) = (11.44 MGD + 0.022 MGD) = 11.46 MGD
- Cr = receiving water concentration

$$Cr = \frac{(0.022 \text{ MGD} \times 0.5 \text{ mg/L}) + (11.44 \text{ MGD} \times 0.017 \text{ mg/L})}{11.46 \text{ MGD}} = 0.018 \text{ mg/L}$$

- Cr = 0.018 mg/L < 0.100 mg/L ⇒ No, Reasonable Potential
- Cr = 0.018 mg/L < 0.030 mg/L ⇒ No, Reasonable Potential

The discharge from the Town will not result in a measurable increase in the ambient total phosphorous concentration of the East Machias River. **Therefore, no effluent limitations or monitoring requirements are being established in this permitting action.**

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

- j. Total Nitrogen: The USEPA requested the Department evaluate the reasonable potential for the discharge of total nitrogen to cause or contribute to non-attainment of applicable water quality standards in marine waters, namely dissolved oxygen (DO) and marine life support. No facility-specific nitrogen data are available for the permittee and therefore an arithmetic mean value of all secondary treated municipal wastewater effluent for Maine marine discharges is being used. All data used in the calculation of this total nitrogen mean value, 17.2 mg/L (n=140), were compiled from studies coordinated by the Department. For reasonable potential evaluations, the Department considers 17.2 mg/L to be representative of total nitrogen discharge levels from the East Machias sanitary wastewater sand filter systems.

As of the date of this permitting action, the State of Maine has not promulgated numeric ambient water quality criteria for total nitrogen. According to several studies in USEPA's Region 1, numeric total nitrogen criteria have been established for relatively few estuaries, but the criteria that have been set typically fall between 0.35 mg/L and 0.50 mg/L to protect marine life using dissolved oxygen as the indicator. While the thresholds are site-specific, nitrogen thresholds set for the protection of eelgrass habitat range from 0.30 mg/L to 0.39 mg/L.

Based on studies in USEPA's Region 1 and the Department's best professional judgment of thresholds that are protective of Maine water quality standards, the Department is utilizing a threshold of 0.45 mg/L for the protection of aquatic life in marine waters using dissolved oxygen as the indicator, and 0.32 mg/L for the protection of aquatic life using eelgrass as the indicator. Three known surveys have been completed within the Machias/East Machias River estuaries to document presence/absence of eelgrass. The first survey occurred in the 1970's by Timson of the Maine Geological Survey, and the second (1993) and third (2009) by the Maine Department of Marine Resources (DMR). The Timson survey extended upstream as far as the Willow Street bridge and noted the presence of unvegetated intertidal and supratidal flats of varying substrate size, and high marsh adjacent to the Post Office discharge point. In the 1993 DMR survey, the nearest eelgrass was mapped at Randall Point in Machiasport, approximately 5 km downstream of the most downstream discharge point. In 2009, the DMR mapped approximately 18 acres of sparse eelgrass 2.5 km downstream of the same point. Although it is not known if the two aerial photography surveys extended as far upstream as the East Machias discharge points, it is unlikely that eelgrass of any substantial extent would exist in close proximity to the discharge points based on the low salinity of the ambient environment. Based on this mapping history and predicted absence of eelgrass in the vicinity of the outfall points, the use of 0.45 mg/L as a threshold value for dissolved oxygen as the indicator is appropriate for this estuary.

With the exception of ammonia, nitrogen is not acutely toxic; thus, the Department is considering a far-field dilution to be more appropriate when evaluating impacts of total nitrogen to the marine environment. The permittee's facility has a chronic near-field dilution of 508:1. Far field dilutions are significantly higher than the near-field dilution, ranging from 10 – 1,000 times higher, depending on the location of the outfall pipe and nature of the receiving waterbody.

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

The permittee's wastewater treatment system discharges via 17 small diameter pipes into the East Machias River surrounding the marine Head of Tide. The East Machias River is a constricted estuary until merging with the Machias River approximately 3 km downstream, and eventually opening into the upper reaches of Machias Bay approximately 3 km below the confluence. Both the Machias and East Machias River estuaries are shallow systems with largely exposed mudflats on low tides. For these conditions, far-field dilutions are estimated to be a minimum of 2,444:1 during neap tides and a minimum of 2,918:1 during spring tides.

Using the most-protective far-field dilution factor at neap tide, the increase in total nitrogen concentration within the East Machias River estuary as a result of the discharge is estimated to be 0.006 mg/L.

Total nitrogen concentrations in effluent = 14.3 mg/L
Far-field dilution factor = 2444:1

In-stream concentration after dilution: $\frac{14.3 \text{ mg/L}}{2444} = 0.006 \text{ mg/L}$

The Department and external partners have been collecting ambient total nitrogen data along Maine's coast. For the East Machias River estuary, no known ambient nitrogen data exist. However, the Department completed sampling just below Head of Tide on the adjacent Narraguagus River from July-September 2015, and based on correspondence with a local environmental chemist with experience on the freshwater portion of Downeast Rivers, the Narraguagus River can be considered chemically similar to the East Machias River. The Downeast Rivers can be classified as having nitrogen that is largely organically bound and thus not available for rapid uptake by phytoplankton and benthic macrophytes. The mean value for the Head of Tide site on the Narraguagus River is 0.47 mg/L (n = 4), and will be used as the ambient value for the East Machias River until further data collection can occur to increase sample size and gather estuary-specific data.

Based on the reasonable potential calculations above using facility-specific effluent and ambient data, and in the absence of any information that the receiving water is not attaining standards, the Department is making a best professional judgment determination that the discharge of total nitrogen from the Freeport POTW does not exhibit a reasonable potential to exceed applicable water quality standards for Class SB waters. This permitting action is not establishing limitations or monitoring requirements for total nitrogen.

7. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

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

8. PUBLIC COMMENTS

Public notice of this application was made in the *Lewiston Sun Journal* newspaper on or about March 18, 2015. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits must have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to *Application Processing Procedures for Waste Discharge Licenses*, 06-096 CMR 522 (effective January 12, 2001).

9. DEPARTMENT CONTACTS

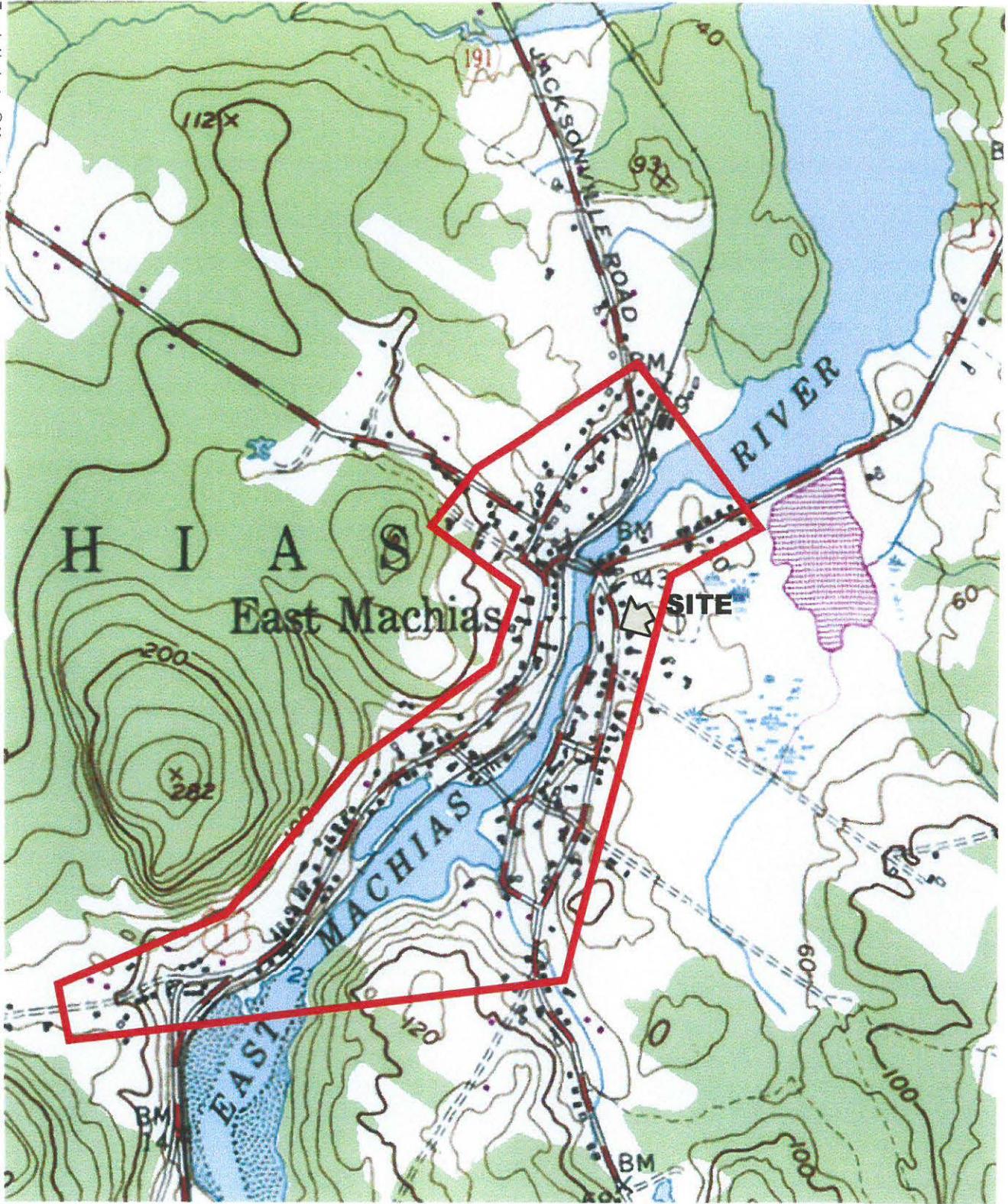
Additional information concerning this permitting action may be obtained from, and written comments sent to:

Aaron Dumont
Division of Water Quality Management
Bureau of Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone: (207) 512-7161
e-mail: Aaron.A.Dumont@maine.gov

10. RESPONSE TO COMMENTS

Reserved until the end of the comment period.

ATTACHMENT A



SOURCE:
U.S.G.S. TOPOGRAPHIC QUADRANGLE
MACHIAS
@ 1:24,000

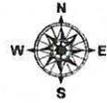


CES INC
WASTEWATER TREATMENT SYSTEMS
EAST MACHIAS, MAINE
LOCATION MAP

2014-08-11
10081.003

ATTACHMENT B

Maine Department of Marine Resources
Pollution Area No. 55
Machias Bay and vicinity
(Machias, East Machias, Machiasport)



All of the Conditional Areas (C. and D.) shall be closed during any malfunction/CSO event at the Machias WWTP

- ◆ Buoy
- Red Painted Post
- Roads
- Prohibited
- Restricted
- Conditionally Approved

