February 12, 2008

Mr. Robert Clark
Superintendent
Falmouth Water Pollution Control Facility
271 Falmouth Road
Falmouth, ME. 04105

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0100218
Maine Waste Discharge License (WDL) Application #W002650-5L-F-R
Final Permit/License

Dear Mr. Clark:

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 permit/license 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: Matthew Hight, DEP/SMRO
Sandy Lao, USEPA

IN THE MATTER OF

TOWN OF FALMOUTH	)	MAINE POLLUTANT DISCHARGE
PUBLICLY OWNED TREATMENT WORKS	)	ELIMINATION SYSTEM PERMIT
FALMOUTH, CUMBERLAND COUNTY, MAINE	)	AND
ME0100218	)	WASTE DISCHARGE LICENSE
W002650-5L-F-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 the TOWN OF FALMOUTH (Town hereinafter), with its supportive data, agency review comments, and other related material on file and finds the following facts:

APPLICATION SUMMARY

The Town has applied to the Department for renewal of combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100218/Maine Waste Discharge License (WDL) #W002650-5L-E-R (permit hereinafter) which was issued on January 22, 2003 for a five-year term. The 1/22/03 permit authorized the discharge of up to a monthly average flow of 1.56 million gallons per day (MGD) of secondary treated sanitary waste waters from a publicly owned treatment works facility to the Presumpscot River estuary, Class SC, in Falmouth, Maine.

PERMIT SUMMARY

This permitting action is <u>similar to</u> the previous permitting action in that it is;

1. Carrying forward the monthly average flow limit of 1.56 MGD.

2. Carrying forward the monthly average, weekly average and daily maximum technology based mass and concentration limits for biochemical oxygen demand (BOD_5) and total suspended solids (TSS).

3. Carrying forward the daily maximum technology based concentration limit for settleable solids.

PERMIT SUMMARY (cont'd)

4. Carrying forward the monthly average and daily maximum water quality based limits for fecal coliform bacteria and the requirement to disinfect the discharge on a year-round basis.

5. Carrying forward the monthly average and daily maximum water quality based limits for total residual chlorine.

6. Carrying forward the requirement for surveillance and screening level whole effluent toxicity (WET) and chemical specific testing requirements of Department rule Chapter 530.

7. Carrying forward the water quality based limit for the sea urchin and ammonia.

8. Carrying forward the technology based pH range limit.

9. Carrying forward the septage disposal requirements.

10. Carrying forward the requirements to maintain an up-to-date Operations & Maintenance (O&M) plan and a Wet Weather Flow Management Plan.

This permitting action is <u>different than</u> the previous permitting action in that it is;

11. Eliminating the monthly average and or daily maximum water quality based mass and concentration limitations for total copper and total cyanide.

12. Establishing a seasonal monthly average water quality based mass and concentration limits for ammonia.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated January 11, 2008 and subject to the Conditions listed below, the Department makes the following CONCLUSIONS:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.

2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.

3. The provisions of the State's antidegradation policy, 38 MRSA 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 waters 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 application of the TOWN OF FALMOUTH, to discharge up to a monthly average flow of 1.56 million gallons per day of secondary treated sanitary waste waters to the Presumpscot River estuary, Class SC, subject to the attached conditions and all applicable standards and regulations:

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 (5) years from the date of signature below.

DONE AND DATED AT AUGUSTA, MAINE, THIS 12th DAY OF February, 2008.

COMMISSIONER OF ENVIRONMENTAL PROTECTION

BY:_____
David P. Littell, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application November 15, 2007.

Date of application acceptance November 20, 2007.

Date filed with Board of Environmental Protection _____

This Order prepared by Gregg Wood, Bureau of Land & Water Quality

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. Beginning upon issuance of this permit the permittee is authorized to discharge secondary treated wastewaters from **OUTFALL # 001A** to the Presumpscot River Estuary. Such discharges shall be limited and monitored by the permittee as specified below. The italicized numeric values bracketed in the table below and on the following pages are code numbers that Department personnel utilize to code Discharge Monitoring Reports (DMR's).

Effluent Characteristic	**Discharge Limitations**						**Minimum Monitoring Requirements**	
	Monthly Average as specified	**Weekly Average** as specified	**Daily Maximum** as specified	**Monthly Average** as specified	**Weekly Average** as specified	**Daily Maximum** as specified	**Measurement Frequency** as specified	Sample Type as specified
Flow *[50050]*	1.56 MGD *[03]*	---	Report MGD *[03]*	---	---	---	Continuous *[99/99]*	Recorder *[RC]*
Biochemical Oxygen Demand (BOD_5) *[00310]*	390 lbs/Day *[26]*	585 lbs/Day *[26]*	650 lbs/Day *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	2/Week *[02/07]*	24 Hr. Composite *[24]*
BOD5 % Removal **(1)** *[81010]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
Total Suspended Solids (TSS) *[00545]*	390 lbs/Day *[26]*	585 lbs/Day *[26]*	650 lbs/Day *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	2/Week *[02/07]*	24 Hr. Composite *[24]*
TSS % Removal **(1)** *[81011]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
Settleable Solids *[00545]*	---	---	---	---	---	0.3 ml/L *[25]*	5/Week *[05/07]*	Grab *[GR]*
Fecal Coliform Bacteria **(2)** *[74055]*	---	---	---	15/100 ml**(3)** *[13]*	---	50/100 ml *[13]*	2/Week *[02/07]*	Grab *[GR]*
Total Residual Chlorine**(4)** *[50060]*	---	---	---	0.080 mg/L *[19]*	---	0.10 mg/L *[19]*	1/Day *[01/01]*	Grab *[GR]*
pH (Std. Units) *[00400]*	---	---	---	---	---	6.0-9.0 *[12]*	5/Week *[05/07]*	Grab *[GR]*
Ammonia (as N) *[61574]* *(June 1 – September 30)*	111 lbs/day *[26]*	---	---	13 mg/L *[19]*	---	---	1/Quarter *[01/90]*	24 Hr. Composite *[24]*

SPECIAL CONDITIONS

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

SURVEILLANCE LEVEL – Beginning upon permit issuance and lasting through the first four years of the permit.

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity[5]						
Acute – NOEL						
Mysidopsis bahia [TDM3E] (Mysid Shrimp)	---	---	---	Report % [23]	1/Year [01/YR]	Composite [24]
Chronic – NOEL						
Arbacia punctulata [TBH3A] (Sea urchin)	---	---	---	9.1 % [23]	2/Year [02/YR]	Composite [24]
Analytical Chemistry[6,7] [51168]	---	---	---	Report ug/L [28]	1/Year [01/YR]	Composite/Grab [24]

SPECIAL CONDITIONS

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

SCREENING LEVEL **-** Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter.

Effluent Characteristic	**Discharge Limitations**				**Minimum Monitoring Requirements**	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity(5)						
Acute – NOEL						
Mysidopsis bahia [TDM3E] (Mysid Shrimp)	---	---	---	Report % [23]	1/Quarter [01/90]	Composite [24]
Chronic – NOEL						
Arbacia punctulata [TBH3A] (Sea urchin)	---	---	---	9.1 % [23]	1/Quarter [01/90]	Composite [24]
Analytical Chemistry(6,7) [51168]	---	---	---	Report ug/L [28]	1/Quarter [01/90]	Composite/Grab [24]
Priority Pollutant(7) [50008]	---	---	---	Report ug/L [28]	1/Year [01/YR]	Composite/Grab [24]

SPECIAL CONDITIONS

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

Footnotes:

Sampling –Sampling the treatment plant effluent for compliance with this permit shall be conducted after de-chlorination. Grab samples shall be collected after the final weir. Any change in sampling location must be approved by the Department in writing. Sampling and analysis must be conducted 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 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 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 detectable 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. 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.

1. **Percent Removal** - The treatment facility shall maintain a minimum of 85 percent removal of both total suspended solids and biochemical oxygen demand for all flows receiving secondary treatment. The percent removal shall be calculated based on influent and effluent concentration values. The percent removal shall be waived when the monthly average influent concentration is less than 200 mg/L. For instances when this occurs, the facility shall report "*NODI-9*" on the monthly Discharge Monitoring Report.

2. **Fecal coliform bacteria** - Limits apply on a year-round basis.

3. **Fecal coliform bacteria -** This is a geometric mean limitation and results shall be reported as such.

SPECIAL CONDITIONS

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

Footnotes:

4. **Total residual chlorine (TRC)** – Limitations and monitoring requirements for TRC are applicable whenever elemental chlorine or chlorine based compounds are being utilized to disinfect the discharge(s). TRC shall be tested using Amperometric Titration or the DPD Spectrophotometric Method. The USEPA approved methods are found in Standard Methods for the Examination of Water and Waste Water, (most current approved edition), Method 4500-CL-E and Method 4500-CL-G or USEPA Manual of Methods of Analysis of Water and Wastes.

5. **Whole Effluent Toxicity (WET)** - Definitive WET testing is a multi-concentration testing event (a minimum of five dilutions bracketing the acute and chronic critical thresholds of 12 % and 9.1% respectively), which provides a point estimate of toxicity in terms of No Observed Effect Level, commonly referred to as NOEL or NOEC. 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. Acute tests shall be conducted on the mysid shrimp (*Mysidopsis bahia*) and chronic tests shall be conducted on the sea urchin (*Arbacia punctulata*). The critical acute and chronic thresholds were derived as the mathematic inverse of the applicable acute and chronic dilution factors of 8.3:1 and 11:1 respectively.

   a. **Surveillance level testing** – Beginning upon issuance of this permit and lasting through the first four years of the term of this permit, the permittee shall conduct surveillance level WET testing at a minimum frequency of (1/Year) for the mysid shrimp and 2/Year for the sea urchin. For the mysid shrimp, testing shall be conducted in a different calendar quarter of each year such that a WET test is conducted in each of the four calendar quarters during the first four years of the term of the permit. For the sea urchin, there shall be at least 6 months between testing events.

   b. **Screening level testing -** Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter, the permittee shall conduct screening level WET testing at a minimum frequency of 1/Quarter.

   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 after receiving the results from the laboratory 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 of 8.3% and 11%, respectively.

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 U.S.E.P.A. methods manuals:

a. Short Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Marine and Estuarine Organisms, Third Edition, October 2002, EPA-821-R-02-014.

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. **Analytical chemistry** – Refers to a suite of twelve (12) chemical tests that consist of ammonia nitrogen (as N), total aluminum, total arsenic, total cadmium, total chromium, total copper, total cyanide, total lead, total nickel, total silver, total zinc and total residual chlorine.

a. **Surveillance level testing** – Beginning upon issuance of this permit and last through the first four years of the term of this permit, the permittee shall conduct surveillance analytical chemistry testing at a minimum frequency of 1/Year. As with WET testing, testing shall be conducted in a different calendar quarter of each year such that an analytical chemistry test is conducted in each of the four calendar quarters during the first four years of the term of the permit.

b. **Screening level testing** - Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter, the permittee shall conduct screening level analytical chemistry testing at a minimum frequency of once per calendar quarter (1/Quarter).

SPECIAL CONDITIONS

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

Footnotes:

7. **Priority pollutant testing** – Priority pollutants are those parameters listed by Department rule, Chapter 525, Section 4(IV).

   a. **Screening level testing** - Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter, the permittee shall conduct screening level priority pollutant testing at a minimum frequency of once per year (1/Year). It is noted Chapter 530 does not require routine surveillance level priority pollutant testing in the first four years of the term of this permit.

   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. See Attachment A of this permit for a list of the Department's reporting levels (RLs) of detection.

   Priority pollutant and analytical chemistry test results must be submitted to the Department not later than the next DMR required by the permit provided, however, that the permittee may review the toxicity reports for up to 10 business days after receiving the test results from the laboratory 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 established in Department rule Chapter 584. For the purposes of Discharge Monitoring Report (DMR) reporting, enter a "1" for yes, testing done this monitoring period or "NODI-9" monitoring not required this period.

   All mercury sampling required to determine compliance with interim limitations established pursuant to Department rule Chapter 519, 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 B of this permit for the Department's report form for mercury results.

SPECIAL CONDITIONS

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. DISINFECTION

If chlorination is used as a means of disinfection, an approved chlorine contact tank providing the proper detention time consistent with good engineering practice must be utilized, followed by a dechlorination system if the total residual chlorine (TRC) cannot be met by dissipation in the detention tank. The total residual chlorine in the effluent shall at no time cause any demonstrable harm to aquatic life in the receiving waters. The dose of chlorine applied shall be sufficient to leave a TRC concentration that will effectively reduce bacteria to levels below those specified in Special Condition A, *"Effluent Limitations and Monitoring Requirements"*, above.

D. TREATMENT PLANT OPERATOR

The waste water treatment facility must be operated under the direction of a person holding a minimum of a **Grade III** certificate [or Maine Professional Engineer (PE) certificate] pursuant to Title 32 M.R.S.A., Section 4171 et seq. 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.

E. LIMITATIONS FOR INDUSTRIAL USERS

Pollutants introduced into the waste water collection and treatment system by a non-domestic source (user) shall not pass through or interfere with the operation of the treatment system.

SPECIAL CONDITIONS

F. NOTIFICATION REQUIREMENT

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

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

2. Any substantial change in the volume or character of pollutants being introduced into the waste water collection and treatment system.

3. For the purposes of this section, adequate notice shall include information on:

    a. The quality and quantity of waste water introduced to the waste water collection and treatment system; and

    b. Any anticipated impact of the change in the quantity or quality of the waste water to be discharged from the treatment system.

G. UNAUTHORIZED DISCHARGERS

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 20, 2007; 2) the terms and conditions of this permit; and 3) only from Outfall #001. Discharges of wastewater 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.

H. DISPOSAL OF SEPTAGE WASTE IN WASTE WATER TREATMENT FACILITY

During the effective period of this permit, the permittee is authorized to receive up to and introduce into the waste water treatment facility or solids handling system up to **8,000 gallons per day** of septage subject to the following terms and conditions:

1. This approval is limited to methods and plans described in the application and supporting documents. Any variations are subject to review and approval prior to implementation.

2. At no time shall the addition of septage cause or contribute to effluent quality violations. If such conditions do exist, the introduction of septage into the treatment process or solids handling stream shall be suspended until effluent quality can be maintained.

3. The permittee shall maintain records which shall include, as a minimum, the following by date: volume of septage received, source of the septage (name of municipality), the hauler transporting the septage, the dates and volume of septage added to the waste water treatment influent and test results.

SPECIAL CONDITIONS

H. DISPOSAL OF SEPTAGE WASTE IN WASTE WATER TREATMENT FACILITY

4. The addition of septage into the treatment process or solids handling stream shall not cause the treatment facilities design capacity to be exceeded. If, for any reason, the treatment process or solids handling facilities become overloaded, introduction of septage into the treatment process or solids handling stream shall be reduced or terminated in order to eliminate the overload condition.

5. Septage known to be harmful to the treatment processes shall not be accepted. Wastes which contain heavy metals, toxic chemicals, extreme pH, flammable or corrosive materials in concentrations harmful to the treatment operation shall be refused.

6. Holding tank waste water shall not be recorded as septage but should be reported in the treatment facility's influent flow.

I. WET WEATHER FLOW MANAGEMENT PLAN

The treatment facility staff shall maintain a current Wet Weather Flow Management Plan to direct the staff on how to operate the facility effectively during periods of high flow. The Department acknowledges that the existing collection system may deliver flows in excess of the monthly average design capacity of the treatment plant during periods of high infiltration and rainfall. The plan shall include operating procedures for a range of intensities, address solids handling procedures (including septic waste and other high strength wastes if applicable) and provide written operating and maintenance procedures to be adhered to during the events.

The Plan shall include **wet weather response operating procedures**, with a list and locations of alarmed equipment and monitors, and an outline of an alarm response plan identifying person(s) and action(s) to be taken in the event of a problem.

The permittee shall review their plan annually and record any necessary changes to keep the plan up-to-date.

SPECIAL CONDITIONS

J. OPERATION & MAINTENANCE (O&M) PLAN

This facility shall have a current written comprehensive Operation & Maintenance (O&M) Plan. The plan shall provide a systematic approach by which 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.

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

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

K. CHAPTER 530(2)(D)(4) CERTIFICATION

On or before December 31 of each year ***[PCS code 95799]*** the permittee is required to file a statement with the Department describing the following.

1. 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;

2. Changes in the operation of the treatment works that may increase the toxicity of the discharge; and

3. Changes in industrial manufacturing processes contributing wastewater to the treatment works that may increase the toxicity of the discharge.

Further, the Department may require that annual WET or priority pollutant testing be re-instituted 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

L. 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 (13th) 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 (15th) 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 Department compliance inspector (unless otherwise specified) to the following address:

Department of Environmental Protection
Southern Maine Regional Office
Bureau of Land and Water Quality
Division of Water Quality Management
312 Canco Road
Portland Maine, Maine 04103

M. 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 monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

N. 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.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

AND

MAINE WASTE DISCHARGE LICENSE

FACT SHEET

Date: **January 11, 2008**

PERMIT NUMBER: **ME0100218**

LICENSE NUMBER: **W002650-5L-F-R**

NAME AND ADDRESS OF APPLICANT:

FALMOUTH WATER POLLUTION CONTROL FACILITY
271 Falmouth Road
Falmouth, ME. 04105

COUNTY: **Cumberland County**

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

250 Clearwater Drive
Falmouth, ME. 04105

RECEIVING WATER(S)/CLASSIFICATION: **Presumpscot River Estuary/Class SC**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Robert "Peter" Clark, Supt.**
(207) 781-4462
pclark@town.falmouth.me.us

1. APPLICATION SUMMARY

a. Application: The Town of Falmouth (Town hereinafter) has applied to the Department for renewal of combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100218/Maine Waste Discharge License (WDL) #W002650-5L-E-R (permit hereinafter) which was issued on January 22, 2003 for a five-year term. The 1/22/03 permit authorized the discharge of up to a monthly average flow of 1.56 million gallons per day (MGD) of secondary treated sanitary waste waters from a publicly owned treatment works facility to the Presumpscot River estuary, Class SC, in Falmouth, Maine. See Attachment A of this Fact Sheet for a location map.

1. APPLICATION SUMMARY

b. Source Description: The waste water treatment facility was originally constructed and went on-line in 1971 and currently serves a population of approximately 7,650 users**.** The treatment facility receives sanitary waste waters generated by residential and commercial entities and does not have any industrial users contributing more than 10% of the flow or pollutant loading to the collection and or waste water treatment facility.

The sanitary sewer collection system consists of approximately fifty (50) miles of piping with twenty-three (23) pump stations. Nine (9) of the pump stations are equipped with on-site back-up power and fourteen (14) are equipped with visual and audio alarms and served by portable generators. The sanitary collection system is completely separated from the storm water collection system and as a result, there are no combined sewer overflow (CSO) points in the collection system. The facility is authorized to receive up to and treat 8,000 gallons per day of septage from local septage haulers.

c. Waste Water Treatment: The facility provides a secondary level of treatment via an activated sludge system referred to as the Modified Ludzack – Ettinger process. The treatment plant headworks includes flow measurement in two Parshall flumes, a climber screen for rag removal and an aerated grit chamber for grit removal. Waste water is then treated in two aeration units. These units include preliminary and secondary anoxic zones with mechanical mixing, aerobic zones with fine bubble aeration, and pumping systems to recycle solids internally within the tank. Overflow from the aeration system is to two final clarifiers. Effluent from the clarifiers is then disinfected using sodium hypochlorite in a chlorine contact tank and dechlorinated using sodium bisulfite. The treatment facility has back-up power to power all treatment processes in the event of a power outage. The treated effluent is conveyed to the river through a 20-inch diameter 234-foot long pipe without a diffuser. The pipe is above high tide and discharges to the intertidal zone. At low tide, effluent flows in a ditch, through salt marsh and mudflat and combines with Skitterygusset Creek, before reaching the main channel of the Presumpscot River estuary. High tide comes up to the base of the outfall structure. See Attachment B of this Fact Sheet for a schematic of the treatment facility.

The sludge handling equipment at the plant includes two aerobic digester with a combined capacity of 250,000 gallons, a ”Bird” centrifuge dewatering unit and two "Reed bed" storage basins. Dewatered sludge is composted by a contract vendor.

2. PERMIT SUMMARY

a. Regulatory: On January 12, 2001, the Department received authorization from the U. S. Environmental Protection Agency (EPA) to administer the National Pollutant Discharge Elimination System (NPDES) permitting program in Maine. From that point forward, the program has been referenced as the MEPDES permit program.

2. PERMIT SUMMARY (cont'd)

b. Terms and conditions: This permitting action is similar to the previous permitting action in that it is;

1. Carrying forward the monthly average flow limit of 1.56 MGD.

2. Carrying forward the monthly average, weekly average and daily maximum technology based mass and concentration limits for biochemical oxygen demand (BOD_5) and total suspended solids (TSS).

3. Carrying forward the daily maximum technology based concentration limit for settleable solids.

4. Carrying forward the monthly average and daily maximum water quality based limits for fecal coliform bacteria and the requirement to disinfect the discharge on a year-round basis.

5. Carrying forward the monthly average and daily maximum water quality based limits for total residual chlorine.

6. Carrying forward the requirement for surveillance and screening level whole effluent toxicity (WET) and chemical specific testing requirements of Department rule Chapter 530.

7. Carrying forward the water quality based limit for the sea urchin and ammonia.

8. Carrying forward the technology based pH range limit.

9. Carrying forward the septage disposal requirements.

10. Carrying forward the requirements to maintain an up-to-date Operations & Maintenance (O&M) plan and a Wet Weather Flow Management Plan.

This permitting action is different than the previous permitting action in that it is;

11. Eliminating the monthly average and or daily maximum water quality based mass and concentration limitations for total copper and total cyanide.

12. Establishing seasonal monthly average water quality based mass and concentration limits for ammonia.

2. PERMIT SUMMARY (cont'd)

c. History: The most recent relevant licensing/permitting actions include the following:

September 2, 1993 – The EPA issued a renewal of NPDES permit #ME0100218 for a five-year term.

September 23, 1999– The Department issued WDL #W002650-5L-C-R for a five-year term.

January 24, 2000 – The Department administratively modified WDL #W002650-5L-C-R by requiring the waste water facility to disinfect on a year-round basis as the Maine Department of Marine Resources determined the discharge was causing the closure of a shellfish area in Mackworth Cove.

May 23, 2000 – Pursuant to Department rule Chapter 519, *Interim Effluent Limitations and Controls for the Discharge of Mercury*, the Department administratively modified the 9/23/99 WDL by establishing interim average and maximum concentration limits for the discharge of mercury.

January 22, 2003 – The Department issued combination MEPDES permit #ME0100218/WDL #W002650-5L-E-R for a five-year term.

April 20, 2006 – The Department issued a modification of the 1/22/03 MEPDES permit by incorporating whole effluent toxicity (WET) and chemical specific testing requirements pursuant to Department rule Chapter 530, promulgated on October 12, 2005.

November 15, 2007 – The Town of Falmouth filed a timely and complete application with the Department to renew the MEPDES permit.

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 such that existing and designated uses of surface waters are maintained and protected.

4. RECEIVING WATER STANDARDS

Maine law 38 M.R.S.A., §469(8) classifies the Presumpscot River estuary as a Class SC waterway. Maine law, 38 M.R.S.A., §465-B(3) describes the standards for classification of Class SC waterways.

5. EXISTING WATER QUALITY CONDITIONS

A document entitled, State of Maine Department of Environmental Protection, 2006 Integrated Water Quality Monitoring and Assessment Report, [often referred to as the 305(b) Report] published by the Department lists the Portland-Falmouth area (DMR area #14) Class SB/SC and Falmouth-Cumberland area (DMR area #14A) Class SB in a category entitled, *Category 5-B-1: Estuarine and Marine Waters Impaired only By Bacteria (TMDL Required).* For Area #14-A (in the vicinity of the Falmouth outfall) the report indicates the impairment is the closure of the shellfish harvesting area due to elevated fecal coliform bacteria levels due to non-point sources. As of November 6, 2006, DMR shellfish harvesting area #14 and #14A were closed to the harvesting of shellfish due to insufficient (limited) ambient water quality data to meet the standards in the National Shellfish Sanitation Program. Therefore, areas #14 and #14A remain closed. Compliance with the fecal coliform bacteria limits in this permitting action will ensure that the Falmouth waste water treatment facility will not cause or contribute to the shellfish harvesting closure. See Attachment C of this Fact Sheet for a map of Area #14-A

The 2006 305(b) report also lists all estuarine and marine waters in a category entitled, *Category 5-D: Estuarine and Marine Waters Impaired by Legacy Pollutants*. The waters are listed as partially supporting fishing ("shellfish consumption) due to elevated levels of PCBs and other persistent, bioaccumulating substances in lobster tomally. The Department is not aware of any PCBs or persistent, bioaccumulating substances (other than mercury) being discharged from the Town of Falmouth's waste water treatment that cause or contribute to the waterbodies impairment. For a discussion on mercury, see section 6(i) of this Fact Sheet.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Flow: The previous permitting action established a monthly average flow limitation of 1.56 MGD that is being carried forward in this permitting action as it remains representative of the monthly average design capacity of the facility. A review of the DMR data for the period November 2004 – September 2007 indicates the following:

Flow

Value	Limit (MGD)	Range (MGD)	Mean (MGD)
Monthly Average	1.56	0.547 – 1.474	0.90
Daily Maximum	Report	0.615 – 3.23	1.68

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

b. Dilution Factors - Department Regulation Chapter 530, *Surface Water Toxics Control Program*, §D(3)(b) states that for discharges to the ocean, dilution must be calculated as near-field or initial dilution, or that dilution available as the effluent plume rises from the point of discharge to its trapping level, at mean low water level and slack tide for the acute exposure analysis and at mean tide for the chronic exposure analysis using appropriate models determined by the Department such as MERGE or CORMIX.

The previous permitting action established dilution factors as follow:

Acute = 8.3:1 Chronic = 11:1 Harmonic mean [(1)] = 33:1

Footnote:

(1) 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 on which human health dilutions are based in a riverine 7Q10 flow situation.

c. Biochemical Oxygen Demand (BOD5) & Total Suspended Solids (TSS): - The previous permitting action established monthly and weekly average BOD5 and TSS best practicable treatment (BPT) concentration limits of 30 mg/L and 45 mg/L respectively, that were based on secondary treatment requirements of the Clean Water Act of 1977 §301(b)(1)(B) as defined in 40 CFR 133.102 and Department rule Chapter 525(3)(III). The maximum daily BOD5 and TSS concentration limits of 50 mg/L were based on a Department best professional judgment (BPJ) of BPT. All three concentration limits are being carried forward in this permitting action.

As for mass limitations, the previous permitting action established monthly average, weekly average and daily maximum mass limitations that are being carried forward in this permitting action and are based on a monthly average limit of 1.56 MGD. The mass limits were derived as follows:

Monthly average: (1.56 MGD)(8.34)(30 mg/L) = 390 lbs/day
Weekly average: (1.56 MGD)(8.34)(45 mg/L) = 585 lbs/day
Daily Maximum: (1.56 MGD)(8.34) (50 mg/L) = 650 lbs/day

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

This permitting action is also carrying forward the requirement of 85% removal for BOD and TSS pursuant to Department rule Chapter 525(3)(III)(a&b)(3).

Monitoring frequencies for BOD and TSS of 2/week are being carried forward in this permitting action and are based on a long standing Department policy for facilities with a monthly average flow greater than 1.0 MGD but less than 5.0 MGD.

A review of the DMR data for the period November 2004 – September 2007 indicates the monthly average and daily maximum mass and concentration values have been reported as follows:

BOD Mass

Value	Limit (lbs/day)	Range (lbs/day)	Average (lbs/day)
Monthly Average	390	44 - 258	83
Daily Maximum	650	62 – 1,235	181

BOD Concentration

Value	Limit (mg/L)	Range (mg/L)	Average (mg/L)
Monthly Average	30	8 - 19	11
Daily Maximum	50	9 – 46	16

TSS mass

Value	Limit (lbs/day)	Range (lbs/day)	Average (lbs/day)
Monthly Average	390	38 - 234	90
Daily Maximum	650	61 – 1,288	210

TSS concentration

Value	Limit (mg/L)	Range (mg/L)	Average (mg/L)
Monthly Average	30	6.6 - 23	11
Daily Maximum	50	10 - 48	19

d. Settleable Solids – The previous permitting action established a daily maximum concentration limit of 0.3 ml/L for settleable solids that is being carried forward in this permitting action and is considered a Department BPJ of BPT for secondary treated waste waters. A review of the DMR data for the period November 2004 – September 2007 indicates the daily maximum concentration values reported have ranged from 0.0 ml/L – 0.5 ml/L with an arithmetic mean of 0.1 ml/L.

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

e. Fecal coliform bacteria – The previous licensing action established year-round monthly average and daily maximum limits of 15 colonies/100 ml and 50 colonies/100 ml respectively, that are consistent with the National Shellfish Sanitation Program. The limitations are being carried forward in this permitting action. The limits were established on a year-round basis at the request of the Maine Department of Marine Resourcesin January of calendar year 2000 in effort to maintain an open shellfish harvesting in the vicinity of the discharge from the treatment facility.

A review of the DMR data for the period November 2004 – September 2007 indicates the monthly average and daily maximum mass values have been reported as follows:

Fecal coliform bacteria

Value	Limit (col/100 ml)	Range (col/100 ml)	Mean (col/100 ml)
Monthly Average	15	0.15 – 6.7	1.6
Daily Maximum	50	1 - 36	7.9

f. Total Residual Chlorine: Limits on total residual chlorine are specified to ensure attainment of the in-stream water quality criteria for chlorine and that BPT technology is utilized to abate the discharge of chlorine. Permits issued by this Department impose the more stringent of the calculated water quality based or BPT based limits. The previous permitting action established monthly average and daily maximum water quality based limitations of 0.08 mg/L and 0.1 mg/L respectively. End-of-pipe water quality based thresholds for TRC may calculated as follows:

Acute (A) Criterion	Chronic (C) Criterion	A & C Dil. Factors	Calculated Acute Limit	Chronic Limit
0.013 mg/L	0.0075 mg/L	8.3:1, 11:1	0.11 mg/L	0.08 mg/L

Example calculation: Acute (0.013 mg/L)(8.3) = 0.11 mg/L

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 unless the calculated acute water quality based threshold is lower than 1.0 mg/L. For facilities that need to de-chlorinate the discharge to meet water quality based thresholds, the Department has established daily maximum and monthly average BPT limits of 0.3 mg/L and 0.1 mg/L respectively. In the case of the Falmouth, the acute water quality based threshold calculated of 0.1 mg/L is lower than the BPT limit of 0.3 mg/L, thus the water quality based limit of 0.1 mg/L is imposed as a daily maximum limit. As for the monthly average limit, the chronic water quality based threshold calculated of 0.08 mg/L is lower than the BPT limit of 0.1 mg/L thus the water quality based limit of 0.08 mg/L is imposed as a monthly average limit.

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

A review of the DMR data for the period November 2004 – September 2007 indicates the monthly average and daily maximum concentration values have been reported as follows:

Total residual chlorine

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly Average	0.08	<0.05 – 0.05	<0.05
Daily Maximum	0.1	<0.05 – 0.75	<0.05

g. pH – The previous permitting action established a pH range limit of 6.0 –9.0 standard units pursuant to Department rule found at Chapter 525(3)(III)(c). The limits are considered BPT. A review of the DMR data for the period November 2004 – September 2007 indicates the pH range limitation has never been exceeded and therefore the Department is reducing the monitoring frequency from 1/Day to 5/Week in this permitting action.

h. Whole Effluent Toxicity (WET) and Chemical Specific Testing –Maine law, 38 M.R.S.A., Sections 414-A and 420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department Rules, 06-096 CMR Chapter 530, Surface Water Toxics Control Program, and Chapter 584, Surface Water Quality Criteria for Toxic Pollutants set forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET, priority pollutant and analytical chemistry testing as required by Chapter 530 is included in this permit in order to fully characterize the effluent. This permit also provides for reconsideration of effluent limits and monitoring schedules after evaluation of toxicity testing results. The monitoring schedule includes consideration of results currently on file, the nature of the wastewater, existing treatment and receiving water characteristics. 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 water quality criteria 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:

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

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

Department rule Chapter 530 (2)(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 I frequency category as the facility has a chronic dilution factor ≤20:1. Chapter 530(2)(D)(1) specifies that default surveillance and screening level testing requirements are as follows:

Screening level testing

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

Surveillance level testing

Level	WET Testing	Priority pollutant testing	Analytical chemistry
I	2 per year	Not required	4 per year

See Attachment D of this Fact Sheet for a summary of the WET test results and Attachment E of this Fact Sheet for a summary of the chemical-specific test results submitted to the Department to date.

Chapter 530(2)(D)(3)(d) states in part that for Level I facilities "… *may reduce surveillance testing to one WET or specific chemical series per year provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedence as calculated pursuant to section 3(E)".*

Chapter 530 §(3)(E) states "*For effluent monitoring data and the variability of the pollutant in the effluent, the Department shall apply the statistical approach in Section 3.3.2 and Table 3-2 of USEPA's "Technical Support Document for Water Quality-Based Toxics Control" (USEPA Publication 505/2-90-001, March, 1991, EPA, Office of Water, Washington, D.C.) to data to determine whether water-quality based effluent limits must be included in a waste discharge license. Where it is determined through this approach that a discharge contains pollutants or WET at levels that have a reasonable potential to cause or contribute to an exceedence of water quality criteria, appropriate water quality-based limits must be established in any licensing action.*"

Chapter 530 §3 states, "*In determining if effluent limits are required, the Department shall consider all information on file and effluent testing conducted during the preceding 60 months. However, testing done in the performance of a Toxicity Reduction Evaluation (TRE) approved by the Department may be excluded from such evaluations."*

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

WET test evaluation

Chapter 530 §3 states, "*In determining if effluent limits are required, the Department shall consider all information on file and effluent testing conducted during the preceding 60 months. However, testing done in the performance of a Toxicity Reduction Evaluation (TRE) approved by the Department may be excluded from such evaluations.*"

On November 20, 2007, the Department conducted a statistical evaluation on the most recent 60 months of WET test results on file with the Department in accordance with the statistical approach in Chapter 530. The statistical evaluation indicates the discharge from the permittee's waste water treatment facility has two C-NOEL test results of 6.25% (10/01/06 and 11/14/06) for the sea urchin that exceed the critical chronic water quality threshold of 9.1% and two additional test results of 12% (12/05/05 and 7/16/07) have a reasonable potential to exceed the critical C-NOEL threshold. Therefore, a C-NOEL limit of 9.1% is being carried forward from the previous permitting action. It is noted there are no acute test results for the mysid shrimp that exceed or have a reasonable potential to exceed the critical A-NOEL threshold of 12%.

Based on the results of the 11/20/07 statistical evaluation, the permittee qualifies for the Chapter 530(2)(D)(3)(d) testing reduction for the mysid shrimp but not the sea urchin. Therefore, this permit action establishes a reduced surveillance level testing of 1/Year for the mysid shrimp but holds the test frequency for the sea urchin at the default surveillance level of testing of 2/Year.

Beginning upon issuance of this permit modification and lasting through 12 months prior to permit expiration, surveillance level WET testing is as follows:

Level	WET Testing
I	1 per year for the mysid shrimp 2 per year for the sea urchin

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

Chapter 530 §3(C) states in part; "*If these data indicate that the discharge is causing an exceedence of applicable water quality criteria, then: (1) the licensee must, within 45 days of becoming aware of an exceedence, submit a TRE plan for review and approval and implement the TRE after Department approval; and (2) the Department must, within 180 days of the Department's written approval of the TRE plan, modify the waste discharge license to specify effluent limits and monitoring requirements necessary to control the level of pollutants and meet receiving water classification standards."*

The Department is not requiring the permittee to conducted a TRE for the sea urchin at this time as the permittee is very close to completing a major upgrade of the waste water treatment that will change the characteristics of the final effluent. The Department will closely track future test results for the sea urchin to determine if the "new" discharge continues to adversely impact the test results. If so, the Department will require the permittee to conduct a TRE at that time.

Chapter 530 §(2)(D) states:

(4) All dischargers having waived or reduced testing must file statements with the Department on or before December 31 of each year describing the following.

(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; and
(c) Changes in industrial manufacturing processes contributing wastewater to the treatment works that may increase the toxicity of the discharge.

Special Condition K, *Chapter 530 §(2)(D)(4) Certification,* of this permitting action requires the permittee to file an annual certification with the Department.

Department rule Chapter 530 (2)(D)(1) specifies that screening level testing is to be established as follows:

Beginning 12 months prior to and lasting through permit expiration and every five years thereafter.

Level	WET Testing
I	4 per year for the mysid shrimp 4 per year for the sea urchin

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

Analytical chemistry & priority pollutant testing evaluation

As with WET test results, on 11/20/07, the Department conducted a statistical evaluation on the most recent 60 months of analytical chemistry and priority pollutant test results on file with the Department in accordance with the statistical approach outlined in Chapter 530. The statistical evaluation indicates the discharge has one test result of 14.7 mg/L (6/1/03) for ammonia that exceeds the chronic AWQC. In addition, the statistical evaluation indicates that one additional ammonia test result of 9.5 mg/L (7/10/07) has a reasonable potential to exceed the chronic AWQC for ammonia. It is noted because ammonia toxicity is temperature dependent, the Department evaluated the test results for ammonia based on AWQC for summer (June – September, 25ºC) and non-summer (October – May, 15ºC) seasons.

Chapter 530 §4(C), states "*The background concentration of specific chemicals must be included in all calculations using the following procedures. The Department may publish and periodically update a list of default background concentrations for specific pollutants on a regional, watershed or statewide basis. In doing so, the Department shall use data collected from reference sites that are measured at points not significantly affected by point and non-point discharges and best calculated to accurately represent ambient water quality conditions." The Department shall use the same general methods as those in section 4(D) to determine background concentrations. For pollutants not listed by the Department, an assumed concentration of 10% of the applicable water quality criteria must be used in calculations.* The Department has no information on the background levels of metals in the water column of the Presumpscot River Estuary. 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.

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."*

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

Chapter 530 §(3)(D) states *"Expression of effluent limits. Where the need for effluent limits has been determined, limits derived from acute water quality criteria must be expressed as daily maximum values. Limits derived from chronic or human health criteria must be expressed as monthly average values."* Therefore, this permit modification establishes monthly average (chronic) end-of-pipe (EOP) mass and concentrations limits for ammonia. The derivation for these limits is as follows:

Ammonia (Total):

Chronic AWQC = 1.0 mg/L (based on 25ºC, salinity 20 ppt, pH 8.0 S.U.)
Chronic dilution factor = 11:1

EOP concentration = [Dilution factor x 0.75 x AWQC] + [0.25 x AWQC]

EOP = [11 x 0.75 x 1.0 ug/L] + [0.25 x 1.0 ug/L] = 8.5 ug/L

Based on a permitted flow of 1.56 MGD, EOP mass limits are as follows:

Parameter	Calculated EOP Concentrations	Monthly Avg. Mass Limit
Ammonia	8.5 mg/L	111 lbs/day

Example Calculation: Ammonia - (8.5 mg/L)(8.34)(1.56 MGD) = 111 lbs/day

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."*

As not to penalize the permittee for operating at flows less than the permitted flow, the Department is establishing concentration limits based on a factor of 1.5. Therefore, concentration limits for the parameter of concern in this permit are as follows:

Parameter	Calculated EOP Concentration	Monthly Avg. Conc. Limit
Ammonia	8.5 mg/L	13 mg/L

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

The Department is not requiring the permittee to conducted a TRE for ammonia at this time as the permittee is very close to completing a major upgrade of the waste water treatment. The permittee has indicated a major component of the upgrade includes new aeration systems with the ability to biologically remove nitrogen compounds and significantly remove ammonia in the effluent. As with the sea urchin, the Department will closely track future test results for ammonia to determine if the "new" discharge continues to adversely impact the test results. If so, the Department will require the permittee to conduct a TRE at that time.

Chapter 530 does not establish specific monitoring frequencies for parameters that exceed or have a reasonable to exceed AWQC. This permitting action is establishing the monitoring frequencies for ammonia based on a best professional judgment given the timing, frequency and severity of the exceedence or reasonable to exceed AWQC. To be consistent with the default surveillance level monitoring requirements in Chapter 530, the Department is establishing a monitoring frequency of 1/Quarter for ammonia.

As for the remaining parameters, monitoring frequencies for priority pollutant and analytical testing established in this permitting action are based on the Chapter 530 rule. Chapter 530(2)(D)(3)(d) states in part that for Level I facilities "… *may reduce surveillance testing to one WET or specific chemical series per year provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedence as calculated pursuant to section 3(E)"*. Based on the results of the 11/20/07 statistical evaluation, the permittee qualifies for the testing reduction. Therefore, this permit action establishes surveillance level priority pollutant and analytical testing (with the exception of ammonia) requirements as follows:

Beginning upon permit issuance and lasting through 12 months prior to permit expiration surveillance level testing requirements are as follows:

Level	Priority pollutant testing	Analytical chemistry
I	Not required	1 per year

Department rule Chapter 530 (2)(D)(1) specifies that screening level testing is to be establishes for analytical chemistry and priority pollutant testing requirements as follows:

Beginning 12 months prior to and lasting through permit expiration and every five years thereafter screening level testing is as follows:.

Level	Priority pollutant testing	Analytical chemistry
I	1 per year	4 per year

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

As with WET testing, Chapter 530 (2)(D) requires an annual certification to qualify for reduced testing. Special Condition K, *Chapter 530 (2)(D)(4) Certification*, of this permitting action requires the permittee to file an annual certification with the Department.

i. Mercury - May 23, 2000 – Pursuant to *Certain deposits and discharges prohibited*, 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 thereby administratively modifying WDL #W000678-5M-E-R by establishing interim monthly average and daily maximum effluent concentration limits of 22.5 parts per trillion (ppt) and 33.8 ppt, respectively, and a minimum monitoring frequency requirement of four (4) tests per year for mercury. It is noted the limitations have not been incorporated into Special Condition A, *Effluent Limitations And Monitoring Requirements*, of this permit as limitations and monitoring frequencies are regulated separately through 38 M.R.S.A.§ 413 and 06-096 CMR 519. However, the interim limitations remain in effect and enforceable and any modifications to the limits and or monitoring requirements will be formalized outside of this permitting document.

Maine law 38 M.R.S.A., §420 1-B,(B)(1) states that a facility is not in violation of the ambient water quality criteria for mercury if the facility is in compliance with an interim discharge limit established by the Department pursuant to section 413, subsection 11. A review of the Department's data base for the period February 2001 – November 2007 indicates mercury test results have ranged from 2.9 ppt to 39.7 ppt with an arithmetic mean (n=31) of 8.9 ppt.

7. DISPOSAL OF SEPTAGE WASTE IN WASTE WATER TREATMENT FACILITY

This permitting action is carrying forward authorization to receive and introduce into the treatment process or solids handling or treatment plant process a daily maximum of up to 8,000 gallons per day of septage wastes consistent with the requirements of 06-096 CMR 555 and based on the Town's written septage management plan submitted to the Department on November 15, 2007 as an addendum to their 11/15/07 general application.

8. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has made a determination based on a best professional judgment that 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 SC classification.

9. PUBLIC COMMENTS

Public notice of this application was made in the Portland Press Herald newspaper on or about November 15, 2007. 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.

10. DEPARTMENT CONTACTS

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

Gregg Wood
Division of Water Quality Management
Bureau of Land and Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone (207) 287-7693

11. RESPONSE TO COMMENTS

During the period of January 11, 2008, through the issuance date of the permit/license, the Department solicited comments on the proposed draft permit/license to be issued for the discharge(s) from the Falmouth facility. The Department did not receive comments from the permittee, state or federal agencies or interested parties that resulted in any substantive change(s) in the terms and conditions of the permit. Therefore, the Department has not prepared a Response to Comments.