STATE OF MAINE

Department of Environmental Protection

John Elias Baldacci
GOVERNOR

David P. Littell
COMMISSIONER

September 2, 2010

Mr. Russell Nutting
Limerick Sewerage District
P.O. Box 309
Limerick, ME. 04048

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0100871
Maine Waste Discharge License (WDL) Application #W000860-6C-E-R
Final Permit

Dear Mr. Nutting

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

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

If you have any questions regarding this 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. Matt Hight, DEP/SMRO
Sandy Mojica, USEPA

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

DEPARTMENT ORDER

IN THE MATTER OF

LIMERICK SEWERAGE DISTRICT	) MAINE POLLUTANT DISCHARGE
PUBLICLY OWNED TREATMENT WORKS	) ELIMINATION SYSTEM PERMIT
LIMERICK, YORK COUNTY, MAINE	) AND
ME0100871	) WASTE DISCHARGE LICENSE
W000860-6C-E-R **APPROVAL**	) **RENEWAL**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, §1251, *et seq.*, and Maine law, 38 M.R.S.A., §414-A, *et seq.*, and applicable regulations, the Department of Environmental Protection (Department hereinafter) has considered the application of the LIMERICK SEWERAGE DISTRICT (District/permittee hereinafter), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

The District has submitted a timely and complete application to the Department for renewal of combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100871/ Maine Waste Discharge License (WDL) #W000860-5L-D-R, (permit hereinafter) which was issued by the Department on October 12, 2005, and is due to expire on October 12, 2010. The 10/12/05 permit authorized the monthly average discharge of up to 0.11 million gallons per day (MGD) of secondary treated sanitary waste water from a publicly owned treatment works (POTW) to Little Ossipee River, Class B, in Limerick, Maine.

PERMIT SUMMARY

This permit is carrying forward all the terms of the previous permitting action except that this permit;

1. Eliminating the limitations and monitoring requirements for settleable solids as the Department has reconsidered the need to monitor and limit settleable solids at lagoon facilities given the lengthy detention times associated with this type of treatment facility.

2. Eliminating the monitoring and reporting requirements for total phosphorus and ortho-phosphorus as the Department has made a best professional judgment that it has sufficient information on discharge levels of both forms of phosphorus from the permittee's facility.

3. Establishing water quality based mass and concentration limitations for inorganic arsenic and cadmium as effluent data indicates the discharge exceeds or has a reasonable potential to exceed ambient water quality criteria (AWQC) for said parameters.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated July 29, 2010, and subject to the Conditions listed below, the Department makes the following conclusions:

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

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

3. The provisions of the State's antidegradation policy, 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 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 water 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 as defined in Maine law, 38 M.R.S.A., §414-A(1)(D).

ACTION

THEREFORE, the Department APPROVES the above noted application of the LIMERICK SEWERAGE DISTRICT to discharge a monthly average flow of up to 0.11 MGD of secondary treated sanitary waste water to Little Ossipee River, Class B, in Limerick, Maine, 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 on the date of signature below and expires at midnight five years thereafter.

DONE AND DATED AT AUGUSTA, MAINE, THIS 2nd DAY OF September, 2010.
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
David P. Littell, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: June 1, 2010.
Date of application acceptance: June 1, 2010.

Date filed with Board of Environmental Protection _____

This Order prepared by GREGG WOOD, BUREAU OF LAND & WATER QUALITY
ME0100871 2010 8/31/10

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Beginning the effective date of this permit, the permittee is authorized to discharge secondary treated sanitary waste water from **Outfall #001** to Little Ossipee River. Such discharges shall be limited and monitored by the permittee as specified below[(1)]:

Effluent Characteristic	Discharge Limitations			Monitoring Requirements				
	Monthly Average	**Weekly Average**	**Daily Maximum**	**Monthly Average**	**Weekly Average**	**Daily Maximum**	**Measurement Frequency**	**Sample Type**
Flow *[50050]*	0.11 MGD *[03]*	---	Report MGD *[03]*	---	---	---	Continuous *[99/99]*	Recorder *[RC]*
BOD_5 *[00310]*	28 lbs./day *[26]*	41 lbs./day *[26]*	46 lbs./day *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	1/Week *[01/07]*	24-Hour Composite *[24]*
BOD_5 Percent Removal[(2)] *[81010]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
TSS *[00530]*	28 lbs./day *[26]*	41 lbs./day *[26]*	46 lbs./day *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	1/Week *[01/07]*	24-Hour Composite *[24]*
TSS Percent Removal[(2)] *[81011]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
E. coli Bacteria *[31633]* *(May 15–September 30)*	---	---	---	64/100 ml[(4)] *[13]*	---	427/100 ml *[13]*	1/Week *[01/07]*	Grab *[GR]*
Total Residual Chlorine[(5)] *[00665]*	---	---	---	0.1 mg/L *[19]*	---	0.2 mg/L *[19]*	1/Day *[01/01]*	Grab *[GR]*
pH *[00400]*	---	---	---	---	---	6.0 – 9.0 SU *[12]*	1/Day *[01/01]*	Grab *[GR]*

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

Footnotes: See pages 8 through 11 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

Beginning the effective date of this permit, the permittee is authorized to discharge secondary treated sanitary waste water **Outfall #001 to** Little Ossipee River. Such discharges shall be limited and monitored by the permittee as specified below[(1)]:

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	**Daily Maximum**	**Monthly Average**	**Daily Maximum**	**Measurement Frequency**	**Sample Type**
Arsenic (Total) [(6)] *[01002]* *(Upon permit issuance)*	Report lbs./day *[26]*	---	Report ug/L *[19]*	---	2/Year *[02/YR]*	24-Hour Composite *[24]*
Arsenic (Inorganic) [(7)] *[01252]* *(Upon EPA method approval)*	0.0014 lbs./day *[26]*	---	1.6 ug/L *[19]*	---	2/Year *[02/YR]*	24-Hour Composite *[24]*
Cadmium (Total) ***[01027]***	0.0032 lbs./day *[26]*	0.0028 lbs./day *[26]*	7 µg/L *[28]*	6 µg/L *[28]*	2/Year *[02/YR]*	24-Hour Composite *[24]*
Copper (Total) ***[01042]***	0.094 lbs./day *[26]*	0.021 lbs./day *[26]*	206 µg/L *[28]*	45 µg/L *[28]*	2/Year *[02/YR]*	24-Hour Composite *[24]*
Lead (Total) ***[01051]***	0.016 lbs./day *[26]*	---	36 µg/L *[28]*	---	2/Year *[02/YR]*	24-Hour Composite *[24]*
Average Lagoon Sludge Depth[(8)] ***[00068]***	Report Feet *[27]*	---	---	---	1/Year *[01/YR]*	Measured *[MS]*

Footnotes: See pages 8 through 11 of this permit for applicable footnotes.

SPECIAL CONDITIONS

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

SURVEILLANCE LEVEL TESTING – Beginning upon issuance of this permit and lasting through 12 months prior to permit expiration of this permit the permittee shall conduct surveillance level testing as follows.

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity (WET) [9]						
A-NOEL						
Ceriodaphnia dubia [TDA3B] (Water Flea)	---	---	---	Report % *[23]*	1/Year *[01/YR]*	Composite *[24]*
Salvelinus fontinalis [TDA6F] (Brook trout)	---	---	---	Report % *[23]*	1/2 Years *[01/2Y]*	Composite *[24]*
C-NOEL						
Ceriodaphnia dubia [TBP3B] (Water Flea)	---	---	---	1.7 % *[23]*	1/ Year *[01/YR]*	Composite *[24]*
Salvelinus fontinalis [TBQ6F] (Brook trout)	---	---	---	Report % *[23]*	1/2 Years *[01/2Y]*	Composite *[24]*
Analytical Chemistry [10,11] *[51477]*	---	---	---	Report ug/L *[28]*	2/Year *[02/YR]*	Composite/ Grab *[24/GR]*

Footnotes: See pages 8 through 11 of this permit for applicable footnotes.

SPECIAL CONDITIONS

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

SCREENING LEVEL TESTING – Beginning 12 months prior to expiration of this permit and lasting through the expiration date of the permit 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 (WET) [9]						
A-NOEL						
Ceriodaphnia dubia [TDA3B] (Water Flea)	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Salvelinus fontinalis [TDA6F] (Brook trout)	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
C-NOEL						
Ceriodaphnia dubia [TBP3B] (Water Flea)	---	---	---	1.7 % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Salvelinus fontinalis [TBQ6F] (Brook trout)	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Priority Pollutants[10] *[50008]*	---	---	---	Report ug/L *[28]*	1/Year *[01/YR]*	Composite/Grab *[24/GR]*
Analytical Chemistry [10,11] *[51477]*	---	---	---	Report ug/L *[28]*	1/Quarter *[01/90]*	Composite/ Grab *[24/GR]*

Footnotes: See pages 8 through 11 of this permit for applicable footnotes.

SPECIAL CONDITIONS

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

Footnotes:

1. **Monitoring –** All influent monitoring shall be conducted at the Main Pump Station, or other sampling location specified by the Department. All effluent monitoring shall be conducted at a location following the last treatment unit in the treatment process as to be representative of end-of-pipe effluent characteristics.

   Sampling and analysis must be conducted in accordance with; a) methods approved in 40 Code of Federal Regulations (CFR) Part 136, b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136, or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services. Samples that are sent to another POTW licensed pursuant to *Waste discharge licenses*, 38 M.R.S.A. § 413 or laboratory facilities that analyze compliance samples in-house are subject to the provisions and restrictions of *Maine Comprehensive and Limited Environmental Laboratory Certification Rules*, 10-144 CMR 263 (last amended February 13, 2000).

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

2. **Percent Removal –** The treatment facility shall maintain a minimum of 85 percent removal of both BOD_5 and TSS for all flows receiving secondary treatment during all months that the facility discharges. Compliance with the limitation shall be based on a twelve-month rolling average. Calendar monthly average percent removal values shall be calculated based on influent and effluent concentrations. For the purposes of this permitting action, the twelve-month rolling average calculation is based on the most recent twelve-month period. The percent removal limit shall be waived when the 12-month rolling 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.

3. ***E. coli* bacteria –** *E. coli* bacteria limits and monitoring requirements are seasonal and apply between May 15 and September 30 of each year. The Department reserves the right to impose year-round bacteria limits to protect the health, safety and welfare of the public.

4. **Bacteria Reporting –** The monthly average *E. coli* bacteria limitation is a geometric mean limitation and sample results shall be reported as such.

SPECIAL CONDITIONS

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

Footnotes:

5. **TRC Monitoring** – Due to the contact time provided by the outfall structure, samples collected for TRC analysis shall be drawn from the outlet side of the effluent pump and allowed to rest uncovered for a period of no longer than 30 minutes before analyzing the sample for TRC.

   Limitations and monitoring requirements are applicable whenever elemental chlorine or chlorine based compounds are being used to disinfect the discharge. The permittee shall utilized approved test methods that are capable of bracketing the limitations in this permit.

6. **Arsenic (Total)** – **Beginning upon issuance of this permit and lasting through a date on which the USEPA approves a test method for inorganic arsenic**, the permittee shall sample and analyze the discharge from the facility for total arsenic. The Department's most current reporting limit (RL) for total arsenic is 5 ug/L but may be subject to revision during the term of this permit. All detectable analytical test results shall be reported to the Department including results which are detected below the Department's most current RL at the time of sampling and reporting. Only the detectable results greater than the total arsenic threshold of 3.1 ug/L or the Department's RL at the time (whichever is higher) will be considered as a possible exceedence of the water quality criteria for inorganic arsenic. If a test result is determined to be a possible exceedence, the permittee shall submit a toxicity reduction evaluation (TRE) to the Department for review and approval within 45 days of receiving the test result of concern from the laboratory.

7. **Arsenic (Inorganic)** – The limitations and monitoring requirements for inorganic arsenic are not in effect until the USEPA approves of a test method for inorganic arsenic. See Special Condition L, *Schedule of Compliance – Inorganic Arsenic*, of this permit.

8. **Sludge Depth Reporting –** Average lagoon sludge depth shall be reported to the nearest tenth of a foot. In determining the average depth, the permittee shall establish an evenly distributed grid pattern that consists of 9 cells (3 wide by 3 deep) over each lagoon. The permittee shall record one measurement from each grid cell and report the average of all measurements for each lagoon.

9. **Whole effluent toxicity (WET) testing** – Definitive WET testing is a multi-concentration testing event (a minimum of five dilutions bracketing the critical acute and chronic thresholds of 10.6% and 1.7% 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. The critical acute and chronic thresholds were derived as the mathematical inverse of the applicable acute and chronic dilution factors of 9.5:1 and 59.2:1 respectively. See **Attachment B** of this permit for a copy of the Department's WET reporting form.

   Surveillance level testing – Beginning upon issuance of this permit and lasting through 12 months prior to expiration of the permit, the permittee shall conduct surveillance level WET testing at a minimum frequency of once per year (1/Year) on the water flea (*Ceriodaphnia dubia*) and 1/2 Years on the brook trout (*Salvelinus fontinalis*).

SPECIAL CONDITIONS

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

Footnotes:

Screening level testing – Beginning 12 months prior to expiration of the current permit or in the fifth year since the last screening test, which ever is sooner, the permittee shall conduct screening level WET testing at a minimum frequency of 2/Year for the water flea (*Ceriodaphnia dubia*) and the brook trout (*Salvelinus fontinalis*). There shall be at least six (6) months between sampling events.

WET test results must be submitted to the Department not later than the next Discharge Monitoring Report (DMR) required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their availability before submitting them. The permittee shall evaluate test results being submitted and identify to the Department possible exceedences of the critical acute and chronic water quality thresholds specified above.

Toxicity tests must be conducted by an experienced laboratory approved by the Department. The laboratory must follow procedures as described in the following USEPA methods manuals.

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

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

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

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

Surveillance level testing – Beginning upon issuance of this permit and lasting through 12 months prior to expiration of the current permit, the permittee shall conduct surveillance level analytical chemistry testing at a minimum frequency of twice per year (2/Year). Testing shall be conducted such that two analytical chemistry tests are conducted in each of the four calendar quarters during the first four years of the term of the permit.

Screening level testing – Beginning 12 months prior to expiration of the current permit or in the fifth year since the last screening test, which ever is sooner, the permittee shall conduct analytical chemistry testing at a minimum frequency of once per calendar quarter (1/Quarter) for four consecutive calendar quarters.

SPECIAL CONDITIONS

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

Footnotes:

11. **Priority pollutant testing –** Priority pollutants are those listed in **Attachment A** of this permit.

    Screening level testing – Beginning 12 months prior to expiration of the permit or in the fifth year since the last screening test, which ever is sooner, the permittee shall conduct screening level priority pollutant testing at a minimum frequency of once per year (1/Year), except for those analytical chemistry parameter(s) otherwise regulated in this permit.

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

    Priority pollutant and analytical chemistry testing shall be conducted on samples collected at the same time as those collected for whole effluent toxicity tests when applicable. Priority pollutant and analytical chemistry testing shall be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve minimum reporting levels of detection as specified by the Department. See **Attachment A** of this permit for a list of the Department's most current reporting limits (RL's).

    Test results must be submitted to the Department not later than the next Discharge Monitoring Report (DMR) required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their availability before submitting them. The permittee shall evaluate test results being submitted and identify to the Department, possible exceedences of the acute, chronic or human health AWQC as established in *Surface Water Quality Criteria for Toxic Pollutants*, 06-096 CMR 584 (effective October 9, 2005). For the purposes of DMR reporting, enter a "1" for yes, testing done this monitoring period or "NODI-9" monitoring not required this period.

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.

SPECIAL CONDITIONS

C. TREATMENT PLANT OPERATOR

The person who has the management responsibility over the treatment facility must hold a **Grade II** certificate (or higher) or must be a Maine Registered Professional Engineer pursuant to *Sewerage Treatment Operators*, Title 32 M.R.S.A., Sections 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) shall not pass through or interfere with the operation of the treatment system.

E. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with: 1) the permittee's General Application for Waste Discharge Permit, accepted for processing on June 1, 2010; 2) the terms and conditions of this permit; and 3) only from Outfall #001 (secondary treated waste water). Discharges of waste water from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5)(*Bypass*) of this permit.

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 wastewater collection and treatment system from an indirect discharger in a primary industrial category discharging process wastewater; and

2. Any substantial change (increase or decrease) in the volume or character of pollutants being introduced into the wastewater collection and treatment system by a source introducing pollutants into the system at the time of permit issuance. For the purposes of this section, notice regarding substantial change shall 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 waste water to be discharged from the treatment system.

SPECIAL CONDITIONS

G. WET WEATHER FLOW MANAGEMENT PLAN

The treatment facility staff shall maintain a current written 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 conform to Department guidelines for such plans and 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 during the events. The **permittee shall review their plan annually** and record any necessary changes to keep the plan up to date.

H. OPERATION & MAINTENANCE (O&M) PLAN

The permittee shall maintain a current written comprehensive Operation & Maintenance (O&M) Plan at the facility. 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 wastewater 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 USEPA personnel upon request.

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

I. MERCURY

All mercury sampling (4/Year) required by this permit or 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 C,** *Effluent Mercury Test Report*, of this permit for the Department's form for reporting mercury test results.

SPECIAL CONDITIONS

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

By December 31 of each calendar year, the permittee shall provide the Department with a certification describing any of the following that have occurred since the effective date of this permit ***[PCS Code 95799]***: See **Attachment E** of the Fact Sheet of this permit for an acceptable certification form to satisfy this Special Condition.

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.

2. Changes in the condition or operations of the facility that may increase the toxicity of the discharge.

3. Changes in storm water collection or inflow/infiltration affecting the facility that may increase the toxicity of the discharge.

4. Increases in the type or volume of hauled wastes accepted by the facility.

5. The Department reserves the right to reinstate annual (surveillance level) testing or other toxicity testing if new information becomes available that indicates the discharge may cause or have a reasonable potential to cause exceedences of ambient water quality criteria/thresholds.

K. TOXICITY REDUCTION EVALUATION (TRE)

Within thirty (30) days of the effective date of this permit, the permittee shall submit to the Department, for review and approval, a TRE plan which outlines a strategy to identify the source(s) and action items to be implemented to mitigate or eliminate exceedence of ambient water quality criteria for copper, cadmium and lead. ***[PCS Code 02299]***

L. SCHEDULE OF COMPLIANCE – INORGANIC ARSENIC

Beginning upon issuance of this permit and lasting through a date on which the USEPA approves a test method for inorganic arsenic, the limitations and monitoring requirements for inorganic are not in effect. During this time frame, the permittee is required by Special Condition A, *Effluent Limitations and Monitoring Requirements,* of this permit to conduct 2/Year sampling and analysis for total arsenic.

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

SPECIAL CONDITIONS

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 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 effluent or ambient water quality 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, 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 respects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

AND

WASTE DISCHARGE LICENSE

FACT SHEET

Date: **July 29, 2010**

MEPDES PERMIT: **ME0100871**
WASTE DISCHARGE LICENSE: **W000860-6C-E-R**

NAME AND ADDRESS OF APPLICANT:

LIMERICK SEWERAGE DISTRICT
P.O. Box 309
Limerick, ME. 04048

COUNTY: **York**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

316 Burhnam Road
Limerick, ME. 04048

RECEIVING WATER / CLASSIFICATION: **Little Ossippe River/Class B**

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1. APPLICATION SUMMARY

a. Application: The Limerick Sewerage District (District/permittee hereinafter) has submitted a timely and complete application to the Department for renewal of combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0100871/ Maine Waste Discharge License (WDL) #W000860-5L-D-R, (permit hereinafter) which was issued by the Department on October 12, 2005, and is due to expire on October 12, 2010. The 10/12/05 permit authorized the monthly average discharge of up to 0.11 million gallons per day (MGD) of secondary treated sanitary waste water from a publicly owned treatment works (POTW) to Little Ossipee River, Class B, in Limerick, Maine. See **Attachment A** for a location map

1. PERMIT SUMMARY (cont'd)

b. Source Description: The Limerick Sewerage District owns and operates a waste water treatment facility on Burnham Road in Limerick, Maine for the treatment of sanitary waste water generated from a total of approximately 150 residential and commercial connections located within the District boundaries. There are no significant industrial users contributing flows to the treatment works and the District is not required to implement a formal pretreatment program. The sewer collection system is 100% separated (sanitary and storm water) and there are no combined sewer overflow (CSO) points associated with the system. The sanitary sewer collection system is approximately five miles in length and contains two (2) pump stations, both of which are equipped with emergency back-up power sources. The District has not applied to and is not authorized to accept transported wastes at the treatment facility.

c. Waste Water Treatment: The District commenced operation in 1985 and the facility currently provides a secondary level of waste water treatment via two (2) 1.27 million gallon aerated lagoons operated in series. Each lagoon measures approximately 134 feet long by 116 feet wide and the operating depth varies based on lagoon and receiving water quality conditions as well as seasonal conditions. Each lagoon is fitted with a fine bubble diffused aeration system. The second lagoon cell is separated into two sections by a baffle.

Waste water is conveyed from a grinder pump station located off Route 11 in Limerick to the main pump station located on Burnham Road via a 10-inch diameter gravity sewer. From there, the flow is conveyed in a 6-inch diameter force main to the facility headworks, which contains a grit removal unit and communitor. The facility is also equipped with a manually-cleaned bar rack to continue screening when the comminutor is off-line due to maintenance or mechanical failure.

Influent flow is measured using an electromagnetic flow meter installed at the main pump station. The flow is then pumped to the first of two, geotextile lined treatment lagoons. The actual detention period of the lagoon system varies based on the management and operation of the lagoons. The management of lagoon levels varies based on seasonal conditions, lagoon water quality and receiving water flow conditions. Lagoon supernatant (effluent) is conveyed to an 8-foot long by 6-foot wide by 7-foot high (approximately 2,500-gallon) effluent wet well prior to disinfection. Effluent is pumped from the wet well and seasonally disinfected (in-line) using sodium hypochlorite. Effluent flow is measured using an electromagnetic flow meter and conveyed for discharge via a 2.85 mile long outfall pipe.

Due to the extended detention time provided by the outfall structure, as demonstrated through a Department-assisted dye study performed on May 21, 2001, the District is able to achieve compliance with the bacteria limits and water quality-based total residual chlorine limits without effluent dechlorination. Further discussion is included in Section 6(f) of this Fact Sheet.

1. PERMIT SUMMARY (cont'd)

Final effluent is discharged on an intermittent basis. The District discharge protocol places the effluent pumps on a timer that activates the pumps one or more times per day to maintain a predetermined lagoon water level

Final effluent is conveyed from the treatment facility to the Little Ossipee River for discharge via a 6-inch diameter, approximately 2.85-mile long outfall pipe that terminates on the shore of the river. The "bank outfall" is not fitted diffusers or other structures intended to enhance mixing with the receiving waters. The Department determined during the 2001 dye study that the discharge does not receive complete and rapid mixing with the receiving waters.

The District reports that no waste sludge has been removed from the lagoons since commencing operations in 1985. The reported design life for sludge removal is 10 to 20 years. The previous licensing action established an annual reporting requirement for sludge depth, however a review of the District's effluent reporting data on file in the permit compliance system (PCS) database indicates that no sludge monitoring results have been provided to the Department. This permitting action carries forward an annual reporting requirement for maximum lagoon sludge depth.

According to the District, the lagoon system was constructed with a lagoon under-drain collection system. The District further indicated that they are unaware of any means to sample or monitor the under-drain system.

A process flow schematic for the Limerick Sewerage District is included as Fact Sheet **Attachment B.**

2. PERMIT SUMMARY

a. Terms and conditions - This permit is carrying forward all the terms of the previous permitting action except that this permit;

1. Eliminating the limitations and monitoring requirements for settleable solids as the Department has reconsidered the need to monitor and limit settleable solids at lagoon facilities given the lengthy detention times associated with this type of treatment facility.

2. Eliminating the monitoring and reporting requirements for total phosphorus and ortho-phosphorus as the Department has made a best professional judgment that it has sufficient information on discharge levels of both forms of phosphorus from the permittee's facility.

3. Establishing water quality based mass and concentration limitations for inorganic arsenic and cadmium as effluent data indicates the discharge exceeds or has a reasonable potential to exceed ambient water quality criteria (AWQC) for said parameters.

2. PERMIT SUMMARY

c. Regulatory history: This section provides a summary of significant licensing/permitting actions and milestones that have been completed for the Limerick Sewerage District.

December 10, 1985 – The USEPA issued NPDES permit #ME0100871 to the District for the monthly average discharge of up to 0.11 MGD of secondary treated waste water to Little Ossipee River in Limerick for five-year term.

December 20, 1990 – The District submitted an application to the USEPA for the renewal of the 12/10/85 NPDES permit.

May 17, 1991 – By way of letter to the District, the USEPA administratively extended the terms and conditions of the 12/10/85 NPDES permit.

May 18, 1995 – The Department issued WDL #W000860-59-B-R to the District for the monthly average discharge of up to 0.11 MGD of secondary treated wastewater to Little Ossipee River in Limerick for five-year term.

May 23, 2000 – Pursuant to Maine law, 38 M.R.S.A. §420 and §413 and Department rule, 06-096 CMR Chapter 519, *Interim Effluent Limitations and Controls for the Discharge of Mercury*, the Department issued a *Notice of Interim Limits for the Discharge of Mercury* to the permittee thereby administratively modifying WDL #W000860-59-B-R by establishing interim monthly average and daily maximum effluent concentration for mercury.

January 12, 2001 – The State of Maine received authorization from the USEPA to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine. From this date forward the program has been referred to as the MEPDES program and ME000871 remains the primary reference number for the Limerick facility.

January 31, 2001 – The Department issued WDL #W000860-5L-C-R to the District for the monthly average discharge of up to 0.11 MGD of secondary treated waste water to Little Ossipee River in Limerick for a five-year term.

June 20, 2005 – The Maine Legislature amended the Maine Surface Water Classification Program at 38 M.R.S.A. §465, sub-§3 to revise the instantaneous level (daily maximum) *E. coli* bacteria limit from 427 colonies / 100 ml to 236 colonies / 100 ml.

October 12, 2005 – The Department issued combination MEPDES permit #ME0100871/Maine WDL #W000860-5L-D-R for a five-year term.

April1 10, 2006 – The Department administratively modified the 10/12/05 permit to incorporate the whole effluent toxicity (WET) and chemical specific testing requirements pursuant to a newly adopted (October 2005) Chapter 530, *Surface Water Toxics Control Program*.

June 1, 2010 –The District submitted a timely and complete application to the Department to renew the 10/12/05 permit.

3. CONDITIONS OF PERMIT

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 QUALITY STANDARDS

Maine law, 38 M.R.S.A. §467(12)(B) classifies tributaries of the Saco River, which includes Little Ossipee River at the point of discharge, as Class B waters. Maine law, 38 M.R.S.A. §465(3) describes the standards for Class B waters as follows:

Class B waters must be of such quality that they are suitable for the designated uses of drinking water supply after treatment; fishing; agriculture; recreation in and on the water; industrial process and cooling water supply; hydroelectric power generation, except as prohibited under Title 12, section 403; navigation; and as habitat for fish and other aquatic life. The habitat must be characterized as unimpaired.

The dissolved oxygen content of Class B waters may not be less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean dissolved oxygen concentration may not be less than 9.5 parts per million and the 1-day minimum dissolved oxygen concentration may not be less than 8.0 parts per million in identified fish spawning areas. Between May 15th and September 30th, the number of Escherichia coli bacteria of human and domestic animal origin in these waters may not exceed a geometric mean of 64 per 100 milliliters or an instantaneous level of 236 per 100 milliliters. In determining human and domestic animal origin, the department shall assess licensed and unlicensed sources using available diagnostic procedures.

Discharges to Class B waters may not cause adverse impact to aquatic life in that the receiving waters must be of sufficient quality to support all aquatic species indigenous to the receiving water without detrimental changes in the resident biological community.

5. RECEIVING WATER QUALITY CONDITIONS

The *State of Maine 2008 Integrated Water Quality Monitoring and Assessment Report,* ("Report") prepared pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act, lists a 10.0-mile reach of the Little Ossipee River from Lake Arrowhead Dam to its confluence with the Saco River (Hydrologic Unit Code ME106000210 / Waterbody ID #615R01) as, *"Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)."* Impairment in this context refers to the aquatic life and dissolved oxygen for Class B waters. The Report identifies non-point source pollution as a potential source for the impairment. The total maximum daily load (TMDL) scheduled to be completed in calendar year 2012 will identify significant sources contributing to the non-attainment status and will allocate wasteloads to the dischargers accordingly.

The District discharges to Little Ossipee River below Arrowhead Lake. In the summer of 2001, the Department sampled Little Ossippee River weekly in the vicinity of the District's discharge. There were numerous events when minimum Class B dissolved oxygen (DO) criteria of 7 parts per million (ppm) were not met both above and below the discharge point. As flow became lower in the middle to late summer, the diurnal swing of DO (p.m. DO – a.m. DO) grew larger and the daily minimum DO lower. This suggests that there is an issue of bottom attached algae that may be fed by nutrients from the District's discharge.

The data do not indicate that a large phosphorus spike occurs due to the discharge, as is evident in other water bodies with point source related nutrient issues. However, orthophosphate (ortho-P) can be rapidly uptaken in these situations. The Department's Division of Environmental Assessment (DEA) concludes that more data are needed to assess to what extent the District's discharge impacts DO levels in Little Ossipee River. The river segment involved is scheduled to have a TMDL completed by the year 2012.

The previous permitting action established a seasonal (June 1 through September 30) weekly monitoring requirement for total phosphorus to assist in evaluating the District's contribution of phosphorus loading to the receiving water. A review of facility effluent data on file with the Department indicates that the District has submitted phosphorus data for the reporting periods of 9/2001, 7/2002, 8/2002 and seasonally (June – September) for years 2005 – 2009 inclusively. Further discussion and consideration of these data is included in Fact Sheet Section 6(g). The Department has no information at this time that the discharge from the District causes or contributes to non-attainment of the standards of classification for Class B waters. The effluent limitations established in this permitting action represent best practicable treatment for secondary treated sanitary wastewater and represent the best information currently available to ensure that the District's discharge does not cause or contribute to non-attainment of the standards for Class B waters. Existing total phosphorus and orthophosphate effluent monitoring data will be used by the Department in conjunction with a TMDL to establish appropriate effluent limitations necessary to protect receiving water quality.

5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

In addition, the 305 b Report lists all freshwaters in Maine as "*Category 5-C: Waters Impaired by Atmospheric Deposition.*" Impairment in this context refers to the designated use of recreational fishing due to elevated levels of mercury in some fish caused by atmospheric deposition. As a result, the State has established a fish consumption advisory for all freshwaters in Maine. Pursuant to Maine law, 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 for this facility. See section 6j of this Fact Sheet for a discussion on mercury.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Flow: The previous permitting action established a monthly average discharge flow limitation of 0.11 MGD based on the design capacity of the treatment facility, a daily maximum discharge flow reporting requirement, a "continuous" monitoring frequency and "recorder" sample type, which are all being carried forward in this permitting action.

A review of the monthly Discharge Monitoring Report (DMR) data for the period January 2007 – February 2010 indicates the permittee has been in compliance with said limit 100% of the time as values have been reported as follows:

Flow (DMRs=38)

Value	Limit (MGD)	Range (MGD)	Mean (MGD)
Monthly Average	0.11	0.035 – 0.102	0.084
Daily Maximum	Report	0.098 – 0.169	0.122

b. Dilution Factors: The Department established applicable dilution factors for the discharge in accordance with freshwater protocols established in Department Rule Chapter 530, *Surface Water Toxics Control Program*, October 2005. With a monthly average discharge flow limit of 0.11 MGD, dilution factors associated with the discharge from the District may be calculated as follows:

Acute: 1Q10 = 5.8 cfs $\Rightarrow \frac{(5.8 \text{ cfs})(0.6464) + 0.11 \text{ MGD}}{0.11 \text{ MGD}} = 35.1{:}1$

Modified Acute: ¼ 1Q10 = 1.45 cfs $\Rightarrow \frac{(1.45 \text{ cfs})(0.6464) + 0.11 \text{ MGD}}{0.11 \text{ MGD}} = 9.5{:}1$

Chronic: 7Q10 = 9.9 cfs $\Rightarrow \frac{(9.9 \text{ cfs})(0.6464) + 0.11 \text{ MGD}}{0.11 \text{ MGD}} = 59.2{:}1$

Harmonic Mean = 29.7 cfs $\Rightarrow \frac{(29.7 \text{ cfs})(0.6464) + 0.11 \text{ MGD}}{0.11 \text{ MGD}} = 175.5{:}1$

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

Department rule Chapter 530 states:

> *Analysis using numerical acute criteria for aquatic life must be based on ¼ of the 1Q10 stream design flow to prevent substantial acute toxicity within any mixing zone, according to EPA's Mixing Zone Policy and to ensure a Zone of Passage of at least ¾ of the cross-sectional area of any stream as required by Department rule. Where it can be demonstrated that a discharge achieves complete and rapid 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 flow, up to and including all of it, as long as the required Zone of Passage is maintained.*

The District's outfall pipe terminates on the shore of Little Ossipee River. In 2001, the Department and District performed a dye study of the discharge to observe the effluent plume as it enters the river. The study indicated that the discharge does not exhibit complete and rapid mixing with the receiving waters. Consequently, the Department is utilizing the default stream flow of ¼ 1Q10 in acute evaluations, as was used in the previous permitting action, in accordance with Chapter 530.

c. Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS): The previous permitting action established monthly average and weekly average BOD_5 and TSS concentration limits of 30 mg/L and 45 mg/L, respectively, based on secondary treatment requirements of Department rule 06-096 CMR Chapter 525(3)(III), and daily maximum BOD_5 & TSS concentration limits of 50 mg/L based on a Department best professional judgement (BPJ) of best practicable treatment (BPT). All three concentration limits are being carried forward in this permitting action based on the secondary treatment requirements and Department BPJ as described above.

The previous permitting action established monthly average, weekly average and daily maximum BOD_5 and TSS mass limits of 28 lbs./day, 41 lbs./day and 46 lbs./day, respectively, based the monthly average discharge flow limit of 0.11 MGD and the applicable concentration limits, which are being carried forward in this permitting action and were derived as follows:

Monthly average mass limit: (30 mg/L)(8.34 lbs./gallon)(0.11 MGD) = 28 lbs./day
Weekly average mass limit: (45 mg/L)(8.34 lbs./day)(0.11 MGD) = 41 lbs./day
Daily maximum mass limit: (50 mg/L)(8.34 lbs./day)(0.11 MGD) = 46 lbs./day

This permitting action is also carrying forward a requirement for a minimum of 85% removal of BOD_5 & TSS pursuant to Department rule 06-096 CMR Chapter 525(3)(III)(a)(3) and (b)(3). Compliance with the limitation is based on a twelve-month rolling average. See Special Condition A, Footnote #2 for additional instructions on calculating the rolling average.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

The previous permitting action established a minimum monitoring frequency requirement of once per week (1/Week) for BOD_5 and TSS, which is being carried forward in this permitting action and is based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD.

A review of the monthly Discharge Monitoring Report (DMR) data for the period January 2007 – February 2010 indicates the permittee has been in compliance with said limit(s) 95% of the time as values have been reported as follows:

BOD Mass (DMRs=38)

Value	Limit (lbs/day)	Range (lbs/day)	Average (lbs/day)
Monthly Average	28	4 – 30	19
Weekly Average	41	5 – 42	24
Daily Maximum	46	5 - 42	24

BOD Concentration (DMRs=38)

Value	Limit (mg/L)	Range (mg/L)	Average (mg/L)
Monthly Average	30	5 – 40	26
Weekly Average	45	6 – 45	29
Daily Maximum	50	6 - 45	29

TSS mass (DMRs=38)

Value	Limit (lbs/day)	Range (lbs/day)	Average (lbs/day)
Monthly Average	28	7 – 35	17
Weekly Average	41	7 – 45	21
Daily Maximum	46	7 - 45	21

TSS concentration (DMRs=38)

Value	Limit (mg/L)	Range (mg/L)	Average (mg/L)
Monthly Average	30	9 – 41	22
Weekly Average	45	11 – 50	27
Daily Maximum	50	11 – 50	27

d. Settleable Solids: The previous permitting action established a daily maximum technology-based concentration limit of 0.3 ml/L for settleable solids, which at the time was considered by the Department to be BPT for secondary treated sanitary waste water. The previous permit established a minimum monitoring frequency requirement for settleable solids of once per day (1/Day) based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD.

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

The Department has since reconsidered the need to monitor and limit settleable solids at lagoon facilities and has made a best professional judgment decision to eliminate both the numeric limitation and monitoring requirements for this parameter. It is noted for the record however, that a summary of settleable solids data as reported on the monthly DMRs for the period of January 2007 through February 2010 (n=38) indicates the daily maximum settleable solids concentration discharge has been in compliance with the 0.3 ml/L limit 100% of the time.

e. *E. coli* bacteria: The previous permitting action established seasonal (between May 15 and September 30 of each year) monthly average and daily maximum concentration limits for *E. coli* bacteria of 64 colonies/100 ml (geometric mean) and 427 colonies/100 ml (instantaneous level), respectively, based on the State of Maine Water Classification Program criteria for Class B waters found at 38 M.R.S.A. §465(3)(B) at the time of permitting along with a minimum monitoring frequency requirement of 1/Week.

During calendar year 2005, Maine's Legislature approved a new daily maximum water quality standards of 236 colonies/100 ml for water bodies designated as Class B and Class C. The Department has determined that end-of-pipe limitations for the instantaneous concentration standard of 427 colonies/100 mL will be achieved through available dilution of the effluent with the receiving waters and need not be revised in MEPDES permits for facilities with adequate dilution such as is the case with the permittee's facility. The bacteria limits established in this permitting action are seasonal and apply between May 15 and September 30 of each year. The Department reserves the right to impose year-round bacteria limits, if necessary, to protect the health, safety and welfare of the public.

A review of the monthly Discharge Monitoring Report (DMR) data for the period January 2007 – February 2010 indicates the permittee has been in compliance with said limit(s) 100% of the time as values have been reported as follows:

***E. coli* bacteria (13 DMRs)**

Value	Limit (col/100 ml)	Range (col/100 ml)	Mean (col/100 ml)
Monthly Average	64	35 – 65	47
Daily Maximum	427	37 - 105	59

f. Total Residual Chlorine (TRC): The previous permitting action established a daily maximum water quality-based concentration limit of 0.2 mg/L and a technology-based monthly average concentration limit of 0.1 mg/L and a minimum monitoring frequency requirement of once per day (1/Day) for 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 BPT based limit. With dilution factors as determined above and current ambient water quality

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

criteria (AWQC) for chlorine provided below, end-of-pipe water quality based concentration thresholds for TRC may be calculated as follows:

			Calculated	
Acute (A) Criterion	Chronic (C) Criterion	Mod. A & C Dilution Factors	Acute Threshold	Chronic Threshold
0.019 mg/L	0.011 mg/L	9.5:1 (Mod. A) 59.2:1 (C)	0.18 mg/L	0.65 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. For facilities subject to water quality-based limits, the Department has established daily maximum and monthly average BPT limits of 0.3 mg/L and 0.1 mg/L, respectively. The (rounded) calculated acute water quality-based threshold of 0.2 mg/L is more stringent than the technology-based BPT-based limit of 0.3 mg/L and is therefore being carried forward in this permitting action. The monthly average technology-based BPT-based limit of 0.1 mg/L is more stringent than the calculated chronic water quality-based threshold of 0.65 mg/L and is being carried forward in this permitting action. This permitting action is also carrying forward the minimum monitoring frequency requirement of once per day (1/Day) based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD, and in consideration of the District's TRC compliance record, which indicates several exceptions of these limitations.

A review of the monthly Discharge Monitoring Report (DMR) data for the period January 2007 – February 2010 indicates the permittee has been in compliance with said limit(s) 100% of the time as values have been reported as follows:

Total residual chlorine (DMRs=15)

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly average	0.1	0.03 – 0.1	0.062
Daily maximum	0.2	0.04 – 0.15	0.11

g. Total Phosphorus and Orthophosphate: The previous permitting action established monthly average and daily maximum mass and concentration reporting requirements for total phosphorus and orthophosphate along with a minimum monitoring frequency requirement of twice per month (2/Month) during June 1 through September 30 of each year. The information was being collected to support the Department's effort to perform a total maximum daily load (TMDL) for Little Ossipee River during calendar year 2012 to determine what, if any, the District's contribution is to the non-attainment status of the receiving water.

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

A review of the monthly Discharge Monitoring Report (DMR) data for the period June 2007 – September 2009 indicates the permittee has reported values as follows:

Concentration

Total phosphorus (DMRs=11)

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly average	Report	3.4 – 5.65	4.4
Daily maximum	Report	3.7 – 6.2	4.5

Ortho phosphate (DMRs=11)

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly average	Report	3.0 – 5.65	4.2
Daily maximum	Report	3.0 – 6.0	4.3

Mass

Total phosphorus (DMRs=11)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly average	Report	2.3 – 4.9	3.3
Daily maximum	Report	2.7 – 5.0	3.6

Ortho phosphate (DMRs=11)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly average	Report	1.88 – 4.7	3.2
Daily maximum	Report	2.56 – 4.8	3.4

The total phosphorus and orthophosphate monitoring and reporting requirements are not being carried forward in this permitting action as the Department has made a best professional judgment that it has sufficient information on discharge levels of both forms of phosphorus from the permittee's facility.

h. pH: The previous permitting action established a pH range limit of 6.0 – 9.0 standard units (SU), which was based on Department rule found at Department rule, 06-096 CMR Chapter 525(3)(III)(c). This permitting action is carrying forward the limitation range and minimum monitoring frequency requirement of once per day (1/Day) based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD.

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

i. 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 AWQC as established in Chapter 584.

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

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

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

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

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

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

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

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

A review of the data on file with the Department indicates that to date, the permittee has fulfilled the WET and chemical-specific testing requirements of Chapter 530. See **Attachment C** of this Fact Sheet for dates and test results for WET and **Attachment D** for chemical specific testing dates.

Department rule Chapter 530(D)(3)(c) states in part *"Dischargers in Level II may reduce surveillance testing to one WET or specific chemical series every other 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, *"The Department shall establish appropriate discharge prohibitions, effluent limits and monitoring requirements in waste discharge licenses if a discharge contains pollutants that are or may be discharged at levels that cause, have reasonable potential to cause, or contribute to an ambient excursion in excess of a numeric or narrative water quality criteria or that may impair existing or designated uses. The licensee must also control whole effluent toxicity (WET) when discharges cause, have a reasonable potential to cause, or contribute to an ambient excursion above the narrative water quality criteria. "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."*

WET Evaluation – The previous permitting action established A-NOEL and C-NOEL limits of 10.6% and 1.7% respectively, for the brook trout (*Salvelinus fontinalis*) as a statistical evaluation at that time indicated the discharge exceeded or had a reasonable potential to exceed critical acute and chronic WET thresholds of 10.6% and 1.7% respectively. It is noted the acute and chronic thresholds are calculated as the mathematical inverse of the modified acute and chronic dilution factors of 9.5:1 and 59.2:1 respectively.

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

For this permitting action, a statistical evaluation was conducted on 7/2910 on the most recent 60 months of WET tests on file at the Department. The statistical evaluation indicates there is one test result of 2.8% on 8/3/09 for the water flea that has a reasonable potential to exceed the critical C-NOEL threshold of 1.7%. There are no test results for the brook trout that exceed or have a reasonable potential to exceed the critical A-NOEL of C-NOEL water quality thresholds.

With the exception of the water flea, the permittee qualifies for the reduced testing frequency provision found at Chapter 530 §2(D)(3) that states "*Dischargers in Level II may reduce surveillance testing to one WET or specific chemical series every other year provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedence as calculated pursuant to section 3(E).*"Therefore, this permitting action establishes a monitoring frequency of 1/Year for the water flea and 1/2Years for the brook trout beginning upon issuance of the permit and lasting through 12 months prior to the expiration date of the permit.

Chapter 530(2)(D)(4) 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.

Given the permittee qualifies for the reduced testing frequency provision for the water flea and the brook trout found at Chapter 530 §2(D)(3), Special Condition J of this permit requires the permittee to file said statement. See **Attachment E** of the Fact Sheet of this permit for an acceptable certification form to satisfy this Special Condition.

Beginning 12 months prior to the expiration date of the permit, the permittee shall revert to a default screening level of 2/Year WET testing in the Chapter 530 rule for both the water flea and brook trout.

Analytical chemistry and priority pollutant testing – 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*

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

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

Chapter 530 §4(E), states "*In allocating assimilative capacity for toxic pollutants, the Department shall hold a portion of the total capacity in an unallocated reserve to allow for new or changed discharges and non-point source contributions. The unallocated reserve must be reviewed and restored as necessary at intervals of not more than five years. The water quality reserve must be not less than 15% of the total assimilative quantity."* Therefore, the Department is reserving 15% of the applicable water quality criteria in the calculations of this permitting action.

Chapter 530 §(3)(E) states *"... that a discharge contains pollutants or WET at levels that have a reasonable potential to cause or contribute to an exceedence of water quality criteria, appropriate water quality-based limits must be established in any licensing action."*

Chapter 530 §4(F) states in part **"***Where there is more than one discharge into the same fresh or estuarine receiving water or watershed, the Department shall consider the cumulative effects of those discharges when determining the need for and establishment of the level of effluent limits. The Department shall calculate the total allowable discharge quantity for specific pollutants, less the water quality reserve and background concentration, necessary to achieve or maintain water quality criteria at all points of discharge, and in the entire watershed. The total allowable discharge quantity for pollutants must be allocated consistent with the following principles.*

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

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

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

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

The Ossipee River is a tributary to the Saco River, however, LSD is the only discharger on the Ossippee River and the potential impact of its discharge on the Saco River is *de minimis*. As a result, the LSD is being evaluated based on its impact to the Ossippe River.

As with WET test results, the Department conducted a statistical evaluation on 7/29/10 (report ID #297) on the most recent 60-months of analytical chemistry and priority pollutant data on file at the Department. The statistical evaluation indicates the permittee's has test results that exceed or have a reasonable potential to exceed the human health (water & organisms) AWQC for arsenic, the acute and chronic AWQC for cadmium and copper and the chronic AWQC for lead. The report indicates the discharge has a reasonable potential to exceed the chronic AWQC for ammonia based on an ambient receiving water temperature of 25ºC. It is noted the AWQC for ammonia is temperature and pH dependent. A closer evaluation of the data indicates all test results of concern were obtained during the colder months of November – April. When evaluated at a more realistic ambient temperature of 15ºC during this time of year, the statistical evaluation no longer flags ammonia has a pollutant of concern and is therefore not being limited in this permitting action.

Based on Department guidance that establishes protocols for establishing waste load allocations (see **Attachment D** of this Fact Sheet) limitation are based on the most protective of water quality. According to the 7/29/10 statistical evaluation, the monthly average limitations for arsenic, cadmium, copper and lead are to be limited based on the segment allocation method and the daily maximum limitations for cadmium and copper are limited based on the individual allocation method. Limitations for the four pollutants of concern were derived as follows:

Segment allocation methodology

Arsenic (inorganic)

Mass limits

Mean concentration = 3.875 ug/L or 0.003875 mg/L
Permit flow limit = 0.11 MGD
Historical average mass = (0.003875 mg/L)(8.34)(0.11 MGD) = 0.003555 lbs/day

The 4/16/10 statistical evaluation indicates the historical average mass of arsenic discharged by District's facility is 100% of the arsenic discharged as it is the only facility permitted on the Little Ossipee River and its tributaries. Therefore, District's segment allocation for arsenic is calculated as 100% of the remaining harmonic mean assimilative capacity of the river at Limerick, the most downstream facility. The assimilative capacity at Limerick can be calculated as follows:

Harmonic mean = 29.7 cfs (0.6464) = 19.198 MGD
Human health AWQC (w & o) = 0.012 ug/L or 0.000012 mg/L

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

Taking into consideration 15% of the AWQC reserve and 10% for background, the assimilative capacity is calculated as follows:

Human health = (0.000012 mg/L)(0.75)(8.34 lbs/gal)(19.198 MGD) = 0.001441 lbs/day

Monthly average: (Harmonic mean assimilative capacity mass)(% of total arsenic discharged)
(0.001441 lbs/day)(100%) = 0.001441 lbs/day

Concentration limits:

Monthly average mass limit = 0.001441 lbs/day

$$\frac{(0.001441 \text{ lbs/day})(1000 \text{ ug/mg})}{(8.34 \text{ lbs/gal})(0.11 \text{ MGD})} = 1.57 \text{ ug/L}$$

Department rule Chapter 530 (C)(6) states:

All chemical testing must be carried out by approved methods that permit detection of a pollutant at existing levels in the discharge or that achieve detection levels as specified by the Department. When chemical testing results are reported as less then, or detected below the Department's specified detection limits, those results will be considered as not being present for the purposes of determining exceedences of water quality criteria.

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

As of the date of this permitting action, the Department has limited data on the percentage of inorganic arsenic (approximately 50%) in total arsenic test results. Based on a literature search conducted by the Department, the inorganic fraction can range from 1% - 99% depending on the source of the arsenic. Generally speaking, ground water supplies derived from bedrockwells will likely tend to have higher fractions of inorganic arsenic (As^{+3}-arsentite and/or As^{+5}- arsenate) than one may find in a food processing facility where the inorganic fraction is low and the organic fraction (arsenobetaine, arsenoribosides) is high. Until the Department and the regulated community in Maine develop a larger database to establish statistically defensible ratios of inorganic and organic fractions in total arsenic test results, the Department is making a rebuttable presumption that the effluent contains a ratio of 50% inorganic arsenic and 50% organic arsenic in total arsenic results.

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

Being that the only approved test methods for compliance with arsenic limits established in permits is for total arsenic, the Department converted the water quality based end-of pipe monthly average concentration value of 1.57 ug/L for inorganic arsenic calculated on page 18 of this Fact Sheet into an equivalent total arsenic threshold (assuming 50% of the total arsenic is inorganic arsenic). This results in a total arsenic end-of-pipe monthly average concentration threshold of 3.14 ug/L. The calculation is as follows:

$$\frac{\text{1.57 ug/L inorganic arsenic}}{\text{0.5 ug/L inorganic arsenic/ 1.0 ug/L total arsenic}} = \text{3.14 ug/L total arsenic}$$

Therefore, a total arsenic value greater than 3.14 ug/L is potentially exceeding the water quality based end-of pipe monthly average concentration value of 1.57 ug/L for inorganic arsenic. Only the results greater than the total arsenic threshold of 3.14 ug/L will be considered a potential exceedence of the inorganic limit of 1.57 ug/L.

It is noted the Department's current RL for total arsenic is 5.0 ug/L. Pursuant to Chapter 530(3)(F)(1) states "*When a test result for a specific chemical is reported as not found in concentrations at a detection level specified by the Department pursuant to section 2(C)(6), the compound must be considered to be not present for the purposes of determining exceedences of water quality criteria*."

If a test result is determined to be a potential exceedence, the permittee shall submit a toxicity reduction evaluation (TRE) to the Department for review and approval within 45 days of receiving the test result of concern from the laboratory. Contact the Department's compliance inspector for a copy of the Department's December 2007 guidance on conducting a TRE for arsenic.

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

Beginning upon issuance of this permit and lasting through a date on which the USEPA approves a test method for inorganic arsenic, the limitations and monitoring requirements for inorganic are not in effect. During this time frame, the permittee is required by Special Condition A, Effluent Limitations and Monitoring Requirements, of this permit to conduct 2/Year sampling and analysis for total arsenic.

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

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

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

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

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

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

Special Condition A, *Effluent Limitations and Monitoring Requirements*, of this permit requires that beginning upon issuance of this permit and lasting through USEPA approval of a test method for inorganic arsenic, the permittee shall conduct 2/Year monitoring for total arsenic. Should the test method approval for inorganic arsenic extend more than one year from the date of the issuance of this permit the sampling and analysis for total arsenic will serve to satisfy the interim requirements specified by Department rule, Chapter 523, *Waste Discharge License Conditions*, Section 7, *Schedules of Compliance*, Sub-section 3, *Interim dates.*

Chapter 530 §(3)(D)(1) states "*For specific chemicals, effluent limits must be expressed in total quantity that may be discharged and in effluent concentration. In establishing concentration, the Department may increase allowable values to reflect actual flows that are lower than permitted flows and/or provide opportunities for flow reductions and pollution prevention provided water quality criteria are not exceeded. With regard to concentration limits, the Department may review past and projected flows and set limits to reflect proper operation of the treatment facilities that will keep the discharge of pollutants to the minimum level practicable."*

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

It is noted the calculations for establishing limitations for inorganic arsenic on page 17 do not increase the EOP concentration for inorganic arsenic by a factor of 2.0 due to uncertainty of the ratio between organic and inorganic fractions of total arsenic. However, the Department has given the permittee some flexibility by evaluating possible exceeedences using the rebuttable presumption that the effluent contains a ratio of 50% inorganic arsenic and 50% organic arsenic in total arsenic results. In other words, the equivalent total arsenic concentration threshold has been increased by a factor of 2.0. Refer to the discussion and calculations on pages 17 thru 19 of this Fact Sheet.

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 arsenic based on a best professional judgment given the timing, frequency and severity of the exceedence or reasonable potential to exceed AWQC. To be consistent with the default surveillance level monitoring requirements in Chapter 530, the Department is establishing a monitoring frequency of 2/Year for total arsenic.

Cadmium (Total) – For cadmium, the segment allocation methodology was used to derive the monthly average (chronic) limits and the individual allocation methodology was used to establish the daily maximum (acute) limits. The limits were derived as follows:

Segment allocation methodology

Mass limit

Mean concentration = 0.90 ug/L or 0.0009 mg/L
Permit flow limit = 0.11 MGD
Historical average mass = (0.0009 mg/L)(8.34)(0.11 MGD) = 0.0008257 lbs/day

The 4/16/10 statistical evaluation indicates the historical average mass of cadmium discharged by District's facility is 100% of the cadmium discharged as it is the only facility permitted on the Little Ossipee River and its tributaries. Therefore, District's segment allocation for cadmium is calculated as 100% of the remaining 7Q10 assimilative capacity of the river at Limerick, the most downstream facility. The assimilative capacity at Limerick can be calculated as follows:

7Q10 = 9.9 cfs (0.6464) = 6.4 MGD
Chronic AWQC = 0.08 ug/L or 0.00008 mg/L

Taking into consideration 15% of the AWQC reserve and 10% for background, the assimilative capacity is calculated as follows:

Chronic = (0.00008 mg/L)(0.75)(8.34 lbs/gal)(6.4 MGD) = 0.003203 lbs/day

Monthly average: (Chronic assimilative capacity mass)(% of total cadmium discharged)
(0.003203 lbs/day)(100%) = 0.003203 lbs/day

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

Cadmium (Total) (cont'd)

Concentration limits:

Monthly average mass limit = 0.003203 lbs/day

(0.003203 lbs/day)(1000 ug/mg)(2.0) = 6.98 ug/L or 7 ug/L
(8.34 lbs/gal)(0.11 MGD)

Individual allocation methodology

In the individual allocation, the Department continues to utilize the formula it has used in permitting actions since October 2005 taking into consideration background (10% of AWQC) and a reserve (15% of AWQC). The formula is as follows:

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

Mass limit = (EOP concentration in mg/L)(8.34 lbs/gal)(Permit flow limit in MGD)

Mass limit

Acute AWQC = 0.42 ug/L or 0.00042 mg/L

Pursuant to Section 6(b) of this Fact Sheet, ¼ of the 1Q10 is applicable resulting in an acute dilution factor of 9.5:1

EOP con = [9.5 x 0.75 x 0.00042 mg/L] + [0.25 x 0.00042 mg/L] = 0.003098 mg/L

Daily max. mass limit = (0.003098 mg/L)(8.34 lbs/gal)(0.11 MGD) = 0.002842 lbs/day

Concentration limit

Daily maximum mass limit = 0.002842 lbs/day

(0.002842 lbs/day)(1000 ug/mg)(2.0) = 6.2 ug/L or 6 ug/L
(8.34 lbs/gal)(0.11 MGD)

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

Copper (Total) – For copper, the segment allocation methodology was used to derive the monthly average (chronic) limits and the individual allocation methodology was used to establish the daily maximum (acute) limits. The limits were derived as follows:

Segment allocation methodology

Mass limit

Mean concentration = 41.4 ug/L or 0.0414 mg/L
Permit flow limit = 0.11 MGD
Historical average mass = (0.0414 mg/L)(8.34)(0.11 MGD) = 0.03798 lbs/day

The 4/16/10 statistical evaluation indicates the historical average mass of copper discharged by District's facility is 100% of the copper discharged as it is the only facility permitted on the Little Ossipee River and its tributaries. Therefore, District's segment allocation for copper is calculated as 100% of the remaining 7Q10 assimilative capacity of the river at Limerick, the most downstream facility. The assimilative capacity at Limerick can be calculated as follows:

7Q10 = 9.9 cfs (0.6464) = 6.4 MGD
Chronic AWQC = 2.36 ug/L or 0.00236 mg/L

Taking into consideration 15% of the AWQC reserve and 10% for background, the assimilative capacity is calculated as follows::

Chronic = (0.00236 mg/L)(0.75)(8.34 lbs/gal)(6.4 MGD) = 0.094476 lbs/day

Monthly average: (Chronic assimilative capacity mass)(% of total copper discharged)
(0.094476 lbs/day)(100%) = 0.094476 lbs/day

Concentration limits:

Monthly average mass limit = 0.094476 lbs/day

$$\frac{(0.094476 \text{ lbs/day})(1000 \text{ ug/mg})(2.0)}{(8.34 \text{ lbs/gal})(0.11 \text{ MGD})} = 206 \text{ ug/L}$$

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

Copper (Total) (cont'd)

Individual allocation methodology

In the individual allocation, the Department continues to utilize the formula it has used in permitting actions since October 2005 taking into consider background (10% of AWQC) and a reserve (15% of AWQC). The formula is as follows:

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

Mass limit = (EOP concentration in mg/L)(8.34 lbs/gal)(Permit flow limit in MGD)

Mass limit

Acute AWQC = 3.07 ug/L or 0.00307 mg/L

Pursuant to Section 6(b) of this Fact Sheet, ¼ of the 1Q10 is applicable resulting in an acute dilution factor of 9.5:1

EOP con = [9.5 x 0.75 x 0.00307 mg/L] + [0.25 x 0.00307 mg/L] = 0.02264 mg/L

Daily max. mass limit = (0.02264 mg/L)(8.34 lbs/gal)(0.11 MGD) = 0.02077 lbs/day

Concentration limit

Daily maximum mass limit = 0.02077 lbs/day

$$\frac{(0.02077 \text{ lbs/day})(1000 \text{ ug/mg})(2.0)}{(8.34 \text{ lbs/gal})(0.11 \text{ MGD})} = 45.3 \text{ ug/L or } 45 \text{ ug/L}$$

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

Lead (Total) – For lead, the segment allocation methodology was used to derive the monthly average (chronic) limits. The limits were derived as follows:

Segment allocation methodology

Mass limit

Mean concentration = 5.71 ug/L or 0.00571 mg/L
Permit flow limit = 0.11 MGD
Historical average mass = (0.00571 mg/L)(8.34)(0.11 MGD) = 0.00524 lbs/day

The 4/16/10 statistical evaluation indicates the historical average mass of lead discharged by District's facility is 100% of the lead discharged as it is the only facility permitted on the Little Ossipee River and its tributaries. Therefore, District's segment allocation for lead is calculated as 100% of the remaining 7Q10 assimilative capacity of the river at Limerick, the most downstream facility. The assimilative capacity at Limerick can be calculated as follows:

7Q10 = 9.9 cfs (0.6464) = 6.4 MGD
Chronic AWQC = 0.41 ug/L or 0.00041 mg/L

Taking into consideration 15% of the AWQC reserve and 10% for background, the assimilative capacity is calculated as follows::

Chronic = (0.00041 mg/L)(0.75)(8.34 lbs/gal)(6.4 MGD) = 0.0164 lbs/day

Monthly average: (chronic assimilative capacity mass)(% of total lead discharged)
(0.0164 lbs/day)(100%) = 0.0164 lbs/day

Concentration limits:

Monthly average mass limit = 0.0164 lbs/day

$$\frac{(0.0164 \text{ lbs/day})(1000 \text{ ug/mg})(2.0)}{(8.34 \text{ lbs/gal})(0.11 \text{ MGD})} = 35.8 \text{ ug/L or } 36 \text{ ug/L}$$

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

j. 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 May 23, 2000, thereby administratively modifying MEPDES ME0100871/WDL W000860-5L-C-R by establishing interim monthly average and daily maximum effluent concentration limits of 18.6 parts per trillion (ppt) and 27.8 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 and Special Condition I of this permit. 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 AWQC 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 database for the previous 60-month period indicates mercury test results reported have ranged from 3.5 ppt to 49.3 ppt with an arithmetic mean (n=16) of 10.5 ppt.

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 Little Ossipee River to meet standards for Class B classification.

8. PUBLIC COMMENTS

Public notice of this application was made in the *Sanford Journal Tribune* newspaper on or about June 1, 2010. 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 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.

9. DEPARTMENT CONTACTS

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

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

10. RESPONSE TO COMMENTS

During the period of July 29 2010, 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 permittee's 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.