March 6, 2008

Mr. Neil H. Leighton
Chairman, Board of Trustees
Limestone Water & Sewer District
P.O. Box 544
Limestone, ME. 04750

RE: Maine Pollutant Discharge Elimination System Permit #M0101095
Maine Waste Discharge License #W002684-5L-H-M
Waiver of Additional Waste Discharge Testing Requirements
Minor Revision

Dear Mr. Leighton:

The Department is in receipt of your December 18, 2007 letter requesting a waiver from all testing requirements of Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program* and a waiver from all similar testing requirements in Special Condition A, *Effluent Limitations And Monitoring Requirements* of the above referenced permit last issued by the Department on October 5, 2004. We have carefully reviewed your request.

The District has indicated the basis for the waiver requested is a proposed project to eliminate the discharge to Limestone Stream by early 2010. All waste waters generated within the District's boundaries will be conveyed to the Loring Development Authority's waste water facility for a secondary level of treatment and discharge to the Little Madawaska River. Your letter indicates a *Letter of Understanding* has been signed with the LDA, partial funding for the project has been secured by the Department but the balance of funding for the pipeline project is uncertain at this time.

Thank you for taking the time to initiate this request. While we have not granted all the waivers you requested, we believe we have provided substantial and reasonable relief that is provided for in law and rule. We are always interested in ensuring that our regulatory requirements are appropriate and necessary. Requests from facilities help us ensure that this is the case.

Given this situation, the Department is amenable to waiving the screening and surveillance level whole effluent toxicity (WET), analytical chemistry and priority pollutant testing for those WET species or chemical specific pollutants that do not exceed or have a reasonable potential to exceed critical ambient water quality thresholds or ambient water quality criteria (AWQC) pursuant to Special Condition L, *Reopening of Permit For Modifications*, of the 10/5/04 MEPDES permit. We estimate this reduction in testing will save the District approximately $10,000 in the screening year of testing scheduled for October 2008 – October 2009. Though the Department and the District are hopeful a full finding package can be secured in the very near future, it would be inappropriate for the Department not to establish limitations and monitoring requirements for those WET species and/or chemical specific pollutants that do exceed or have a reasonable potential to exceed critical ambient water quality thresholds or AWQC.

Attached is a copy of the minor revision and a Fact Sheet that explains the rationale and calculations to support the revised limitations which were approved by the Department of Environmental Protection. Please read the minor revision 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.

Should you have questions regarding this matter, feel free to call me at 287-7693.

Sincerely,

Andrew Fisk
Director, Bureau of Land & Water Quality

Enc.

cc: William Sheehan, DEP/NMRO
Nick Archer/NMRO
Gregg Wood, DEP/CMRO
Lori Mitchell, DEP/CMRO
Sandy Lao, USEPA

IN THE MATTER OF

LIMESTONE WATER & SEWER DISTRICT	)	MAINE POLLUTANT DISCHARGE
LIMESTONE, AROOSTOOK COUNTY, MAINE	)	ELIMINATION SYSTEM
PUBLICLY OWNED TREATMENT WORKS	)	AND
W002684-5L-H-M	)	WASTE DISCHARGE LICENSE
ME0101095 **APPROVAL**	)	**MINOR REVISION**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, Section 1251, et. seq. and Maine Law 38 M.R.S.A., Section 414-A et seq., and applicable regulations, the Department of Environmental Protection (Department hereinafter) has considered the minor revision request by the LIMESTONE WATER & SEWER DISTRICT (LWSD hereinafter) with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

MINOR REVISION REQUESTED

Pursuant to Special Condition L, *Reopening Of Permit For Modification*, of combination MEPDES permit #ME0101095/WDL #W002684-5L-G-R issued by the Department on October 5, 2004, the LWSD has requested the Department issue a minor revision of the permit to modify the Surface Water Toxics Control Program testing requirements in said permit. More specifically, the LSWD has requested the Department waive all screening and surveillance level testing requirements of Department rule , 06-096 CMR, Chapter 530, *Surface Water Toxics Control Program*, as well as the testing requirements for ammonia, arsenic, copper, cyanide, dichlorobromoethane, lead, and thallium listed in the 10/5/04 permit.

MINOR REVISION SUMMARY

This minor revision is;

1) Eliminating the screening and surveillance level whole effluent toxicity (WET), analytical and priority pollutant testing requirements of Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*.

2) Eliminating the monthly average and or water quality based mass and concentration limits for ammonia, copper, cyanide and dichlorobromoethane.

3) Carrying forward monthly average water quality based limitations for lead and thallium.

4) Eliminating the monthly average water quality based mass and concentration limits for total arsenic and replacing them with a “report” only requirement.

5) Establishing monthly average water quality based limits for inorganic arsenic and the brook trout.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated March 6, 2008, and subject to the Conditions listed below, the Department makes the following CONCLUSIONS:

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

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

3. The provisions of the State's antidegradation policy, 38 MRSA Section 464(4)(F), will be met, in that:

   (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;

   (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;

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

   (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification, that higher water quality will be maintained and protected; and

   (e) Where a discharge will result in lowering the existing quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.

4. The discharge will be subject to effluent limitations that require application of best practicable treatment.

ACTION

THEREFORE, the Department partially APPROVES the above minor revision request by the LIMESTONE WATER & SEWER DISTRICT, to modify limitations and monitoring requirements of the October 5, 2004 MEPDES permit/WDL. The permittee is SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

1. "*Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits*," revised July 1, 2002, copy attached to the 10/5/04 MEPDES permit/WDL.

2. The attached Special Conditions, including any effluent limitations and monitoring requirements.

3. All terms and conditions in the 10/5/04 MEPDES permit/WDL not modified by this minor revision remain in effect and enforceable.

4. **This minor revision expires on October 5, 2009**, concurrent with the10/5/04 MEPDES permit/WDL.

DONE AND DATED AT AUGUSTA, MAINE, THIS 11th DAY OF March 2008.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
David P. Littell, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of the request December 20, 2007.

Date of acceptance of the request December 27, 2007.

Date filed with Board of Environmental Protection _____

This Order prepared by GREGG WOOD, BUREAU of LAND AND WATER QUALITY

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge treated sanitary waste waters from **OUTFALL #001** to Limestone Stream. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations						Monitoring Requirements	
	Monthly Average as specified	**Weekly Average** as specified	**Daily Maximum** as specified	**Monthly Average** as specified	**Weekly Average** as specified	**Daily Maximum** as specified	**Measurement Frequency** as specified	**Sample Type** as specified
Flow *Oct 1 – June 30* *July 1 – Sept 30 [50050]*	--- ---	--- ---	--- ---	0.300 MGD 0.200 MGD *[03]*	--- ---	Report Report *[03]*	Continuous Continuous *[99/99]*	Recorder Recorder *[RC]*
Biochemical Oxygen Demand *Oct 1 – June 30* *July 1 – Sept 30 [00310]*	75 #/day 50 #/day *[26]*	112 #/day 75 #/day *[26]*	125 #/day 83 #/day *[26]*	30 mg/L 30 mg/L *[19]*	45 mg/L 45 mg/L *[19]*	50 mg/L 50 mg/L *[19]*	1/Week 1/Week *[01/07]*	8-Composite 8-Composite *[08]*
BOD % Removal **(1)** *[81010]*	---	---	---	85%	---	---	1/Month *[01/30]*	Calculate *[CA]*
Total Suspended Solids *Oct 1 – June 30* *July 1 – Sept 30 [00530]*	75 #/day 50 #/day *[26]*	112 #/day 75 #/day *[26]*	125 #/day 83 #/day *[26]*	30 mg/L 30 mg/L *[19]*	45 mg/L 45 mg/L *[19]*	50 mg/L 50 mg/L *[19]*	1/Week 1/Week *[01/07]*	8-Composite 8-Composite *[08]*
TSS % Removal **(1)** *[81011]*	---	---	---	85%	---	---	1/Month *[01/30]*	Calculate *[CA]*
Settleable Solids *[00545]*	---	---	---	---	---	0.3 ml/L *[25]*	5/Week**(8)** *[05/07]*	Grab *[GR]*
E. Coli Bacteria**(2)** *[31633]* *May 15 – Sept 30*	---	---	---	142/100 ml**(3)** *[13]*	---	949/100 ml *[13]*	1/Week *[01/07]*	Grab *[GR]*
Total Residual Chlorine**(4)** *[50060]*	---	---	---	0.042 mg/L*[19]*	---	0.063 mg/L*[19]*	1/Day *[01/01]*	Grab *[GR]*
pH *[00400]*	---	---	---	---	---	6.0 – 9.0 SU *[12]*	5/Week**(8)** *[05/07]*	Grab *[GR)*

SPECIAL CONDITIONS

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

Effluent Characteristic	Discharge Limitations						Monitoring Requirements	
	Monthly Average as specified	**Weekly Average** as specified	**Daily Maximum** as specified	**Monthly Average** As specified	**Weekly Average** as specified	**Daily Maximum** as specified	**Measurement Frequency** as specified	**Sample Type** as specified
Arsenic (Total) [5a] *[01002]* *Upon permit issuance*	Report #/Day *[26]*	---	---	Report ug/L *[28]*	---	---	1/Quarter *[01/90]*	Composite *[24]*
Arsenic (Inorganic) [5b] *[01252]* *Upon EPA test method approval*	0.0002 #/Day *[26]*	---	---	0.09 ug/L *[28]*	---	---	1/Quarter *[01/90]*	Composite *[24]*
Bis (2-ethylhexyl) phthalate) *[16770]*	0.014 #/Day *[26]*	---	---	8.6 ug/L *[28]*	---	---	1/Year *[01/YR]*	Composite *[24]*
Cadmium (Total) *[01027]*	0.0017 #/Day *[26]*	---	---	1.0 ug/L *[28]*	---	---	1/Year *[01/YR]*	Composite *[24]*
Lead (Total) *[01051]*	0.017 #/Day *[26]*	---	---	10 ug/L *[28]*	---	---	1/Year *[01/YR]*	Composite *[24]*
Thallium (Total) *[01059]*	0.003 #/Day *[26]*	---	---	1.8 ug/L [6] *[28]*	---	---	1/Year *[01/YR]*	Composite *[24]*
Total Phosphorus *[00665]* *(June 1 – September 30)*	Report #/Day *[26]*		Report #/Day *[26]*	Report ug/L *[28]*		Report ug/L *[28]*	1/Month *[01/30]*	Composite *[24]*
Ortho-phosphorus *[70507]* *(June 1 – September 30)*	Report #/Day *[26]*	---	Report #/Day *[26]*	Report ug/L *[28]*	---	Report ug/L *[28]*	1/Month *[01/30]*	Composite *[24]*
Whole Effluent Toxicity (WET) [7] C-NOEL *Salvelinus fontinalis [TBQ6F]*	---	---	---	---	---	27% *[23]*	1/Year *[01/YR]*	Composite *[24]*

SPECIAL CONDITIONS

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

Footnotes:

Sampling Locations:

Influent sampling for BOD_5 and TSS shall be sampled after the comminutor but prior to the grit chamber a year-round basis.

Effluent sampling shall be sampled just prior to the chorine contact chamber on a year-round basis.

Any change in sampling location(s) must be reviewed and approved by the Department in writing.

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

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

1. **Percent removal** - The treatment facility shall maintain a minimum of 85 percent removal of both BOD_5 and TSS. The percent removal shall be based on a monthly average calculation using influent and effluent concentrations. The percent removal shall be waived when the monthly average influent concentration is less than 200 mg/L. For instances when this occurs, the facility shall report "*NODI-9"* on the monthly Discharge Monitoring Report (DMR).

SPECIAL CONDITIONS

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

Footnotes:

2. ***E. coli.* bacteria** – The limitations are seasonal and apply between May 15 and September 30 of each calendar year. The Department reserves the right to require year-round disinfection to protect the health and safety and welfare of the public.

3. ***E. coli.* bacteria** – The monthly average limitation is a geometric mean limitation and shall be calculated and reported as such.

4. **Total Residual Chlorine (TRC) –** The permittee is only required to monitor effluent TRC levels during periods in which elemental chlorine or chlorine-based compounds are in use. TRC shall be tested using Amperometric Titration or the DPD Spectrophotometric Method. The EPA approved methods are found in Standard Methods for the Examination of Water and Waste Water, (Most current edition), Method 4500-CL-E and Method 4500-CL-G or U.S.E.P.A. Manual of Methods of Analysis of Water and Wastes. For the monthly average limit, compliance/non-compliance determinations will be based on the Minimum Level (ML) of detection. EPA Region I's Quality Assurance Office established a ML of 0.05 mg/L for TRC in April of 1992. All analytical test results shall be reported to the Department including results which are detected below the ML. If the analytical test result is below the ML, the concentration result shall be reported as <X where X is the detection level achieved by the laboratory for that test.

5. **Arsenic (Total and Inorganic)**

   (a) **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 0.17 ug/L or the Department's RL at the time (whichever is higher) will be considered as a possible exceedence of the inorganic limit. 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.

SPECIAL CONDITIONS

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

Footnotes:

(b) **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 M, *Schedule of Compliance – Inorganic Arsenic*, of this minor revision.

6. **Thallium (Total)** – For the purpose of this minor revision, compliance will be based on the Department's current RL of 4.0 ug/L. The DMR for the permittee's facility will be coded with the RL of 4.0 ug/L such that detectable test results reported below the RL will not be considered excursions of the permit limit of 1.8 ug/L. As with arsenic, the RL may be subject to revision during the term of this minor revision.

7. **Whole effluent toxicity** (**WET) testing** - Definitive WET testing is a multi-concentration testing event (a minimum of five dilutions set at levels to bracket the critical chronic threshold of 27%), which provides a point estimate of toxicity in terms of No Observed Effect Level, commonly referred to as NOEL or NOEC. C-NOEL is defined as the chronic no observed effect level with survival, reproduction and growth as the end points.

   Beginning upon issuance of this permit and lasting through permit expiration, chronic WET testing shall be conducted at a frequency of 1/Year. Tests shall be conducted in a different calendar quarter of each year. Testing shall be conducted on the brook trout (*Salvelinus fontinalis*).

   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 receipt from the laboratory conducting the testing before submitting them. The permittee shall evaluate test results being submitted and identify to the Department possible exceedences of the chronic water quality thresholds of 27%.

SPECIAL CONDITIONS

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

Footnotes:

Toxicity tests must be conducted by an experienced laboratory approved by the Department. The laboratory must follow procedures as described in the following U.S.E.P.A. methods manuals.

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

Each time a WET test is performed, the permittee shall sample and analyze for the nine (9) parameters in the WET Chemistry and the eleven (11) parameters in the Analytical Chemistry sections of the Department form entitled, *Maine Department of Environmental Protection, WET and Chemical Specific Data Report Form*. See Attachment A of this minor revision.

8. **Settleable solids and pH** – Monitoring not required on holidays.

M. SCHEDULE OF COMPLIANCE

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

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

SPECIAL CONDITIONS

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

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

1. Changes in the number or types of non-domestic wastes contributed directly or indirectly to the wastewater treatment works that may increase the toxicity of the discharge;

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

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

Further, the Department may require that annual WET, analytical chemistry and or priority pollutant testing be re-instituted if it determines that there have been changes in the character of the discharge or if annual certifications described above are not submitted.

O. 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

MAINE WASTE DISCHARGE LICENSE

FACT SHEET

Date: **March 6, 2008**

PERMIT NUMBER: **ME0101095**
LICENSE NUMBER: **W002684-5L-H-M**

NAME AND ADDRESS OF APPLICANT:

LIMESTONE WATER & SEWER DISTRICT
P.O. Box 544, 6 Water Company Street
Limestone, Maine 04750

COUNTY: **Aroostook County**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

Limestone Water & Sewer District Waste Water Treatment Facility
6 Water Company Road
Limestone, Maine 04750

RECEIVING WATER/CLASSIFICATION: **Limestone Stream/Class C**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Mr. Clayton Fitzsimmons, Supt.**
(207) 325-4788

1. MINOR REVISION REQUESTED

Pursuant to Special Condition L, *Reopening Of Permit For Modification*, of combination MEPDES permit #ME0101095/WDL #W002684-5L-G-R issued by the Department on October 5, 2004, the LWSD has requested the Department issue a minor revision of the permit to modify the Surface Water Toxics Control Program testing requirements in said permit. More specifically, the LSWD has requested the Department waive all screening and surveillance level testing requirements as well as the testing requirements for ammonia, arsenic, copper, cyanide, dichlorobromomethane, lead, and thallium listed in the 10/5/04 permit.

2. MINOR REVISION SUMMARY

This minor revision is;

a) Eliminating the screening and surveillance level whole effluent toxicity (WET), analytical and priority pollutant testing requirements of Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program.*

b) Eliminating the monthly average and or water quality based mass and concentration limits for ammonia, copper, cyanide and dichlorobromoethane.

c) Carrying forward monthly average water quality based limitations for lead and thallium.

d) Eliminating the monthly average water quality based mass and concentration limits for total arsenic and replacing them with a "report" only requirement.

e) Establishing monthly average water quality based limits for inorganic arsenic and the brook trout.

3. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

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."*

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.*"

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

a. WET test evaluation

The 10/5/04 MEPDES permit established an acute limitation of 30% for the fathead minnow and chronic limitations of 27% for the water flea, brook trout and fathead minnow based on a statistical evaluation conducted at the time of permit renewal. On January 7, 2008, the Department conducted an updated statistical evaluation on the most recent 60 months of WET test results on file with the Department in accordance with the statistical approach in Chapter 530. The statistical evaluation indicates the discharge from the permittee's waste water treatment facility has one WET test result of 12.5% (10/11/05) for the brook trout that exceeds the critical chronic water quality threshold of 27%. The critical threshold is calculated as the mathematical inverse of the chronic dilution factor of 3.7:1. Pursuant to Chapter 530§(3), the Department is establishing a chronic limit of 27% for the brook trout with a 1/Year monitoring requirement beginning upon issuance of this minor revision and lasting through the expiration date of the permit (10/5/09). The WET test shall be conducted in a different calendar quarter of each year. The Department is waiving all other WET testing requirements through the expiration date of the permit.

b. Chemical specific

The 10/5/04 MEPDES permit established monthly average and or daily maximum water quality based mass and concentration limits for ammonia, arsenic, copper, cyanide, dichlorobromoethane, lead and thallium.

Chapter 530 §4(C), states "*The background concentration of specific chemicals must be included in all calculations using the following procedures. The Department may publish and periodically update a list of default background concentrations for specific pollutants on a regional, watershed or statewide basis. In doing so, the Department shall use data collected from reference sites that are measured at points not significantly affected by point and non-point discharges and best calculated to accurately represent ambient water quality conditions. The Department shall use the same general methods as those in section 4(D) to determine background concentrations. For pollutants not listed by the Department, an assumed concentration of 10% of the applicable water quality criteria must be used in calculations."* The Department has limited information on the background levels of metals in the water column of Limestone Stream in the vicinity of the LW&SD'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.

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

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 "*... when 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."*

As with WET test results, on 1/7/08 the Department conducted a statistical evaluation on the most recent 60 months of analytical chemistry and priority pollutant test results on file with the Department in accordance with the statistical approach outlined in Chapter 530. The statistical evaluation indicates there are no longer test results for ammonia, copper, cyanide and dichlorobromoethane that exceed or have a reasonable potential to exceed AWQC and therefore, limitations and monitoring requirements for these parameters are being removed from the permit. However, the 1/7/08 statistical evaluation indicates there are one or more tests results for inorganic arsenic, bis (2-ethylhexyl) phthalate, cadmium, lead and thallium that do exceed or have a reasonable potential to exceed applicable AWQC. It is noted that for hardness dependent metals, acute and chronic site specific hardness values of 71 mg/L and 75 mg/L (approved by the Department on 3/26/02) were utilized in the statistical evaluation.

Chapter 530 §(3)(D) states "*Expression of effluent limits. Where the need for effluent limits has been determined, limits derived from acute water quality criteria must be expressed as daily maximum values. Limits derived from chronic or human health criteria must be expressed as monthly average values.*" Therefore, this permit establishes monthly average (chronic & human health) and or daily maximum (acute) end-of-pipe (EOP) mass and concentrations limits for arsenic, bis (2-ethylhexyl) phthalate, cadmium, lead and thallium. The derivation for these limits is as follows:

<u>Arsenic (Inorganic)</u>

HH AWQC (water & organisms) = 0.012 ug/L
Harmonic mean dilution factor = 9.2.0:1

EOP concentration = [Dilution factor x 0.75 x AWQC] + [0.25 x AWQC]
EOP = [9.2 x 0.75 x 0.012 ug/L] + [0.25 x 0.012 ug/L] = 0.086 ug/L

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

Based on a permitted flow of 0.30 MGD, EOP mass limits are as follows:

Parameter	Calculated EOP Concentrations	Month Avg. Mass Limit
Inorganic Arsenic	0.086 ug/L	0.0002 lbs/day

Ex. Calculation: Inorganic Arsenic - $\frac{(0.086 \text{ ug/L})(8.34)(0.30 \text{ MGD})}{1000 \text{ ug/mg}} = 0.0002$ lbs/day

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 than, 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 minor revision. 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 minor revision. Therefore, beginning upon issuance of this minor revision 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 minor revision, 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.

3. 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 0.086 ug/L for inorganic arsenic calculated 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 0.17 ug/L. The calculation is as follows:

$$\frac{0.086 \text{ ug/L inorganic arsenic}}{0.5 \text{ ug/L inorganic arsenic/ } 1.0 \text{ ug/L total arsenic}} = 0.17 \text{ ug/L total arsenic}$$

Therefore, a total arsenic value greater than 0.17 ug/L is potentially exceeding the water quality based end-of pipe monthly average concentration value of 0.086 ug/L for inorganic arsenic. However, the Department's most current reporting limit (RL) for total arsenic is 5 ug/L and 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 results greater than the total arsenic threshold of 0.17 ug/L or the Department's RL at the time of sampling (whichever is higher) will be considered a potential exceedence of the inorganic limit of 0.086 ug/L.

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 M, *Schedule of Compliance,* in this minor revision establishes a schedule as follows:

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

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

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

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

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."

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

Special Condition A, *Effluent Limitations and Monitoring Requirements*, of this minor revision requires that beginning upon issuance of this permit and lasting through USEPA approval of a test method for inorganic arsenic, the permittee shall conduct 1/Quarter 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.*"

It is noted the calculations for establishing limitations for inorganic arsenic do not increase the EOP concentration for inorganic arsenic by a factor of 1.5 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.

Bis(2-ethylhexyl) phthalate

HH AWQC (water & organisms) = 0.80 ug/L
Harmonic mean dilution factor = 9.2:1

EOP concentration = [Dilution factor x 0.75 x AWQC] + [0.25 x AWQC]
EOP = [9.2 x 0.75 x 0.80 ug/L] + [0.25 x 0.80 ug/L] = 5.7 ug/L

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

Based on a permitted flow of 0.30 MGD, EOP mass limits are as follows:

Parameter	Calculated EOP Concentrations	Month Avg. Mass Limit
Bis	5.7 ug/L	0.014 lbs/day

Ex. Calculation: Bis - $\frac{(5.7 \text{ ug/L})(8.34)(0.30 \text{ MGD})}{1000 \text{ ug/mg}}$ = 0.014 lbs/day

Cadmium

Chronic AWQC = 0.22 ug/L
Chronic dilution factor = 3.7:1

EOP concentration = [Dilution factor x 0.75 x AWQC] + [0.25 x AWQC]
EOP = [3.7 x 0.75 x 0.22 ug/L] + [0.25 x 0.22 ug/L] = 0.67 ug/L

Based on a permitted flow of 0.30 MGD, EOP mass limits are as follows:

Parameter	Calculated EOP Concentrations	Month Avg. Mass Limit
Cadmium	0.67 ug/L	0.0017 lbs/day

Ex. Calculation: Cadmium - $\frac{(0.67 \text{ ug/L})(8.34)(0.30 \text{ MGD})}{1000 \text{ ug/mg}}$ = 0.0017 lbs/day

Lead

Chronic AWQC = 2.21 ug/L
Chronic dilution factor = 3.7:1

EOP concentration = [Dilution factor x 0.75 x AWQC] + [0.25 x AWQC]
EOP = [3.7 x 0.75 x 2.21 ug/L] + [0.25 x 2.21 ug/L] = 6.7 ug/L

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

Based on a permitted flow of 0.30 MGD, EOP mass limits are as follows:

Parameter	Calculated EOP Concentrations	Month Avg. Mass Limit
Lead	6.7 ug/L	0.017 lbs/day

Ex. Calculation: Lead - $\frac{(6.7 \text{ ug/L})(8.34)(0.30 \text{ MGD})}{1000 \text{ ug/mg}} = 0.017$ lbs/day

Thallium

HH AWQC (water & organisms) = 0.17 ug/L
Harmonic mean dilution factor = 9.2:1

EOP concentration = [Dilution factor x 0.75 x AWQC] + [0.25 x AWQC]
EOP = [9.2 x 0.75 x 0.17 ug/L] + [0.25 x 0.17 ug/L] = 1.2 ug/L

Based on a permitted flow of 0.30 MGD, EOP mass limits are as follows:

Parameter	Calculated EOP Concentrations	Month Avg. Mass Limit
Thallium	1.2 ug/L	0.003 lbs/day

Ex. Calculation: Thallium - $\frac{(1.2 \text{ ug/L})(8.34)(0.30 \text{ MGD})}{1000 \text{ ug/mg}} = 0.003$ lbs/day

Chapter 530(3)(D)(1) states, *"for specific chemicals, effluent limits must be expressed in total quantity that may be discharged and in effluent concentration. In establishing concentration, the Department may increase allowable values to reflect actual flows that are lower than permitted flows and/or provide opportunities for flow reductions and pollution prevention provided water quality criteria are not exceeded."* Based on the provisions of Chapter 530 and Department best professional judgment, the water quality-based concentration thresholds

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

for bis (2-ethylhexyl) phthalate, cadmium, lead and thallium are being increased by a factor of 1.5 so as not to penalize the permittee for operating at flows less than the permitted flow. Therefore, the water quality based concentration limits in this minor revision are as follows

	Calculated EOP	Permit limit	Dept. RL
Bis (2-ethylhexyl) phthalate	5.7 ug/L	8.6 ug/L	3.0 ug/L
Cadmium	0.67 ug/L	1.0 ug/L	1.0 ug/L
Lead	6.7 ug/L	10.0 ug/L	3.0 ug/L
Thallium	1.2 ug/L	1.8 ug/L	4.0 ug/L

For thallium, compliance with the concentration limit will be based on the Department reporting limit (RL) of 4.0 ug/L.

For summary of the WET and chemical specific limitations and monitoring requirements that become effective upon issuance of this minor revision and last through the expiration date of the permit (10/5/09), see the attached revised Special Condition A, *Effluent Limitations and Monitoring Requirements.*

Chapter 530 §(2)(D) states:

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

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

Special Condition N, *Chapter 530 §(2)(D)(4) Certification*, of this minor revision requires the permittee to file the annual certification with the Department.

4. DEPARTMENT CONTACTS

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

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