IN THE MATTER OF

TOWN OF THOMASTON	)	MAINE POLLUTANT DISCHARGE
THOMASTON, KNOX COUNTY, MAINE	)	ELIMINATION SYSTEM PERMIT
PUBLICLY OWNED TREATMENT WORKS	)	AND
#ME0100668	)	WASTE DISCHARGE LICENSE
#W002643-5L-D-R **APPROVAL**	)	**RENEWAL**

Pursuant to the provisions of the Federal Water pollution Control Act, Title 33 USC, Section 1251, et. seq. and Maine law 38 M.R.S.A., Section 414-A et. seq., and applicable regulations, the Department of Environmental Protection (Department) has considered the application of the TOWN OF THOMASTON (Thomaston) with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

The applicant has applied for a renewal of Waste Discharge License (WDL) #W002643-46-B-R, which was issued on August 26, 1996 and expired on August 26, 2001. The WDL authorized the disposal of treated sanitary waste water by discharge to the St. George River in Thomaston, Maine and for disposal via a surface waste water disposal system (hereafter referred to as spray irrigation).

The previous license authorized the discharge of 0.46 million gallons per day (MGD) of treated sanitary waste water to the St. George River until the completion of the new treatment lagoons but no later than March 31, 1998. After completion of the new treatment lagoons or after March 31, 1998 whichever came first, Thomaston was authorized to discharge 0.9 MGD of treated waste water to the St. George River during the months of January, February, and March of each year and to spray irrigate 0.65 MGD of waste water on land during the period April 15 through October 31 each year.

PERMIT/LICENSE SUMMARY

On January 12, 2001 the Department received authorization from the EPA to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine. From this point forward the program will be referenced as the Maine Pollutant Discharge Elimination System (MEPDES) program and MEPDES permit numbers will be utilized as the primary facility reference. Discharges to surface waters require a MEPDES permit whereas waste water disposal by spray-irrigation is licensed pursuant to the provisions of Maine Law found at 38 M.R.S.A., Section 413 et seq., and applicable Department regulations. This permit/license renewal authorizes the discharge of treated waste water to the St. George River during the months of January, February and March and for the disposal of treated waste water via a spray irrigation system during the period of April 15 through November 15 of each year.

PERMIT/LICENSE SUMMARY (cont'd)

Therefore this document will be referenced as a permit/license and the applicant will be referred to as the permittee/licensee. Section titles will be followed by one of the following subtitles; "SURFACE WATER DISPOSAL", "SPRAY IRRIGATION" or "GENERAL" where "GENERAL" refers to both surface water disposal and spray irrigation.

A. SURFACE WATER DISPOSAL

By this renewal, the Department is carrying forward the existing:

(1) Flow limit of 0.9 MGD to the St. George River during January, February and March,

(2) Monthly average, weekly average and daily maximum concentration limits and mass limits for biochemical oxygen demand (BOD_5) and total suspended solids (TSS),

(3) Daily maximum limit of 0.3 ml/L for settleable solids,

(4) Monthly average and daily maximum limits for fecal coliform, and

(5) The daily maximum limit for total residual chlorine.

This renewal is different from the previous licensing action in that it is:

(1) Establishing percent removal limits for BOD_5 and TSS,

(2) Eliminating the monthly average monitoring requirement for settleable solids,

(3) Revising the limits for pH from 6 to 8.5 standard units (su) to 6.0 to 9.0 su, and

(4) Reducing monitoring frequency for Whole Effluent and Chemical Specific Toxicity testing.

B. SPRAY IRRIGATION

The most significant spray-irrigation conditions imposed by this permitting/licensing action include:

(1) Carrying forward BOD_5 and TSS lagoon effluent limits of 100 mg/L,

(2) Reducing the BOD_5 and TSS lagoon effluent monitoring frequency from once per week to once per month to be consistent with the monitoring requirements for similar facilities now licensed by the Department,

(3) Establishing lagoon effluent nitrate-nitrogen and pH monitoring to be consistent with the monitoring requirements for similar facilities now licensed by the Department,

PERMIT/LICENSE SUMMARY (cont'd)

B. SPRAY IRRIGATION

(4) Establishing a spray irrigation rate for the entire spray site of 54,305 gallons per acre per day (equivalent to two inches per day) and 81,457 gallons per acre per week (equivalent to three inches week),

(5) Revising limitations and monitoring requirements for the spray-irrigation fields and ground water monitoring along with certain operational constraints in order to provide consistency across similar facilities now licensed by the Department,

(6) Requiring routine ground water monitoring for the following: depth to water level below land surface, nitrate-nitrogen, chloride, specific conductance, temperature, pH, and total suspended solids twice per year and arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc once per five years to be consistent with permits being issued for other municipal spray irrigation disposal systems (The previous WDL required routine spray field ground water monitoring for the following: ground water level, nitrate-nitrogen, chloride, conductivity, temperature, and fecal coliform bacteria.),

(7) Requiring routine lagoon underdrain monitoring for flow rate, specific conductance, and temperature at a frequency of three per year to be consistent with permits being issued for other municipal spray irrigation disposal systems (The previous WDL required routine lagoon underdrain monitoring for flow rate, conductivity, temperature and fecal coliform bacteria.),

(8) Establishing a soils monitoring program for the spray-irrigation site that is consistent with soils monitoring for similar facilities now licensed by the Department,

(9) Requiring the submission of a *Spray Irrigation Performance Report* as an exhibit to the application for the next license renewal,

(10) Requiring the permittee/licensee to maintain an up-to-date *Operations & Maintenance (O&M) Plan*,

(11) Extending the spray season from the period April 15 through October 31, to April 15 through November 15 of each year,

(12) Requiring the installation of certain signage around the perimeter of the lagoon and spray irrigation site, and

(13) Reducing the lagoon effluent monitoring frequency during the spray irrigation season from 1/week to 1/month and eliminating the lagoon liquid level monitoring.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated February 13, 2003, revised March 25, 2003 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 that the Department expects to adopt in accordance with state law.

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

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

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

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

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

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

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

ACTION

THEREFORE, the Department APPROVES the above noted application of the TOWN OF THOMASTON for the disposal of 0.65 MGD of treated wastewater via a spray-irrigation system during the period from April 15 through November 15 and for the discharge of 0.9 MGD of secondary treated waste water to the St. George River in Thomaston during the months of January, February and March, SUBJECT TO THE FOLLOWING 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. Standard Conditions of Approval for POTW Waste Discharge Licenses dated July 16, 1996, copy attached.

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

4. The term of the permit is five (5) years from the date of signature.

DONE AND DATED AT AUGUSTA, MAINE, THIS ____ DAY OF _____, 2003.
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
Dawn R. Gallagher, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: June 29, 2001
Date of application acceptance: June 29, 2001

Date filed with Board of Environmental Protection _____

This Order prepared by Charles Brown 03/25/03

I. SPECIAL CONDITIONS (SURFACE WATER DISPOSAL)

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. **Outfall #001A:** During the period beginning the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge **secondary treated waste water** from **Outfall #001A** to the St. George River during the months of **January, February and March**. Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitation						Monitoring Requirements	
	Monthly Average lb/day	Weekly Average lb/day	Daily Maximum lb/day	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Flow *[50050]*	---	---	---	0.9 MGD *[03]*	---	---	Continuous *[CN]*	Recorder *[RC]*
BOD_5 *[00310]*	225 *[26]*	338 *[26]*	375 *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	2/Week *[02/07]*	24-Hr. Composite *[24]*
BOD_5 % Removal(1) *[81010]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
TSS *[00530]*	225 *[26]*	338 *[26]*	375 *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	2/Week *[02/07]*	24-Hr. Composite *[24]*
TSS % Removal(1) *[81011]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
Settleable Solids *[00545]*	---	---	---	--- *[19]*	---	0.3 ml/L *[25]*	1/Day *[01/01]*	Grab *[GR]*
Fecal Coliform Bacteria (2) *[31616]*	---	---	---	15 col/100 ml(3) *[13]*	---	50 col/100 ml *[13]*	2/Week *[02/07]*	Grab *[GR]*
Total Residual Chlorine (2) *[00665]*	---	---	---	---	---	1.0 mg/L *[19]*	1/Day *[02/01]*	Grab *[GR]*
pH *[00400]*	---	---	---	---	---	6.0-9.0 s.u. *[12]*	1/Day *[01/01]*	Grab *[GR]*

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

FOOTNOTES: See pages 8 9 & 10 of 26 of this permit.

I. SPECIAL CONDITIONS (SURFACE WATER DISPOSAL)

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

1. **Outfall #001A:** Beginning 12 months prior to expiration of this permit and lasting through permit expiration – **SCREENING LEVEL TESTING** [4]

Effluent Characteristic	Discharge Limitations			Monitoring Requirements				
	1Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
WET Testing[5]								
Acute-NOEC *Mysidopsis bahia (Mysid shrimp)* [TDM3E]	---	---	---	---	---	Report % [23]	1/5 Years [01/5Y]	Composite [24]
Acute-NOEC *Menidia beryllina (Inland Silverside)* [TDM6B]	---	---	---	---	---	Report % [23]	1/5 Years [01/5Y]	Composite [24]
Chronic-NOEC *Menidia beryllina (Inland Silverside)* [TBP6B]	---	---	---	---	---	Report % [23]	1/5 Years [01/5Y]	Composite [24]
Chronic-NOEC *Arbacia punctulata (Sea urchin)* [TBH3A]	---	---	---	---	---	Report % [23]	1/5 Years [01/5Y]	Composite [24]
Chemical Specific Testing[6,7,8] [50008]	---	---	---	---	---	Report ：g/L [28]	1/5 Years [01/5Y]	Composite/Grab [24]

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

FOOTNOTES: See pages 8, 9 & 10 of 26 of this permit.

I. SPECIAL CONDITIONS (SURFACE WATER DISPOSAL)

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

All parameter sampling and analysis shall be performed according to methods found in 40 Code of Federal Regulations (CFR) Part 136, alternative methods approved by EPA in accordance with the procedures in 40 CFR Part 136, or as otherwise specified. Sampling for BOD_5, TSS, settleable solids and pH is conducted at a sample port in the pump room. TRC and fecal coliform bacteria sampling is conducted at a sample port at the river bank, except when the facility is not chlorinating the effluent, the fecal coliform bacteria sampling may be conducted at the sample port in the pump room or the sample point at the river bank. Any change in sampling locations from the above specified locations must be approved in writing by the Department.

Footnotes:

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

2. **Fecal coliform bacteria and total residual chlorine limits and monitoring requirements** are seasonal and apply between January 1 and March 31 of each year when chlorination is employed for disinfection.

   As an alternative to chlorinating the discharge, the permittee may use the following fecal coliform bacteria monitoring and chlorination procedure:

   Beginning January 1 or the first day of discharge to the river after that date, the permittee shall discharge for one hour and collect a coliform bacteria sample and shut down the discharge. If the sample has a bacteria level of less than 15 colonies per hundred milliliters (15 col/100 ml), the permittee may commence discharging the next morning without chlorination. For each of the next four days of discharge, the permittee shall sample the effluent for coliform bacteria, and thereafter twice per week for the period January 1 through March 31 providing no samples have 15 col/100 ml or greater of coliform bacteria. **If any coliform bacteria sample has a coliform bacteria count of 15 col/100 ml or greater, the permittee shall resume daily chlorination for the remainder of the period January 1 through March 31.**

3. **Fecal coliform bacteria monthly average** – To be reported as a geometric mean.

4. **Screening level WET and chemical specific testing** –
See Special Condition D. CHAPTER 530.5(B)(7)(c)(iii) CERTIFICATION.

I. SPECIAL CONDITIONS (SURFACE WATER DISPOSAL)

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

5. **Whole Effluent Toxicity Tests** – Definitive WET testing is a multi-concentration testing event (a minimum of five dilutions set at levels to bracket the acute and chronic dilution factors of 0.93% and 0.46% 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.

Beginning 12 months prior to permit expiration and extending through permit expiration, the permittee shall conduct screening level Whole Effluent Toxicity testing once per year in any calendar quarter.

Each WET test shall be conducted using three species. Acute WET tests are performed on the invertebrate species mysid shrimp (*Mysidopsis bahia*) and on the vertebrate species Inland silverside (*Menidia beryllina*). Chronic WET tests are performed on the invertebrate species sea urchin (*Arbacia punctulata*) and on the vertebrate species Inland silverside.

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 Marine and Estuarine Organisms, (Fifth Edition), October 2002, EPA-821-R-02-014.

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

The permittee is also required to analyze the effluent for the analytic chemistry parameters specified on the form in Attachment B of this permit each and every time a WET test is performed.

WET tests and the corresponding analytic chemistry results shall be reported within 30 days of receipt from the contract laboratory conducting the analysis in the format as specified in Attachments A and B respectively.

6. **Priority Pollutants -** (chemical specific testing under Chapter 530.5) are those listed by the USEPA pursuant to Section 307(a) of the Clean Water Act and published at 40 CFR Part 122, Appendix D, Tables II and III.

   B**eginning 12 months prior to permit expiration and extending through permit expiration, the permittee shall conduct screening level chemical specific testing once per year in any calendar quarter.** Chemical specific testing shall be conducted on

I. SPECIAL CONDITIONS (SURFACE WATER DISPOSAL)

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

samples collected at the same time as those collected for whole effluent toxicity tests, when applicable. Chemical specific testing shall be conducted using methods that permit detection of a pollutant to minimum reporting levels of detection as specified by the Department. All mercury sampling shall be conducted in accordance with EPA's "clean sampling techniques" found in EPA Method 1669, *Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels*. All mercury analysis shall be conducted in accordance with EPA Method 1631, *Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Flourescence Spectrometry*. **Results shall be reported within 30 days of receipt from the contract laboratory conducting the analysis.**

Detectable results - All detectable analytical test results shall be reported to the Department including results that are detected below the Department's most current Reporting Level (RL). If the concentration result is at or above the RL, the concentration shall be reported at that level.

Non-detectable results – If the analytical test result is below the RL, the concentration result shall be reported as <X where X is the detection level achieved by the laboratory for that test. Reporting a value of <X that is greater than the RL is not acceptable and will be rejected by the Department.

7. **DMR Reporting –For the purposes of Discharge Monitoring Report (DMR) reporting, enter a "1" for *yes*, *testing done this monitoring period* or "NODI-9"** ***monitoring not required this period.***

8. **Priority Pollutant Test Results – The priority pollutant test results shall be submitted to the Department on a 3.5 inch floppy disk.**

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 discharge 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.

I. SPECIAL CONDITIONS (SURFACE WATER DISPOSAL) (cont'd)

C. DISINFECTION

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

D. CHAPTER 530.5(B)(7)(c)(iii) CERTIFICATION

By December 31 of each calendar year, the permittee shall provide the Department with a certification that none of the following has occurred since the effective date of this permit:

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.

E. OPERATIONAL CONSTRAINTS

1. The permittee is authorized to discharge treated waste water to the St. George River only during the months of January, February and March.

2. See SPECIAL CONDITIONS (GENERAL) for operational constraints that pertain to both surface water disposal and to spray irrigation.

II. SPECIAL CONDITIONS (SPRAY IRRIGATION)

A. LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning the effective date of the permit/license and lasting through the permit/license expiration date, the permittee/licensee is authorized to operate a surface waste water treatment and disposal system for treated waste water. The **STORAGE LAGOON EFFLUENT (OUTFALL #002A)** [(1)] shall be limited and monitored as specified below.

Effluent Characteristic	Discharge Limitations	Monitoring Requirements	
	Daily Maximum As specified	Measurement Frequency as specified	Sample Type as specified
Biochemical Oxygen Demand *[00310}*	100 mg/L *[19]*	1/Month[(2)] *[01/30]*	Grab *[GR]*
Total Suspended Solids *[00530}*	100 mg/L *[19]*	1/Month[(2)] *[01/30]*	Grab *[GR]*
Nitrate-Nitrogen *[00620]*	Report (mg/L) *[19]*	1/Month[(2)] *[01/30]*	Grab *[GR]*
pH (Standard Units) *[00400*	Report S.U. *[12]*	1/Month[(2)] *[01*	Grab *[GR]*
Metals (Total): Arsenic *[01002]*; Cadmium *[01027]*; Chromium *[01034]*; Copper *[01042]*; Lead *[01051]*; Mercury *[71900]*; Nickel *[01067]*; Zinc *[01092]*	Report (µg/L) *[28]*	1/5 Years[(3)] *[01/5Y]*	Grab *[GR]*

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

FOOTNOTES: See pages 16 & 17 of 26 of this permit.

II. SPECIAL CONDITIONS (SPRAY IRRIGATION)

A. LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

3. During the period beginning the effective date of the permit/license and lasting through the permit/license expiration date, application of waste water to the land via a spray irrigation system shall be limited to the time period of **April 15th to November 15th** of each calendar year.

   The application of wastewater to the **SPRAY IRRIGATION FIELDS (FLD #1, FLD #2, FLD #3, FLD #4, and FLD #5)** shall be limited and monitored as specified below.

Effluent Characteristic	Discharge Limitations			Monitoring Requirements	
	Monthly Total as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Application Rate (Weekly)(4) *[51125]*	---	81,457 gal/acre(5) *[8B]*	---	1/Week *[01/07]*	Calculate *[CA]*
Application Rate (Daily) (4) *[51124]*	---	---	54,305 gal/acre(5) *[8B]*	1/Day *[01/01]*	Calculate *[CA]*
Flow – Total Gallons *[82220]*	Report (Gallons) *[80]*	---	---	1/Month *[01/30]*	Calculate *[CA]*

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

FOOTNOTES: See pages 16 & 17 of 26 of this permit.

One inch of water per acre is equivalent to 27,152 gallons.
Two inches of water per acre is equivalent to 54,305 gallons
Three inches of water per acre is equivalent to 81,457 gallons

II. SPECIAL CONDITIONS (SPRAY IRRIGATION)

A. LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

3. During the period beginning the effective date of the permit/license and lasting through the permit/license expiration date, **GROUND WATER MONITORING WELLS (002BD, 002BS, 002DD, 002DS, 002GD, 002GS, 002HS, AND 002ID)** shall be limited and monitored as specified below.

Effluent Characteristic	Discharge Limitations	Monitoring Requirements	
	Daily Maximum As specified	Measurement Frequency as specified	Sample Type as specified
Depth To Water Level Below Land Surface *[72019]*	Report (feet)[6] *[27]*	2/Year[7] *[02/YR]*	Measure *[MS]*
Nitrate- Nitrogen (NO_3-N) *[00620]*	10 mg/L *[19]*	2/Year[7] *[02/YR]*	Grab *[GR]*
Chloride (Total) *[00940]*	Report (mg/L) *[19]*	2/Year[7] *[02/YR]*	Grab *[GR]*
Specific Conductance *[00095]*	Report (µmhos/cm) *[11]*	2/Year[7] *[02/YR]*	Grab *[GR]*
Temperature (°C) *[00010]*	Report (°C) *[04]*	2/Year[7] *[02/YR]*	Grab *[GR]*
pH (Standard Units) *[00400]*	Report S.U *[12]*	2/Year[7] *[02/YR]*	Grab *[GR]*
Total Suspended Solids *[00530]*	Report (mg/L) *[19]*	2/Year[7] *[02/YR]*	Grab *[GR]*
Metals (Total): Arsenic *[01002]*; Cadmium *[01027]*; Chromium *[01034]*; Copper *[01042]*; Lead *[01051]*; Mercury *[71900]*; Nickel *[01067]*; Zinc *[01092]*	Report (µg/L) *[28]*	1/5 Years[3] *[01/5Y]*	Grab *[GR]*

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

FOOTNOTES: See pages 16 & 17 of 26 of this permit.

II. SPECIAL CONDITIONS (SPRAY IRRIGATION)

A. LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

4. During the period beginning the effective date of the permit/license and lasting through the permit/license expiration date, the permittee/licensee shall sample the **LAGOON UNDERDRAIN (UD-1)** as specified below:

Effluent Characteristic	Discharge Limitations	Monitoring Requirements	
	Daily Maximum As specified	Measurement Frequency as specified	Sample Type as specified
Flow Rate *[00058]*	Report (GPM) *[78]*	3/Year[8] *[03/YR]*	Estimate *[ES]*
Specific Conductance *[00095]*	Report (µmhos/cm) *[11]*	3/Year[8] *[03/YR]*	Grab *[GR]*
Temperature (°C) *[00010]*	Report (°C) *[04]*	3/Year[8] *[03/YR]*	Grab *[GR]*

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

FOOTNOTES: See pages 16 & 17 of 26 of this permit.

II. SPECIAL CONDITIONS (SPRAY IRRIGATION)

A. LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Footnotes

Lagoon Effluent

1. Storage lagoon effluent shall be sampled in the pump room at the sample port prior to the effluent pumps and shall be representative of what is actually sprayed on the fields. Any change in sampling location must be approved by the Department in writing. Sampling and analysis must be conducted in accordance with; a) methods approved by 40 Code of Federal Regulations (CFR) Part 136, b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136, or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services.

2. Lagoon effluent sampling shall be conducted during the months of **May, June, July, August, September and October** of each calendar year. The permittee/licensee is not required to test for these parameters during a month where no waste water is disposed of via the spray irrigation system except as required under surface water disposal Special Conditions.

3. The results from the "Chemical Specific Testing" as required on page 7 of 25 of this permit/license may be reported for the metals specified.

Spray-Irrigation Fields

4. A field's daily or weekly application rate is the total gallons sprayed over the applicable period of time divided by the size of the wetted area of the spray-irrigation field in acres or the wetted area in acres of that portion of the field utilized.

   Note: 27,152 gallons per acre is equivalent to one acre-inch. The permittee/licensee shall measure the flow of waste water to the irrigation area by the use of a flow measuring device that is checked for calibration at least once per calendar year. Weekly is defined as Sunday through Saturday.

5. For Discharge Monitoring Report (DMR) reporting purposes, the permittee/licensee shall report the highest daily and weekly application rate for the month in the applicable box on the form. Compliance with weekly reporting requirements must be reported for the month in which the calendar week ends**.**

II. SPECIAL CONDITIONS (SPRAY IRRIGATION)

A. LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

Footnotes

Ground water and Underdrain Monitoring

6. Depth to water level below the land surface shall be measured in the months of **May and October** of each calendar year to the nearest one tenth ($1/10^{th}$) of a foot as referenced from the surface of the ground at the base of the monitoring well.

7. Ground water sampling shall be conducted during **May and October** of each calendar year. Sampling, handling and preservation shall be conducted in accordance with federally approved methods (See footnote #1).

   Specific conductance (calibrated to 25.0° C), temperature, and pH are considered to be "field" parameters, and are to be measured in the field via instrumentation. The permittee/licensee is required to test for these parameters whether wastewater was disposed of via the spray-irrigation system or not.

8. Underdrain sampling shall be conducted during the months of **July, August and September** of each year.

C. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain materials in concentrations or combination that would impair the uses designated by the classification of the groundwater.

2. 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.

D. OPERATIONAL CONSTRAINTS

1. All waste water shall receive biological treatment through a properly designed, operated and maintained lagoon system prior to disposal via land irrigation.

2. The spray-irrigation facilities shall be effectively maintained and operated at all times so that there is no discharge to surface waters, nor any contamination of ground water which will render it unsatisfactory for usage as a public drinking water supply.

3. The spray irrigation disposal system shall not cause the lowering of the quality of the ground water, as measured in the ground water monitoring wells specified by this license, below the State Primary and Secondary Drinking Water Standards specified in the Maine State Drinking Water regulations pursant to Maine Law 22 M.R.S.A. § 2601.

D. OPERATIONAL CONSTRAINTS (cont'd)

In the event the ground water monitoring results indicate adverse effects, the permittee/licensee may be required to take immediate remedial action(s), which may include but not be limited to, adjustment of the irrigation schedule or application rates, a reduction of the pollutant loading, or ceasing operation of the system until the groundwater attains applicable standards.

4. Suitable and sufficient vegetative cover shall be maintained on the irrigation site to prevent erosion or surface water runoff outside the designated boundaries of the spray fields.

5. At least 10 inches of separation from the ground surface to the ground water table shall be present prior to spray irrigating.

6. No waste water shall be applied to the site following a rainfall accumulation exceeding 1.0 inch within the previous 8-hour period. A rain gauge shall be located on site to monitor daily precipitation. The licensee shall also manage application rates by taking into consideration the forecast for rain events in the 48-hour period in the future.

7. No waste water shall be applied where there is more than 0.5 inches of snow present on the surface of the ground.

8. No waste water shall be applied when there is any evidence of frost or frozen ground within the upper 10 inches of the soil profile.

9. No traffic or equipment shall be allowed in the spray-irrigation field except where installation occurs or where normal operations and maintenance are performed.

E. SPRAY IRRIGATION OPERATIONAL PROCEDURES, LOGS AND REPORTS

1. Prior to the commencement of spray irrigation for the season, the permittee/licensee shall notify the Department's compliance inspector that they have verified that site conditions are appropriate (frozen ground, soil moisture etc) for spray irrigation.

2. The permittee/licensee shall install the equivalent of one ground water level inspection well per field to verify that 10 inches of separation from the ground surface to the observed groundwater level is present prior to spraying. Depths to ground water shall be recorded in accordance with the format of *"Depth to Groundwater"* provided as Attachment "C" of this permit/license.

3. The permittee/licensee shall at all times maintain in good working order and operate at maximum efficiency all waste water collection, treatment and/or control and disposal facilities. Should significant malfunctions or leaks be detected, the licensee must shut down the malfunctioning equipment and make the necessary repairs before resuming

E. SPRAY IRRIGATION OPERATIONAL PROCEDURES, LOGS AND REPORTS (cont'd)

operation of that equipment. The licensee shall cease irrigation if runoff is observed outside the designated boundaries of the spray field(s).

4. **The permittee/licensee shall maintain a daily log** of all spray irrigation operations which records, the date, weather and soil conditions, rainfall, areas irrigated, volume sprayed (gallons), application rates (daily and weekly), and other relevant observations/comments from daily inspections. The log shall be in accordance with the format of the *"Monthly Operations Log"* provided as Attachment "D" of this permit/license.

   Weekly spray application rates shall be reported in accordance with the format of the *"Spray Application Report by Week"* provided as Attachment "E" of this permit/license. The *Monthly Operations Log, Spray Application Report by Week, and Depth to Groundwater* for each month shall be submitted to the Department as an attachment to the monthly Discharge Monitoring Reports (DMR's). Copies will also be maintained on site for a minimum of five years for Department review and for license operation and maintenance purposes.

F. VEGETATION MANAGEMENT

1. The permittee/licensee shall remove grasses and other vegetation such as shrubs and trees if necessary so as not to impair the operation of the spray-irrigation system, ensure uniform distribution of waste water over the desired application area and to optimize nutrient uptake and removal.

2. The vegetative buffer zones along the perimeter of the site shall be maintained to maximize vegetation and forest canopy density in order to minimize off-site drift of spray.

G. INSPECTIONS AND MAINTENANCE

The permittee/licensee shall periodically inspect all system components to ensure the facility is being operated and maintained in accordance with the design of the system. Maintenance logs shall be maintained for each major system component including pumps, pump stations, septic tanks, lagoons, spray apparatus, and pipes.

At a minimum, the logs shall include the unique identifier [alphabetic, numeric or alpha-numeric, see SPECIAL CONDITIONS, (GENERAL), F., 3.], the date of maintenance, type of maintenance performed, name(s) of person(s) performing the maintenance, and other relevant system observations.

II. SPECIAL CONDITIONS (SPRAY IRRIGATION)

H. GROUND WATER MONITORING WELLS AND WATER QUALITY MONITORING PLAN DETAILS

1. **By April 30, 2003** (**PCS Event 24599**)**,** the permittee/licensee shall submit to the Department for review and approval a revised ground water quality monitoring plan as outlined in Department guidance entitled "*Water Quality Monitoring Plan Details*", enclosed as Attachment "E" of the Fact Sheet of this permit/license.

2. All monitoring wells shall be equipped with a cap and lock to limit access and shall be maintained in a secured state at all times. The integrity of the monitoring wells shall also be verified annually.

3. The Department reserves the right to require increasing the depth and or relocating any of the groundwater monitoring wells if the well is perennially dry or is determined not to be representative of ground water conditions.

I. SOILS MONITORING

Within the 12-month period prior to the expiration date of the permit/license, the permittee/licensee shall monitor the soils in the disposal area to determine the impacts of spray irrigation. Soils shall be sampled within compartments of a site referred to as Landscape Units (LU) designed to define major differences within a site due to differences in soil and vegetation (or stand) characteristics. LU's should not be identified solely on the basis of similar soil series, but should include obvious differences that may exist among areas on site such as O-horizon thickness or scarification and rutting that may have resulted from land alterations.

1. Sampling Plan - **At least 60 days prior to the proposed sampling collection dates**, the permittee/licensee shall coordinate a pre-sampling meeting with the Department to develop a Sampling Plan prepared by a State of Maine Certified Soil Scientist (CSS) or other qualified professional (approved in writing by the Department), including sampling locations/procedures and determination of the number of LU's. **At least 45 days prior to the proposed sampling collection dates,** the permittee/licensee shall submit the Sampling Plan to the Department for review and approval.

2. Sampling - A minimum of four (4) soil samples in each LU shall be collected and sampled in accordance with *Preliminary Protocols for Sampling and Analysis of Ash and Sludge Amended Forest Soils*, Maine Agricultural and Forest Experiment Station (Orono, Maine) February 1988, Technical Bulletin #818. Each sample location in each LU shall include separate samples from the O-, and B-horizons (upper 4 inches or 10 cm of the B horizon as defined in protocols referenced above). In no case shall composite samples be created by mixing soil from different major and morphologically different soil horizon types; do not mix O-, and B-horizons together.

II. SPECIAL CONDITIONS (SPRAY IRRIGATION)

I. SOILS MONITORING (cont'd)

a. The O-horizon shall be physically sampled for thickness as a block of material and include specifying the various layer subdivisions (inclusive of Oa, Oe, and Oi or sapric, hemic, and fibric materials).

b. The B-horizon shall be sampled for various parameters in accordance with the Maine Soil Testing Laboratory test *Forest Soil Protocols* (pH, exchangeable acidity, Total N, Total C, Organic matter content by "Loss-on-Ignition" [LOI], NH_4Cl extractable Ca, K, Mg, P, Na, Fe, Mn). Additionally, each sample shall be evaluated for nitrate-Nitrogen, and ammonium-Nitrogen.

c. In addition, the single most representative B-horizon sample (of sites receiving the maximum spray application rates) shall be analyzed for the 10 metal compounds specified in 40 CFR Part 503 (As, Cd, Cr, Cu, Hg, Ni, Mo, Pb, Se, Zn). The metals shall be analyzed using acid digestion methods specified in EPA SW-846: method 7471 (for Hg), method 3010 (for As, Se), and method 3051 (for all others).

A control plot (or background plot) shall be delineated in an area that does not receive wastewater irrigation but has the same or similar LU characteristics as the treatment area. Control plots shall be a minimum of 0.10 acre and be located in a suitable location representative of the spray irrigation area approved by the Department.

3. Reporting: A CSS or other qualified professional (approved by the Department in writing) shall prepare a report that summarizes, evaluates, and provides recommendations on the soils and LU sampling analysis results after each soil analysis. The report shall include, but is not limited to, historical, as well as the most recent calendar year's monitoring data for each soil-sampling or LU sampling location, (presented in tabular, graphical and narrative format), an updated map showing the locations of the sampling sites, spray irrigation areas, control plots, LU or soils boundaries, natural or man-made drainage features, or any other relevant features or factors. The person preparing the report shall endorse the report and attest to its completeness, validity, accuracy and shall concur with its recommendations. The report shall be submitted to the Department as an exhibit in the *Spray Irrigation Performance Report* required by Special Condition J of this license.

J. SPRAY IRRIGATION PERFORMANCE REPORT

As an exhibit to the next application for license renewal, the licensee shall submit to the Department a report of the treatment system's performance covering the previous five calendar years. (PCS code 90199). The report shall be dated and signed by the operator in responsible charge of the system.

The report shall include, but is not necessarily limited to, an updated source description, an updated schematic and narrative of the treatment system and distribution system, a soils

J. SPRAY IRRIGATION PERFORMANCE REPORT (cont'd)

monitoring report, a summary of the past performance demonstrating compliance with all terms and conditions of the effective license, a description of any proposed changes in the overall system or operation of the system, and if applicable, proposed changes in the effective license.

K. PUBLIC ACCESS TO LAND APPLICATION SITES AND SIGNAGE

Access to the land application sites shall be limited during the season of active site use. The licensee shall install signs measuring at least 8 ½" x 11", in areas of concern around the perimeter of the lagoon and spray irrigation site that inform the general public that the area is being used to dispose of sanitary waste waters. The signs must be constructed of materials that are weather resistant. The licensee must annually inspect and make any necessary repairs to the signage to comply with this condition.

III. SPECIAL CONDITIONS (GENERAL)

Special Conditions applicable to both Surface Water Disposal and Spray Irrigation

A. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a **Grade III** certificate pursuant to Title 32 M.R.S.A., Section 4171 et seq. All proposed contracts for facility operation by any person must be approved by the Department before the licensee may engage the services of the contract operator.

B. MONITORING AND REPORTING

The results of the monitoring requirements shall be reported on forms approved by the Department (Discharge Monitoring Reports-DMR's) in the units specified and in accordance with the attached Standard Conditions. The forms shall be submitted monthly (April through November and January through March), and shall be postmarked by the thirteenth (13th) day of the month or hand delivered to the Department's Regional Office such that the DMR's are received by the Department by the fifteenth (15th) day of the month. The results should be directed to the attention of the Department's facility inspector at:

Bureau of Land and Water Quality
Department of Environmental Protection
State House Station #17
Augusta
Maine 04333

C. UNAUTHORIZED DISCHARGES

The permittee/licensee is authorized to discharge treated sanitary waste water only in accordance with the terms and conditions of this permit/license during the period April 15th through November 15th of each year to the spray-irrigation fields identified in this permit/license and during the period January 1st through March 31st of each year through Outfall #001 to the St. George River. Discharge of waste water from any other location or from sources other than those specifed in this permit/license requires formal modification of this permit/license.

The collection, treatment or discharge of waste water which has constituents unlike that or significantly higher in strength than that of domestic waste water is prohibited without written authorization from the Department.

D. NOTIFICATION REQUIREMENTS

1. **The permittee/licensee shall immediately notify the Department of Environmental Protection (DEP) and the Department of Marine Resources (DMR) of any discharges of improperly treated waste water to the estuarine or marine environment. When required to disinfect the waste water, the permittee/licensee shall immediately notify**

III. SPECIAL CONDITIONS (GENERAL)

Special Conditions applicable to both Surface Water Disposal and Spray Irrigation

D. NOTIFICATION REQUIREMENTS (cont'd)

the DEP and the DMR of any disinfection equipment malfunction and of the discharge of any waste water to the estuarine or marine environment that is not properly disinfected.

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

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

   ii. Any substantial change in the volume or character of pollutants being introduced into the waste water 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 waste water introduced to the waste water 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.

E. LAGOON MAINTENANCE

1. The banks of the lagoon shall be inspected periodically during the operating season and properly maintained at all times. There shall be no overflow through or over the banks. Any signs of leaks, destructive animal activity or soil erosion of the banks shall be repaired immediately.

2. The banks of the lagoon shall be maintained to keep them free of woody vegetation and other vegetation that may be detrimental to the integrity of the bank and/or lagoon liner.

3. The waters within the lagoon shall be kept free of all vegetation (i.e. grasses, reeds, cattails, etc) that hinders the operation of the lagoon.

4. The permittee/licensee shall maintain the lagoon freeboard at design levels or at least two (2) feet whichever is greater. The storage lagoon shall be operated in such a way as to balance the disposal of waste water via spray irrigation, including the necessary storage capacity for precipitation, to ensure that design freeboard levels are maintained.

III. SPECIAL CONDITIONS (GENERAL)

Special Conditions applicable to both Surface Water Disposal and Spray Irrigation

E. LAGOON MAINTENANCE (cont'd)

5. The treatment and storage lagoons shall be dredged as necessary to maintain the proper operating depths in the lagoons that will provide best practicable treatment of the waste water. All material removed from the lagoons shall be properly disposed of in accordance with all applicable State and federal rules and regulations.

F. OPERATIONAL CONSTRAINTS

1. The Department shall be notified as soon as the permittee/licensee becomes aware of any threat to public health, unauthorized discharges of waste water, sanitary system overflows (SSO's) or any malfunction that threatens the proper operation of the system. Notification shall be made in accordance with the attached Standard Condition D of this license.

   A *sanitary sewer overflow* (SSO) is the release of raw sewage from a sanitary collection system prior to reaching the treatment plant or facility. Spills out of manholes, into basements, onto municipal or private property and into the waters of the State are all considered to be SSO's.

2. The permittee/licensee shall maintain a file on the location of all system components and relevant features. Each component shall be mapped and field located sufficiently to allow adequate inspections and monitoring by both the licensee and the Department.

3. System components including collection pipes, tanks, manholes, pumps, pumping stations, spray disposal fields, and monitoring wells shall be identified and referenced by a unique identifier (alphabetical, numeric or alpha-numeric) in all logs and reports.

G. DISPOSAL OF SEPTAGE IN WASTE WATER TREATMENT FACILITY

The permittee/licensee is prohibited from accepting septage for disposal into any part or parts of the wastewater disposal system. Septage shall mean any waste, refuse, effluent, sludge or other material removed from a septic tank, cesspool, vault privy or similar source which concentrates wastes or to which chemicals have been added. Except the facility may take up to 3,000 gallons per year of leachate from the St. George transfer station providing analytical results of samples of the leachate water do not indicate levels of metals that will cause the waste water treatments facilities discharge and/or sludge to be in non-compliance with its permit(s) and license(s).

III. SPECIAL CONDITIONS (GENERAL)

Special Conditions applicable to both Surface Water Disposal and Spray Irrigation

H. OPERATIONS AND MAINTENANCE (O & M) PLAN AND SITE PLAN(S)

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

By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades, the permittee/licensee 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 the Department personnel upon request.

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

I. INSPECTION AND MAINTENANCE

The permittee/licensee shall periodically inspect all system components to insure the facility is being operated and maintained in accordance with the design of the system. Maintenance logs shall be maintained for each major system component including pumps, pump stations, lagoons, spray apparatus, and collection and distribution systems. At a minimum, the logs shall include the unique identifier [see Special Condition, (GENERAL), F.3. *Operational Constraints*], the date of maintenance, type of maintenance performed, name(s) of person(s) performing the maintenance, and other relevant system observations.

J. REOPENING OF PERMIT/LICENSE FOR MODIFICATIONS

Upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at anytime and with notice to the permittee, modify this permit to; 1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded, (2) require additional monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.