



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAVID P. LITTELL
COMMISSIONER

July 26, 2007

Mr. Robert King
1098 Crystal Road
Island Falls, Maine 04747

**RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0001856
Maine Waste Discharge License (WDL) Application #W002620-5O-D-R
FINAL MEPDES Permit/WDL**

Dear Mr. King:

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

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

If you have any questions regarding the matter, please feel free to call me at 287-7659.

Sincerely,

Bill Hinkel
Division of Water Quality Management
Bureau of Land and Water Quality

Enc.

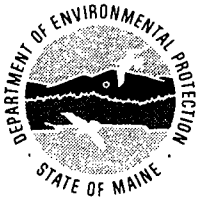
cc: Bill Sheehan, DEP
Lori Mitchell, DEP
Sandy Lao, USEPA
File #2620

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826
RAY BLDG., HOSPITAL ST.

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

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

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 760-3143



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

DEPARTMENT ORDER
IN THE MATTER OF

NATIONAL STARCH & CHEMICAL COMPANY)	MAINE POLLUTANT DISCHARGE
ISLAND FALLS, AROOSTOOK COUNTY)	ELIMINATION SYSTEM PERMIT
STARCH PROCESSING FACILITY)	AND
#ME0001856)	WASTE DISCHARGE LICENSE
#W002620-5O-D-R APPROVAL)	RENEWAL

Pursuant to the provisions of the *Federal Water Pollution Control Act*, Title 33 USC, §1251, *Water Pollution Control*, 38 M.R.S.A. § 414-A, and applicable regulations, the Maine Department of Environmental Protection (Department) has considered the application of NATIONAL STARCH & CHEMICAL COMPANY (NATIONAL STARCH), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

National Starch has applied to the Department for the renewal of Waste Discharge License (WDL) #W002620-5O-D-R, which was issued on June 6, 2002, and expired on June 6, 2007. The 6/6/2002 WDL authorized the monthly average discharge of up to 0.12 million gallons per day (MGD) and a daily maximum discharge of up to 0.16 MGD of treated process waste waters from a starch processing facility to the West Branch of the Mattawamkeag River, Class B, in Island Falls, Maine.

On December 27, 2002, the Department administrative modified the 6/6/02 WDL to increase the mass limitations for total suspended solids.

On April 10, 2006, the Department amended the 6/6/02 WDL to incorporate testing requirements of *Surface Waters Toxics Control Program*, 06-096 CMR 530 (effective October 9, 2005).

REGULATORY SUMMARY

On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (USEPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine, excluding areas of special interest to Maine Indian Tribes. On October 30, 2003, after consultation with the U.S. Department of Justice, the USEPA extended Maine's NPDES program delegation to all but tribally owned lands. The extent of Maine's delegated authority is under appeal at the time of this permitting action. From that point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System (MEPDES) permit program and this permitting action will utilize a permit number of #ME0001856 (same as National Starch's NPDES permit) as a reference number for National Starch's MEPDES permit. NPDES permit #ME001856, last issued by the USEPA on June 1, 2002, will be replaced by the final MEPDES permit upon issuance. Once the MEPDES permit has been issued, all terms and conditions of the NPDES become null and void.

PERMIT SUMMARY

This permitting action is similar to the 6/6/02 licensing action, 12/27/02 administrative modification, and 6/10/06 amendment in that it is:

1. Carrying forward the monthly average discharge flow limitation of 0.12 MGD;
2. Carrying forward the seasonal (June 1- September 30 and October 1- May 31) monthly average concentration and mass limitations for biochemical oxygen demand (BOD₅);
3. Carrying forward the monthly average and daily maximum concentration and mass limitations for total suspended solids (TSS);
4. Carrying forward the daily maximum concentration limitation for settleable solids;
5. Carrying forward the daily maximum pH range limitation of 6.0 – 9.0 standard units;
6. Carrying forward the year-round monthly total water quality-based limitation and the daily maximum concentration reporting requirement for total phosphorous (total-P);
7. Carrying forward the annual total total-P limitation from 114 lbs./year;
8. Carrying forward reduced surveillance level whole effluent toxicity (WET) and analytical chemistry testing requirements and the default screening level WET, analytical chemistry and priority pollutant testing requirements pursuant to 06-096 CMR 530; and
9. Carrying forward the minimum monitoring frequency requirements for discharge flow, BOD₅, TSS, and settleable solids.

This permitting action is different from the 6/6/02 licensing action, 12/27/02 administrative modification, and 6/10/06 amendment in that it is:

1. Eliminating the daily maximum discharge flow limitation and establishing a report only requirement;
2. Revising the acute dilution factor associated with the discharge from 49.7:1 to 66.2:1 based on using the average design flow (monthly average flow limit) for the facility;
3. Revising the daily maximum summer season concentration and mass limits for BOD₅;
4. Establishing a daily maximum concentration reporting requirement for total-P;
5. Establishing Special Condition H, *Chapter 530(2)(D)(4) Statement for Reduced Toxics Testing*, for reduced surveillance level WET and analytical chemistry testing; and
6. Revising the minimum monitoring frequency requirements for pH and total-P.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated July 23, 2007, 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, *Classification of Maine waters*, 38 M.R.S.A. § 464(4)(F), will be met, in that:
 - (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;
 - (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;
 - (c) The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;
 - (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification that higher water quality will be maintained and protected; and
 - (e) Where a discharge will result in lowering the existing water quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.
4. The discharge will be subject to effluent limitations that require application of best practicable treatment as defined in 38 M.R.S.A. § 414-A(1)(D).

ACTION

THEREFORE, the Department APPROVES the above noted application of NATIONAL STARCH & CHEMICAL COMPANY to discharge a monthly average of up to 0.12 million gallons per day (MGD) of combined treated process, non-process waste waters and storm water from a starch processing facility to the West Branch of the Mattawamkeag River, Class B, in Island Falls, Maine, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

1. "Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits," revised July 1, 2002, copy attached.
2. The attached Special Conditions, including any effluent limitations and monitoring requirements.
3. The expiration date of this permit is five (5) years from the date of signature below.

DONE AND DATED AT AUGUSTA, MAINE, THIS 25TH DAY OF July, 2007.

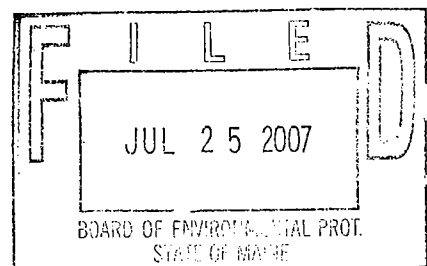
DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: 

DAVID P. LITTELL, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: March 23, 2007
Date of application acceptance: March 23, 2007



Date filed with Board of Environmental Protection: _____

This Order prepared by William F. Hinkel, BUREAU OF LAND & WATER QUALITY
#ME0001856 / #W002620-5O-D-R July 23, 2007

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. The permittee is authorized to discharge **treated process waste waters** via **Outfall #001** to the West Branch of the Mattawamkeag River at Island Falls. Such discharges shall be limited and monitored by the permittee as specified below⁽¹⁾:

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	<u>Monthly Average</u> as specified	<u>Daily Maximum</u> as specified	<u>Monthly Average</u> as specified	<u>Daily Maximum</u> as specified	<u>Measurement Frequency</u> as specified	<u>Sample Type</u> as specified
Flow [50050]	0.12 MGD [03]	Report MGD [03]	---	---	Continuous [99/99]	Recorder [RC]
BOD₅ June 1 – September 30	<i>26 lbs./day [26]</i>	<i>160 lbs./day [26]</i>	<i>86 mg/L [19]</i>	<i>160 mg/L [19]</i>	<i>1/Week [01/07]</i>	Composite ⁽²⁾
October 1 – May 31 [00310]	<i>90 lbs./day [26]</i>	<i>160 lbs./day [26]</i>	<i>90 mg/L [19]</i>	<i>160 mg/L [19]</i>	<i>1/Week [01/07]</i>	[CP]
Total Suspended Solids [00530]	<i>120 lbs./day [26]</i>	<i>180 lbs./day [26]</i>	<i>266 mg/L [19]</i>	<i>297 mg/L [19]</i>	<i>1/Week [01/07]</i>	Composite ⁽²⁾ [CP]
Settleable Solids [00545]				<i>0.3 ml/L [25]</i>	<i>1/Week [01/07]</i>	Grab [GR]
pH [00400]	---	---	---	<i>6.0 – 9.0 SU [12]</i>	<i>5/Week [05/07]</i>	Grab [GR]

	<u>Daily Maximum</u> as specified	<u>Daily Maximum</u> as specified	<u>Monthly Total</u> as specified	<u>Annual Total</u> as specified	<u>Measurement Frequency</u> as specified	<u>Sample Type</u> as specified
Total Phosphorous ⁽³⁾ [00665]	<i>Report lbs./day [26]</i>	<i>Report mg/L [19]</i>	<i>14 lbs./Month [76]</i>	<i>114 lbs./Year [50]</i>	<i>2/Month [02/30]</i>	Composite ⁽²⁾ [CP]

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

FOOTNOTES: See Pages 7 through 9 of this permit for applicable footnotes.

SPECIAL CONDITIONS

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

SURVEILLANCE LEVEL - Beginning upon issuance and lasting until 12 months prior to permit expiration.

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity⁽⁴⁾						
<u>Acute – NOEL</u>						
<i>Ceriodaphnia dubia</i> (Water flea) [TDA3B]	---	---	---	Report % [23]	1/2 Years [01/2Y]	Composite ⁽²⁾ [CP]
<i>Salvelinus fontinalis</i> (Brook trout) [TDA6F]	---	---	---	Report % [23]	1/2 Years [01/2Y]	Composite ⁽²⁾ [CP]
<u>Chronic – NOEL</u>						
<i>Ceriodaphnia dubia</i> (Water flea) [TBP3B]	---	---	---	Report % [23]	1/2 Years [01/2Y]	Composite ⁽²⁾ [CP]
<i>Salvelinus fontinalis</i> (Brook trout) [TBQ6F]	---	---	---	Report % [23]	1/2 Years [01/2Y]	Composite ⁽²⁾ [CP]
Analytical Chemistry ⁽⁵⁾ [51168]	---	---	---	Report ug/L [28]	1/2 Years [01/2Y]	Composite ⁽²⁾ /Grab [CP]

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

	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity⁽⁴⁾						
<u>Acute – NOEL</u>						
<i>Ceriodaphnia dubia</i> (Water flea) [TDA3B]	---	---	---	Report % [23]	2/Year [02/YR]	Composite ⁽²⁾ [CP]
<i>Salvelinus fontinalis</i> (Brook trout) [TDA6F]	---	---	---	Report % [23]	2/Year [02/YR]	Composite ⁽²⁾ [CP]
<u>Chronic – NOEL</u>						
<i>Ceriodaphnia dubia</i> (Water flea) [TBP3B]	---	---	---	Report % [23]	2/Year [02/YR]	Composite ⁽²⁾ [CP]
<i>Salvelinus fontinalis</i> (Brook trout) [TBQ6F]	---	---	---	Report % [23]	2/Year [02/YR]	Composite ⁽²⁾ [CP]
Analytical Chemistry ⁽⁵⁾ [51168]	---	---	---	Report ug/L [28]	1/Quarter [01/QO]	Composite/Grab [CP]
Priority Pollutant ⁽⁶⁾ [50008]	---	---	---	Report ug/L [28]	1/Year [01/YR]	Composite ⁽²⁾ /Grab [CP]

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

FOOTNOTES: See Pages 7 through 9 of this permit for applicable footnotes.

SPECIAL CONDITIONS

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

FOOTNOTES:

1. **Sampling** – All effluent monitoring shall be conducted at a location following the last treatment unit in the treatment process. 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 Health and Human Services.

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. If a non-detect analytical test result is below the respective RL, the concentration result shall be reported as <Y where Y is the actual 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. Compliance with this permit will be evaluated based on whether or not a compound is detected at or above the Department's RL.

2. **Composite Sample** – Composite sample shall consist of a minimum of eight (8) flow-proportioned grab samples collected at evenly-spaced intervals throughout the daily operating hours of the facility.
3. **Total Phosphorous** – Total phosphorus (total-P) monitoring shall be performed in accordance with Attachment A of this permit, *Protocol For Total Phosphorous Sample Collection and Analysis for Waste Water and Receiving Water Monitoring Required by Permits, Finalized April, 2008*, unless otherwise specified by the Department.
4. **Whole Effluent Toxicity (WET)** – Definitive WET testing is a multi-concentration testing event (a minimum of five dilutions bracketing the critical acute and chronic thresholds of 1.5% and 1.4% respectively), which provides a point estimate of toxicity in terms of No Observed Effect Level, commonly referred to as NOEL or NOEC. A-NOEL is defined as the acute no observed effect level with survival as the end point. C-NOEL is defined as the chronic no observed effect level with survival, reproduction and growth as the end points. The critical acute and chronic thresholds were derived as the mathematical inverse of the applicable acute and chronic dilution factors of 66.2:1 and 73.7:1, respectively.

SPECIAL CONDITIONS

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

FOOTNOTES:

- a. **Surveillance level testing** – Beginning upon issuance of this permit and lasting through twelve months prior to permit expiration, the permittee shall initiate surveillance level WET testing at a minimum frequency of once every two years (reduced testing) for the water flea (*Ceriodaphnia dubia*) and the brook trout (*Salvelinus fontinalis*). Tests shall be conducted in a different calendar quarter each year.
- b. **Screening level testing** – Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter, the permittee shall conduct screening level acute and chronic WET testing at a minimum frequency of twice per year for both the water flea and brook trout. There shall be at least six (6) months between testing events.

WET test results must be submitted to the Department not later than the next Discharge Monitoring Report (DMR) required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their availability before submitting them. The permittee shall evaluate test results being submitted and identify to the Department possible exceedences of the critical acute and chronic water quality thresholds of 1.5% and 1.4%, respectively.

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

- a. Short Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002, EPA-821-R-02-013.
- b. Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012.

Results of WET tests shall be reported on the “Whole Effluent Toxicity Report Fresh Waters” form included as Attachment B of this permit each time a WET test is performed. **The permittee is required to analyze the effluent for the twelve (12) analytical chemistry parameters specified on the “WET and Chemical Specific Data Report Form” form included as Attachment C of this permit each time a WET test is performed.**

SPECIAL CONDITIONS

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

FOOTNOTES:

4. **Analytical chemistry** – Pursuant to 06-096 CMR 530(2)(C)(4), analytical chemistry refers to a suite of twelve (12) chemical tests that consist of: ammonia nitrogen (as N), total aluminum, total arsenic, total cadmium, total chromium, total copper, total cyanide, total hardness, total lead, total nickel, total silver, total zinc and total residual chlorine, unless otherwise specified in this permit for individual pollutants.
 - a. **Surveillance level testing** – Beginning upon permit issuance and lasting until 12 months prior to permit expiration, the permittee shall conduct analytical chemistry testing at a minimum frequency of once every other year. Tests shall be conducted in a different calendar quarter of each year.
 - b. **Screening level testing** – Beginning 12 months prior to permit expiration and every five years thereafter, the permittee shall conduct analytical chemistry testing at a minimum frequency of once per calendar quarter for four consecutive calendar quarters.
5. **Priority pollutant testing** – Priority pollutants are those parameters listed by *Effluent Guidelines and Standards*, 06-096 CMR 525(4)(IV) (effective January 12, 2001).
 - a. **Screening level testing** - Beginning 12 months prior to permit expiration and lasting through permit expiration and every five years thereafter, the permittee shall conduct screening level priority pollutant testing at a minimum frequency of once per year (1/Year).

Surveillance level testing is not required pursuant to 06-096 CMR 530.

Priority pollutant and analytical chemistry testing shall be conducted on samples collected at the same time as those collected for whole effluent toxicity tests when applicable. Priority pollutant and analytical chemistry testing shall be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve minimum reporting levels of detection as specified by the Department.

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

SPECIAL CONDITIONS

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

FOOTNOTES:

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 Fluorescence Spectrometry.

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.

C. AUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from Outfall #001. Discharges of wastewater from any other point source that are not authorized under this or another Department permit shall be reported in accordance with Standard Condition B(5), *Bypasses*, of this permit.

D. NOTIFICATION REQUIREMENTS

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

1. 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 to the system at the time of permit issuance.
2. For the purposes of this section, adequate notice shall include information on:
 - a. The quality and quantity of waste water introduced to the waste water collection and treatment system; and
 - b. Any anticipated impact of the change in the quantity or quality of the waste water to be discharged from the treatment system.

SPECIAL CONDITIONS

E. MONITORING AND REPORTING

Monitoring results obtained during the previous calendar quarter shall be summarized for each calendar quarter and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and **postmarked on or before the thirteenth (13th) day of the month or hand-delivered to the Department's Regional Office such that the DMR's are received by the Department on or before the fifteenth (15th) day of the month** following the completed reporting period. A signed copy of the DMR and all other reports required herein shall be submitted to the Department assigned inspector (unless otherwise specified by the Department) at the following address:

Department of Environmental Protection
Northern Maine Regional Office
Bureau of Land and Water Quality
Division of Water Quality Management
1235 Central Park Drive
Skyway Park
Presque Isle, Maine 04769

F. CHAPTER 530(2)(D)(4) STATEMENT FOR REDUCED TOXICS TESTING

On or before December 31st of each year of the effective term of this permit [*PCS Code 95799*], the permittee shall provide the Department with statements 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 Starch Processing Facility processes contributing wastewater to the treatment works that may increase the toxicity of the discharge.

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

SPECIAL CONDITIONS

G. OPERATIONS AND MAINTENANCE (O&M) PLAN

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

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

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

H. REOPENING OF PERMIT FOR MODIFICATION

Upon evaluation of the tests results in the 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.

I. 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 aspects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

ATTACHMENT A

Protocol for Total Phosphorus Sample Collection and Analysis for Waste Water and Receiving Water Monitoring Required by Permits

Approved Analytical Methods: EPA 365.1 (Rev. 2.0), 365.3, 365.4; SM 4500-P B.5, 4500-P E, 4500-P F; ASTM D515-88(A), D515-88(B); USGS I-4600-85, I-4610-91; OMAAOAC 973.55, 973.56

Sample Collection: The Maine DEP is requesting that total phosphorus analysis be conducted on composite effluent samples, unless a facility's Permit specifically designates grab sampling for this parameter. Facilities can use individual collection bottles or a single jug made out of glass or polyethylene. Bottles and/or jugs should be cleaned prior to each use with dilute HCL. This cleaning should be followed by several rinses with distilled water. Commercially purchased, pre-cleaned sample containers are an acceptable alternative. The sampler hoses should be cleaned, as needed.

Sample Preservation: During compositing the sample must be at 0-6 degrees C (without freezing). If the sample is being sent to a commercial laboratory or analysis cannot be performed the day of collection then the sample must be preserved using H₂SO₄ to obtain a sample pH of <2 su and refrigerated at 0-6 degrees C (without freezing). The holding time for a preserved sample is 28 days.

Note: Ideally, Total P samples are preserved as described above. However, if a facility is using a commercial laboratory then that laboratory may choose to add acid to the sample once it arrives at the laboratory. The Maine DEP will accept results that use either of these preservation methods.

Laboratory QA/QC: Laboratories must follow the appropriate QA/QC procedures that are described in each of the approved methods.

Sampling QA/QC: If a composite sample is being collected using an automated sampler, then once per month run a blank on the composite sampler. Automatically, draw distilled water into the sample jug using the sample collection line. Let this water set in the jug for 24 hours and then analyze for total phosphorus. Preserve this sample as described above.

ATTACHMENT B

**MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION
WHOLE EFFLUENT TOXICITY REPORT
FRESH WATERS**

Facility Name _____ MEPDES Permit # _____

Facility Representative _____ Signature _____

By signing this form, I attest that to the best of my knowledge that the information provided is true, accurate, and complete.

Facility Telephone # _____ Date Collected _____ Date Tested _____
mm/dd/yy mm/dd/yy

Chlorinated? _____ Dechlorinated? _____

Results	% effluent		Effluent Limitations
	water flea	trout	
A-NOEL			A-NOEL
C-NOEL			C-NOEL

Data summary	water flea			trout		final weight (mg) > 2% increase
	% survival		no. young	% survival		
QC standard	A>90	C>80	>15/female	A>90	C>80	
lab control						
receiving water control						
conc. 1 (%)						
conc. 2 (%)						
conc. 3 (%)						
conc. 4 (%)						
conc. 5 (%)						
conc. 6 (%)						
stat test used						

place * next to values statistically different from controls

for trout show final wt and % incr for both controls

Reference toxicant	water flea		trout	
	A-NOEL	C-NOEL	A-NOEL	C-NOEL
toxicant / date				
limits (mg/L)				
results (mg/L)				

Comments _____

Laboratory conducting test

Company Name _____ Company Rep. Name (Printed) _____

Mailing Address _____ Company Rep. Signature _____

City, State, ZIP _____ Company Telephone # _____

Report WET chemistry on DEP Form "ToxSheet (Fresh Water Version), March 2007."

ATTACHMENT C

**Maine Department of Environmental Protection
WET and Chemical Specific Data Report Form**

This form is for reporting laboratory data and facility information. Official compliance reviews will be done by DEP.

Facility Name _____ MEPDES # _____ Facility Representative Signature _____
 Pipe # _____ To the best of my knowledge this information is true, accurate and complete.

Licensed Flow (MGD)
 Acute dilution factor
 Chronic dilution factor
 Human health dilution factor
 Criteria type: M(arine) or F(resh)

Flow for Day (MGD)⁽¹⁾

Flow Avg. for Month (MGD)⁽²⁾

Date Sample Collected

Date Sample Analyzed

Laboratory _____ Telephone _____
 Address _____

Lab Contact _____ Lab ID # _____

ERROR WARNING ! Essential facility information is missing. Please check required entries in bold above.

FRESH WATER VERSION

Please see the footnotes on the last page.

WHOLE EFFLUENT TOXICITY		Effluent Limits, %		Receiving Water or Ambient	Effluent Concentration (ug/L or as noted)	WET Result, % Do not enter % sign	Reporting Limit Check	Possible Exceedence ⁽⁷⁾			
		Acute	Chronic					Acute	Chronic		
	Trout - Acute										
	Trout - Chronic										
	Water Flea - Acute										
	Water Flea - Chronic										
WET CHEMISTRY											
	pH (S.U.) ⁽⁹⁾			(8)							
	Total Organic Carbon (mg/L)			(8)							
	Total Solids (mg/L)										
	Total Suspended Solids (mg/L)										
	Alkalinity (mg/L)			(8)							
	Specific Conductance (umhos)										
	Total Hardness (mg/L)			(8)							
	Total Magnesium (mg/L)			(8)							
	Total Calcium (mg/L)			(8)							
ANALYTICAL CHEMISTRY ⁽³⁾											
	Also do these tests on the effluent with WET. Testing on the receiving water is optional	Reporting Limit	Effluent Limits, ug/L					Reporting Limit Check	Possible Exceedence ⁽⁷⁾		
			Acute ⁽⁶⁾	Chronic ⁽⁶⁾	Health ⁽⁶⁾				Acute	Chronic	Health
	TOTAL RESIDUAL CHLORINE (mg/L) ⁽⁹⁾	0.05				NA					
	AMMONIA	NA				(8)					
M	ALUMINUM	NA				(8)					
M	ARSENIC	5				(8)					
M	CADMIUM	1				(8)					
M	CHROMIUM	10				(8)					
M	COPPER	3				(8)					
M	CYANIDE	5				(8)					
M	LEAD	3				(8)					
M	NICKEL	5				(8)					
M	SILVER	1				(8)					
M	ZINC	5				(8)					

Maine Department of Environmental Protection
WET and Chemical Specific Data Report Form

This form is for reporting laboratory data and facility information. Official compliance reviews will be done by DEP.

PRIORITY POLLUTANTS ⁽⁴⁾		Effluent Limits				Reporting Limit Check	Possible Exceedence ⁽⁷⁾		
	Reporting Limit	Acute ⁽⁶⁾	Chronic ⁽⁶⁾	Health ⁽⁶⁾	Acute		Chronic	Health	
M	ANTIMONY	5							
M	BERYLLIUM	2							
M	MERCURY (5)	0.2							
M	SELENIUM	5							
M	THALLIUM	4							
A	2,4,6-TRICHLOROPHENOL	3							
A	2,4-DICHLOROPHENOL	5							
A	2,4-DIMETHYLPHENOL	5							
A	2,4-DINITROPHENOL	45							
A	2-CHLOROPHENOL	5							
A	2-NITROPHENOL	5							
A	4,6 DINITRO-O-CRESOL (2-Methyl-4,6-dinitrophenol)	25							
A	4-NITROPHENOL	20							
A	P-CHLORO-M-CRESOL (3-methyl-4-chlorophenol)+B80	5							
A	PENTACHLOROPHENOL	20							
A	PHENOL	5							
BN	1,2,4-TRICHLOROENZENE	5							
BN	1,2-(O)DICHLOROENZENE	5							
BN	1,2-DIPHENYLHYDRAZINE	10							
BN	1,3-(M)DICHLOROENZENE	5							
BN	1,4-(P)DICHLOROENZENE	5							
BN	2,4-DINITROTOLUENE	6							
BN	2,6-DINITROTOLUENE	5							
BN	2-CHLORONAPHTHALENE	5							
BN	3,3'-DICHLOROENZIDINE	16.5							
BN	3,4-BENZO(B)FLUORANTHENE	5							
BN	4-BROMOPHENYLPHENYL ETHER	2							
BN	4-CHLOROPHENYL PHENYL ETHER	5							
BN	ACENAPHTHENE	5							
BN	ACENAPHTHYLENE	5							
BN	ANTHRACENE	5							
BN	BENZIDINE	45							
BN	BENZO(A)ANTHRACENE	8							
BN	BENZO(A)PYRENE	3							
BN	BENZO(G,H,I)PERYLENE	5							
BN	BENZO(K)FLUORANTHENE	3							
BN	BIS(2-CHLOROETHOXY)METHANE	5							
BN	BIS(2-CHLOROETHYL)ETHER	6							
BN	BIS(2-CHLOROISOPROPYL)ETHER	6							
BN	BIS(2-ETHYLHEXYL)PHTHALATE	3							
BN	BUTYLBENZYL PHTHALATE	5							
BN	CHRYSENE	3							
BN	DI-N-BUTYL PHTHALATE	5							
BN	DI-N-OCTYL PHTHALATE	5							
BN	DIBENZO(A,H)ANTHRACENE	5							
BN	DIETHYL PHTHALATE	5							
BN	DIMETHYL PHTHALATE	5							

Maine Department of Environmental Protection
WET and Chemical Specific Data Report Form

This form is for reporting laboratory data and facility information. Official compliance reviews will be done by DEP.

BN	FLUORANTHENE	5												
BN	FLUORENE	5												
BN	HEXACHLOROBENZENE	2												
BN	HEXACHLOROBUTADIENE	1												
BN	HEXACHLOROCYCLOPENTADIENE	10												
BN	HEXACHLOROETHANE	2												
BN	INDENO(1,2,3-CD)PYRENE	5												
BN	ISOPHORONE	5												
BN	N-NITROSODI-N-PROPYLAMINE	10												
BN	N-NITROSODIMETHYLAMINE	1												
BN	N-NITROSODIPHENYLAMINE	5												
BN	NAPHTHALENE	5												
BN	NITROBENZENE	5												
BN	PHENANTHRENE	5												
BN	PYRENE	5												
P	4,4'-DDD	0.05												
P	4,4'-DDE	0.05												
P	4,4'-DDT	0.05												
P	A-BHC	0.2												
P	A-ENDOSULFAN	0.05												
P	ALDRIN	0.15												
P	B-BHC	0.05												
P	B-ENDOSULFAN	0.05												
P	CHLORDANE	0.1												
P	D-BHC	0.05												
P	DIELDRIN	0.05												
P	ENDOSULFAN SULFATE	0.1												
P	ENDRIN	0.05												
P	ENDRIN ALDEHYDE	0.05												
P	G-BHC	0.15												
P	HEPTACHLOR	0.15												
P	HEPTACHLOR EPOXIDE	0.1												
P	PCB-1016	0.3												
P	PCB-1221	0.3												
P	PCB-1232	0.3												
P	PCB-1242	0.3												
P	PCB-1248	0.3												
P	PCB-1254	0.3												
P	PCB-1260	0.2												
P	TOXAPHENE	1												
V	1,1,1-TRICHLOROETHANE	5												
V	1,1,2,2-TETRACHLOROETHANE	7												
V	1,1,2-TRICHLOROETHANE	5												
V	1,1-DICHLOROETHANE	5												
V	1,1-DICHLOROETHYLENE (1,1-dichloroethene)	3												
V	1,2-DICHLOROETHANE	3												
V	1,2-DICHLOROPROPANE	6												
V	1,2-TRANS-DICHLOROETHYLENE (1,2-trans-dichloroethene)	5												
V	1,3-DICHLOROPROPYLENE (1,3-dichloropropene)	5												
V	2-CHLOROETHYL VINYL ETHER	20												

**Maine Department of Environmental Protection
WET and Chemical Specific Data Report Form**

This form is for reporting laboratory data and facility information. Official compliance reviews will be done by DEP.

V	ACROLEIN	NA								
V	ACRYLONITRILE	NA								
V	BENZENE	5								
V	BROMOFORM	5								
V	CARBON TETRACHLORIDE	5								
V	CHLOROBENZENE	6								
V	CHLORODIBROMOMETHANE	3								
V	CHLOROETHANE	5								
V	CHLOROFORM	5								
V	DICHLOROBROMOMETHANE	3								
V	ETHYLBENZENE	10								
V	METHYL BROMIDE (Bromomethane)	5								
V	METHYL CHLORIDE (Chloromethane)	5								
V	METHYLENE CHLORIDE	5								
V	TETRACHLOROETHYLENE (Perchloroethylene or Tetrachloroethene)	5								
V	TOLUENE	5								
V	TRICHLOROETHYLENE (Trichloroethene)	3								
V	VINYL CHLORIDE	5								

Notes:

- (1) Flow average for day pertains to WET/PP composite sample day.
- (2) Flow average for month is for month in which WET/PP sample was taken.
- (3) Analytical chemistry parameters must be done as part of the WET test chemistry.
- (4) Priority Pollutants should be reported in micrograms per liter (ug/L).
- (5) Mercury is often reported in nanograms per liter (ng/L) by the contract laboratory, so be sure to convert to micrograms per liter on this spreadsheet.
- (6) Effluent Limits are calculated based on dilution factor, background allocation (10%) and water quality reserves (15% - to allow for new or changed discharges or non-point sources).
- (7) Possible Exceedence determinations are done for a single sample only on a mass basis using the actual pounds discharged. This analysis does not consider watershed wide allocations for fresh water discharges.
- (8) These tests are optional for the receiving water. However, where possible samples of the receiving water should be preserved and saved for the duration of the WET test. In the event of questions about the receiving water's possible effect on the WET results, chemistry tests should then be conducted.
- (9) pH and Total Residual Chlorine must be conducted at the time of sample collection. Tests for Total Residual Chlorine need be conducted only when an effluent has been chlorinated or residual chlorine is believed to be present for any other reason.

Comments:

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

FACT SHEET

DATE: **JULY 23, 2007**

PERMIT NUMBER: **#ME0001856**
WASTE DISCHARGE LICENSE: **#W002620-5O-D-R**

NAME AND ADDRESS OF APPLICANT:

**NATIONAL STARCH & CHEMICAL COMPANY
P.O. BOX 10
ISLAND FALLS, MAINE 04747**

COUNTY: **AROOSTOOK**

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

**NATIONAL STARCH & CHEMICAL COMPANY
1098 CRYSTAL ROAD
ISLAND FALLS, MAINE 04747**

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

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **MR. ROBERT KING
(207) 463-2287**

1. APPLICATION SUMMARY

Application: National Starch & Chemical Company (National Starch) has applied to the Department of Environmental Protection (Department) for the renewal of Waste Discharge License (WDL) #W002620-5O-D-R, which was issued on June 6, 2002, and expired on June 6, 2007. The 6/6/2002 WDL authorized the monthly average discharge of up to 0.12 million gallons per day (MGD) and a daily maximum discharge of up to 0.16 MGD of treated process waste waters from a starch processing facility to the West branch of the Mattawamkeag River, Class B, in Island Falls, Maine.

On December 27, 2002, the Department administrative modified the 6/6/02 WDL to increase the mass limitations for total suspended solids.

On April 10, 2006, the Department amended the 6/6/02 WDL to incorporate testing requirements of *Surface Waters Toxics Control Program*, 06-096 CMR 530 (effective October 9, 2005),.

2. REGULATORY SUMMARY

Regulatory: On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (USEPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine, excluding areas of special interest to Maine Indian Tribes. On October 30, 2003, after consultation with the U.S. Department of Justice, the USEPA extended Maine's NPDES program delegation to all but tribally owned lands. The extent of Maine's delegated authority is under appeal at the time of this permitting action. From that point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System (MEPDES) permit program and this permitting action will utilize a permit number of #ME0001856 (same as National Starch's NPDES permit) as a reference number for National Starch's MEPDES permit. NPDES permit #ME001856, last issued by the USEPA on June 1, 2002, will be replaced by the final MEPDES permit upon issuance. Once the MEPDES permit has been issued, all terms and conditions of the NPDES become null and void.

3. PERMIT SUMMARY

- a. Terms and Conditions: **This permitting action is similar to the 6/6/02 licensing action, 12/27/02 administrative modification, and 6/10/06 amendment in that it is:**
1. Carrying forward the monthly average discharge flow limitation of 0.12 MGD;
 2. Carrying forward the seasonal (June 1- September 30 and October 1- May 31) monthly average and daily maximum concentration and mass limitations for BOD₅;
 3. Carrying forward the monthly average and daily maximum concentration and mass limitations for total suspended solids (TSS);
 4. Carrying forward the daily maximum concentration limitation for settleable solids;
 5. Carrying forward the daily maximum pH range limitation of 6.0 – 9.0 standard units;
 6. Carrying forward the year-round monthly total water quality-based limitation and the daily maximum concentration reporting requirement for total phosphorous (total-P);
 7. Carrying forward the annual total total-P limitation from 114 lbs./year;
 8. Carrying forward reduced surveillance level whole effluent toxicity (WET) and analytical chemistry testing requirements and the default screening level WET, analytical chemistry and priority pollutant testing requirements pursuant to 06-096 CMR 530; and
 9. Carrying forward the minimum monitoring frequency requirements for discharge flow, BOD₅, TSS, and settleable solids.

2. PERMIT SUMMARY (cont'd)

This permitting action is different from the 6/6/02 licensing action, 12/27/02 administrative modification, and 6/10/06 amendment in that it is:

1. Eliminating the daily maximum discharge flow limitation and establishing a report only requirement;
 2. Revising the acute dilution factor associated with the discharge from 49.7:1 to 66.2:1 based on using the average design flow (monthly average flow limit) for the facility;
 3. Revising the daily maximum summer season concentration and mass limits for BOD₅;
 4. Establishing a daily maximum concentration reporting requirement for total-P;
 5. Establishing Special Condition H, *Chapter 530(2)(D)(4) Statement for Reduced Toxics Testing*, for reduced surveillance level WET and analytical chemistry testing; and
 6. Revising the minimum monitoring frequency requirements for pH and total-P.
- b. History: This section provides a summary of significant licensing/permitting actions and milestones that have been completed for National Starch.

May 23, 2000 – Pursuant to *Certain deposits and discharges prohibited*, 38 M.R.S.A. § 420 and *Waste discharge licenses*, 38 M.R.S.A. § 413 and *Interim Effluent Limitations and Controls for the Discharge of Mercury*, 06-096 CMR 519 (last amended October 6, 2001), the Department issued a *Notice of Interim Limits for the Discharge of Mercury* to the permittee thereby administratively modifying WDL #W002620-42-B-R by establishing interim monthly average and daily maximum effluent concentration limits of 4.5 parts per trillion (ppt) and 6.8 ppt, respectively, and a minimum monitoring frequency requirement of two (2) tests per year for mercury. On October 9, 2003, the Department issued a letter suspending mercury testing. It is noted the limitations have not been incorporated into Special Condition A, *Effluent Limitations And Monitoring Requirements*, of this permit as limitations and monitoring frequencies are regulated separately through 38 M.R.S.A. § 413 and 06-096 CMR 519. However, the interim limitations remain in effect and enforceable and any modifications to the limits and or monitoring requirements will be formalized outside of this permitting document.

June 1, 2002 –The USEPA issued NPDES renewal permit #ME0001856 to National Starch for the discharges of process wastewater and cooling water to the Mattawamkeag River at Island Falls, Maine. The 6/1/02 NPDES permit superseded the previous NPDES permit issued by the USEPA on August 23, 1979, and is scheduled to expire on May 31, 2007.

2. PERMIT SUMMARY (cont'd)

June 6, 2002 – The Department issued WDL #W002620-5O-C-R to National Starch for the discharge of treated process waste waters for a five-year term. The 6/2/2002 WDL superseded WDL #W002620-42-B-R issued on March 29, 1991 and WDL #2620 issued on January 11, 1984 (earliest Order on file with the Department). It is noted that at the time the 6/6/02 WDL was issued, the Department had not received authorization to administer the MEPDES program in areas of special interest to Maine Indian Tribes, which included this privately-owned facility in Island Falls. On October 30, 2003, the Department received authority to administer the MEPDES program to all but tribally-owned lands. Therefore, this is the first MEPDES permit to be issued for this facility.

December 27, 2002 – The Department administratively modified the 6/6/02 WDL by increasing the monthly average and daily maximum mass limitations for TSS from 40 lbs./day to 80 lbs./day and 60 lbs./day to 120 lbs./day, respectively. To demonstrate that the increase in TSS limits would not have an adverse impact on receiving water quality, the modification also established a new condition requiring ambient water quality monitoring and macroinvertebrate biomonitoring in the Mattawamkeag River during the summers of calendar years 2003 and 2004.

April 10, 2006 – The Department amended the 6/6/2002 WDL to incorporate testing requirements of 06-096 CMR 530. The toxics testing requirements established in the 4/10/06 administrative modification are identical to those established in Special Condition A of this permit.

March 23, 2007 – National Starch submitted a timely and complete General Application to the Department for renewal of the 6/6/2002 WDL. The application was accepted for processing on March 23, 2007, and was assigned WDL #W002620-5O-D-R / MEPDES #ME0001856.

- c. Source Description: National Starch is located in Island Falls, Maine, as indicated on the map included as Attachment A of this fact sheet. National Starch processes tapioca starch, corn starch, and potato starch at this facility to create a variety of processed foods and pharmacologic products. National Starch stated that the facility is currently producing approximately 140,000 pounds of finished starch products per day.

Sources of wastewater generated by this facility are: process water, non-contact cooling water, wash-down water and storm water. National Starch stated that the wastewater volume varies with products, production demands and rainfall/runoff.

2. PERMIT SUMMARY (cont'd)

- d. Wastewater Treatment: National Starch operates a waste water treatment facility that includes a primary settling lagoon, equalization lagoon, a return activated sludge ("RAS") tank, an aeration tank, a clarifier, and polishing pits prior to discharge to the receiving waters. See Attachment B of this fact sheet for a schematic of the wastewater treatment process. See WDL #W002620-5O-C-R (June 6, 2002) for an expanded wastewater treatment description. National Starch indicated there have been no modifications of the treatment facility since issuance of the 6/6/02 license.

Treated effluent is discharged through a "V-notched" weir and flow measuring device to the West Branch of the Mattawamkeag River. The outfall pipe is a 6-inch diameter polyvinylchloride pipe that extends into the receiving water such that it is approximately two feet below the mean low water level. There is a diffuser orifice at the outfall discharge point extending 15 feet from shore.

3. CONDITIONS OF PERMIT

Conditions of licenses, 38 M.R.S.A. § 414-A requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with the U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, 38 M.R.S.A., § 420 and 06-096 CMR 530 require the regulation of toxic substances not to exceed levels set forth in *Surface Water Quality Criteria for Toxic Pollutants*, 06-096 CMR 584 (effective October 9, 2005) and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

4. RECEIVING WATER QUALITY STANDARDS

Classification of major river basins, 38 M.R.S.A. § 467(7)(D)(2)(b) classifies the West Branch of the Mattawamkeag River from Interstate 95 to its confluence with Mattawamkeag Lake, which includes the point of discharge, as Class B waters. *Standards for the classification of fresh surface waters*, 38 M.R.S.A. § 465(4) describes the standards for Class B waters.

5. RECEIVING WATER QUALITY CONDITIONS

The State of Maine 2004 Integrated Water Quality Monitoring and Assessment Report, prepared by the Department pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act, lists 337.9 miles of the West Branch of the Mattawamkeag River and its tributaries (Hydrologic Unit Code #ME0102000301 / Waterbody ID #208-R) as, "Category 2: Rivers and Streams Attaining Some Designated Uses – Insufficient Information for Other Uses."

5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

The Report lists all of Maine's fresh waters as, "*Category 4-B-3: Waters Impaired by Atmospheric Deposition of Mercury. Regional or National TMDL may be Required.*" Impairment in this context refers to a statewide fish consumption advisory due to elevated levels of mercury in some fish tissues. The Report states, "the impairment is presumed to be from atmospheric contamination and deposition. The advisory is based on probability data that a stream, river, or lake may contain some fish that exceed the advisory action level. Any freshwater may contain both contaminated and uncontaminated fish depending on size, age and species occurrence in that water." Pursuant to 38 M.R.S.A. § 420(1-B)(B), "a facility is not in violation of the ambient criteria for mercury if the facility is in compliance with an interim discharge limit established by the Department pursuant to section 413 subsection 11." The Department has established interim monthly average and daily maximum mercury concentration limits for this facility.

The Department received benthic macroinvertebrate data in 2003 that was collected by Acheron Engineering, Environmental and Geologic Consultants at two stations. The upstream station was located on Fish Stream in Crystal and the downstream station was located on the West Branch Mattawamkeag River in Island Falls approximately 2 km below National Starch. The macroinvertebrate identifications were completed by Freshwater Benthic Services, which is the same firm that identifies the Department's in-house samples. The benthic macroinvertebrate communities at both stations are very similar and attain Class A aquatic life standards. The Department did not receive macroinvertebrate data in 2004 for these stations due to high water conditions, as documented in correspondence from National Starch to the Department, dated March 1, 2005.

The Department has no information at this time that the discharge from National Starch, as permitted, causes or contributes to the failure of the receiving water to meet the designated uses of its ascribed classification.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

- a. Applicability of National Effluent Guideline Limitations: National Starch processes tapioca starch, corn starch, and potato starch at this facility to create a variety of processed foods and pharmacologic products. The Department is making a best professional judgment determination, as was done in previous licensing/permitting actions, to consider the best practicable treatment (BPT)-based effluent guidelines for the *Canned and Preserved Fruits and Vegetables Processing Point Source Category, Canned and Miscellaneous Specialties Subcategory* established at 40 CFR Part 407.82 for this facility.
- b. Flow: The previous licensing action established a monthly average discharge flow limit of 0.12 million gallons (MGD) and a daily maximum limit of 0.16 MGD of treated process waste waters via Outfall #001. This permitting action is carrying forward the monthly average discharge flow limit based on the design flow for the facility, and is eliminating the daily maximum discharge flow limit as the Department has determined this limitation is not necessary for permit limit or dilution calculations. This permitting action is establishing a daily maximum discharge flow reporting requirement as these data are readily available.

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

A summary of the discharge flow data as reported on the Discharge Monitoring Reports (DMRs) submitted to the Department for the period July 2002 – December 2006 is as follows:

Discharge Flow	Minimum	Maximum	Arithmetic Mean	# DMRs
Monthly Average	0.0274 MGD	0.107 MGD	0.066 MGD	54
Daily Maximum	0.0453 MGD	0.146 MGD	0.099 MGD	54

- c. Dilution Factors: Dilution factors associated with the permitted discharge flow of 0.12 MGD from the facility were derived in accordance with 06-096 CMR 530(4)(A) and were calculated as follows:

$$\text{Acute: } 1Q10 = 12.1 \text{ cfs} \quad \Rightarrow \frac{(12.1 \text{ cfs})(0.6464) + (0.12 \text{ MGD})}{(0.12 \text{ MGD})} = 66.2:1$$

$$\text{Chronic: } 7Q10 = 13.5 \text{ cfs} \quad \Rightarrow \frac{(13.5 \text{ cfs})(0.6464) + (0.12 \text{ MGD})}{(0.12 \text{ MGD})} = 73.7:1$$

$$\text{Harmonic Mean}^1 = 40.6 \text{ cfs} \quad \Rightarrow \frac{(40.6 \text{ cfs})(0.6464) + (0.12 \text{ MGD})}{(0.12 \text{ MGD})} = 219.7:1$$

06-096 CMR 530(4)(B)(1) states,

Analyses using numerical acute criteria for aquatic life must be based on 1/4 of the 1Q10 stream design flow to prevent substantial acute toxicity within any mixing zone and to ensure a zone of passage of at least 3/4 of the cross-sectional area of any stream as required by Chapter 581. Where it can be demonstrated that a discharge achieves rapid and complete mixing with the receiving water by way of an efficient diffuser or other effective method, analyses may use a greater proportion of the stream design flow, up to and including all of it, as long as the required zone of passage is maintained.

The Department's Division of Environmental Assessment has determined that the discharge from National Starch achieves complete and rapid mixing with the receiving waters; therefore, the Department is utilizing the entire 1Q10 stream design flow in acute evaluations.

¹ Pursuant to 06-096 CMR 530(4)(a)(2)(c), the harmonic mean dilution factor is approximated by multiplying the chronic dilution factor by a factor of three (3).

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

It is noted that the previous licensing action calculated an acute dilution factor of 49.7:1 based on the previous daily maximum discharge flow limit of 0.16 MGD. In this permitting action, the Department has calculated an acute dilution factor of 66.2:1 based on the average design flow (monthly average flow limit) of 0.12 MGD consistent with other MEPDES permits issued for industrial facilities.

- d. Biochemical Oxygen Demand (BOD₅): 40 CFR Part 407.82 establishes monthly average and daily maximum BPT-based effluent guideline limitations for BOD₅ of 1.08 pounds per 1,000 pounds of final product and 1.87 pounds per 1,000 pounds of final product, respectively. The previous licensing action established two tiers of effluent limitations for BOD₅ as follows:

BOD₅	<u>Monthly Average</u> (lbs./day)	<u>Daily Maximum</u> (lbs./day)	<u>Monthly Average</u> (mg/L)	<u>Daily Maximum</u> (mg/L)
Year-round from issuance through May 31, 2005	90 lbs./day	160 lbs./day	90 mg/L	160 mg/L
<i>After June 1, 2005</i>				
Summer Season June 1 – Sept 30	26 lbs./day	26 lbs./day	86 mg/L	86 mg/L
Winter Season October 1 – May 31	90 lbs./day	160 lbs./day	90 mg/L	160 mg/L
Effluent Guidelines Based on 140,000 pounds of final product per day	151 lbs/day	262 lbs./day	151 mg/L	262 mg/L

Effluent guideline-based production calculation examples:

Mass Calculation:

$$(\text{Production, lbs./day})(\text{Effluent Guideline, lbs. per 1,000 pounds of production}) \\ (140,000 \text{ lbs.})(1.87 \text{ lbs./1,000 pounds}) = 262 \text{ lbs./day}$$

Concentration Calculation:

$$\frac{262 \text{ lbs./day}}{(0.12 \text{ MGD})(8.34 \text{ lbs./gallon})} = 262 \text{ mg/L}$$

The monthly average and daily maximum mass limits of 90 lbs./day and 160 lbs./day, respectively, in the 6/6/02 WDL were carried forward from the March 29, 1991 WDL and were based on Department best professional judgment of best practicable treatment for this facility.

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

The monthly average and daily maximum concentration limits of 90 mg/L and 160 mg/L, respectively, were derived by back calculating from the mass limits.

$$\text{Example: } \frac{90 \text{ lbs./day}}{(0.12 \text{ MGD})(8.34 \text{ lbs./gallon})} = 90 \text{ mg/L}$$

The Department determined through desktop modeling that more stringent limitations were necessary during the critical summer months to meet ambient water quality criteria for dissolved oxygen. Therefore beginning in calendar year 2005, the previous licensing action established a summer season (June 1 – September 30) mass limit of 26 lbs./day (as both a monthly average and daily maximum limitation) that was anticipated to result in attainment of Class B dissolved oxygen standards. Based on this mass loading limit and straight back-calculation of concentration limits, the summer season concentration limit would be 26 mg/L as follows:

$$\frac{26 \text{ lbs./day}}{(0.12 \text{ MGD})(8.34 \text{ lbs./gallon})} = 26 \text{ mg/L}$$

However, the previous licensing action established monthly average and daily maximum limits of 86 mg/L based on a negotiated agreement between the Department and the permittee. The permittee indicated in an electronic mail correspondence to the Department dated June 12, 2007, that based on the first five months of 2007, the facility would have had six violations of the daily maximum summer BOD₅ limits. Therefore, this permitting action is revising the daily maximum BOD₅ concentration and mass limits from 86 mg/L / 26 lbs./day to 160 mg/L / 160 lbs./day, which are equivalent to the cold season limits. The summer season limits are more stringent than the national effluent guideline-based monthly average and daily maximum concentration limits of 151 mg/L and 262 mg/L, respectively.

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

A summary of the most recent 60 months of effluent BOD₅ data which has been entered into the Department's compliance tracking system database as of March 2007 (data for March 2002 – September 2006 available) is as follows:

BOD₅	Minimum	Maximum	Arithmetic Mean	# DMRs	Proposed Limits
Summer Season Monthly Average	0.53 lbs./day	4.0 lbs./day	2.2 lbs./day	18	26 lbs./day
	1.4 mg/L	15 mg/L	4.6 mg/L	18	86 mg/L
Summer Season Daily Maximum	0.87 lbs./day	16.92 lbs./day	4.6 lbs./day	18	160 lbs./day
	2.1 mg/L	46.8 mg/L	9.8 mg/L	18	160 mg/L
Winter Season Monthly Average	0.81 lbs./day	6.0 lbs./day	2.8 lbs./day	29	90 lbs./day
	0.08 mg/L	13 mg/L	4.2 mg/L	26	90 mg/L
Winter Season Daily Maximum	0.11 lbs./day	22 lbs./day	6.0 lbs./day	29	160 lbs./day
	0.15 mg/L	65 mg/L	10.7 mg/L	26	160 mg/L

This permitting action is carrying forward the winter season (October 1 – May 31) mass and concentration limitations for BOD₅ from the previous licensing action based on a review of the facility's past demonstrated performance with this parameter and the monthly average summer season (June 1 – September 30) limits.

In consideration of the results on file with the Department, this permitting action is carrying forward the minimum monitoring frequency requirement of once per week for BOD₅.

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

- e. Total Suspended Solids (TSS): 40 CFR Part 407.82 establishes monthly average and daily maximum best practicable treatment (BPT)-based effluent guideline limitations for TSS of 2.23 pounds per 1,000 pounds of final product and 3.31 pounds per 1,000 pounds of final product, respectively. The previous licensing action and a subsequent administrative modification established effluent limitations for TSS as follows:

TSS	<u>Monthly Average</u> (lbs./day)	<u>Daily Maximum</u> (lbs./day)	<u>Monthly Average</u> (mg/L)	<u>Daily Maximum</u> (mg/L)
6/6/02 WDL	40 lbs./day	60 lbs./day	266 mg/L	297 mg/L
12/27/02 Administrative Modification	80 lbs./day	120 lbs./day	266 mg/L	297 mg/L
Effluent Guidelines Based on 140,000 pounds of final product per day	312 lbs./day	463 lbs./day	312 mg/L	463 mg/L

The monthly average and daily maximum mass limits of 40 lbs./day and 60 lbs./day, respectively, in the 6/6/02 WDL were carried forward from the March 29, 1991 WDL and were based on Department best professional judgment of best practicable treatment for this facility.

On December 5, 2002, the Department issued a letter to National Starch denying their request to increase the monthly average limit from 40 lbs./day to 267 lbs./day and the daily maximum limit from 60 lbs./day to 397 lbs./day. It is noted the values requested were based applying the effluent guideline limits and a production of 120,000 lbs./day of final product.

On December 27, 2002, following a meeting with National Starch on December 3, 2002, the Department administratively modified the 6/6/02 WDL by increasing the monthly average mass limits from 40 lbs./day to 80 lbs./day and the daily maximum limit from 60 lbs./day to 120 lbs./day. The administrative modification also required National Starch to conduct benthic macro-invertebrate monitoring in the West Branch of the Mattawamkeag River during the summers of 2003 and 2004 to assist the Department in determination the assimilative capacity of the river.

The origin of the monthly average and daily maximum concentration limits of 266 mg/L and 297 mg/L, respectively, is not well documented in the previous license.

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

As documented in Section 5 of this fact sheet, the Department has determined that the benthic macroinvertebrate data collected in 2003 demonstrate the receiving water attained Class A aquatic life standards. The State's antidegradation policy, *Classification of Maine waters*, 38 M.R.S.A. § 464(4)(F)(3)(d) states, "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." Therefore, this permitting action must ensure that the discharge will not cause or contribute to failure of the receiving water to meet Class A standards for aquatic life.

A summary of the most recent 60 months of effluent TSS data which has been entered into the Department's compliance tracking system database as of March 2007 (data for March 2002 – December 2006 available) is as follows:

TSS	Minimum	Maximum	Arithmetic Mean	# DMRs	Proposed Limits
Monthly Average	0.16 lbs./day	33 lbs./day	6.8 lbs./day	58	80 lbs./day
	0.4 mg/L	67 mg/L	12.3 mg/L	55	120 mg/L
Daily Maximum	0.3 lbs./day	54 lbs./day	13.7 lbs./day	58	120 lbs./day
	0.5 mg/L	154 mg/L	26.3 mg/L	55	180 mg/L

This permitting action is carrying forward the monthly average and daily maximum mass limitations of 80 lbs./day and 120 lbs./day, respectively, for TSS that were established by the 12/27/02 administrative modification. These limits are approximately four times lower (more stringent) than the effluent guideline-based limitations thresholds.

This permitting action is carrying forward the monthly average and daily maximum concentration limits of 266 mg/L and 297 mg/L, respectively, for TSS as these limits are more stringent than the allowable technology-based limits.

In consideration of the results on file with the Department, this permitting action is carrying forward the minimum monitoring frequency requirement of once per week for TSS.

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

- f. Settleable Solids: The previous licensing action established, and this permitting action carrying forward, a daily maximum concentration limit of 0.3 ml/L, which is considered a best practicable treatment limitation (BPT).

A summary of the most recent 60 months of effluent settleable solids data which has been entered into the Department's compliance tracking system database as of March 2007 (data for March 2002 – December 2006 available, # DMRs = 58) indicates 100 % compliance with the daily maximum limitation.

In consideration of the results on file with the Department, this permitting action is carrying forward the minimum monitoring frequency requirement of once per week for settleable solids.

- g. Total Phosphorus (Total-P): The previous licensing action established three tiers of effluent limitations for total-P through a schedule of compliance as follows:

Total Phosphorous	<u>Monthly Total</u> (lbs./month)	<u>Daily Maximum</u> (lbs./day)	<u>Annual Total</u> (lbs./year)
June 1, 2002 – May 31, 2003	35 lbs./month	Report lbs./day	281 lbs./year
June 1, 2003 – May 31, 2004	25 lbs./month	Report lbs./day	198 lbs./year
June 1, 2004 – license expiration	14 lbs./month	Report lbs./day	114 lbs./year

The total-P effluent limitations established in the previous licensing action were in effect on a year-round basis to ensure that the discharge would not cause or contribute to non-attainment of the Class GPA standards for Mattawamkeag Lake, which is located approximately five miles downstream of National Starch's discharge into the West Branch of the Mattawamkeag River. The final total-P limits specified in the table above were based on a February 20, 2001 evaluation of phosphorous loading from the watershed and point source dischargers and represent the Department's best professional judgment of appropriate water quality-based limits necessary to prevent algae blooms in Mattawamkeag Lake.

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

A summary of the of reported effluent total-P data for the period of April 2004 through January 2007 is as follows:

Total Phosphorous	Minimum	Maximum	Arithmetic Mean	# DMRs	Proposed Limits
Monthly Total Mass	0.0274 lbs./month	7.64 lbs./month	2.02 lbs./month	33	14 lbs./month
Daily Maximum Mass	0.01 lbs./day	0.38 lbs./day	0.12 lbs./day	34	Report lbs./day

The annual total mass discharged for calendar years 2004, 2005, and 2006 are 48.42 lbs./year, 20.62 lbs./year and 11.83 lbs./year, respectively. It is noted that since May 2006, all monthly total mass values have been below 1.0 lbs./month, and that since June 2006, the daily maximum mass values have not exceeded 0.03 lbs./day. Effluent total phosphorous data for this facility demonstrate a negative (downward) trend between 2004 and early 2007.

The Department has limited and insufficient ambient water quality data for Mattawamkeag Lake at this time to determine the current water quality status of the lake. Since calendar year 2000, the Department only has ambient water quality data for Mattawamkeag Lake for one year (2005). This dataset indicates a mean secchi disc transparency of 3.3 meters, an improvement from the late 1990s, and a one-time ambient phosphorus concentration of 11 ppb, the lowest that has been measured in the lake. These data indicate a possible improvement in water quality, however additional datasets are necessary to confirm the water quality status of Mattawamkeag Lake. The Department's Division of Watershed Management recommends continued phosphorous limitations for this discharge.

Therefore, for total phosphorous this permitting action is carrying forward the year-round monthly total mass limit of 14 lbs./month, the daily maximum mass reporting requirement and the annual total mass limit of 114 lbs./year. Whereas concentration data are readily available, this permitting action is establishing a daily maximum concentration reporting requirement to assist in further evaluations of facility performance and water quality conditions.

In consideration of the results on file with the Department, this permitting action is revising the minimum monitoring frequency requirement from once per week to twice per month on a year-round basis.

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

- h. pH: The previous licensing action established a pH range limitation of 6.0 – 9.0 standard units (SU), which is considered best practicable treatment, and a minimum monitoring frequency requirement of once per day. It is noted that the fact sheet associated with the previous license erroneously stated that the pH range of 6.0 – 8.5 SU was being carried forward. It is also noted that the effluent guideline limitations at 40 CFR Part 407.82 establish a pH range limit of 6.0 – 9.5 SU. This permitting action is carrying forward the pH range limit of 6.0 – 9.0 SU to satisfy the anti-backsliding provisions of the Department's rules.

A review of the effluent pH data as reported on the Discharge Monitoring Reports submitted to the Department for the period March 2002 – January 2007 indicates the facility has been in compliance with the pH range limitation 100% of the time during said reporting period (# DMRs = 58).

In consideration of the 58 months worth of daily pH measurements on file with the Department, this permitting action is revising the minimum monitoring frequency requirement from once per day to five times per week.

- i. Whole Effluent Toxicity (WET), Priority Pollutant, and Analytical Chemistry Testing: 38 M.R.S.A. § 414-A and 38 M.R.S.A. § 420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. 06-096 CMR 530 sets forth effluent monitoring requirements and procedures to establish safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected and narrative and numeric water quality criteria are met. 06-096 CMR 584 sets forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET, priority pollutant and analytical chemistry testing, as required by 06-096 CMR 530, is included in this permit in order to characterize the effluent. WET monitoring is required to assess and protect against impacts upon water quality and designated uses caused by the aggregate effect of the discharge on specific aquatic organisms. Acute and chronic WET tests are performed on invertebrate water flea (*Ceriodaphnia dubia*) and vertebrate brook trout (*Salvelinus fontinalis*). Chemical-specific monitoring is required to assess the levels of individual toxic pollutants in the discharge, comparing each pollutant to acute, chronic, and human health water quality criteria. Priority pollutant testing refers to the analysis for levels of priority pollutants listed in 06-096 CMR 525(4)(VI). Analytical chemistry refers to a suite of twelve (12) chemical tests consisting of: ammonia-nitrogen, total aluminum, total cadmium, total chromium, total copper, total hardness (fresh water only), total lead, total nickel, total silver, total zinc, total arsenic, total cyanide and total residual chlorine.

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

06-096 CMR 530(4)(C), states *“The background concentration of specific chemicals must be included in all calculations using the following procedures. The Department may publish and periodically update a list of default background concentrations for specific pollutants on a regional, watershed or statewide basis. In doing so, the Department shall use data collected from reference sites that are measured at points not significantly affected by point and non-point discharges and best calculated to accurately represent ambient water quality conditions.”* *“The Department shall use the same general methods as those in section 4(D) to determine background concentrations. For pollutants not listed by the Department, an assumed concentration of 10% of the applicable water quality criteria must be used in calculations.”* The Department has no information on the background levels of metals in the water column in the West Branch of the Mattawamkeag River. Therefore, a default background concentration of 10% of applicable water quality criteria is being used in the calculations of this permitting action.

06-096 CMR 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 applicable water quality criteria used in the calculations of this permitting action.

One aspect of the new Chapter 530 rule found in Section 4(F) is evaluating toxic pollutant impacts on a watershed basis. 06-096 CMR 530(4)(F) states, *“Where there is more than one discharge into the same fresh or estuarine receiving water or watershed, the Department shall consider the cumulative effects of those discharges when determining the need for and establishment of the level of effluent limits. The Department shall calculate the total allowable discharge quantity for specific pollutants, less the water quality reserve and background concentration, necessary to achieve or maintain water quality criteria at all points of discharge, and in the entire watershed.”* The Department is currently working to construct a computer program model to conduct this analysis. Until such time the model is complete and a multi-discharger statistical evaluation can be conducted, the Department is evaluating the impact of the National Starch's discharge assuming it is the only discharger to the river. Should the multi-discharger evaluation indicate there are parameters that exceed or have a reasonable potential to exceed applicable AWQC, this permit will be reopened pursuant to Special Condition H, *Reopening of Permit For Modifications*, to incorporate additional limitations and or revise monitoring requirements.

This permit provides for reconsideration of effluent limits and monitoring schedules after evaluation of toxicity testing results. The monitoring schedule includes consideration of results currently on file, the nature of the wastewater, existing treatment, and receiving water characteristics.

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

06-096 CMR 530(2)(B) categorizes dischargers subject to the toxics rule into one of four levels (Levels I through IV). Level II dischargers are those "having a chronic dilution factor of at least 20 but less than 100 to 1." The chronic dilution factor associated with the discharge from National Starch is 73.7 to 1; thus, the facility is considered a Level II facility for purposes of toxics testing. 06-096 CMR 530(2)(D) specifies default WET, priority pollutant, and analytical chemistry test schedules for Level II dischargers as follows:

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

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

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

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

The previous licensing action established acute and chronic No Observed Effect Level (NOEL) limits of 1.4% and 2.0%, respectively, for the water flea based on an April 19, 2001 statistical evaluation of WET test results on file with the Department. The 4/19/01 evaluation indicated that the discharge demonstrates a reasonable potential to exceed the critical acute threshold of 2.0% [mathematical inverse of the acute dilution factor (49.7:1)] used at the time of the previous licensing action and exceeded the critical chronic threshold of 1.4% [mathematical inverse of the acute dilution factor (73.7:1)]. Special Condition H of the previous license established a requirement for National Starch to submit to the Department a toxicity reduction evaluation (TRE) for the exceedence of the chronic water flea limit. No other limits were established for WET species. A letter from the Department to National Starch, dated July 8, 2002, indicates an acceptable TRE plan (titled, *Toxicity Reduction Evaluation Plan For Island Falls Plant, July 2, 2003*) was submitted to the Department as required.

On April 10, 2006, the Department modified the 6/6/02 license to establish the default WET and chemical-specific testing requirements required 06-096 CMR 530, which became effective October 2005. The 4/10/06 modification eliminated the acute and chronic NOEL limitations for the water flea, established reduced surveillance level WET testing (one every two years) for the water flea and brook trout and screening level testing for both WET species consistent with the default frequencies specified in the table above. The 4/10/06 modification established reduced surveillance level analytical chemistry testing (once every two years), and screening level analytical chemistry and priority pollutant testing consistent with the default frequencies specified in the table above.

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

See Attachment C of this Fact Sheet for a summary of the most recent 60 months of WET test results on file with the Department, and Attachment D of this Fact Sheet for a summary of chemical-specific test dates.

WET Evaluation:

06-096 CMR 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.

On June 11, 2007, the Department conducted a statistical evaluation on the most recent 60 months of WET test results on file with the Department for National Starch in accordance with the statistical approach outlined above. **The 6/11/07 statistical evaluation indicates that the discharge does not exceed or demonstrate a reasonable potential to exceed the critical acute (1.5%) or chronic (1.4%) water quality thresholds for either the water flea or brook trout.** This permitting action is not establishing limitations for WET test species.

06-096 CMR 530(2)(D)(3)(c) states, in part, "*dischargers in Level II may reduce surveillance testing to one WET or specific chemical series every other year provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedence.*" Therefore, the facility does qualify for reduced surveillance level testing for both the water flea and brook trout. This permitting action is establishing (carrying forward from the 4/10/06 administrative modification) reduced surveillance level WET testing for at a minimum frequency of once every two years. Screening level WET testing is being established at a minimum frequency of twice per year for both the water flea and brook trout based on 06-096 CMR 530.

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

06-096 CMR 530(2)(D)(4) states, *“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 Starch Processing Facility processes contributing wastewater to the treatment works that may increase the toxicity of the discharge.”*

This permitting action establishes Special Condition F, *Chapter 530 Certification*, pursuant to 06-096 CMR 530(2)(D)(4). It is noted, however, that if future WET testing indicates the discharge exceeds critical water quality thresholds, this permit will be reopened in accordance with Special Condition H, *Reopening of Permit For Modification*, to establish effluent limitations and monitoring requirements as necessary.

Priority Pollutant Evaluation:

On June 11, 2007, the Department conducted a statistical evaluation on the most recent 60 months of chemical-specific tests results on file with the Department for National Starch in accordance with the statistical approach outlined above. **The 6/11/07 statistical evaluation indicates the discharge does not exceed or demonstrate a reasonable potential to exceed the ambient water quality criteria (AWQC) thresholds for any parameters tested.** It is noted that the 6/11/07 evaluation indicates the discharge demonstrates RP for the human health-based arsenic AWQC, however, all tests results are below the Department's minimum reporting level of 5.0 µg/L. 06-096 CMR 530(3)(F)(1) states, *“When a test result for a specific chemical is reported as not found in concentrations at a detection level specified by the Department pursuant to section 2(C)(6), the compound must be considered to be not present for the purposes of determining exceedences of water quality criteria.”*

Therefore, the Department is applying this provision of Department rules to make a best professional judgment determination that the discharge does not exhibit RP for arsenic.

Therefore, this permitting action is not establishing effluent limitations or monitoring requirements for any priority pollutants, and is establishing (carrying forward from the 4/10/06 administrative modification) reduced surveillance level analytical chemistry testing at a minimum frequency of once every two years. It is noted that surveillance level priority pollutant testing is not required pursuant to 06-096 CMR 530.

7. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

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

8. PUBLIC COMMENTS

Public notice of this application was made in the *Houlton Pioneer Times* newspaper on or about March 28, 2007. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to *Application Processing Procedures for Waste Discharge Licenses*, 06-096 CMR 522 (effective January 12, 2001).

9. DEPARTMENT CONTACTS

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

William F. Hinkel
Division of Water Quality Management
Bureau of Land & Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone: (207) 287-7659 Fax: (207) 287-3435
e-mail: bill.hinkel@maine.gov

10. RESPONSE TO COMMENTS

During the period of June 11, 2007, 2004 through July 11, 2007, the Department solicited comments on the proposed draft Maine Pollutant Discharge Elimination System Permit to be issued to National Starch for the proposed discharge. On June 12, 2007, National Starch submitted comments to the Department via electronic mail.

Comment #1: National Starch evaluated effluent data for the first five months of calendar year 2007 which indicated that the facility would not be able to comply with the proposed summer season daily maximum BOD₅ concentration and mass effluent limits of 26 mg/L and 26 lbs./day, respectively, without cutting production from a seven day per week to a five day per week schedule.

Response #1: The Department has no information at this time that less stringent daily maximum summer season limits will cause or contribute to failure of the receiving water to meet the designated uses for Class B waters. Therefore, the final permit has been issued with revised daily maximum summer season limits of 160 mg/L and 160 lbs./day, consistent with the non-summer season limits, to allow the facility to continue production seven days per week as it has in the past.

ATTACHMENT A



**National Starch and Chemical Company
Facility and Outfall to
West Branch of the Mattawamkeag River
#ME0001856**

Dyer Brook

Legend

- ▲ Wastewater_Facilities
- ▲ Wastewater_Outfalls

River Class

- AA
- A
- B
- C

Stream Class

- AA
- A
- B
- C

□ Ponds_and_Lakes

Major_Roads.lyr

JURISDICTION

- State aided
- State hwy
- Toll highway
- Railroads

Pleasant Lake

Upper Mattawamkeag Lake

West Branch of Mattawamkeag River

Mattawamkeag Lake

Crystal

Interstate 95

State Route 2

T4 R3 Wels

Island Falls

Caribou Lake

State of Maine

Arroostook County

Facility Location
Map Inset

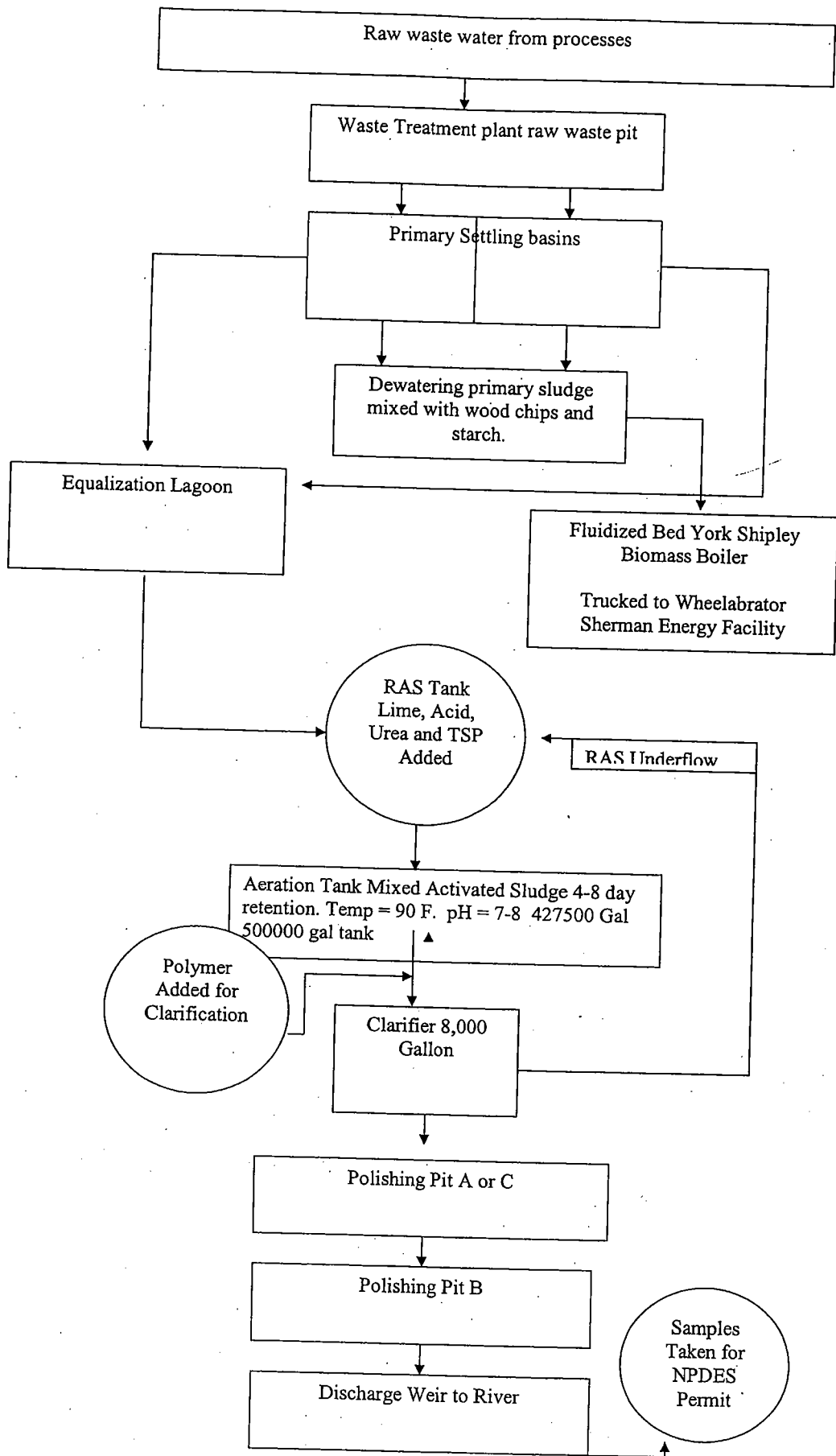


National Starch and Chemical Company at Island Falls, Maine

Map created by Maine DEP
April 24, 2007



ATTACHMENT B



Island Falls Waste Water Treatment Facility

ATTACHMENT C

Species	Test	Test Result %	Sample Date
TROUT	A_NOEL	100	03/04/1992
TROUT	C_NOEL	100	03/04/1992
TROUT	LC50	>100	03/04/1992
WATER FLEA	A_NOEL	10	03/04/1992
WATER FLEA	LC50	28.7	03/04/1992
WATER FLEA	A_NOEL	5	03/23/1992
WATER FLEA	C_NOEL	100	03/23/1992
WATER FLEA	LC50	19.9	03/23/1992
TROUT	A_NOEL	50	11/30/1999
TROUT	C_NOEL	50	11/30/1999
TROUT	LC50	80.79	11/30/1999
WATER FLEA	A_NOEL	25	11/30/1999
WATER FLEA	C_NOEL	1	11/30/1999
WATER FLEA	LC50	31.50	11/30/1999
TROUT	A_NOEL	50	09/10/2002
TROUT	C_NOEL	50	09/10/2002
WATER FLEA	A_NOEL	10	09/10/2002
WATER FLEA	C_NOEL	10	09/10/2002
FATHEAD	A_NOEL	50	10/29/2002
FATHEAD	C_NOEL	50	10/29/2002
WATER FLEA	A_NOEL	10	10/29/2002
WATER FLEA	C_NOEL	10	10/29/2002
TROUT	A_NOEL	50	03/11/2003
TROUT	C_NOEL	50	03/11/2003
WATER FLEA	A_NOEL	10	03/11/2003
WATER FLEA	C_NOEL	10	03/11/2003
TROUT	A_NOEL	100	05/01/2007
TROUT	C_NOEL	100	05/01/2007
WATER FLEA	A_NOEL	100	05/01/2007
WATER FLEA	C_NOEL	10	05/01/2007

ATTACHMENT D

Sample Date: 09/15/2002

Plant flows provided

Total Tests:	124	mon. (MGD) = 0.058	
Missing Compounds:	0	day (MGD) = 0.096	
Tests With High DL:	0		
	M = 0	V = 0	A = 0
	BN = 0	P = 0	other = 0

Sample Date: 10/29/2002

Plant flows provided

Total Tests:	116	mon. (MGD) = 0.058	
Missing Compounds:	8	day (MGD) = 0.071	
Tests With High DL:	1		
	M = 1	V = 0	A = 0
	BN = 0	P = 0	other = 0

Sample Date: 03/11/2003

Plant flows not provided

Total Tests:	116		
Missing Compounds:	8		
Tests With High DL:	2		
	M = 2	V = 0	A = 0
	BN = 0	P = 0	other = 0

Sample Date: 03/14/2007

Plant flows provided

Total Tests:	21	mon. (MGD) = 0.039	
		day (MGD) = 0.048	
Tests With High DL:	0		
	M = 0	V = 0	A = 0
	BN = 0	P = 0	other = 0