STATE OF MAINE

Department of Environmental Protection

Paul R. LePage
GOVERNOR

Patricia W. Aho
COMMISSIONER

April 2, 2015

Mr. Jeffrey Saucier
McCain Foods USA, Inc.
319 Richardson Road
Easton, Maine 04740

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0036218
Maine Waste Discharge License (WDL) Application #W008085-5N-F-R
Proposed Draft Permit

Dear Mr. Saucier:

Enclosed is a **proposed draft** MEPDES permit and Maine WDL (permit hereinafter) which the Department proposes to issue as a final document after opportunity for your review and comment. By transmittal of this letter you are provided with an opportunity to comment on the proposed draft permit and its conditions (special conditions specific to this permit are enclosed; standard conditions applicable to all permits are available upon request). If it contains errors or does not accurately reflect present or proposed conditions, please respond to this Department so that changes can be considered.

By copy of this letter, the Department is requesting comments on the proposed draft permit from various state and federal agencies, as required by our regulations, and from any other parties who have notified the Department of their interest in this matter.

All comments must be received in the Department of Environmental Protection office on or before the close of business **Monday, May 4, 2015.** Failure to submit comments in a timely fashion will result in the final document being issued as drafted. Comments in writing should be submitted to my attention at the following address:

Maine Department of Environmental Protection
Bureau of Land & Water Quality
Division of Water Quality Management
17 State House Station
Augusta, ME. 04333

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-3901 FAX: (207) 287-3435
RAY BLDG., HOSPITAL ST.

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

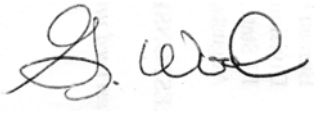
PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-6477 FAX: (207) 764-1507

web site: www.maine.gov/dep

If you have any questions regarding the matter, please feel free to call me at 287-7693.

Sincerely,



Gregg Wood
Division of Water Quality Management
Bureau of Land and Water Quality

Enc.

cc: William Sheehan, DEP/NMRO
Barry Mower, DEP/CMRO
Maine Inland Fisheries & Wildlife
Maine Department of Marine Resources
Alex Rosenberg, USEPA
David Webster, USEPA
David Pincumbe, USEPA
Olga Vergara, USEPA
Shari Venno, Malissets
Fred Corey, MicMacs
Ivy Frignoca, CLF
Steve Sutter

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

DEPARTMENT ORDER

IN THE MATTER OF

MCCAIN FOODS USA, INC.	)	MAINE POLLUTANT DISCHARGE
PRESQUE ISLE, AROOSTOOK COUNTY	)	ELIMINATION SYSTEM PERMIT
FOOD PROCESSING FACILITY	)	AND
ME0036218	)	WASTE DISCHARGE LICENSE
W008085-5N-F-R **APPROVAL**	)	**RENEWAL**

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

APPLICATION SUMMARY

McCain has submitted a timely and complete application to the Department for the renewal of combination Maine Waste Discharge License (WDL) #W008085-5N-D-R / Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0036218, which was issued on May 17, 2007, and expired on May 17, 2012. The 5/17/07 MEPDES permit authorized the monthly average discharge of up to 2.5 million gallons per day (MGD) (Tier #1 production for Easton Plant I) and a monthly average discharge of up to 4.0 MGD (Tier #2 production for Easton Plant I and Plant II) of treated process and sanitary waste waters from a potato processing facility located in Easton, Maine, to the Aroostook River, Class C, in Presque Isle, Maine.

PERMIT SUMMARY

This permitting action is carrying forward all the terms and conditions of the May 17, 2007, permit except that this permit is:

1) Establishing revised dilution factors associated with the discharge based on a review of 2011 gauge data for the Aroostook River evaluated by the Department.

2) Eliminating the chronic-no observed effect level (C-NOEL) limit of 2.6% (Tier I) and the acute no-observed effect level (A-NOEL) limit of 2.6% (Tier II) and the C-NOEL limit of 4.0% (Tier II) for the water flea as a statistical evaluation of the most recent 60 months of whole effluent toxicity (WET) test results indicates there is no longer a reasonable potential to exceed critical A-NOEL or C-NOEL ambient water quality thresholds.

PERMIT SUMMARY (cont'd)

2) Establishing a less stringent water quality based mass for total aluminum based on a revised statistical evaluation for the Aroostook River watershed.

3) Eliminating technology based concentration limit for total aluminum based on Maine law 38 M.R.S.A. §464, ¶¶ K.

4) Eliminating the requirement for *E. coli* bacteria limits to apply on a year-round basis and only requiring limits seasonally (May 15 – September 30) as the Caribou Utility District (5 miles downstream of the McCain facility) no longer uses the Aroostook River as a public drinking water supply.

5) Establishing a more stringent monthly average water quality based limitation for total phosphorus based on new information obtained from a 2012 ambient water quality survey conducted by the Department. The survey indicates the discharge of total phosphorus from the McCain facility is contributing pH violations in the Aroostook River.

CONCLUSIONS

BASED on the findings in the attached **PROPOSED DRAFT** Fact Sheet dated April 2, 2015, and subject to the Conditions listed below, the Department makes the following conclusions:

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

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

3. The provisions of the State's antidegradation policy, 38 M.R.S.A. §464(4)(F), will be met, in that:

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

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

   (c) 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.

CONCLUSIONS (cont'd)

4. The discharge will be subject to effluent limitations that require application of best practicable treatment as defined in Maine law, 38 M.R.S.A., §414-A(1)(D).

ACTION

THEREFORE, the Department APPROVES the above noted application of MCCAIN FOODS USA, INC. to discharge a monthly average flow of up to 2.5 million gallons per day (MGD) (Tier #1) and up to 4.0 MGD (Tier #2) of treated process and sanitary waste waters from a food processing facility to the Aroostook River, Class C, in Presque Isle, Maine, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

1. "*Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits*," revised July 1, 2002, copy attached.

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

3. This permit becomes effective upon the date of signature below and expires at midnight five (5) years after that date. If a renewal application is timely submitted and accepted as complete for processing prior to the expiration of this permit, the terms and conditions of this permit and all subsequent modifications and minor revisions thereto remain in effect until a final Department decision on the renewal application becomes effective. [*Maine Administrative Procedure Act*, 5 M.R.S.A. § 10002 and *Rules Concerning the Processing of Applications and Other Administrative Matters*, 06-096 CMR 2(21)(A) (effective April 1, 2003)].

DONE AND DATED AT AUGUSTA, MAINE, THIS _____DAY OF_____, 2015.

COMMISSIONER OF ENVIRONMENTAL PROTECTION

BY:_____
Patricia W. Aho, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application December 30, 2011.
Date of application acceptance December 30, 2011.

Date filed with Board of Environmental Protection _____

This Order prepared by Gregg Wood, BUREAU OF LAND & WATER QUALITY

SPECIAL CONDITIONS
EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. **TIER #1** The permittee is authorized to discharge **treated process and secondary treated sanitary waste waters from Outfall #001** to the Aroostook River in Presque Isle. Such discharges shall be limited and monitored by the permittee as specified below[(1)]:

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow *[50050]*	2.5 MGD *[03]*	---	Report MGD *[03]*	---	---	---	Continuous *[99/99]*	Recorder *[RC]*
BOD_5 *[00310]*	497 lbs./day *[26]*	---	994 lbs./day *[26]*	36 mg/L *[19]*	---	72 mg/L *[19]*	1/Week *[01/07]*	24-Hour Composite *[24]*
TSS *[00530]*	1,608 lbs./day *[26]*	---	3,216 lbs./day *[26]*	116 mg/L *[19]*	---	231 mg/L *[19]*	1/Week *[01/07]*	24-Hour Composite *[24]*
Settleable Solids *[00545]*	---	---	---	---	---	0.3 ml/L *[25]*	1/Week *[01/07]*	Grab *[GR]*
Total Residual Chlorine[(2)] *[50060]*	---	---	---	0.1 mg/L *[19]*	---	0.3 mg/L *[19]*	3/Week *[03/07]*	Grab *[GR]*
Total Phosphorus[(3)] (June 1 – Sept. 30) *[00665]*	63 lbs./day *[26]*	Report lbs./day *[26]*	Report lbs./day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	Report mg/L *[19]*	3/Week *[03/07]*	24-Hour Composite *[24]*
pH *[00400]*	---	---	---	---	---	6.0 – 9.0 SU *[12]*	3/Week *[03/07]*	Grab *[GR]*

Monthly

The italicized numeric values bracketed in the table above and the tables that follow are not limitations but code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports.

Footnotes: See Pages 13 through 16 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

TIER #1 The permittee is authorized to discharge **treated process and secondary treated sanitary waste waters from Outfall #001** to the Aroostook River at Presque Isle. Such discharges shall be limited and monitored by the permittee as specified below[(1)]:

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Aluminum (Total) [(4)] **(June 1 – Sept 30)** *[01105]*	65 lbs./day *[26]*	---	---	Report ug/L *[28]*	---	---	1/Month *[01/30]*	24-Hour Composite *[24]*
Mercury (Total) [(5)] *[71900]*	---	---	---	4.25 ng/L *[3M]*	---	6.75 ng/L *[3M]*	1/Year *[01/YR]*	Grab *[GR]*

Footnotes: See Pages 13 through 16 of this permit for applicable footnotes.

Monthly

SPECIAL CONDITIONS

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

TIER #1 (Outfall #001) Whole effluent toxicity, analytical chemistry and priority pollutant testing requirements.

SURVEILLANCE LEVEL - Beginning upon permit issuance and lasting through 24 months prior to permit expiration (Years 1, 2 & 3 of the term of the permit) and commencing again 12 months prior to permit expiration (Year 5 of the term of the permit), the permittee shall conduct surveillance level testing as follows:

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity(6)						
Acute – NOEL						
Ceriodaphnia dubia (Water flea) *[TDA3B]*	---	---	---	Report % *[23]*	1/2 Years *[01/2Y]*	Composite *[24]*
Salvelinus fontinalis (Brook trout) *[TDA6F]*	---	---	---	Report % *[23]*	1/2 Years *[01/2Y]*	Composite *[24]*
Chronic – NOEL						
Ceriodaphnia dubia (Water flea) *[TBP3B]*	---	---	---	Report % *[23]*	1/2 Years *[01/ 2Y]*	Composite *[24]*
Salvelinus fontinalis (Brook trout) *[TBQ6F]*	---	---	---	Report % *[23]*	1/2 Years *[01/2Y]*	Composite *[24]*
Analytical Chemistry **(7,9)** *[54177]*	---	---	---	Report ug/L *[28]*	1/2 Years *[01/2Y]*	Composite/Grab *[24]*

Monthly

Footnotes: **See Pages 13 through 16 of this permit for applicable footnotes.**

SPECIAL CONDITIONS

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

TIER #1 (Outfall #001) Whole effluent toxicity, analytical chemistry and priority pollutant testing requirements.

SCREENING LEVEL **-** Beginning 24 months prior to permit expiration and lasting through 12 months prior to permit expiration (Year 4 of the term of the permit) and every five years thereafter if a timely request for renewal has been made and the permit continues in force, or is replaced by a permit renewal containing this requirement, the permittee shall conduct screening level testing as follows:

	Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity[6]						
Acute – NOEL						
Ceriodaphnia dubia (Water flea) *[TDA3B]*	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Salvelinus fontinalis (Brook trout) *[TDA6F]*	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Chronic – NOEL						
Ceriodaphnia dubia (Water flea) *[TBP3B]*	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Salvelinus fontinalis (Brook trout) *[TBQ6F]*	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Analytical Chemistry **[7,9]** *[54177]*	---	---	---	Report ug/L *[28]*	1/Quarter *[01/90]*	Composite/Grab *[24]*
Priority Pollutant **[8,9]** *[50008]*	---	---	---	Report ug/L *[28]*	1/Year *[01/YR]*	Composite/Grab *[24]*

Monthly

Footnotes: **See Pages 13 through 16 of this permit for applicable footnotes.**

SPECIAL CONDITIONS

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

2. **TIER #2** The permittee is authorized to discharge **treated process and secondary treated sanitary waste waters from Outfall #002** to the Aroostook River at Presque Isle. Such discharges shall be limited and monitored by the permittee as specified below[(1)]. Tier #2 limits shall become effective upon written approval by the Department following notification by the permittee that Tier #2 production levels are scheduled to commence to a monthly average value exceeding 2.9 million pounds per day.

Effluent Characteristic	Discharge Limitations					Monitoring Requirements		
	Monthly Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow *[50050]*	4.0 MGD *[03]*	---	Report MGD *[03]*	---	---	---	Continuous *[99/99]*	Recorder *[RC]*
BOD_5 *[00310]*	794 lbs./day *[26]*	---	1,588 lbs./day *[26]*	36 mg/L *[19]*	---	71 mg/L *[19]*	3/Week *[03/07]*	24-Hour Composite *[24]*
TSS *[00530]*	2,569 lbs./day *[26]*	---	5,137 lbs./day *[26]*	116 mg/L *[19]*	---	231 mg/L *[19]*	3/Week *[03/07]*	24-Hour Composite *[24]*
Settleable Solids *[00545]*	---	---	---	---	---	0.3 ml/L *[25]*	3/Week *[03/07]*	Grab *[GR]*
Total Residual Chlorine[(2)] *[50060]*	---	---	---	0.1 mg/L *[19]*	---	0.3 mg/L *[19]*	3/Week *[03/07]*	Grab *[GR]*
Total Phosphorus[(3)] (June 1 – Sept. 30) *[00665]*	63 lbs./day *[26]*	Report lbs./day *[26]*	Report lbs./day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	Report mg/L *[19]*	3/Week *[03/07]*	24-Hour Composite *[24]*
pH *[00400]*	---	---	---	---	---	6.0 – 9.0 SU *[12]*	3/Week *[03/07]*	Grab *[GR]*

Footnotes: See Pages 13 through 16 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. **TIER #2** The permittee is authorized to discharge **treated process and secondary treated sanitary waste waters from Outfall #002** to the Aroostook River at Presque Isle. Such discharges shall be limited and monitored by the permittee as specified below[(1)]:

Minimum

Effluent Characteristic **Discharge Limitations** **Monitoring Requirements**

	Average	Weekly Average	Daily Maximum	Monthly Average	Weekly Average	Daily Maximum	Measurement Frequency	Sample Type
Aluminum (Total) [(4)] *[01105]*	65 lbs./day *[26]*	---	---	Report ug/L *[28]*	---	---	1/Month *[01/30]*	24-Hour Composite *[24]*
Mercury (Total) [(5)] *[71900]*	---	---	---	4.25 ng/L *[3M]*	---	6.75 ug/L *[3M]*	1/Year *[01/YR]*	Grab *[GR]*

Footnotes: See Pages 13 through 16 of this permit for applicable footnotes.

Monthly

SPECIAL CONDITIONS

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

TIER #2 (Outfall #002) Whole effluent toxicity, analytical chemistry and priority pollutant testing requirements.

SURVEILLANCE LEVEL **-** Beginning upon permit issuance and lasting through 24 months prior to permit expiration (Years 1, 2 & 3 of the term of the permit) and commencing again 12 months prior to permit expiration (Year 5 of the term of the permit), the permittee shall conduct surveillance level testing as follows:

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Whole Effluent Toxicity(6)						
Acute – NOEL						
Ceriodaphnia dubia (Water flea) *[TDA3B]*	---	---	---	Report % *[23]*	1/2 Years *[01/2Y]*	Composite *[24]*
Salvelinus fontinalis (Brook trout) *[TDA6F]*	---	---	---	Report % *[23]*	1/2 Years *[01/2Y]*	Composite *[24]*
Chronic – NOEL						
Ceriodaphnia dubia (Water flea) *[TBP3B]*	---	---	---	Report % *[23]*	1/2 Years *[01/2Y]*	Composite *[24]*
Salvelinus fontinalis (Brook trout) *[TBQ6F]*	---	---	---	Report % *[23]*	1/2 Years *[01/2Y]*	Composite *[24]*
Analytical Chemistry **(7,9)** *[54177]*	---	---	---	Report ug/L *[28]*	1/2 Years *[01/2Y]*	Composite/Grab *[24]*

Monthly

Footnotes: **See Pages 13 through 16 of this permit for applicable footnotes.**

SPECIAL CONDITIONS

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

TIER #2 (Outfall #002) Whole effluent toxicity, analytical chemistry and priority pollutant testing requirements.

SCREENING LEVEL **-** Beginning 24 months prior to permit expiration and lasting through 12 months prior to permit expiration (Year 4 of the term of the permit) and every five years thereafter if a timely request for renewal has been made and the permit continues in force, or is replaced by a permit renewal containing this requirement, the permittee shall conduct screening level testing as follows.

	Average	**Daily Maximum**	**Monthly Average**	**Daily Maximum**	**Measurement Frequency**	**Sample Type**
Whole Effluent Toxicity(6)						
Acute – NOEL						
Ceriodaphnia dubia (Water flea) *[TDA3B]*	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Salvelinus fontinalis (Brook trout) *[TDA6F]*	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Chronic – NOEL						
Ceriodaphnia dubia (Water flea) *[TBP3B]*	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Salvelinus fontinalis (Brook trout) *[TBQ6F]*	---	---	---	Report % *[23]*	2/Year *[02/YR]*	Composite *[24]*
Analytical Chemistry **(7,9)** *[54177]*	---	---	---	Report ug/L *[28]*	1/Quarter *[01/90]*	Composite/Grab *[24]*
Priority Pollutant **(8,9)** *[50008]*	---	---	---	Report ug/L *[28]*	1/Year *[01/YR]*	Composite/Grab *[24]*

Monthly

Footnotes: See Pages 13 through 16 of this permit for applicable footnotes.

SPECIAL CONDITIONS

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

3. The permittee is authorized to discharge **secondary treated sanitary waste waters from a package treatment plant via internal Outfall #100.** Such discharges shall be sampled prior to mixing with any other waste streams and shall be limited and monitored by the permittee as specified below[(1)]:

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Average	Daily Maximum	Monthly Average	Daily Maximum	Measurement Frequency	Sample Type
Flow *[50050]*	Report GPD *[07]*	Report GPD *[07]*	---	---	Continuous *[99/99]*	Recorder *[RC]*
***E. coli* Bacteria[(10)]** *[31663]* **(May 15 – September 30)**	---	---	126 col/100 ml[(11)] *[13]*	949 col/100 ml *[13]*	2/Week *[02/07]*	Grab *[GR]*

Footnotes: See Pages 13 through 16 of this permit for applicable footnotes.

Monthly

SPECIAL CONDITIONS

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

Footnotes:

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

2. **TRC Monitoring** – Monitoring for TRC is only required when elemental chlorine or chlorine-based compounds are in use for effluent disinfection. The permitee shall use approved methods that a capable of bracketing the limit established in this permit. For the purposes of Discharge Monitoring Report (DMR) reporting when a facility has not disinfected with chlorine-based compounds for an entire reporting period, enter **"NODI-9" indicating "monitoring not required this monitoring period."**

3. **Total Phosphorus –** Total phosphorus monitoring shall be performed in accordance with **Attachment A** of this permit entitled, *Protocol For Total P Sample Collection and Analysis for Waste Water and Receiving Water Monitoring Required by Permits*, July 1 2014, unless otherwise specified by the Department.

4. **Aluminum –** The permittee shall conduct seasonal monitoring for total aluminum at a minimum frequency of 1/Month during the period of June – September to coincide with the period in which aluminum-based compounds are in use for phosphorous removal. Monitoring events shall be spaced a minimum of 10 days apart.

5. **Mercury** - All mercury sampling required by this permit or required to determine compliance with interim limitations established pursuant to Department rule Chapter 519, shall be conducted in accordance with EPA's "clean sampling techniques" found in EPA Method 1669, Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels. All mercury analysis shall be conducted in accordance with EPA Method 1631, Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry. See **Attachment B** for a Department report form for mercury test results.

   Compliance with the monthly average limitation established in Special Condition A of this permit will be based on the cumulative arithmetic mean of all mercury tests results that were conducted utilizing sampling Methods 1669 and analysis Method 1631E on file with the Department for this facility.

SPECIAL CONDITIONS

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

Footnotes:

6. **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 2.9% and 2.5%, respectively, for Tier #1 or critical acute and chronic thresholds of 4.8% and 4.0%, respectively, for Tier #2), 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 34:1 and 40:1, respectively, for Tier #1 and applicable acute and chronic dilution factors of 21:1 and 25:1, respectively, for Tier #2.

   a. **Surveillance level testing –** Beginning upon permit issuance and lasting through 24 months prior to permit expiration (Years 1, 2 & 3 of the term of the permit) and commencing again 12 months prior to permit expiration (Year 5 of the term of the permit) the permittee shall initiate surveillance level WET testing at a minimum frequency of once every other year (1/2 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 time a test is conducted.

   b. **Screening level testing** – Beginning 24 months prior to permit expiration and lasting through 12 months prior to permit expiration (Year 4 of the term of the permit) and every five years thereafter if a timely request for renewal has been made and the permit continues in force, or is replaced by a permit renewal containing this requirement, the permittee shall conduct screening level WET testing at a minimum frequency of twice per year (2/Year) for both species. There shall be at least six (6) months between testing events. Acute and chronic tests shall be conducted on the water flea (*Ceriodaphnia dubia*) and the brook trout (*Salvelinus fontinalis*).

   WET test results must be submitted to the Department not later than the next Discharge Monitoring Report (DMR) required by the permit, provided, however, that the permittee may review the toxicity reports for up to 10 business days of their 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 2.9% and 2.5%, respectively, for Tier #1 or critical acute and chronic thresholds of 4.8% and 4.0%, respectively, for Tier #2, whichever Tier is applicable at the time the WET test is conducted.

SPECIAL CONDITIONS

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

Footnotes:

Toxicity tests must be conducted by an experienced laboratory approved by the Department. The laboratory must follow procedures as described in the following USEPA methods manuals as modified by Department protocol for the brook trout. See **Attachment C** of this permit for the Department protocol.

a. U.S. Environmental Protection Agency. 2002. *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organism*s, 5th ed. EPA 821-R-02-012. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., October 2002 (the acute method manual).

b. U.S. Environmental Protection Agency. 2002. *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organism*s, 4th ed. EPA 821-R-02-013. U.S. Environmental Protection Agency, Office of Water, Washington, D.C., October 2002 (the freshwater chronic method manual).

Results of WET tests shall be reported on the "WET Results Report – Fresh Waters" form included as **Attachment D** of this permit each time a WET test is performed. The permittee is required to analyze the effluent for the parameters specified on the "WET and Analytical Chemistry Results – Fresh Waters" form included as **Attachment E** of this permit each time a WET test is performed.

7. **Analytical chemistry** – Refers to a suite of chemicals in **Attachment E** of this permit.

a. **Surveillance level testing** – Beginning upon permit issuance and lasting through 24 months prior to permit expiration (Years 1, 2 & 3 of the term of the permit) and commencing again 12 months prior to permit expiration (Year 5 of the term of the permit), the permittee shall conduct analytical chemistry testing at a minimum frequency of once every other year (1/2 Years). Tests are to be conducted in a different calendar quarter of each year.

b. **Screening level testing** – Beginning 24 months prior to permit expiration and lasting through 12 months prior to permit expiration (Year 4 of the term of the permit) and every five years thereafter if a timely request for renewal has been made and the permit continues in force, or is replaced by a permit renewal containing this requirement, the permittee shall conduct analytical chemistry testing at a minimum frequency of once per calendar quarter (1/Quarter) for four consecutive calendar quarters.

SPECIAL CONDITIONS

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

Footnotes:

8. **Priority pollutant testing** – Refers to a suite of chemicals in **Attachment E** of this permit.

   a. **Surveillance level testing** is not required pursuant to Department rule Chapter 530.

   b. **Screening level testing** - Beginning 24 months prior to permit expiration and lasting through 12 months prior to permit expiration (Year 4 of the term of the permit) and every five years thereafter if a timely request for renewal has been made and the permit continues in force, or is replaced by a permit renewal containing this requirement, the permittee shall conduct screening level priority pollutant testing at a minimum frequency of once per year (1/Year).

9. **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 Department rule Chapter 584 *Surface Water Quality Criteria for Toxic Pollutants.* For the purposes of DMR reporting, enter a "1" for yes, testing done this monitoring period or "NODI-9" monitoring not required this period.

10. **Bacteria Limits –** *E. coli* bacteria limits and monitoring requirements are in effect Seasonally, between May 15th – September 30th of each year.

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

SPECIAL CONDITIONS

B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the uses designated for 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 uses designated for the classification of the receiving waters.

3. The discharge shall not cause visible discoloration or turbidity in the receiving waters, which would impair the uses designated for 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. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a minimum of a **Grade V** certificate (or Registered Maine Professional Engineer) pursuant to *Sewerage Treatment Operators*, 32 M.R.S.A. §§ 4171-4182 and *Regulations for Wastewater Operator Certification*, 06-096 CMR 531 (effective May 8, 2006). All proposed contracts for facility operation by any person must be approved by the Department before the permittee may engage the services of the contract operator.

D. AUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with: 1) the permittee's General Application for Waste Discharge Permit, accepted for processing on July 29, 2014; 2) the terms and conditions of this permit; and 3) only from Outfalls #001, #002 & #100. Discharges of waste water from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5)(*Bypass*) of this permit.

E. 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

F. 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.

G. 06-096 CMR 530(2)(D)(4) STATEMENT FOR REDUCED/WAIVED TOXICS TESTING

By December 31 of each calendar year, the permittee shall provide the Department with a certification describing any of the following that have occurred since the effective date of this permit ***[ICIS Code 75305]***: See **Attachment G** of the Fact Sheet for an acceptable certification form to satisfy this Special Condition.

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

(b) Changes in the operation of the treatment works that may increase the toxicity of the discharge; and

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

In addition, in the comments section of the certification form, the permittee shall provide the Department with statements describing;

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

(e) Increases in the type or volume of hauled wastes accepted by the facility.

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.

SPECIAL CONDITIONS

H. MONITORING AND REPORTING

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

Alternatively, if you are submitting an electronic DMR (eDMR), the completed eDMR must be electronically submitted to the Department by a facility authorized DMR Signatory not later than close of business on the 15th day of the month following the completed reporting period. Hard Copy documentation submitted in support of the eDMR must be postmarked on or before the thirteenth (13th) day of the month or hand-delivered to the Department's Regional Office such that it is received by the Department on or before the fifteenth (15th) day of the month following the completed reporting period. Electronic documentation in support of the eDMR must be submitted not later than close of business on the 15th day of the month following the completed reporting period.

I. 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 any time and with notice to the permittee, modify this permit to: (1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded: (2) require additional monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

J. 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 Effluent

Approved Analytical Methods: EPA 200.7 (Rev. 44), 365.1 (Rev. 2.0), (Lachat), 365.3, 365.4; SM 3120 B, 4500-P B.5, 4500-P E, 4500-P F, 4500-P G, 4500-P H; ASTM D515-88(A), D515-88(B); USGS I-4471-97, I-4600-85, I-4610-91; OMAAOAC 973.55, 973.56 (laboratory must be certified for any method performed)

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 H_2SO_4 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

Effluent Mercury Test Report

Name of Facility: _____ Federal Permit # ME _____

Pipe # _____

Purpose of this test:
- ☐ Initial limit determination
- ☐ Compliance monitoring for: year _____ calendar quarter _____
- ☐ Supplemental or extra test

SAMPLE COLLECTION INFORMATION

Sampling Date: ___ ___ _____ (mm dd yy) Sampling time: _____ AM/PM

Sampling Location:

Weather Conditions: _____

Please describe any unusual conditions with the influent or at the facility during or preceding the time of sample collection:

Optional test - not required but recommended where possible to allow for the most meaningful evaluation of mercury results:

Suspended Solids _____ mg/L Sample type: _____ Grab (recommended) or _____ Composite

ANALYTICAL RESULT FOR EFFLUENT MERCURY

Name of Laboratory: _____

Date of analysis: _____ **Result:** _____ **ng/L (PPT)**

Please Enter Effluent Limits for your facility

Effluent Limits: **Average =** _____ ng/L **Maximum =** _____ ng/L

Please attach any remarks or comments from the laboratory that may have a bearing on the results or their interpretation. If duplicate samples were taken at the same time please report the average.

CERTIFICATION

I certifiy that to the best of my knowledge the foregoing information is correct and representative of conditions at the time of sample collection. The sample for mercury was collected and analyzed using EPA Methods 1669 (clean sampling) and 1631 (trace level analysis) in accordance with instructions from the DEP.

By: _____ Date: _____

Title: _____

PLEASE MAIL THIS FORM TO YOUR ASSIGNED INSPECTOR

ATTACHMENT C

Salmonid Survival and Growth Test

The Salmonid survival and growth test must follow the procedures for the fathead minnow larval survival and growth tests detailed in USEPA's freshwater acute and chronic methods manuals with the following Department modifications:

Species - Brook Trout, *Salvelinus fontinalis*, or other salmonid approved by the Department.

Age - Less than six months old for the first test each year and less than twelve months for subsequent tests.

Size - The largest fish must not be greater than 150% of the smallest.

Loading Rate - < 0.5 g/l/day

Feeding rate - 5% of body weight 3 times daily (15%/day)

Temperature - 12° ± 1°C

Dissolved Oxygen - 6.5 mg/l ,aeration if needed with large bubbles (> 1 mm diameter) at a rate of <100/min

Dilution Water - Receiving water upstream of discharge (or other ambient water approved by the Department)

Dilution Series - A minimum of 5 effluent concentrations (including the instream waste concentrations bracketing acute and chronic dilutions calculated pursuant to Section D); a receiving water control; and control of known suitable water quality

Duration - Acute = 48 hours
- Chronic = 10 days minimum

Test acceptability - Acute = minimum of 90% survival in 2 days
- Chronic = minimum of 80% survival in 10 days; minimum growth of 20 mg/gm/d dry weight in controls, (individual fish weighed, dried at 100°C to constant weight and weighed to 3 significant figures)

ATTACHMENT D

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 _____ (mm/dd/yy) Date Tested _____ (mm/dd/yy)

Chlorinated? _____ Dechlorinated? _____

Results

	% effluent	
	water flea	**trout**
A-NOEL		
C-NOEL		

Effluent Limitations

A-NOEL	
C-NOEL	

Data summary

	water flea			**trout**		
	% survival		**no. young**	**% survival**		**final weight (mg)**
QC standard	**A>90**	**C>80**	**>15/female**	**A>90**	**C>80**	**> 2% increase**
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 E

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)		**Flow for Day (MGD)[1]**		**Flow Avg. for Month (MGD)[2]**	
Acute dilution factor					
Chronic dilution factor		**Date Sample Collected**		Date Sample Analyzed	
Human health dilution factor					
Criteria type: M(arine) or F(resh)	f	Laboratory		Telephone	
		Address			
Last Revision - April 24, 2014					
		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.

			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]**		
	WHOLE EFFLUENT TOXICITY		Acute	Chronic					Acute	Chronic	
	Trout - Acute										
	Trout - Chronic										
	Water Flea - Acute										
	Water Flea - Chronic										
	WET CHEMISTRY										
	pH (S.U.) (9)										
	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 Acute[6]	Chronic[6]	Health[6]			Reporting Limit Check	**Possible Exceedence [7]** 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, TOTAL	5				(8)					
	CYANIDE, AVAILABLE [3a]	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
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	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	5									
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-TRICHLOROBENZENE	5									
BN	1,2-(O)DICHLOROBENZENE	5									
BN	1,2-DIPHENYLHYDRAZINE	20									
BN	1,3-(M)DICHLOROBENZENE	5									
BN	1,4-(P)DICHLOROBENZENE	5									
BN	2,4-DINITROTOLUENE	6									
BN	2,6-DINITROTOLUENE	5									
BN	2-CHLORONAPHTHALENE	5									
BN	3,3'-DICHLOROBENZIDINE	16.5									
BN	3,4-BENZO(B)FLUORANTHENE	5									
BN	4-BROMOPHENYLPHENYL ETHER	5									
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	5									
BN	BENZO(G,H,I)PERYLENE	5									
BN	BENZO(K)FLUORANTHENE	5									
BN	BIS(2-CHLOROETHOXY)METHANE	5									
BN	BIS(2-CHLOROETHYL)ETHER	6									
BN	BIS(2-CHLOROISOPROPYL)ETHER	6									
BN	BIS(2-ETHYLHEXYL)PHTHALATE	10									
BN	BUTYLBENZYL PHTHALATE	5									
BN	CHRYSENE	5									
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
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BN	FLUORANTHENE	5									
BN	FLUORENE	5									
BN	HEXACHLOROBENZENE	5									
BN	HEXACHLOROBUTADIENE	5									
BN	HEXACHLOROCYCLOPENTADIENE	10									
BN	HEXACHLOROETHANE	5									
BN	INDENO(1,2,3-CD)PYRENE	5									
BN	ISOPHORONE	5									
BN	N-NITROSODI-N-PROPYLAMINE	10									
BN	N-NITROSODIMETHYLAMINE	5									
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-CHLOROETHYLVINYL ETHER	20									

Maine Department of Environmental Protection

WET and Chemical Specific Data Report Form
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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.

(3a) Cyanide, Available (Cyanide Amenable to Chlorination) is not an analytical chemistry parameter, but may be required by certain discharge permits .

(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.

Maine Department of Environmental Protection

WET and Chemical Specific Data Report Form

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Comments:

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
MAINE WASTE DISCHARGE LICENSE

FACT SHEET

DATE: **April 2, 2015**

PERMIT NUMBER: **#ME0036218**
WASTE DISCHARGE LICENSE: **#W008085-5N-F-R**

NAME AND ADDRESS OF APPLICANT:

MCCAIN FOODS USA, INC.
319 Richardson Road
Easton, Maine 04740

COUNTY: **Aroostook County**

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

MCCAIN FOODS USA, INC.
State Route #16
Presque Isle, Maine

RECEIVING WATER/CLASSIFICATION: **Aroostook River/Class C**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Mr. Jeffrey Saucier**
Environmental Control Supervisor
(207) 488-1399
e-mail: jeffrey.saucier@mccain.com

1. APPLICATION SUMMARY

a. Application: McCain Foods USA, Inc. (McCain/permittee hereinafter) has submitted a timely and complete application to the Maine Department of Environmental Protection (Department) for the renewal of combination Maine Waste Discharge License (WDL) #W008085-5N-D-R / Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0036218, (permit hereinafter) which was issued by the Department on May 17, 2007, and expired on May 17, 2012. The 5/17/07 permit authorized the monthly average discharge of up to 2.5 million gallons per day (MGD) (Tier #1 production for Easton Plant I) and a monthly average discharge of up to 4.0 MGD (Tier #2 production for Easton Plant I and Plant II) of treated process and sanitary waste waters from a potato processing facility located in Easton, Maine, to the Aroostook River, Class C, in Presque Isle, Maine.

1. APPLICATION SUMMARY (cont'd)

b. Source Description: McCain Foods USA, Inc. is a potato processing facility located in Easton, Maine. McCain's waste water treatment facility receives process waste waters generated by the production of frozen French-fried potatoes and other specialty potato products. A map showing the location of the processing facility, outfall location and receiving water is included as **Attachment A** of this Fact Sheet.

McCain proposed an expansion (referred to as Phase II) of their food processing facility and their waste water treatment plant at the Easton site at the time of the previous permitting action but it has been put on hold due to unfavorable market conditions. The Phase II expansion of the processing facility includes expansion of a previously permitted cold storage facility from 80,000 square feet to 101,420 square feet and to construct a new 193,400 square-foot potato processing facility. As for the waste water treatment facility, McCain proposes to modify the facility by constructing a new screening building, one new primary clarifier, a new lime feed system for the primary sludge and a new secondary clarifier to accommodate additional flows from the covered anaerobic lagoon. These construction activities have been reviewed and approved by the Department pursuant to Site Location of Development Amendment #L-19771-26-D-A, dated May 31, 2001.

McCain has proposed to increase production for processing of raw potatoes from a current long-term average of 2,923,640 lbs./day to a projected long-term average of 4,670,000 lbs/day. McCain originally proposed to realize the production increase by late fall of calendar year 2001, but a downturn in market conditions has resulted in the expansion being put on hold for the foreseeable future. However, McCain has requested the Department carry forward Tier II limitations and monitoring requirements for the proposed production increase to expedite the construction activities when market conditions improve.

Raw potatoes are processed by washing, peeling and slicing and then coated, deep fried, frozen and packaged for shipment. Sanitary waste waters generated by workers at the facility are also treated on-site by a small package treatment facility. The permittee has submitted a breakdown of waste waters flows generated at the facility as follows:

Tier #1 Production

Operation	Average Flow (gpd)
Steam generation	80,500
Process wastewater	1,178,000
Cleaning	464,000
Mechanical equipment operation	757,500
Sanitary flows	20,000
Total Flows	2,500,000 (gpd)

1. APPLICATION SUMMARY (cont'd)

Tier #2 Production

Operation	Average Flow (gpd)
Steam generation	130,000
Process wastewater	1,897,000
Cleaning	735,000
Mechanical equipment operation	1,218,000
Sanitary flows	20,000
Total Flows	4,000,000 (gpd)

Based on information provided by the applicant on Department Form DEPLW1999-19, *Food Processing Facilities*, current average and maximum frozen French-fried potato production figures for the McCain facility are as follows:

Pounds per Day Processed		Processing Period Each Year		MGD Daily Effluent Flows	
Average lbs./day	Maximum lbs./day	#Weeks per Year	Months processing	Average	Maximum
2,020,818	3,109,457	42	Jan-Dec	1.6 MGD	2.4 MGD

McCain stated that the long-term average production rate that should be utilized for purposes of calculating effluent limitations is 2,923,640 lbs./day.

McCain accepts waste waters into its waste water treatment facility from the J.M. Huber Company's Wood Products Mill located in Easton, Maine. The permittee indicates that it accepts boiler blowdown (approximately 20,000 gallons per day), process waste water (waferizer water sprays, 5 gpd), and log pond waters (500 gpd) from the mill.

It is noted that all make-up water for the McCain food processing facility and potable water for use by employees is derived from independent drilled wells owned by McCain. The process make-up water is pumped from three wells at McCain's existing well field in Presque Isle and is capable of delivering 3.4 million gallons per day. Due to the proposed expansion, McCain is proposing to develop additional wells in their existing well field.

A water use schematic is included as **Attachment B** of this Fact Sheet.

c. Wastewater Treatment: The process wastewater treatment facility includes a pumping station, two screens, a screened effluent wet well, a covered anaerobic lagoon with a biogas handling system, an activated sludge system including an aeration tank and a secondary clarifier.

1. APPLICATION SUMMARY (cont'd)

The production plant effluent potato solids is separated by a screening system. Potato solids from the screens is sent to the McCain Tater Meal Facility for further processing to animal feed. The screened wastewater is discharged into a screened effluent wet well equipped with three (3) transfer pumps. Two of the pumps are the lead with the third being the backup to prevent overflow of the structure in case of pump failure. The wet well pump system is also equipped with an emergency generator in case of electrical failure.

Adjacent to the screened effluent is an existing lagoon that was formally part of the waste treatment system prior to the year 2000. Separating the two is a storm water drainage swale. McCain has requested that this lagoon be used as an emergency overflow for the screened effluent wet well in the event of emergency shutdown and cessation of production of the facility due to electrical and/or pump failure. McCain has indicated that the use of this lagoon will prevent any overflow of the wet well from entering the storm water swale and the storm water pond ultimately affecting the Prestile Stream. All flows from the emergency bypass will start being reintroduced into the waste stream within 24 hours of wet well failure corrections and completed as soon as possible. Therefore, this permitting action authorizes the use of this lagoon in emergency situations as described to prevent discharges to Prestile Stream.

Anaerobic System:

The pretreatment system includes a covered anaerobic lagoon (CAL) with the primary purpose of reducing the Biochemical Oxygen Demand (BOD_5) content. The CAL has a volume of 20.275 million gallons and is covered with an insulated floating HDPE membrane. This cover allows for a biogas removal system where the gas produced is captured and flared off by means of a biogas blower system and propane flare or utilized in the production facility boiler system. The pretreated effluent is discharged to a nitrification activated sludge system.

Activated Sludge System:

The aeration basin in the activated sludge system has a variable volume of 2.4 to 3.2 million gallons depending on process conditions. The primary purpose of this basin is to remove BOD and ammonia from the wastewater through biological action.

Seasonal phosphorous removal is accomplished in the activated sludge system by the addition of sodium aluminate to the aeration basin prior to the outlet to secondary clarification.

Secondary Clarification:

A secondary clarifier accommodates the flow from the aeration basin. The clarifier is 90-feet in diameter with 6300 ft^2 of surface area. The clarifier is approximately 11.5- feet deep with a side water depth of 8.2 feet. The waste sludge from the clarifier is pumped into the CAL for digestion.

1. APPLICATION SUMMARY (cont'd)

Final effluent is conveyed for discharge to the Aroostook River via a six-mile long pipeline to a diffuser located in the middle of the Aroostook River. The six-mile long pipeline was installed in 1999 and is constructed of high density polyethylene (HPDE) pipe that is 18-inches in diameter. The diffuser in the Aroostook River is constructed of perforated HDPE piping that is 18-inches in diameter and 100-feet long. The diffuser was designed and strategically placed in the Aroostook River to provide for rapid and complete mixing of the effluent from the McCain facility with the Aroostook River, which the Department's Division of Environmental Assessment has determined is achieved.

Sanitary waste from the McCain facility is processed by a 20,000 gal/day intermittent cycle extended aeration system sequencing batch reactor (SBR) package plant. This plant combines continuous flow activated sludge technology with intermittent system operation. It also provides chlorine disinfection for the effluent. The system uses a single vessel in which the activated sludge is aerated over a number of cycles. Solids-liquid separation occurs during the air-off part of the cycle. During the latter part of the air-off cycle, treated effluent is decanted from the liquid surface, co-mingled with the process waste waters and discharged to the Aroostook River via the 18" HDPE pipe.

A wastewater treatment process flow schematic is included as Fact Sheet **Attachment C**.

Tier #2 production – Due to the increased flows and pollutant loadings to be treated from the proposed Phase II expansion, McCain is proposing to modify its waste water treatment system. Modifications include the addition of a new screening building, one primary clarifier, a lime feed system for the primary sludge generated and one additional secondary clarifier. A wastewater schematic is included as **Attachment C** of this Fact Sheet.

The new screening building will accommodate a new production line effluent pump station, two screens from the existing system and an additional rotary screen for the new production line waste waters and primary sludge de-watering centrifuges. The new lime storage and make-up system will provide for bulk storage of bulk lime and slurry hydrated lime into a lime feed system.

Flows to the secondary waste water treatment facility will combine waste water flows from two potato processing plants; one existing, one proposed. After being screened, the combined waste water will flow by gravity to a lime addition mixing and flow splitter chamber, then to a new primary clarifier. The primary clarifier is being designed to remove phosphorus and potato starch solids. The primary sludge will be drawn from the clarifier, centrifuged, and then conveyed to the McCain Tater Meal Facility for use in the production of livestock feed. The primary clarifier effluent will be pumped to the existing covered anaerobic lagoon (CAL). The CAL does not require re-design as installation of a new primary clarifier will result in organic loads to the CAL at or slightly less than Tier #1 levels. As with the existing waste water treatment system, flow from the CAL is conveyed to the nitrifying activated sludge system then to two secondary clarifiers prior to being pumped to the Aroostook River as previously described.

2. PERMIT SUMMARY

a. Terms and Conditions - This permitting action is carrying forward all the terms and conditions of the May 17, 2007, permit except that this permit is:

1) Eliminating the chronic-no observed effect level (C-NOEL) limit of 2.6% (Tier I) and the acute no-observed effect level (A-NOEL) limit of 2.6% (Tier II) and the C-NOEL limit of 4.0% (Tier II) for the water flea as a statistical evaluation of the most recent 60 months of whole effluent toxicity (WET) test results indicates there is no longer a reasonable potential to exceed critical A-NOEL or C-NOEL ambient water quality thresholds.

2) Establishing a less stringent water quality based mass for total aluminum based on a revised statistical evaluation for the Aroostook River watershed

3) Eliminating technology based concentration limit for total aluminum based on Maine law 38 M.R.S.A. §464, ¶¶ K.

4) Eliminating the requirement for *E. coli* bacteria limits to apply on a year-round basis and only requiring limits seasonally (May 15 – September 30) as the Caribou Utility District (5 miles downstream of the McCains facility) no longer uses the Aroostook River as a public drinking water supply.

5) Establishing a more stringent monthly average water quality based limitation for total phosphorus based on new information obtained from a 2012 ambient water quality survey conducted by the Department. The survey indicates the discharge of total phosphorus from the PISD is contributing pH violations in the Aroostook River.

b. History: This section provides a summary of significant licensing/permitting actions and milestones that have been completed for McCain facility.

December 2, 1999 – The U.S. Environmental Protection Agency (USEPA) issued National Pollutant Discharge Elimination System (NPDES) permit #ME0036218 to McCain for a five-year term.

January 12, 2001 – The Department received authorization from the USEPA to administer the NPDES permit program in Maine, excluding areas of special interest to Maine Indian Tribes. From this point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System (MEPDES) program.

June 11, 2002 – The Department issued WDL Renewal and Modification #W008085-5N-C-M / MEPDES permit #ME0036218 to McCain for a five-year term. The 6/11/02 WDL/Permit superseded WDL #W008085-5N-A-N issued on July 22, 1999.

April 10, 2006 – The Department modified the 6/11/02 permit to incorporate testing requirements of Department rule 06-096 CMR, Chapter 530, *Surface Water Toxics Control Program.*

2. PERMIT SUMMARY (cont'd)

May 17, 2007 –The Department issued combination WDL #W008085-5N-D-R / MEPDES #ME0036218 for a five-year term.

December 30, 2011 – McCain submitted a timely and complete application to renew combination WDL/MEPDES permit.

February 7, 2012 – The Department issued a minor revision to the 5/17/2007 permit that reducing the monitoring frequency for mercury from 1/Quarter to 1/Year.

3. CONDITIONS OF PERMIT

Maine law, 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 Department rule 06-096 CMR Chapter 530, *Surface Water Toxics Control Program,* require the regulation of toxic substances not to exceed levels set forth in Department rule 06-096 CMR Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants*, and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

4. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S.A., Section 467 subsection C (1)(d) classifies the Aroostook River from its confluence with Presque Isle Stream to a point located 3.0 miles upstream of the former intake of the Caribou water supply, including all impoundments, which includes the receiving water at the point of discharge, as Class C waters. Maine law, 38 M.R.S.A., Section 465(4) describes the standards for Class C waters as follows:

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

B. The dissolved oxygen content of Class C water may be not less than 5 parts per million or 60% of saturation, whichever is higher, except that in identified salmonid spawning areas where water quality is sufficient to ensure spawning, egg incubation and survival of early life stages, that water quality sufficient for these purposes must be maintained. In order to provide additional protection for the growth of indigenous fish, the following standards apply.

(1) The 30-day average dissolved oxygen criterion of a Class C water is 6.5 parts per million using a temperature of 22 degrees centigrade or the ambient temperature of the water body, whichever is less, if:

4. RECEIVING WATER QUALITY STANDARDS (cont'd)

(a) A license or water quality certificate other than a general permit was issued prior to March 16, 2004 for the Class C water and was not based on a 6.5 parts per million 30-day average dissolved oxygen criterion; or

(b) A discharge or a hydropower project was in existence on March 16, 2005 and required but did not have a license or water quality certificate other than a general permit for the Class C water. This criterion for the water body applies to licenses and water quality certificates issued on or after March 16, 2004.

(2) In Class C waters not governed by subparagraph (1), dissolved oxygen may not be less than 6.5 parts per million as a 30-day average based upon a temperature of 24 degrees centigrade or the ambient temperature of the water body, whichever is less. This criterion for the water body applies to licenses and water quality certificates issued on or after March 16, 2004. The department may negotiate and enter into agreements with licensees and water quality certificate holders in order to provide further protection for the growth of indigenous fish. Agreements entered into under this paragraph are enforceable as department orders according to the provisions of sections 347-A to 349.

Between May 15th and September 30th, the number of Escherichia coli bacteria of human and domestic animal origin in Class C waters may not exceed a geometric mean of 126 per 100 milliliters or an instantaneous level of 236 per 100 milliliters. In determining human and domestic animal origin, the department shall assess licensed and unlicensed sources using available diagnostic procedures. The board shall adopt rules governing the procedure for designation of spawning areas. Those rules must include provision for periodic review of designated spawning areas and consultation with affected persons prior to designation of a stretch of water as a spawning area.

C. Discharges to Class C waters may cause some changes to aquatic life, except that the receiving waters must be of sufficient quality to support all species of fish indigenous to the receiving waters and maintain the structure and function of the resident biological community. This paragraph does not apply to aquatic pesticide or chemical discharges approved by the department and conducted by the department, the Department of Inland Fisheries and Wildlife or an agent of either agency for the purpose of restoring biological communities affected by an invasive species.

Maine law 38 M.R.S.A., §464(4)(A)(5) states that discharges fresh waters shall not cause the pH of the receiving water to fall outside of the range of 6.0 – 8.5 standard units.

5. RECEIVING WATER QUALITY CONDITIONS

The State of Maine 2012 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 all of Maine's fresh waters as, "*Category 4-A: Waters Impaired With Impaired Use, TMDL Completed, Waters Impaired by Atmospheric Deposition of Mercury*. The report states the impairment is caused by atmospheric deposition of mercury; a regional scale TMDL has been approved. Maine has a fish consumption advisory for fish taken from all freshwaters due to mercury. Many waters and many fish from any given water, do not exceed the action level for mercury. However, because it is impossible for someone consuming a fish to know whether the mercury level exceeds the action level, the Maine Department of Health and Human Services decided to establish a statewide advisory for all freshwater fish that recommends limits on consumption. Maine has already instituted statewide programs for removal and reduction of mercury sources.

Pursuant to Maine law, 38 M.R.S.A. §420(1-B)(B), "a facility is not in violation of the ambient criteria for mercury if the facility is in compliance with an interim discharge limit established by the Department pursuant to section 413 subsection 11." The Department has established interim average and maximum mercury concentration limits for this facility and the permittee has been in compliance with said limits. See the discussion in section 6(k) of this Fact Sheet.

Historic Water Quality Assessment/Modeling

The Aroostook River Basin is the largest sub-basin of the St. John River lying almost entirely within the State of Maine. The river segment of interest on the Aroostook begins in Ashland and flows to Washburn, Presque Isle, Caribou, Fort Fairfield and eventually the international border. In this segment of interest, there are seven point source discharges licensed to discharge organic waste loads to the Aroostook River: Ashland Water and Sewer District (AWSD), Town of Washburn, Presque Isle Sewer District (PISD), Caribou Utilities District (CUD), Limestone Water & Sewer District (LWSD), Fort Fairfield Utilities District (FFUD), and McCain Foods, USA, Inc. (McCain). Additionally, two dams significantly impound water in this river segment. The Caribou dam is located approximately 15 river miles upstream of the international border and impounds water 4.5 river miles upstream of the international border. The Tinker dam is located in Canada, but impounds water 5 river miles upstream of the international border.

A study of the Aroostook River from Ashland to the United States-Canadian border (58 miles) began in the summer of 2001 involving the Department and a number of stakeholders, including McCain. Two data sets were collected in August of 2001 to calibrate and verify a water quality model, and in September 2004, the Department summarized the findings in a report entitled, *Aroostook River Modeling Report, Final Sept 2004* ("Modeling Report").

5. RECEIVING WATER QUALITY CONDITIONS

The Department has not established numeric nutrient criteria at this time, specifically for phosphorous. The Department is in the process of developing nutrient criteria (as required by the USEPA), methodologies for quantitatively evaluating benthic-attached algae, and developing water classification specific (Class A, Class B, and Class C) chlorophyll-a standards for Maine waters. These criteria and standards are anticipated to be finalized in 2016-2017.

The Department's Division of Environmental Assessment (DEA) evaluated the 2001 Aroostook River data, calibrated and verified the Aroostook River water quality model and published the 2004 Modeling Report, certain assumptions were incorporated into the model to predict water quality conditions, such as utilizing a range of 8 to 12 ug/L for chlorophyll-a as the likely threshold level for algae blooms. Additionally, "there is currently no precedent on threshold levels of benthic algae where designated uses become inhibited, but it is likely that this could also be an issue on the Aroostook River after the nutrient criteria are developed…." (Modeling Report, p.51) In the Executive Summary of the Modeling Report (see #11 and #12), the Department concluded that "An additional data set should be taken at reduced point source phosphorous inputs" and "Total phosphorous license allocations for point sources should be re-evaluated by the model after collection of the additional data set recommended and nutrient criteria development are final." The Department stated in its response to comment #11 (see page 4 of the Modeling Report, *Response to Comments*), that "it [i]s important to make all stakeholders aware of the nutrient issue on the Aroostook River and give some idea for ballpark estimates of phosphorous allocations, given the current science and knowledge of this issue."

The Department concluded in the Modeling Report that both 2001 data sets experienced chlorophyll-a levels exceeding the upper range of the 8 to 12 µg/L threshold from above the Caribou dam to the international border, and that algae blooms were projected for 13 to 23 miles of the river from Maysville to the international border, with chlorophyll-a levels as high as 17 µg/L. The model predicted that both minimum dissolved oxygen criteria and monthly average dissolved oxygen criteria (6.5 parts per million) should be met everywhere on the Aroostook River. Additionally, the Modeling Report stated that "Although not quantitatively sampled, large levels of benthic algae were observed in the Aroostook River during the 2001 surveys. The benthic algae were evident from the confluence of the Presque Isle Stream to the head of the Caribou dam impoundment, but most abundant from below the Caribou dam to the head of the Tinker Dam impoundment in Fort Fairfield." The Modeling Report stated that dissolved oxygen data collected in 2001 was characterized by large diurnal fluctuations due to the significant growths of both bottom-attached (benthic) and floating algae (phytoplankton)." There is a trend of less fluctuation (generally around 1-2 ppm) above the major point source discharges as compared to average diurnal fluctuations below the major point source discharges (ranging from 5 to 9 ppm in shallower flowing sections and 1 to 4 ppm in impoundments).

5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

Phosphorous is ordinarily the limiting nutrient in fresh water systems, which must be reduced in order to alleviate eutrophication. Component analysis was undertaken in the 2004 Modeling Report by comparing input loads of point and non-point sources of ultimate BOD and total phosphorous. The analysis demonstrated that at 7Q10 river conditions, McCain and PISD were the major sources of phosphorous in the river, assuming that both were discharging at permitted flows with contributions of 43% and 17% of the total river phosphorous load, respectively. See Figure 16 of the Modeling Report. Assuming that all dischargers were discharging their permitted BOD_5 loads at 7Q10 flow, McCain, LWSD, CUD, and PISD are all significant inputs with contributions of 29%, 15%, 15%, and 14%, respectively, of the total ultimate BOD load. For both phosphorous and BOD, base flow non-point source and background sources are not significant, accounting collectively for 4% and 13% of the total river load for phosphorous and BOD, respectively. See Figure 17 of the Modeling Report.

Different levels of point source reductions were investigated to estimate the amount needed to alleviate eutrophication on the Aroostook River, given the model assumptions described above. See Table 10 of the Modeling Report. Large reductions of point source phosphorous were recommended to reduce algae to a non-eutrophic state. Model prediction runs undertaken with reduced phosphorous inputs from McCain and PISD, which collectively have been identified as the two largest sources of phosphorous to the river, provide guidance as to the necessary reductions. The model runs suggested that a total phosphorous effluent mass limit for the McCain and PISD facilities based upon permitted flow and a total phosphorous concentration of 0.5 ppm would result in a maximum chlorophyll-a concentration of 9 ppb, which approaches the lower end of the 8-12 ppb range at which algae blooms are expected in the river.

Due to uncertainties in final nutrient criteria and how these final criteria will affect the 2004 Modeling Report results, the May 17, 2007 permit carried forward the seasonal (June 1 – September 30) weekly average total phosphorous mass and concentration limits of 91 lbs./day and 6.6 mg/L for both Tier #1 and Tier #2 of the McCain with a minimum monitoring frequency requirement of three times per week.

Current Water Quality Assessment/Modeling

The Department conducted two separate studies of the Aroostook River in July-August, 2012 to update its evaluation of nutrient enrichment on the river and published the results in a report entitled, *Aroostook River Data Report, April 2013*. The biological monitoring results show that the river is enriched with nutrients, but is remarkably resilient and supported relatively healthy aquatic life communities (Table 1 of the report). All the biological monitoring samples for macroinvertebrates and algae attained class. The pH was greater than the pH criterion of 6.5-8.5 for four samples collected during the late morning or early afternoon, particularly downstream of Presque Isle. The percent cover of filamentous algae > 2 cm in length was not bad, but looked ready to bloom if water levels dropped further.

5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

Sample results confirm the problems with pH (Figure 4). During a July 24-26 sampling trip, the Department measured early morning and afternoon DO and pH, along with other water quality parameters, for three consecutive days. Upstream of Presque Isle, the data show that the river had small diurnal swings with moderate peaks in DO (≤9.63 ppm) and pH (≤8.27). Sample locations further downstream from Presque Isle center indicate algae is likely removing phosphorus from the water by the time it reached the downstream sample locations. Downstream of Presque Isle and Caribou, nutrient enrichment increased production of algae and plants, which caused larger swings and higher peaks in DO (10.08-13.63 ppm) and pH (8.59-9.11). pH values exceeded the 8.5 criterion at seven locations on the Aroostook River downstream of Presque Isle and Caribou. The high pH values downstream are not natural based on the evidence that the upstream sample points did not have pH >8.5 and the high pH downstream was caused by algae and aquatic plants. The alkalinity from the region's calcium-rich soils contributed to the high pH values and made the river more susceptible to pH exceedances.

The 2013 data report indicates on 7/30/20, there were a lot of nutrients being discharged into the river in the Presque Isle area. Upstream of Presque Isle, the total phosphorus concentration was 9 µg/L compared to 93 and 80 µg/L downstream of Presque Isle. The large ortho-phosphorus concentrations from the same date suggest that the source was a point source discharge. The total phosphorus concentrations were comparable upstream and downstream of Presque Isle on 8/27. The McCain potato processing plant was operating in July but was not discharging into the Aroostook River in late August when the second batch of samples were collected. During the July 24-26 sampling trip, all total phosphorus samples collected in the Aroostook River were <33 µg/L. During the same trip, samples collected total phosphorus samples from three major tributaries ranging from 14 ug/L to 32 µg/L. There is great potential for phosphorus enrichment from the agriculturally impacted tributaries during storm events. Major conclusions and recommendations from the report were as follows:

- Dissolved oxygen criterion was met throughout the river with diurnal swings over 5 mg/L.
- Chlorophyll *a* exceeded 8 µg/L within the Caribou dam and Tinker dam impoundments.
- Although pH was not measured during the 2001 field survey, readings were taken during a transect survey in 2002 and included in the report. Observed pH levels exceeded criterion of 8.5 on four of eight river sites. The report concluded that the elevated pH was due to the diurnal algal growth kinetics.
- High phosphorus concentrations measured during the field survey and elevated when modeled during critical water quality conditions are attributed to point source discharges.
- Collective point source phosphorus reductions of greater than 50% from current amounts are needed to eliminate algae blooms.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Applicability of National Effluent Guidelines: Title 40, Part 407, *Canned and Preserved Fruits and Vegetables Processing Point Source Category*, Subpart D, *Frozen Potato Products Subcategory*, of the Code of Federal Regulations applies to the discharge from the McCain facility. Effluent limitation guidelines for BOD_5, TSS, and pH, which represent the standards of performance for new sources are promulgated at 40 CFR Part 407.45, and were utilized by the Department in the previous two licensing actions.

b. Tiered Limits: The previous permitting action established two tiers of effluent limitations: Tier #1 represents current production levels and Tier #2 represents proposed production levels following upgrade of the facility as described in Section 2 of this Fact Sheet. As of the date of this permitting action, McCain has not completed the upgrade of the treatment facility. However, McCain maintains the company's continued intention to expand the facility to process more potatoes. Therefore, this permitting action is carrying forward two tiers of effluent limitations and monitoring requirements for current conditions and the proposed productions levels following facility expansion (Phase II build-out).

Tier #1 limitations and monitoring requirements are effective beginning upon issuance of this permit and remain in effect until such time that McCain notifies the Department of the completion of the Phase II expansion and that the facility is prepared to increase average production above 2,923,640 lbs./day. The previous permitting action utilized McCain's projected (Tier II) monthly average and daily maximum production figures of 4,670,000 lbs./day and 6,110,000 lbs./day, respectively, to calculate applicable loading limits for the discharge.

The previous permitting action established separate outfall identifiers for Tier #1 (Outfall #001) and Tier #2 (Outfall #002) conditions. In this permitting action, the Department is identifying that there is no physical change in the outfall structure associated with the Phase II facility expansion. However, for administrative purposes, this permitting action is carrying forward separate outfall identifiers of #001A and #002A for Tier #1 and Tier #2 conditions, respectively, following the Department's standard outfall pipe identifier convention.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

c. Flow: The previous permitting action established, and this permitting action is carrying forward, a monthly average flow limitation of 2.5 million gallons per day (MGD) for Tier #1 based on the hydraulic design capacity of the existing waste water treatment facility.

A review of the monthly Discharge Monitoring Reports (DMRs) submitted to the Department for the period January 2011 – October 2014 indicates flow values have been reported as follows:

Flow (DMRs = 45)

Value	Limit (MGD)	Range (MGD)	Mean (MGD)
Monthly Average	2.5	0.604 -1.935	1.66
Daily maximum	Report	1.716 -2.197	2.45

The previous permitting action established, and this permitting action is carrying forward, a monthly average flow limitation of 4.0 MGD for Tier #2 based on the hydraulic design capacity of the proposed upgrade of the waste water treatment facility.

d. Dilution Factors: Dilution factors associated with the permitted discharge flow of 2.5 MGD for Tier #1 were derived in accordance with Department rule, 06-096 CMR, Chapter 530 Section 4.A *Surface Water Toxics Control Program* and were calculated as follows.

Acute: 1Q10 = 126 cfs[(1)] $\Rightarrow \frac{(126\ \text{cfs})(0.6464) + (2.5\ \text{MGD})}{(2.5\ \text{MGD})} = 34{:}1$

Chronic: 7Q10 = 150 cfs[(1)] $\Rightarrow \frac{(150\ \text{cfs})(0.6464) + (2.5\ \text{MGD})}{(2.5\ \text{MGD})} = 40{:}1$

Harmonic Mean = 983 cfs[(1)] $\Rightarrow \frac{(983\ \text{cfs})(0.6464) + (2.5\ \text{MGD})}{(2.5\ \text{MGD})} = 255{:}1$

Footnotes:

(1) Flows were determined by a review of 2011 gauge data evaluate by the Department.

Department rule Chapter 530 Section 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.*

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

The Department's Division of Environmental Assessment has determined that the outfall structure and diffuser associated with this discharge achieves complete and rapid mixing of the effluent with the receiving waters. Therefore, the Department is utilizing the entire 1Q10 stream design flow in acute evaluations.

Dilution factors associated with the permitted discharge flow of 4.0 MGD for Tier #2 were derived in accordance with Department rule, 06-096 CMR, Chapter 530 Section 4.A *Surface Water Toxics Control Program* and were calculated as follows.

Acute: 1Q10 = 126 cfs $\Rightarrow \frac{(126 \text{ cfs})(0.6464) + (4.0 \text{ MGD})}{(4.0 \text{ MGD})} = 21{:}1$

Chronic: 7Q10 = 150 cfs $\Rightarrow \frac{(150 \text{ cfs})(0.6464) + (4.0 \text{ MGD})}{(4.0 \text{ MGD})} = 25{:}1$

Harmonic Mean = 983 cfs $\Rightarrow \frac{(983 \text{ cfs})(0.6464) + (4.0 \text{ MGD})}{(4.0 \text{ MGD})} = 160{:}1$

e. Biochemical Oxygen Demand (BOD_5):

Tier #1

The following table summarizes the year-round effluent limits established in the previous permit for BOD_5 for Tier #1:

BOD_5	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
	497 lbs./day	994 lbs./day	36 mg/L	72 mg/L

The previous permitting action established technology-based monthly average and daily maximum BOD_5 mass limits based on the new source performance standards (NSPS) at 40 CFR Part 407.45. The guidelines are expressed in terms of pounds of pollutant per 1,000 pounds of raw material (lbs./lbs. production). The guidelines for BOD_5 are 0.34 lbs./per 1,000 lbs. raw material (daily maximum) and 0.17 lbs./1,000 lbs. (monthly average). The Department utilized average and maximum production values of 2,923,640 lbs./day and 3,927,270 lbs./day, respectively, in calculating the previous limits. The previous permitting action established monthly average and daily maximum concentration limits by back-calculating from the applicable mass limitations.

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

The *Aroostook River Modeling Report, Final Sept 2004* stated that McCain is a significant input (29%) of the total ultimate BOD load to the receiving water (using Tier II production figures). However, the Modeling Report identifies that the statutory minimum dissolved oxygen criteria for Class C and Class B waters should be met everywhere on the Aroostook River, even with all dischargers inputting licensed loads at 7Q10 flow conditions. The Modeling Report does not recommend establishing water quality-based effluent limits for BOD_5. Therefore, this permitting action is carrying forward technology-based effluent limits for BOD_5 based on the NSPS at 40 CFR Part 407.45 and the long-term average production rate for the facility. The previous permitting action established both monthly average and daily maximum limitations based on long-term average production rate is consistent with USEPA guidance on developing technology-based effluent limitations.

With a long-term average production figure of 2,923,640 lbs./day, monthly average and daily maximum technology-based mass limitations for BOD_5 for Tier #1 were derived as follows:

Daily Maximum: $\frac{(2{,}923{,}640 \text{ lbs./day})(0.34)}{1{,}000} = 994 \text{ lbs./day}$

Monthly Average: $\frac{(2{,}923{,}640 \text{ lbs./day})(0.17)}{1{,}000} = 497 \text{ lbs/day}$

Department rule Chapter 523, *Waste Discharge License Conditions*, Section 6, *Calculating NPDES permit conditions*, subsection f(2) states that "…*pollutants limited in terms of mass additionally may be limited in terms of other units of measurement and the permit shall require the permittee to comply with both limitations."* To ensure best practicable treatment is being applied to the discharge from McCain at all times, the Department has made a best professional judgment determination to carry forward the monthly average and daily maximum technology-based concentrations limits for BOD_5. The concentration limits were derived by back-calculating values from the applicable mass limits calculated above and the monthly average flow limit established in Section 6 a. of this fact sheet. A review of the discharge flow data as summarized in Section 6 a. of this fact sheet indicates the monthly average flow has an arithmetic mean of 1.67 MGD, which is less than the design capacity of 2.5 MGD. As not to penalize the permittee for operating at flows less than the permitted flow and to encourage water conservation at the facility, the Department established BOD_5 and TSS concentration limits based on a factor of 1.5 as was done in the previous permitting action. Therefore, the monthly average and daily maximum BOD_5 concentration limits were derived as follows:

Daily Maximum: $\frac{(994 \text{ lbs/day})(1.5)}{(8.34)(2.5 \text{ MGD})} = 72 \text{ mg/L}$

Monthly Average: $\frac{(497 \text{ lbs/day})(1.5)}{(8.34)(2.5 \text{ MGD})} = 36 \text{ mg/L}$

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

A review of the monthly average flow data as reported on the monthly DMRs submitted to the Department for the period January 2011 – October 2014 indicates values have been reported as follows:

BOD mass (DMRs = 45)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly Average	497	35 - 266	116
Daily Maximum	994	47 – 1,202	252

BOD concentration (DMRs = 45)

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly Average	36	2.2 – 17	7
Daily Maximum	72	3.2 - 88	17

The previous permit established a monitoring frequency of three times per week (3/Week) for BOD_5 for both Tier #1 and Tier #2 based on Department best professional judgment of an appropriate frequency to determine on-going compliance with the limits in this permit.

Minimum monitoring frequency requirements in MEPDES permits are prescribed by 06-096 CMR Chapter 523§5(i). The USEPA has published guidance entitled, *Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies* (USEPA Guidance April 1996). In addition, the Department has supplemented the EPA guidance with its own guidance entitled, *Performance Based Reduction of Monitoring Frequencies - Modification of EPA Guidance Released April 1996* (Maine DEP May 22, 2014). Both documents are being utilized to evaluate the compliance history for each parameter regulated by the previous permit to determine if a reduction in the monitoring frequencies is justified.

Although EPA's 1996 Guidance recommends evaluation of the most current two-years of effluent data for a parameter, the Department is considering 42 months of data (January 2011 – June 2014). A review of the monitoring data for BOD indicates the ratios (expressed in percent) of the long term effluent average to the monthly average limits can be calculated as 23%. According to Table I of the EPA Guidance, a 3/Week monitoring requirement can be reduced to 1/Week. Therefore, this permitting action is reducing the monitoring frequency for BOD to 1/Week.

Tier #2

The following table summarizes the effluent limits established for BOD_5 in the previous permit.

BOD_5	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
	794 lbs./day	1,588 lbs./day	36 mg/L	71 mg/L

The previous permitting action utilized McCain's projected monthly average production figures of 4,670,000 lbs./day to calculate monthly average and daily maximum loading limits for BOD_5.

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

Monthly average and daily maximum technology-based BOD_5 mass and concentration limitations for Tier #2 being carried forward from the previous permitting action were derived as follows:

Daily Maximum Mass: $\frac{(4{,}670{,}000 \text{ lbs./day})(0.34)}{1{,}000} = 1{,}588$ lbs./day

Monthly Average Mass: $\frac{(4{,}670{,}000 \text{ lbs./day})(0.17)}{1{,}000} = 794$ lbs./day

Daily Maximum Conc.: $\frac{(1{,}588 \text{ lbs/day})(1.5)}{(8.34)(4.0 \text{ MGD})} = 71$ mg/L

Monthly Average Conc.: $\frac{(794 \text{ lbs/day})(1.5)}{(8.34)(4.0 \text{ MGD})} = 36$ mg/L

Given the facility has not realized the Tier II production and associated waste water flows and loads to the treatment facility, this permit is carrying forward the 3/Week monitoring frequency for BOD until the permittee has generated an effluent data set at Tier II that is statistically defensible for evaluation.

f. Total Suspended Solids (TSS): The *Aroostook River Modeling Report, Final Sept 2004* does not recommend establishing water quality-based effluent limits for TSS. Therefore, this permitting action is carrying forward the technology-based effluent limits for TSS based on the NSPS at 40 CFR Part 407.45 and the long-term average production rate for the facility. The NSPS guidelines for TSS are 0.55 lbs./per 1,000 lbs. raw material (monthly average) and 1.10 lbs./1,000 lbs. (daily maximum).

Tier #1

The following table summarizes the year-round effluent limits established in the previous permit for TSS for Tier #1:

TSS	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Tier #1	1,608 lbs./day	3,216 lbs./day	116 mg/L	231 mg/L

The technology-based, monthly average and daily maximum mass and concentration limits for Tier #1 are being carried forward in this permitting action and were derived as follows:

Monthly Average Mass: $\frac{(2{,}923{,}640 \text{ lbs./day})(0.55)}{1{,}000} = 1{,}608$ lbs./day

Monthly Average Conc.: $\frac{(1{,}608 \text{ lbs/day})(1.5)}{(8.34)(2.5 \text{ MGD})} = 116$ mg/L

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

Daily Maximum: $\frac{(2{,}923{,}640 \text{ lbs./day})(1.10)}{1{,}000} = 3{,}216 \text{ lbs./day}$

Daily Maximum: $\frac{(3{,}216 \text{ lbs/day})(1.5)}{(8.34)(2.5 \text{ MGD})} = 231 \text{ mg/L}$

A review of the monthly average flow data as reported on the monthly DMRs submitted to the Department for the period January 2011 – October 2014 indicates values have been reported as follows:

TSS mass (DMRs = 45)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly Average	1,608	61 - 869	326
Daily Maximum	3,216	189 – 2,731	708

TSS concentration (DMRs = 45)

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly Average	116	4.5 – 53	21
Daily Maximum	231	12 - 175	50

As with BOD, the previous permit established a monitoring frequency of three times per week (3/Week) for TSS for both Tier #1 and Tier #2 based on Department best professional judgment of an appropriate frequency to determine on-going compliance with the limits in the permit.

The Department considered the most current 45 months of data (January 2011 – October 2014) as it is representative of the timeframe for the previous permitting action.
A review of the monitoring data for TSS indicates the ratios (expressed in percent) of the long term effluent average to the monthly average limits can be calculated as 20%. According to Table I of the EPA Guidance, a 3/Week monitoring requirement can be reduced to 1/Week. Therefore, this permitting action is reducing the monitoring frequency for TSS to 1/Week.

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

Tier #2

The following table summarizes the effluent limits established in the previous permit for TSS for Tier #2:

TSS	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum
Tier #2	2,569 lbs./day	5,137 lbs./day	116 mg/L	231 mg/L

Based on the projected long-term average production rate for Tier #2, monthly average and daily maximum technology-based TSS mass and concentration limitations for Tier #2 were derived as follows:

Daily Maximum Mass: $\frac{(4{,}670{,}000 \text{ lbs./day})(1.1)}{1{,}000} = 5{,}137 \text{ lbs./day}$

Monthly Average Mass: $\frac{(4{,}670{,}000 \text{ lbs./day})(0.17)}{1{,}000} = 2{,}569 \text{ lbs./day}$

Daily Maximum Conc.: $\frac{(5{,}137 \text{ lbs/day})(1.5)}{(8.34)(4.0 \text{ MGD})} = 231 \text{ mg/L}$

Monthly Average Conc.: $\frac{(2{,}569 \text{ lbs/day})(1.5)}{(8.34)(4.0 \text{ MGD})} = 116 \text{ mg/L}$

Given the facility has not realized the Tier II production and associated waste water flows and loads to the treatment facility, this permit is carrying forward the 3/Week monitoring frequency for TSS until the permittee has generated an effluent data set at Tier II that is statistically defensible for evaluation.

g. Settleable Solids – The previous permitting action established a technology-based daily maximum concentration limit of 0.3 ml/L for settleable solids for both Tier #1 and Tier #2, which is considered a best practicable treatment limitation (BPT) for secondary treated wastewater.

A review of the monthly DMR data for the period January 2011 – October 2014 indicates settleable solids have been reported as follows:

Settleable solids concentration (DMRs 45)

Value	Limit (ml/L)	Range (ml/L)	Average (ml/L)
Daily Maximum	0.3	0.1 - 0.3	0.11

The Department considered the most current 45 months of data (January 2011 – October 2014) as it is representative of the timeframe for the previous permitting action.
A review of the monitoring data for SS indicates the ratios (expressed in percent) of the long term effluent average to the monthly average limits can be calculated as 37%. According to Table I of the EPA Guidance, a 3/Week monitoring requirement can be reduced to 1/Week. Therefore, this permitting action is reducing the monitoring frequency for SS to 1/Week.

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

Given the facility has not realized the Tier II production and associated waste water flows and loads to the treatment facility, this permit is carrying forward the 3/Week monitoring frequency for SS until the permittee has generated an effluent data set at Tier II that is statistically defensible for evaluation.

h. Total Residual Chlorine (TRC): The previous permitting action established year-round monthly average and daily maximum technology (BPT)-based concentration limitations of 0.1 mg/L and 0.3 mg/L, respectively, for TRC. Limitations on TRC are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. Department licensing/permitting actions impose the more stringent of either a water quality-based or BPT-based limit.

With acute and chronic dilution factors associated with Tier #1 of this permit, end-of-pipe acute and chronic water quality-based concentration thresholds for Tier #1 may be calculated as follows:

Tier #1

			Calculated	
Acute (A) Criterion	Chronic (C) Criterion	A & C Dilution Factors	Acute Threshold	Chronic Threshold
0.019 mg/L	0.011 mg/L	34:1 (A) 40:1 (C)	0.65 mg/L	0.44 mg/L

With acute and chronic dilution factors associated with Tier #2 of this permit, end-of-pipe acute and chronic water quality-based concentration thresholds for Tier #2 may be calculated as follows:

Tier #2

			Calculated	
Acute (A) Criterion	Chronic (C) Criterion	A & C Dilution Factors	Acute Threshold	Chronic Threshold
0.019 mg/L	0.011 mg/L	21:1 (A) 25:1 (C)	0.40 mg/L	0.28 mg/L

The Department has established a daily maximum BPT limitation of 1.0 mg/L for facilities that disinfect their effluent with elemental chlorine or chlorine-based compounds. For facilities that need to dechlorinate the discharge in order to meet water quality based thresholds, the Department has established daily maximum and monthly average BPT limits of 0.3 mg/L and 0.1 mg/L, respectively. McCain dechlorinates the effluent prior to discharge in order to consistently achieve compliance with the chronic water quality-based threshold. The daily maximum and monthly average BPT-based limits of 0.3 mg/L and 0.1 mg/L, respectively, are more stringent than the water quality-based thresholds above and are therefore being carried forward in this permitting action for both Tier #1 and Tier #2.

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

A review of the monthly DMR data for the period January 2011 – October 2014 indicates TRC values have been reported as follows:

Total residual chlorine (DMRs = 45)

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly Average	0.1	0.02 – 0.1	0.06
Daily Maximum	0.3	0.08 – 0.22	0.12

This permitting action is carrying forward the monitoring frequency of three times per week (3/Week) for total residual chlorine for both Tier #1 and Tier #2 based on Department best professional judgment of an appropriate frequency to determine on-going compliance with the limits in this permit.

i. pH: The previous permitting action established a technology based pH range limitation of 6.0 – 9.0 standard units for both Tier #1 and Tier #2 based on the NSPS standards promulgated at 40 CFR Part 407.45, which is being carried forward in this permitting action.

pH (DMRs = 45)

Value	Limit (su)	Minimum (SU)	Maximum (su)
Range	6.0 – 9.0	6.2	8.6

This permitting action is carrying forward the monitoring frequency of three times per week (3/Week) for pH for both Tier #1 and Tier #2 based on Department best professional judgment of an appropriate frequency to determine on-going compliance with the limits in this permit.

j. Total Phosphorus (Total-P): The previous permitting action established, for both Tier #1 and Tier #2, seasonal (June 1 – September 30) weekly average water quality-based mass and concentration limits of 91 lbs./day and 6.6 mg/L, respectively, for total-P. In addition, the previous permitting action required the permitte to report the monthly average and daily maximum mass and concentration of total P discharged. These limits and monitoring requirements were originally established in a July 22, 1999, licensing action, which stated that the limits were derived based on USEPA guidance of 100 ug/L taken from *Quality Criteria for Water, 1986*. The limitations and monitoring requirement were established based on past in-stream sampling results for phosphorus, modeling efforts by the Department for the Aroostook River, and Department experience with dissolved oxygen deficits on other waterbodies in the State associated with the discharge of phosphorus at low dilutions.

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

The 1999 licensing action for the McCain facility contained the following italicized text and calculations;

"Potato processing industries typically have waste waters high in phosphates. One reason for this is because of the addition of sodium acid pyrophosphate in the blanching process. This chemical acts as a preservative and prevents the potatoes from turning gray during processing. At this time, there are no criteria continuous concentration (CCC-chronic) or criteria maximum concentration (CMC-acute) established in EPA's Quality Criteria for Water, 1986 (Gold Book). Therefore, criteria of 100 ug/L for phosphorus is based upon available dilution and guidance provided in the Gold Book. Phosphorus limits in this license were calculated as follows:

Chronic dilution factor = 43.7:1
8.34 = Conversion factor
Calculated end-of-pipe concentration: (43.7)(100ug/l) = 4,370 ug/l = 4.37 mg/l
License concentration limit: (4.37 mg/L)(1.5[(1)]) = 6.55 mg/L ≈ 6.6 mg/L
License mass limit: (4.37 mg/l)(8.34)(2.5 MGD) = 91.1 lb/Day ≈ 91 lbs/day

The 2002 permitting action for the PISD facility contained the following italicized text and calculations;

In consideration of the Aroostook River Modeling Report, Final Sept 2004, comments from the permittee on the proposed draft permit issued on May 14, 2007, and lack of nutrient criteria at this time, this permitting action is establishing for the discharge to the Aroostook River a new, seasonal, water quality-based monthly average end-of-pipe concentration limit of 1.0 mg/L based on a Department best professional judgment determination and a monthly average total phosphorous mass limit of 19.2 lbs./day, which was derived as follows:

Monthly Average Mass Limit: (1.0 mg/L)(8.34 lbs./gallon)(2.31 MGD) = 19.2 lbs./day

A review of the daily maximum data as reported on the Discharge Monitoring Reports submitted to the Department for the period June 2011 – September 2014 indicates the McCain facility has reported values as follows

Total phosphorus – mass (DMRs = 15)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly Average	Report	46 – 76	62
Weekly Average	91	--	--
Daily Maximum	Report	75 – 118	96

Total phosphorus – concentration (DMRs = 16)

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly Average	Report	3.6 – 5.2	4.6
Weekly Average	6.6	--	--
Daily Maximum	Report	5.1 – 7.3	6.3

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

Given the close proximity of the discharges from the McCain Foods facility and Presque Isle Sewer District (approximately 1.0 miles apart) the Department is evaluating the impact of total phosphorus discharged from the two facilities collectively. The calculations are as follows:

Given
Flow limit = 4.81 MGD (2.5 MGD McCain + 2.31 MGD PISD)
7Q10 at McCain = 150 cfs or 96.8 MGD (based on 2011 statistical evaluation)
Background concentration of Total P = 0.009 mg/L (based on 2014 ambient data)
Critical Total P threshold = 0.10 mg/L (EPA Gold Book threshold)
Chronic dilution factor = 21:1

Find:

1. Does the combined discharge have a reasonable potential to exceed the threshold of 0.10 mg/L?
2. What is the allowable discharge of Total P mass from McCain and PISD combined?
3. What is the total P mass limit for each facility?

Solution:

1. Reasonable potential

What is remaining assimilative capacity: 0.100 mg/L – 0.010 mg/L = 0.090 mg/L

What is the weighted average concentration of Total P being discharged?

$$\frac{\text{McCain (2.5 MGD)(4.9 mg/L) + PISD (2.31 MGD)(0.33 mg/L)}}{\text{4.81 MGD}} = 2.7 \text{ mg/L}$$

What is the resultant instream concentration after rapid and complete mixing?

$$\frac{2.7 \text{ mg/L}}{21} = 0.13 \text{ mg/L}$$

Reasonable potential? **Yes**, as 0.13 mg/L > than assimilative capacity of 0.090 mg/L

2. Allowable discharge of Total P mass from McCain and PISD combined.

EOP concentration = [Dilution factor x 0.90 x AWQ goal] + [0.10 x AWQC goal]

EOP concentration = [(21 x 0.90 x 0.100 mg/L) + (0.10 x 0.100 mg/L)] = 1.90 mg/L

Monthly average mass limit: (4.81 MGD)(8.34 lbs/gal)(1.90 mg/L) = **76 lbs/day**

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

3. Total P mass limit for each facility

Based on the allocation established in the previous permitting actions for McCain and PISD, the facilities were limited to a total of 110 lbs/day, 91 lbs/day for McCain and 19 lbs/day for PISD. That apportions to 83% of the allocation to McCain and 17% of the allocation to PISD. To be consistent with previous allocations, this permitting action is establishing monthly average water quality based mass limitations for each facility as follows:

McCain: 76 lbs/day(0.83)= **63 lbs/day** resulting in a 28% reduction from the previous permit.

PISD: 76 lbs/day(0.17)= **13 lbs/day** resulting in a 32% reduction from the previous permit.

The Maine Potato Board recently announced it will partner with the Central Aroostook Soil & Water Conservation District (SWCD), McCain Foods USA, Maine Department of Transportation, Maine Department of Environmental Protection, Maine Department of Agriculture, Conservation & Forestry, St. John Valley SWCD, Southern Aroostook SWCD, Maine Association of Conservation Districts (MACD), and Maine Rural Water Association to create a public-private partnership between government and the potato industry to address soil erosion, soil health, and water quality within Aroostook County, Maine. The project goals are to reduce soil loss from potato fields, prevent sedimentation of public roads, ditches and rights-of-way, improve ambient water quality in rivers and tributary streams, and protect sources of public drinking supplies.

With the reduction in the water quality based limitations for total phosphorus and a proposed project to reduce non-point source run-off in the Aroostook River watershed during term of this permit, the Department believes there is a reasonable assurance the pH levels in Aroostook River below the McCain facility will achieve the pH range water quality standard of 6.0 – 8.5 standard units pursuant to Maine law. As part of an Adaptive Management Plan, the Department and the permitted facilities will continue to collect effluent and ambient data on environmental indicators to determine if the current limitations are sufficient to attain standards. If it is found standards are not being met, the Department reserves the right to reopen this permit (after proper notice to the permittee) pursuant to Special Condition I, *Reopening of Permit For Modifications*, to establish more stringent limitations and or monitoring requirements.

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

k. Mercury – Pursuant to *Certain deposits and discharges prohibited*, Maine law, 38 M.R.S.A. § 420 and *Waste discharge licenses*, 38 M.R.S.A. § 413 and *Interim Effluent Limitations and Controls for the Discharge of Mercury*, 06-096 CMR 519 (last amended October 6, 2001), the Department established a 1/Quarter monitoring frequency for total mercury.

The previous permitting action contained the following italicized text; *"Maine law, 38 M.R.S.A. §413 subsection 11 states, "The department shall establish and may periodically revise interim discharge limits, based on procedures specified by rule, for each facility licensed under this section and subject to this subsection in order to reduce the discharge of mercury over time and achieve the ambient water quality criteria established in section 420, subsection 1-B." Department rule Chapter 519, Interim Effluent Limitations and Controls for the Discharge of Mercury, Section 3 specifies that facilities required to conduct toxics testing, as McCain is, shall complete a minimum of four mercury tests to provide the Department with information on which to establish interim effluent limits for mercury. Therefore, this permitting action is establishing effluent mercury testing at a minimum frequency of once per calendar quarter during the initial 12-month period following issuance of the permit. Upon completion of mercury testing required in this permit, the Department will establish interim mercury concentration limits and notify the facility as specified in Chapter 519."*

The Department notified the permittee that interim average and maximum limits for mercury were established as 4.25 ng/L and 6.75 ng/L respectively, and a minimum monitoring frequency requirement of four (4) tests per year for mercury. On February 6, 2012, the Department issued a minor revision of the permit by reducing the monitoring frequency to 1/Year which is being carried forward in this permitting action. Maine law 38 M.R.S.A., §420 1-B,(B)(1) states that a facility is not in violation of the AWQC for mercury if the facility is in compliance with an interim discharge limit established by the Department pursuant to section 413, subsection 11. A review of the

Department's data base for the period April 2009 through January 2014 indicates the permittee has been in compliance with the interim limits for mercury as results have been reported as follows;

Mercury (n = 15)

Value	Limit (ng/L)	Range (ng/L)	Mean (ng/L)
Average	4.25	0.5 – 1.6	0.7
Maximum	6.75	0.5 – 1.6	0.7

l. Whole Effluent Toxicity (WET), Priority Pollutant, and Analytical Chemistry Testing: Maine law, 38 M.R.S.A., §414-A and §420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department rule, 06-096 CMR Chapter 530, *Surface Water Toxics Control Program* sets forth effluent monitoring requirements and procedures to establish safe levels for the discharge of toxic pollutants such that existing and designated uses of

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

surface waters are maintained and protected and narrative and numeric water quality criteria are met. Department rule 06-096 CMR Chapter 584, Surface *Water Quality Criteria for Toxic Pollutants*, sets forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET monitoring is required to assess and protect against impacts upon water quality and designated uses caused by the aggregate effect of the discharge on specific aquatic organisms. Acute and chronic WET tests are performed on invertebrate and vertebrate species. Priority pollutant and analytical chemistry testing is required to assess the levels of individual toxic pollutants in the discharge, comparing each pollutant to acute, chronic, and human health AWQC as established in Chapter 584.

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

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

Department rule Chapter 530 (1)(D) specifies the criteria to be used in determining the minimum monitoring frequency requirements for WET, priority pollutant and analytical chemistry testing. Based on the Chapter 530 criteria, the permittee's facility falls into the Level II frequency category as the facility has chronic dilution factors of ≥20:1 but <100:1 for Tier #1 (40:1) and Tier #2 (25:1). Chapter 530(1)(D)(1) specifies that routine screening and surveillance level testing requirements are as follows:

Screening level testing – Beginning 24 months prior to permit expiration and lasting through 12 months prior to permit expiration (Year 4 of the term of the permit) and every five years thereafter if a timely request for renewal has been made and the permit continues in force, or is replaced by a permit renewal containing this requirement the permittee shall initiate screening level WET testing as follows:

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

Surveillance level testing – Beginning upon permit issuance and lasting through 24 months prior to permit expiration (Years 1, 2 & 3 of the term of the permit) and commencing again 12 months prior to permit expiration (Year 5 of the term of the permit) the permittee shall initiate surveillance level WET testing as follows:

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

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

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

Department rule Chapter 530(1)(D)(3)(c) states in part, "*Dischargers in Level II may reduce surveillance testing to one WET or specific chemical series every other year provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedence as calculated pursuant to section 3(E).*"

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

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

WET evaluation

The previous permitting action erroneously established a C-NOEL limit of 2.6% for the water flea as a statistical evaluation of the WET data at that time indicate the discharge had a reasonable potential to exceed the critical C-NOEL thresholds of 2.1% (Tier #1) and 3.4% (Tier #2). The limit should have been established at 2.1%. On 1/21/15, the Department conducted a statistical evaluation on the most recent 60 months of WET data that indicates that the discharge does not exceed or have a reasonable potential (RP) to exceed the acute or chronic critical ambient water quality criteria (AWQC) thresholds for either Tier #1 or Tier #2 (Tier #1 – 2.9% and 2.5% – mathematical inverse of the acute dilution factor 34:1 and the chronic dilution factor 40:1 and Tier #2 – 4.8% and 4.0% respectively – mathematical inverse of the acute dilution factor 21:1 and the chronic dilution factor 25:1).

Given the absence of exceedences or reasonable potential to exceed critical WET thresholds, the C-NOEL limit for the water flea is no longer necessary and the permittee meets the surveillance level monitoring frequency reduction criteria found at Department rule Chapter 530(D)(3)(b). Therefore, this permit is reducing the surveillance level WET testing frequency to once every other year (1/2 Years) beginning upon permit issuance and lasting through 24 months prior to permit expiration (Years 1, 2 & 3 of the term of the permit) and commencing again 12 months prior to permit expiration (Year 5 of the term of the permit). Beginning 24 months prior to permit expiration and lasting through

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

12 months prior to permit expiration (Year 4 of the term of the permit) and every five years thereafter if a timely request for renewal has been made and the permit continues in force, or is replaced by a permit renewal containing this requirement, the permittee shall conduct screening level WET testing at a frequency of two times per year (2/Year).

In accordance with Department rule Chapter 530(2)(D)(4) and Special Condition H, *06-096 CMR 530(2)(D)(4) Statement For Reduced/Waived Toxics Testing* of this permit, the permittee must annually submit to the Department a written statement evaluating its current status for each of the conditions listed.

Chemical evaluation

06-096 CMR Chapter 530 §4(C), (promulgated on October 12, 2005) states *"The background concentration of specific chemicals must be included in all calculations using the following procedures. The Department may publish and periodically update a list of default background concentrations for specific pollutants on a regional, watershed or statewide basis. In doing so, the Department shall use data collected from reference sites that are measured at points not significantly affected by point and non-point discharges and best calculated to accurately represent ambient water quality conditions The Department shall use the same general methods as those in section 4(D) to determine background concentrations. For pollutants not listed by the Department, an assumed concentration of 10% of the applicable water quality criteria must be used in calculations."* The Department has limited information on the background levels of metals in the water column in the Aroostook River in the vicinity of the permittee's outfall. Therefore, a default background concentration of 10% of the applicable water quality criteria is being used in the calculations of this permitting action.

06-096 CMR Chapter 584(5)(B) states, "*Fresh water quality must be calculated using a pH of 7.0, a temperature of 25 degrees Celsius, and a hardness of 20 mg/L."* Chapter 584(5)(B) further notes, "*These characteristics, however, may vary depending on the location of the discharge. The relative criteria for a pollutant subject to these considerations may be recalculated in any given licensing proceeding using the actual local ambient physical water characteristics*." 06-096 CMR 530(4)(D) states, *"The Department may use available information to evaluate physical and chemical characteristics of a specific receiving water and adjust calculations of the degree to which they influence the relative toxicity of individual pollutants in that situation. The information may include tests conducted by the Department, the discharger or another organization, provided that approved methods are used for sample collection and analysis. Once being accepted by the Department as valid data, this information may be used in place of the assumptions used to develop statewide water quality criteria for the effected pollutants and discharger."*

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

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

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

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

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

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

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

In a letter dated September 21, 2000, to the Department, the Presque Isle Sewer District submitted eight and a half years (1990-1999) of quarterly test results (by season) of the background hardness of Presque Isle Stream in an effort have the Department consider a site specific hardness for hardness dependent metals. The arithmetic mean of the seasonal data points are as follows: Winter (62 mg/L), Spring (34 mg/L), Summer (66 mg/L) and Fall (40 mg/L). The Department took the data submitted by the PISD into consideration and made the determination that for hardness dependent metals, the applicable acute hardness for Presque Isle Stream at the point of discharge is 33 mg/L and the chronic hardness is 40 mg/L, and applicable limits for hardness dependent metals were established in PISD's September 30, 2002, MEPDES permit.

The Department has made a best professional judgment that the hardness data for Presque Isle Stream is a conservative assumption for the background hardness in the Aroostook River and is therefore being utilized for establishing limits for hardness dependent metals for dischargers in the Aroostook River watershed. Because only one hardness value can be entered into the Department DETOX program for statistically evaluating chemical

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

specific test results and establishing limitations for pollutant that have a reasonable potential or exceed AWQC, the Department is utilizing a watershed hardness value of 37 mg/L. The value is the arithmetic mean of the acute and chronic hardness values established for PISD's September 30, 2002, MEPDES permit.

See **Attachment F** of this Fact Sheet for Department guidance that establishes protocols for establishing waste load allocations. The guidance states that the most protective of water quality becomes the facility's allocation. According to the January 21, 2015 statistical evaluation (Report ID #771), the only pollutant of concern for the McCain facility is aluminum that is to be limited based on the individual allocation method as was the case in the May 2007 permitting action.

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

Individual allocation

Aluminum (Total)

The May 17, 2007, permit established a monthly average water quality based mass and concentration limitations of 63 lbs/day and 4.5 mg/L. The limitations were calculated as follows:

Given:

Permitted flow: 4.0 MGD
Chronic dilution factor: 46:1
Chronic AWQC: 87 ug/L or 0.087 mg/L
Background withheld (10% of AWQC) Reserve (15% of reserve)

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

EOP concentration = [(46 x 0.75 x 0.087 mg/L) + (0.25 x 0.087 mg/L)] = 3.024 mg/L

Monthly average mass limit: (4.0 MGD)(8.34 lbs/gal)(3.024 mg/L) = 63 lbs/day

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

A review of the monthly DMR data for the period July 2011 – September 2014 indicates total aluminum values have been reported as follows:

Total aluminum (DMRs=9) Mass

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly Average	63	4 - 38	15

Total copper (DMRs=9) Concentration

Value	Limit (mg/L)	Range (mg/L)	Mean (mg/L)
Monthly Average	4.5	0.3 – 2.3	1.0

For this permitting action the individual methodology remains applicable but a couple of the variables in the equation have changed based on new information. The 7Q10 of the Arootook River at the McCain facility has been reduced from 174 cfs to 150 cfs based on a 2011 statistical evaluation of gauge data for the Aroostook River. In addition, withholding of 15% of the AWQC for reserve capacity has been reduced to withholding 0%. On January 21, 2015, the Department conducted statistical evaluations based on 15% of the ambient water quality criteria reserve being withheld (Report ID 779) and 0% of the reserve of the criteria being withheld (Report ID 771) to determine if the unallocated assimilative capacity would avoid an exceedance or avoid a reasonable potential to exceed applicable ambient water quality criteria for toxic pollutants. Report ID 771 indicates McCain's would no longer has a reasonable potential to exceed the chronic ambient water quality criteria for copper. Therefore, the Department is utilizing the full 15% of the unallocated assimilative capacity in the statistical evaluation when establishing limits for toxic pollutants in waste discharge licenses for facilities in the Aroostook River watershed.

Report ID #771 indicates McCain Foods discharges approximately 85% of the aluminum discharged from all the facilities in the Aroostook River watershed. If one considers the segment methodology for establishing limitations in which permittee's receive a percentage of the total assimilative capacity based on their historic discharge, McCain Foods would receive an allocation of 70.1 lbs which is 85% of the total chronic assimilative capacity for the aluminum (83.1 lbs) at the mouth of the watershed in Fort Fairfield. The calculation is as follows:

$$(83.1 \text{ lbs/day})(0.85) = 70.1 \text{ lbs/day}$$

However, establishing a monthly average (chronic) limit of 70.1 lbs/day would exceed the AWQC for total aluminum at the McCain facility. In case such as this, the Department utilizes the individual allocation formula it has used in permitting actions since October 2005 taking into consideration background (10% of AWQC) and a reserve (0% of AWQC). The formula is as follows:

EOP concentration = [Dilution factor x 0.90 x AWQC] + [0.10 x AWQC]

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

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

Aluminum (Total):

Chronic AWQC= 87 ug/L or 0.087 mg/L
Chronic dilution factor = 25:1
EOP concentration = [Dilution factor x 0.90 x AWQC] + [0.10 x AWQC]

EOP = [25 x 0.90 x 0.087 mg/L] + [0.10 x 0.087 mg/L] = 1.96 mg/L

Monthly average mass limit: (4.0 MGD)(8.34 lbs/gal)(1.96 mg/L) = **65 lbs/day**

In May 2012, Maine law 38 M.R.S.A. §464, ¶¶ K was enacted which reads as follows, "*Unless otherwise required by an applicable effluent limitation guideline adopted by the department, any limitations for metals in a waste discharge license may be expressed only as mass-based limits."* There are no applicable effluent limitation guidelines adopted by the USEPA for metals in 40 CFR Part 407.

Based on the timing, severity and frequency of occurrences of the exceedences or reasonable potential to exceed applicable critical water quality thresholds, this permitting action is making a best professional judgment to establish the monitoring frequencies for the parameters of concern at a frequency of 1/Year specified in Chapter 530.

As for the remaining parameters, monitoring frequencies for priority pollutant and analytical chemistry testing established in this permitting action are based on the Chapter 530 rule. Chapter 530(2)(D)(3)(d) states in part that for Level II facilities "… *may reduce surveillance testing to one WET or specific chemical series once every other year provided that testing in the preceding 60 months does not indicate any reasonable potential for exceedence as calculated pursuant to section 3(E)".* Testing shall be conducted as follows:

Screening level testing – Beginning 24 months prior to permit expiration and lasting through 12 months prior to permit expiration (Year 4 of the term of the permit) and every five years thereafter if a timely request for renewal has been made and the permit continues in force, or is replaced by a permit renewal containing this requirement the permittee shall initiate screening level WET testing as follows:

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

Surveillance level testing – Beginning upon permit issuance and lasting through 24 months prior to permit expiration (Years 1, 2 & 3 of the term of the permit) and commencing again 12 months prior to permit expiration (Year 5 of the term of the permit) the permittee shall initiate surveillance level WET testing as follows:

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

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

Outfall #100 – Internal Waste Stream – Package Treatment Plant:

m. Flow - The previous permitting action established, and this permitting action is carrying forward, monthly average and daily maximum discharge flow monitoring requirements for the extended aeration, sequencing batch reactor (SBR) package plant utilized to treat sanitary waste waters generated by workers at the production facility. The permittee has indicated that the package treatment plant is designed to treat up to 20,000 gallons per day (gpd) on a monthly average basis.

A review of the monthly Discharge Monitoring Reports (DMRs) submitted to the Department for the period January 2011 – November 2014 indicates flow values have been reported as follows:

Flow (DMRs = 47)

Value	Limit (gpd)	Range (gpd)	Mean (gpd)
Monthly Average	Report	1,064 – 15,570	7,909
Daily maximum	Report	5,669 – 86,192	26,471

n. *E. coli* bacteria - The previous permit established year-round monthly average and daily maximum *Escherichia coli* bacteria concentration limits of 142 colonies/100 ml (geometric mean) and 949 colonies/100 ml (instantaneous level), respectively, which were based on the State of Maine Water Classification Program criteria for Class C waters found at 38 M.R.S.A. §465(4)(B), and a minimum monitoring frequency requirement of twice per week. Subsequent to issuance of the previous permit, the State Legislature adopted more stringent AWQC for *E. coli* bacteria. The newer criteria for Class C waters are 126 colonies/100 ml as a monthly average and 236 colonies/100 ml as a daily maximum. The Department has made the determination that after taking into consider the dilution associated with the discharge, the daily maximum BPT limit established in the previous permitting action is protective of the newer AWQC for bacteria. Therefore, this permitting action is reducing the monthly average limitation to 126 colonies/100 ml but carrying forward the daily maximum limitation of 949 colonies/100 mL. In addition, the Department is only establishing the limitations on a seasonal basis (May 15 – September 30) given the Caribou Utility District (5 miles downstream) no longer withdraws water from the Aroostook River for a public drinking water supply.

A review of the monthly DMR data for the period January 2011 – November 2014 indicates *E. coli* bacteria values have been reported as follows:

***E coli*. bacteria (DMRs = 47)**

Value	Limit (col/100 ml)	Range (col/100 ml)	Mean (col/100 ml)
Monthly Average	126	1 -143	14
Daily Maximum	949	3 – 665	125

7. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

Based on all available information, the Department has determined, as permitted, 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 C classification.

8. PUBLIC COMMENTS

Public notice of this application was made in the Presque Isle Star Herald newspaper on or about December 21, 2012. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

9. DEPARTMENT CONTACTS

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

Gregg Wood
Division of Water Quality Management
Bureau of Land & Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone: (207) 287-7693 Fax: (207) 287-3435
e-mail: gregg.wood@maine.gov

10. RESPONSE TO COMMENTS

Reserved until the close of the formal 30-day public comment period.

ATTACHMENT A

Aroostook River, Class C

Caribou

CANADA

Fort Fairfield Utilities District and Outfall to Aroostook River

Boralex Fort Fairfield and Outfall to Aroostook River (shared with FFUD)

Fort Fairfield

Town and County Apartments and Outfall to Aroostook River

Aroostook River, Class B

Presque Isle Sanitary District and Outfalls to Presque Isle Stream

Presque Isle

Mapleton

Presque Isle Drinking Water Treatment Plant and Outfall to Presque Isle Stream

McCain Foods Outfall to Aroostook River #ME0036218

Easton

McCain Foods Facility in Easton #ME0036218

Chapman

Legend

- Wastewater_Facilities
- Wastewater_Outfalls
- Ponds_and_Lakes

Major_Roads.lyr

JURISDICTION

- State aided
- State hwy
- Toll highway

Class

- AA
- A
- B
- C
- SB

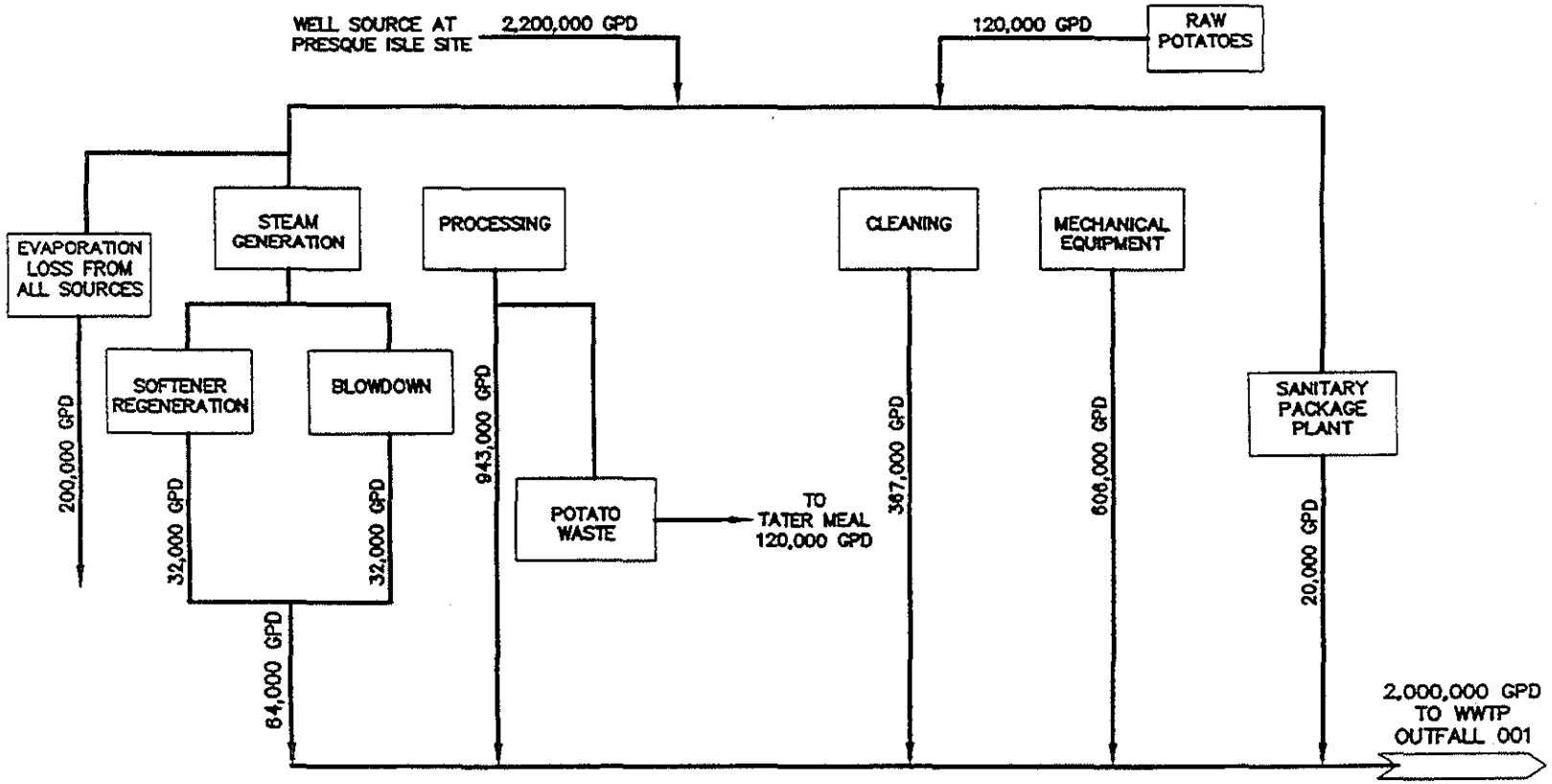
0 2.5 5 10 Miles

N W E S

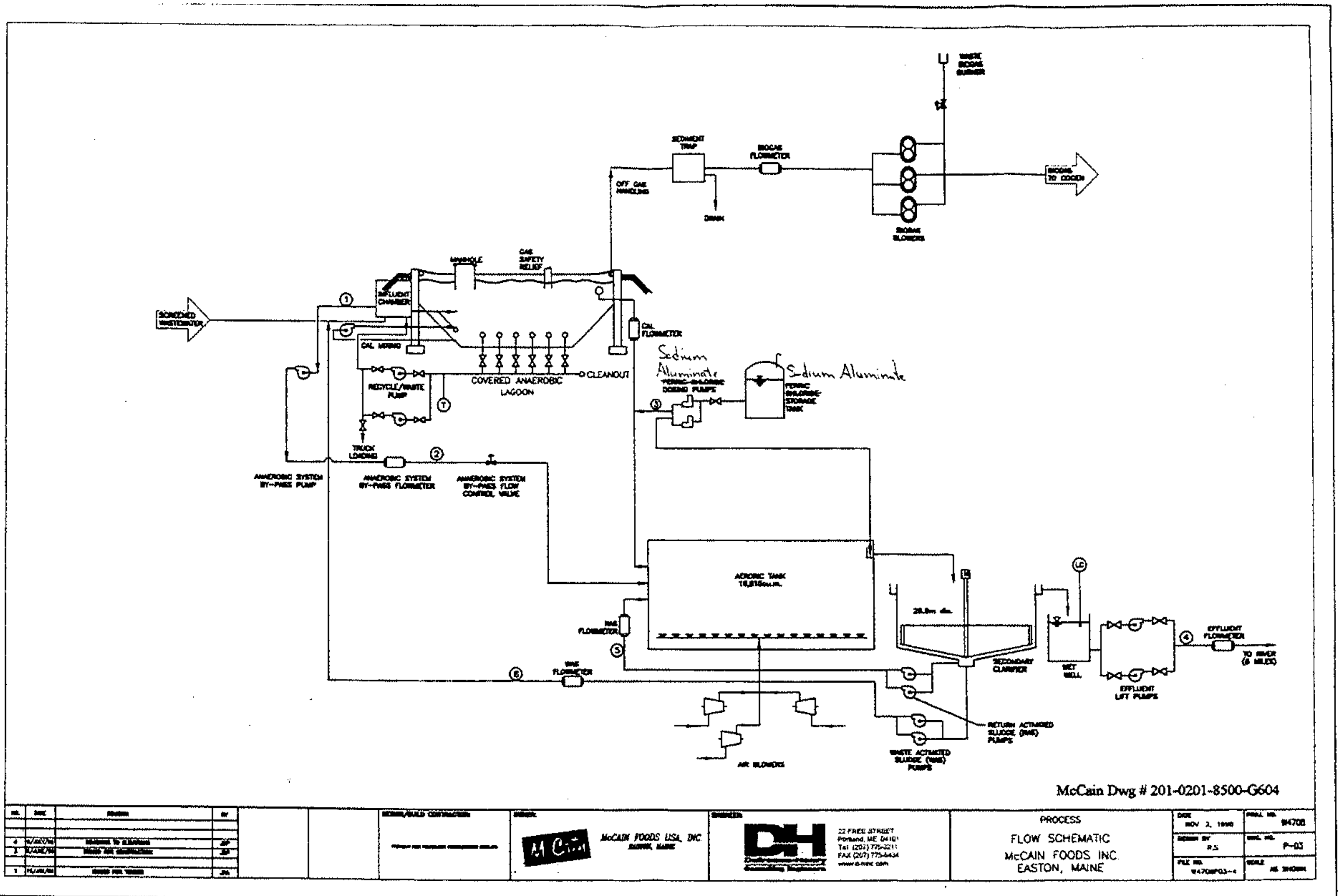
Map created by Maine DEP
April 13, 2007

McCain Foods USA, Inc., Aroostook River, Aroostook County, Maine

ATTACHMENT B


WELL SOURCE AT PRESQUE ISLE SITE
2,200,000 GPD
120,000 GPD
RAW POTATOES
EVAPORATION LOSS FROM ALL SOURCES
STEAM GENERATION
PROCESSING
CLEANING
MECHANICAL EQUIPMENT
SANITARY PACKAGE PLANT
SOFTENER REGENERATION
BLOWDOWN
POTATO WASTE
TO TATER MEAL 120,000 GPD
200,000 GPD
32,000 GPD
32,000 GPD
64,000 GPD
943,000 GPD
387,000 GPD
606,000 GPD
20,000 GPD
2,000,000 GPD TO WWTP OUTFALL 001

ATTACHMENT C



SCREENED WASTEWATER
INFLUENT CHAMBER
MANHOLE
GAS SAFETY RELIEF
OFF GAS HANDLING
SEDIMENT TRAP
DRAIN
BIOGAS FLOWMETER
BIOGAS BLOWERS
BIOGAS TO COOKER
CAL MIXING
COVERED ANAEROBIC LAGOON
CLEANOUT
RECYCLE/WASTE PUMP
TRUCK LOADING
CAL FLOWMETER
Sodium Aluminate
DOSING PUMPS
Sodium Aluminate
STORAGE TANK
ANAEROBIC SYSTEM BY-PASS PUMP
ANAEROBIC SYSTEM BY-PASS FLOWMETER
ANAEROBIC SYSTEM BY-PASS FLOW CONTROL VALVE
AEROBIC TANK
RAS FLOWMETER
WAS FLOWMETER
SECONDARY CLARIFIER
WET WELL
EFFLUENT LIFT PUMPS
EFFLUENT FLOWMETER
TO RIVER
RETURN ACTIVATED SLUDGE (RAS) PUMPS
WASTE ACTIVATED SLUDGE (WAS) PUMPS
AIR BLOWERS
McCain Dwg # 201-0201-8500-G604
McCAIN FOODS USA, INC
22 FREE STREET
Portland, ME 04101
FAX (207) 775-6434
PROCESS
FLOW SCHEMATIC
McCAIN FOODS INC.
EASTON, MAINE
NOV 2, 1998
P-03

ATTACHMENT D

WET TEST REPORT

Data for tests conducted for the period

19/Mar/2010 - 19/Mar/2015

MCCAIN FOODS USA INC NPDES= ME003621 Effluent Limit: Acute (%) = 4.692 Chronic (%) = 3.970

Species	Test	Percent	Sample date	Critical %	Exception	RP
TROUT	A_NOEL	100	05/17/2011	4.692		
TROUT	A_NOEL	100	12/06/2011	4.692		
TROUT	A_NOEL	100	02/18/2014	4.692		
TROUT	C_NOEL	100	05/17/2011	3.970		
TROUT	C_NOEL	100	12/06/2011	3.970		
TROUT	C_NOEL	100	02/18/2014	3.970		
WATER FLEA	A_NOEL	100	07/21/2010	4.692		
WATER FLEA	A_NOEL	100	05/17/2011	4.692		
WATER FLEA	A_NOEL	100	12/06/2011	4.692		
WATER FLEA	A_NOEL	100	04/23/2013	4.692		
WATER FLEA	A_NOEL	100	02/18/2014	4.692		
WATER FLEA	A_NOEL	100	08/05/2014	4.692		
WATER FLEA	C_NOEL	50	07/21/2010	3.970		
WATER FLEA	C_NOEL	50	05/17/2011	3.970		
WATER FLEA	C_NOEL	100	12/06/2011	3.970		
WATER FLEA	C_NOEL	25	04/23/2013	3.970		
WATER FLEA	C_NOEL	50	02/18/2014	3.970		
WATER FLEA	C_NOEL	100	08/05/2014	3.970		

ATTACHMENT E

PRIORITY POLLUTANT DATA SUMMARY

Date Range: 19/Mar/2010 - 19/Mar/2015

Facility Name: **MCCAIN FOODS USA INC** NPDES: **ME0036218**

Test Date	Monthly (Flow MGD)	Daily (Flow MGD)	Total Test Number	Test # By Group M	V	BN	P	O	A	Clean	Hg
04/11/2010	1.86	1.96	1	1	0	0	0	0	0	F	0
05/09/2010	1.73	1.80	1	1	0	0	0	0	0	F	0
06/09/2010	1.58	1.64	1	1	0	0	0	0	0	F	0
06/22/2010	1.58	1.57	1	1	0	0	0	0	0	F	0
07/21/2010	1.35	0.69	21	10	0	0	0	11	0	F	0
08/10/2010	1.65	1.79	1	1	0	0	0	0	0	F	0
08/24/2010	1.65	1.80	1	1	0	0	0	0	0	F	0
09/06/2010	1.62	1.96	1	1	0	0	0	0	0	F	0
11/15/2010	1.60	1.71	1	1	0	0	0	0	0	F	0
12/19/2010	1.33	1.96	1	1	0	0	0	0	0	F	0
02/13/2011	1.74	1.72	1	1	0	0	0	0	0	F	0
04/17/2011	1.74	1.72	1	1	0	0	0	0	0	F	0
05/17/2011	1.84	1.73	133	14	28	46	25	9	11	F	0

Key:

A = Acid O = Others P = Pesticides

BN = Base Neutral M = Metals V = Volatiles

PRIORITY POLLUTANT DATA SUMMARY

Date Range: 19/Mar/2010 - 19/Mar/2015

Facility Name: **MCCAIN FOODS USA INC** NPDES: **ME0036218**

Test Date	Monthly (Flow MGD)	Daily (Flow MGD)	Total Test Number	Test # By Group M	V	BN	P	O	A	Clean	Hg
07/19/2011	1.49	1.64	11	10	0	0	0	1	0	F	0
08/04/2011	1.81	1.89	1	1	0	0	0	0	0	F	0
08/09/2011	1.81	1.89	1	1	0	0	0	0	0	F	0
12/06/2011	1.37	1.95	21	10	0	0	0	11	0	F	0
02/06/2012	1.70	1.77	11	10	0	0	0	1	0	F	0
06/17/2012	1.69	1.68	1	1	0	0	0	0	0	F	0
06/24/2012	1.69	1.94	1	1	0	0	0	0	0	F	0
07/01/2012	1.52	1.49	1	1	0	0	0	0	0	F	0
07/10/2012	1.52	1.56	1	1	0	0	0	0	0	F	0
07/17/2012	1.52	1.74	1	1	0	0	0	0	0	F	0
07/23/2012	1.52	1.70	1	1	0	0	0	0	0	F	0
07/31/2012	1.52	1.62	1	1	0	0	0	0	0	F	0
08/07/2012	0.60	1.60	1	1	0	0	0	0	0	F	0

Key:

A = Acid O = Others P = Pesticides

BN = Base Neutral M = Metals V = Volatiles

PRIORITY POLLUTANT DATA SUMMARY

Date Range: 19/Mar/2010 - 19/Mar/2015

Facility Name: **MCCAIN FOODS USA INC** NPDES: **ME0036218**

Test Date	Monthly (Flow MGD)	Daily (Flow MGD)	Total Test Number	Test # By Group M	V	BN	P	O	A	Clean	Hg
04/23/2013	1.74	1.80	21	10	0	0	0	11	0	F	0
07/16/2013	1.73	1.74	1	1	0	0	0	0	0	F	0
08/20/2013	1.48	2.04	1	1	0	0	0	0	0	F	0
02/18/2014	1.90	1.99	21	10	0	0	0	11	0	F	0
08/05/2014	1.72	1.82	21	10	0	0	0	11	0	F	0
08/28/2014	1.72	1.61	1	1	0	0	0	0	0	F	0
09/16/2014	1.63	1.96	1	1	0	0	0	0	0	F	0

Key:

A = Acid O = Others P = Pesticides

BN = Base Neutral M = Metals V = Volatiles

ATTACHMENT F

MAINE DEPARTMENT OF ENVIRONMENTAL PROTECTION

MEMORANDUM

DATE: October 2008

TO: Interested Parties

FROM: Dennis Merrill, DEP

SUBJECT: DEP's system for evaluating toxicity from multiple discharges

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Following the requirements of DEP's rules, Chapter 530, section 4(F), the Department is evaluating discharges of toxic pollutants into a freshwater river system in order to prevent cumulative impacts from multiple discharges. This is being through the use of a computer program known internally as "DeTox". The enclosed package of information is intended to introduce you to this system.

Briefly, the DeTox program evaluates each wastewater facility within a watershed in three different ways in order to characterize its effluent: 1) the facility's past history of discharges, 2) its potential toxicity at the point of discharge on an individual basis, and 3) the facility's contribution to cumulative toxicity within a river segment in conjunction with other facilities. The value that is most protective of water quality becomes the value that is held in the DeTox system as an allocation for the specific facility and pollutant.

The system is not static and uses a five-year "rolling" data window. This means that, over time, old test results drop off and newer ones are added. The intent of this process is to maintain current, uniform facility data to estimate contributions to a river's total allowable pollutant loading prior to each permit renewal.

Many facilities are required to do only a relatively small amount of pollutant testing on their effluent. This means, statistically, the fewer tests done, the greater the possibility of effluent limits being necessary based on the facility's small amount of data. To avoid this situation, most facilities, especially those with low dilution factors, should consider conducting more than the minimum number of tests required by the rules.

Attached you will find three documents with additional information on the DeTox system:

- Methods for evaluating the effects of multiple discharges of toxic pollutants
- Working definitions of terms used in the DeTox system
- Reviewing DeTox Reports
- Prototype facility and pollutant reports

If you have questions as you review these, please do not hesitate to contact me at Dennis.L.Merrill@maine.gov or 287-7788.

Maine Department of Environmental Protection

Methods for evaluating the effects of multiple discharges of toxic pollutants.

Reference: DEP Rules, Chapter 530, section 4(F)

To evaluate discharges of toxic pollutants into a freshwater river system and prevent cumulative impacts from multiple discharges, DEP uses a computer program called "DeTox that functions as a mathematical evaluation tool.

It uses physical information about discharge sources and river conditions on file with the Department, established water quality criteria and reported effluent test information to perform these evaluations. Each toxic pollutant and associated water quality criterion for acute, chronic and/or human health effects is evaluated separately.

Each facility in a river drainage area has an assigned position code. This "address" is used to locate the facility on the river segment and in relation to other facilities and tributary streams. All calculations are performed in pounds per day to allow analysis on a mass balance. Pollutants are considered to be conservative in that once in the receiving water they will not easily degrade and have the potential to accumulate.

The process begins with establishing an assimilative capacity for each pollutant and water quality criterion at the most downstream point in the river segment. This calculation includes set-aside amounts for background and reserve quantities and assumed values for receiving water pH, temperature and hardness. The resulting amount of assimilative capacity is available for allocation among facilities on the river.

Each facility is evaluated to characterize its past discharge quantities. The historical discharge, in pounds per day, is figured using the average reported concentration and the facility's permitted flow. As has been past practice, a reasonable potential (RP) factor is used as a tool to estimate the largest discharge that may occur with a certain degree of statistical certainty. The RP factor is multiplied by the historical average to determine an allocation based on past discharges. The RP factor is also multiplied by the single highest test to obtain a maximum day estimate. Finally, the direct average without RP adjustment is used to determine the facility's percent contribution to the river segment in comparison to the sum of all discharges of the pollutant. This percent multiplied by the total assimilative capacity becomes the facility's discharge allocation used in evaluations of the segment loadings.

Additionally, individual facility discharges are evaluated as single sources, as they have been in the past to determine if local conditions are more limiting than a segment evaluation.

With all of this information, facilities are evaluated in three ways. The methods are:

1. The facility's past history. This is the average quantity discharged during the past five years multiplied by the applicable RP factor. This method is often the basis for an allocation when the discharge quantity is relatively small in comparison to the water quality based allocation.
2. An individual evaluation. This assumes no other discharge sources are present and the allowable quantity is the total available assimilative capacity. This method may be used when a local condition such as river flow at the point of discharge is the limiting factor.
3. A segment wide evaluation. This involves allocating the available assimilative capacity within a river segment based on a facility's percent of total past discharges. This method would be used when multiple discharges of the same pollutant to the same segment and the available assimilative capacity is relatively limited.

The value that is most protective of water quality becomes the facility's allocation that is held in the system for the specific facility and pollutant. It is important to note that the method used for allocation is facility and pollutant specific and different facilities on the same segment for the same pollutant can have different methods used depending on their individual situations.

Discharge amounts are always allocated to all facilities having a history of discharging a particular pollutant. This does not mean that effluent limits will be established in a permit. Limits are only needed when past discharge amounts suggest a reasonable potential to exceed a water quality based allocation, either on an individual or segment basis. Similar to past practices for single discharge evaluations, the single highest test value is multiplied by a RP factor and if product is greater than the water quality allowance, an effluent limit is established. It is important to remember an allocation is "banking" some assimilative capacity for a facility even if effluent limits are not needed.

Evaluations are also done for each tributary segment with the sum of discharge quantities in tributaries becoming a "point source" to the next most significant segment. In cases where a facility does not use all of its assimilative capacity, usually due to a more limiting individual water quality criterion, the unused quantity is rolled downstream and made available to other facilities.

The system is not static and uses a five-year rolling data window. Over time, old tests drop off and newer ones are added on. These changes cause the allocations and the need for effluent limits to shift over time to remain current with present conditions. The intent is to update a facility's data and relative contribution to a river's total assimilative capacity prior to each permit renewal. Many facilities are required to do only minimal testing to characterize their effluents. This creates a greater degree of statistical uncertainty about the true long-term quantities. Accordingly, with fewer tests the RP factor will be larger and result in a greater possibility of effluent limits being necessary. To avoid this situation, most facilities, especially those with relatively low dilution factors, are encouraged to conduct more that a minimum number of tests. It is generally to a facility's long-term benefit to have more tests on file since their RP factor will be reduced.

Maine Department of Environmental Protection

Working Definitions of Terms Used in the DeTox System.

Allocation. The amount of pollutant loading set aside for a facility. Separate amounts are set for each *water quality criterion.* Each pollutant having a history of being discharged will receive an allocation, but not all allocations become *effluent limits.* Allocation may be made in three ways: *historical allocation, individual allocation* or *segment allocation.*

Assimilative capacity. The amount of a pollutant that river segment can safely accept from point source discharges. It is determined for the most downstream point in a river segment using the *water quality criterion* and river flow. Separate capacities are set for acute, chronic and human health criteria as applicable for each pollutant. Calculation of this capacity includes factors for *reserve* and *background* amounts.

Background. A concentration of a pollutant that is assumed to be present in a receiving water but not attributable to discharges. By rule, this is set as a rebuttable presumption at 10% of the applicable *water quality criterion.*

Effluent limit. A numeric limit in a discharge permit specifically restricting the amount of a pollutant that may be discharged. An effluent limit is set only when the highest discharge, including an adjustment for *reasonable potential,* is greater than a facility's water quality based *allocation* for a pollutant.

Historical allocation (or *RP history*). One of three ways of developing an *allocation.* The facility's average history of discharges, in pounds at design flow, is multiplied by the appropriate *reasonable potential* factor. An allocation using this method does not become an *effluent limit.*

Historical discharge percentage. For each pollutant, the average discharge concentration for each facility in a segment is multiplied by the permitted flow (without including a *reasonable potential* factor). The amounts for all facilities are added together and a percent of the total is figured for each facility. When a facility has no detectable concentrations, that pollutant is assumed to be not present and it receives no percentage.

Individual allocation. One of three ways of developing an *allocation.* The facility's single highest discharge on record multiplied by the appropriate *reasonable potential* factor is compared to a water quality based quantity with an assumption that the facility is the only point source to that receiving water. If the RP-adjusted amount is larger, the water quality amount may become an *effluent limit.*

Less than. A qualification on a laboratory report indicating the concentration of a pollutant was below a certain concentration. Such a result is evaluated as being one half of the Department's reporting limit in most calculations.

Reasonable potential (RP). A statistical method to determine the highest amount of a pollutant likely to be present at any time based on the available test results. The method produces a value or RP factor that is multiplied by test results. The method relies on an EPA guidance document, and considers the coefficient of variation and the number of tests. Generally, the fewer number of tests, the higher the RP factor.

Reserve. An assumed concentration of a pollutant that set aside to account for non-point source of a pollutant and to allow new discharges of a pollutant. By rule this is set at 15% of the applicable *water quality criterion.*

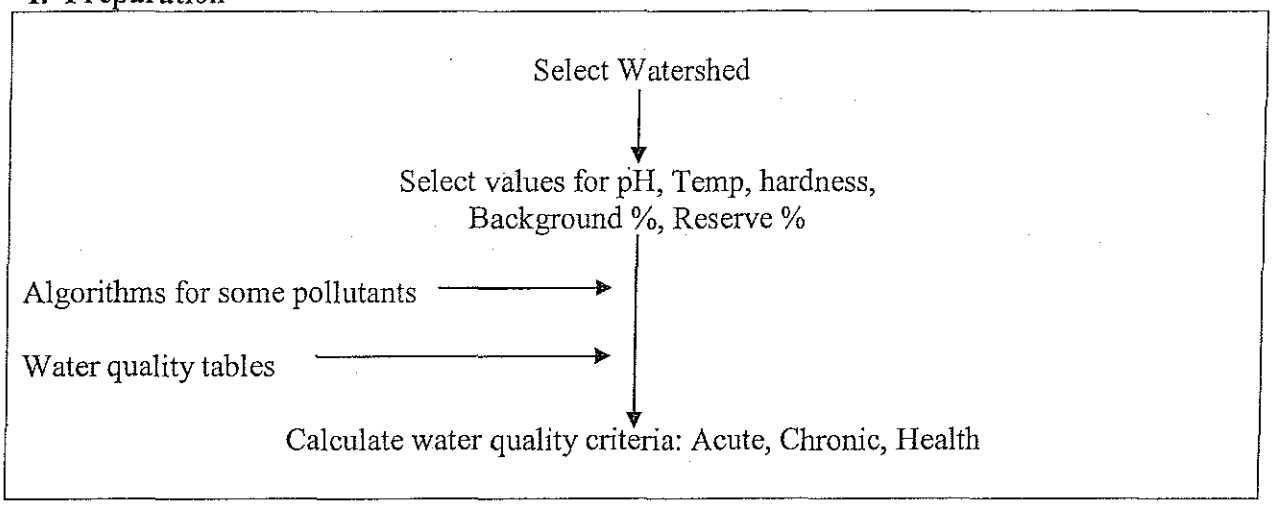
Segment allocation. One of three ways of developing an *allocation.* The amount is set by multiplying a facility's *historical discharge percentage* for a specific pollutant by the *assimilative capacity* for that pollutant and criterion. A facility will have different allocation percentages for each pollutant. This amount may become an *effluent limit.*

Tributary. A stream flowing into a larger one. A total pollutant load is set by adding the all facilities *allocations* on the tributary and treating this totaled amount as a "point source" to the next larger segment.

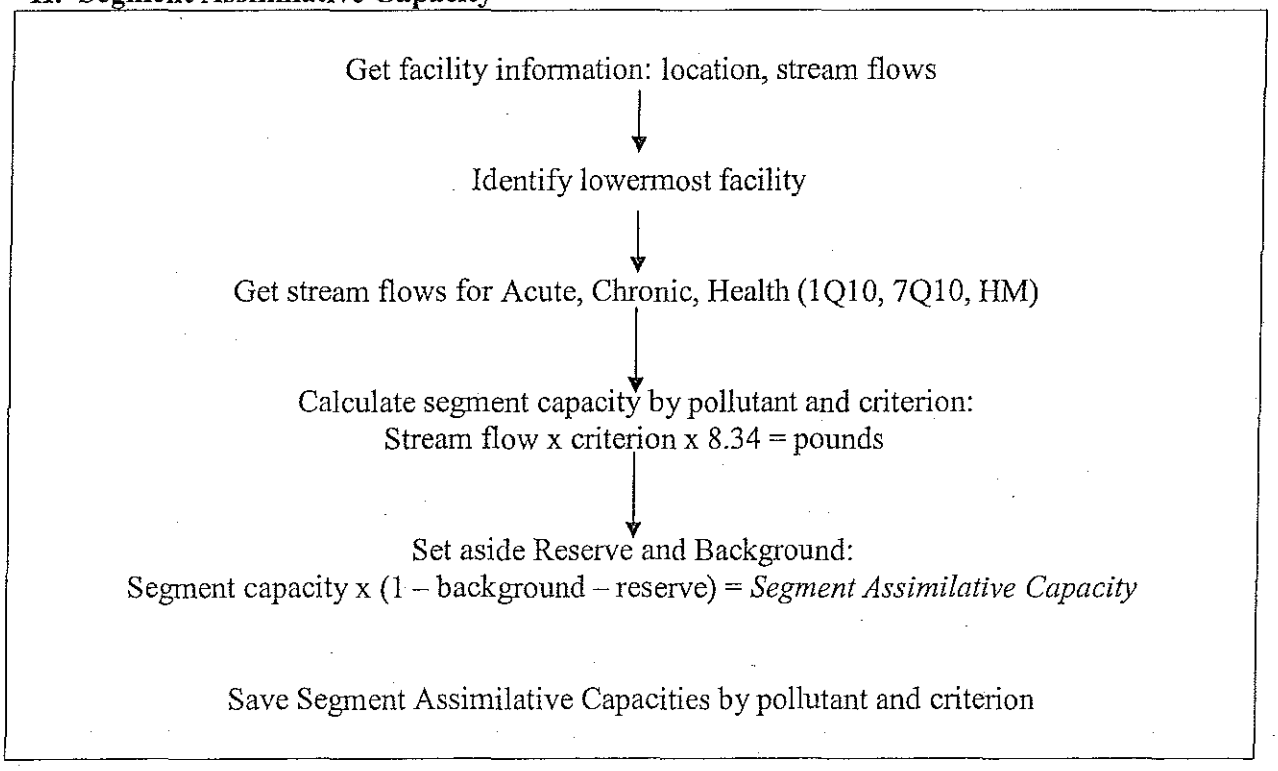
Water quality criteria. Standards for acceptable in-stream or ambient levels of pollutants. These are established in the Department's Chapter 584 and are expressed as concentrations in ug/L. There may be separate standards for acute and chronic protection aquatic life and/or human health. Each criterion becomes a separate standard. Different stream flows are used in the calculation of each.

Maine Department of Environmental Protection
General Processing Steps in "DeTox"

I. Preparation

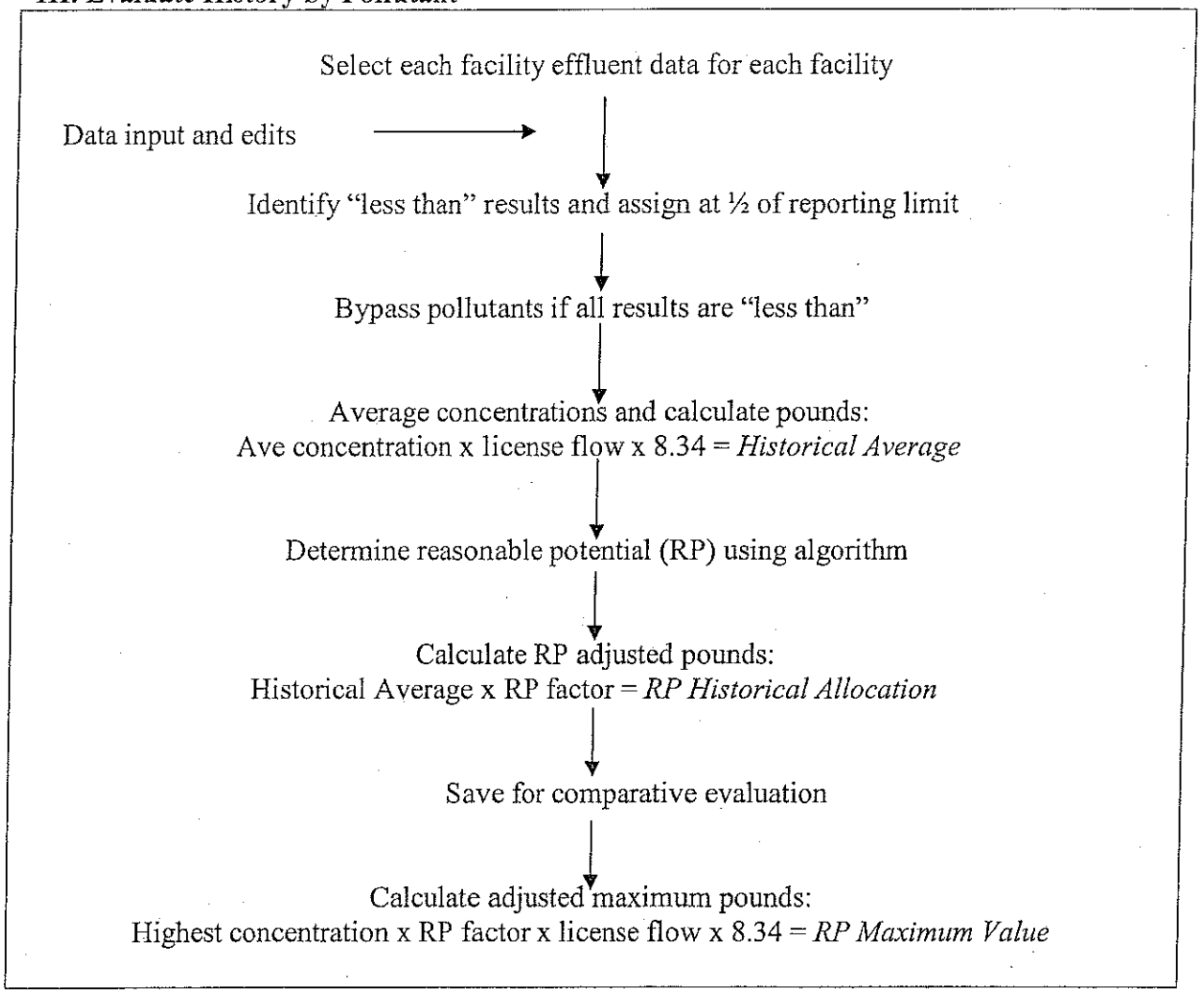


II. Segment Assimilative Capacity

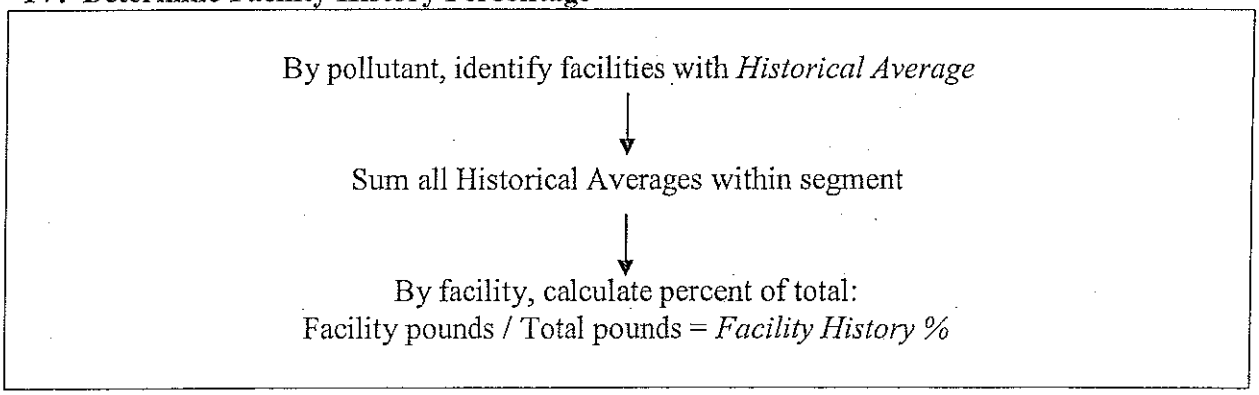


Maine Department of Environmental Protection
General Processing Steps in "DeTox"

III. Evaluate History by Pollutant



IV. Determine Facility History Percentage



V. Segment Allocation

By pollutant and criterion, select *Segment Assimilative Capacity*

↓

Select individual *Facility History %*

↓

Determine facility allocation:
Assimilative Capacity x Facility History % = *Segment Allocation*

↓

Save for comparative evaluation

VI. Individual Allocation

Select individual facility and dilution factor (DF)

↓

Select pollutant and water quality criterion

↓

By pollutant and criterion, calculate individual allocations:
[DF x 0.75 x criterion] + [0.25 x criterion] = Individual Concentration

↓

Determine individual allocation:
Individual Concentration x license flow x 8.34 = *Individual Allocation*

↓

Save for comparative evaluation

VII. Make Initial Allocation

By facility, pollutant and criterion, get:
Individual Allocation, Segment Allocation, RP Historical Allocation

↓

Compare allocation and select the smallest

↓

Save as *Facility Allocation*

VIII. Evaluate Need for Effluent Limits

By facility, pollutant and criterion select
Segment Allocation, *Individual Allocation* and *RP Maximum value*

↓

If *RP Maximum value* is greater than either *Segment Allocation* or *Individual Allocation*, use lesser value as *Effluent Limit*

↓

Save *Effluent Limit* for comparison

IX. Reallocation of Assimilative Capacity

Starting at top of segment, get *Segment Allocation*, *Facility Allocation* and *Effluent Limit*

↓

If *Segment Allocation* equals *Effluent Limit*, move to next facility downstream

↓

If not, subtract *Facility Allocation* from *Segment Allocation*

↓

Save difference

↓

Select next facility downstream

↓

Figure remaining *Segment Assimilative Capacity* at and below facility, less tributaries

↓

Add saved difference to get an adjusted *Segment Assimilative Capacity*

↓

Reallocate *Segment Assimilative Capacity* among downstream facilities per step V

↓

Repeat process for each facility downstream in turn

ATTACHMENT G

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

MEPDES# _____ Facility Name _____

Since the effective date of your permit have there been:	NO	YES (Describe in Comments)
1. changes in the number or types of non-domestic wastes contributed directly or indirectly to the wastewater treatment works that may **increase** the toxicity of the discharge?		
2. changes in the operation of the treatment works that may **increase** the toxicity of the discharge?		
3. changes in industrial manufacturing processes contributing wastewater to the treatment works that may **increase** the toxicity of the discharge?		

COMMENTS:

Name(print) _____

Signature _____ Date _____

This document must be signed by the permittee or their legal representative.

This form may be used to meet the requirements of Chap 530(2)(D)(4). This Chapter requires all dischargers having waived or reduced Toxic testing to file a statement with the Department describing changes to the waste being contributed to their system as outlined above. As an alternative the discharger may submit a signed letter containing the same information.