STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JANET T. MILLS
GOVERNOR

GERALD D. REID
COMMISSIONER

March 21, 2019

Mr. David W. Dedian
Senior VP/Senior Area Mgr.
Woodard & Curran
One Merchants Plaza, Suite 501
Bangor, ME. 04401

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0000639
Maine Waste Discharge License (WDL) #W001048-5N-F-R
Proposed Draft Permit

Dear Mr. Dedian:

Enclosed is a **proposed draft** MEPDES permit and Maine WDL which the Department proposes to issue for your facility 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 document and its special and standard conditions. 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 and from any other parties who have notified the Department of their interest in this matter.

Beginning today, Thursday, March 21, 2019, the Department is making the draft permit available for a 30-day public comment period. All comments on the proposed draft permit must be received in the Department of Environmental Protection office on or before the close of business **Monday, April 22, 2019**. Failure to submit comments in a timely fashion will result in the final permit document being issued as drafted.

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688 FAX: (207) 287-7826

BANGOR
106 HOGAN ROAD, SUITE 6
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
(207) 764-0477 FAX: (207) 760-3143

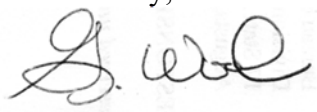
website: www.maine.gov/dep

Comments in writing should be submitted to my attention at the following address:

Maine Department of Environmental Protection
Bureau of Water Quality
Division of Water Quality Management
17 State House Station
Augusta, ME 04333-0017
gregg.wood@maine.gov

If you have any questions regarding the matter, please feel free to call me at (207) 287-7693 or send me an e-mail at gregg.wood@maine.gov.

Sincerely,



Gregg Wood
Division of Water Quality Management
Bureau of Water Quality

Enc.
cc: Clarissa Trasko, DEP/EMRO
Lori Mitchell, DEP/CMRO
Ellen Weitzler, USEPA
Damien Houlihan, USEPA
Shelley Puleo, USEPA
Marilyn Vega, USEPA
Maine IFW
Maine DMR
Daniel Kuznierz, PIN

DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: November 2018 **Contact: (207) 287-2452**

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's (DEP) Commissioner: (1) an administrative process before the Board of Environmental Protection (Board); or (2) a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development (35-A M.R.S. § 3451(4)) or a general permit for an offshore wind energy demonstration project (38 M.R.S. § 480-HH(1)) or a general permit for a tidal energy demonstration project (38 M.R.S. § 636-A) must be taken to the Supreme Judicial Court sitting as the Law Court.

This information sheet, in conjunction with a review of the statutory and regulatory provisions referred to herein, can help a person to understand his or her rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

The laws concerning the DEP's *Organization and Powers*, 38 M.R.S. §§ 341-D(4) & 346; the *Maine Administrative Procedure Act*, 5 M.R.S. § 11001; and the DEP's *Rules Concerning the Processing of Applications and Other Administrative Matters* ("Chapter 2"), 06-096 C.M.R. ch. 2.

DEADLINE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written appeal within 30 days of the date on which the Commissioner's decision was filed with the Board. Appeals filed more than 30 calendar days after the date on which the Commissioner's decision was filed with the Board will be dismissed unless notice of the Commissioner's license decision was required to be given to the person filing an appeal (appellant) and the notice was not given as required.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017. An appeal may be submitted by fax or e-mail if it contains a scanned original signature. It is recommended that a faxed or e-mailed appeal be followed by the submittal of mailed original paper documents. The complete appeal, including any attachments, must be received at DEP's offices in Augusta on or before 5:00 PM on the due date; materials received after 5:00 pm are not considered received until the following day. The risk of material not being received in a timely manner is on the sender, regardless of the method used. The appellant must also send a copy of the appeal documents to the Commissioner of the DEP; the applicant (if the appellant is not the applicant in the license proceeding at issue); and if a hearing was held on the application, any intervenor in that hearing process. All of the information listed in the next section of this information sheet must be submitted at the time the appeal is filed.

INFORMATION APPEAL PAPERWORK MUST CONTAIN

Appeal materials must contain the following information at the time the appeal is submitted:

1. *Aggrieved Status*. The appeal must explain how the appellant has standing to maintain an appeal. This requires an explanation of how the appellant may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions, or conditions objected to or believed to be in error.* The appeal must identify the specific findings of fact, conclusions regarding compliance with the law, license conditions, or other aspects of the written license decision or of the license review process that the appellant objects to or believes to be in error.
3. *The basis of the objections or challenge.* For the objections identified in Item #2, the appeal must state why the appellant believes that the license decision is incorrect and should be modified or reversed. If possible, the appeal should cite specific evidence in the record or specific licensing requirements that the appellant believes were not properly considered or fully addressed.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.
5. *All the matters to be contested.* The Board will limit its consideration to those matters specifically raised in the written notice of appeal.
6. *Request for hearing.* If the appellant wishes the Board to hold a public hearing on the appeal, a request for public hearing must be filed as part of the notice of appeal, and must include an offer of proof in accordance with Chapter 2. The Board will hear the arguments in favor of and in opposition to a hearing on the appeal and the presentations on the merits of an appeal at a regularly scheduled meeting. If the Board decides to hold a public hearing on an appeal, that hearing will then be scheduled for a later date.
7. *New or additional evidence to be offered.* If an appellant wants to provide evidence not previously provided to DEP staff during the DEP's review of the application, the request and the proposed evidence must be submitted with the appeal. The Board may allow new or additional evidence, referred to as supplemental evidence, to be considered in an appeal only under very limited circumstances. The proposed evidence must be relevant and material, and (a) the person seeking to add information to the record must show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process; or (b) the evidence itself must be newly discovered and therefore unable to have been presented earlier in the process. Specific requirements for supplemental evidence are found in Chapter 2 § 24.

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, and is made easily accessible by the DEP. Upon request, the DEP will make application materials available during normal working hours, provide space to review the file, and provide an opportunity for photocopying materials. There is a charge for copies or copying services.
2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer general questions regarding the appeal process.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed, the license normally remains in effect pending the processing of the appeal. Unless a stay of the decision is requested and granted, a license holder may proceed with a project pending the outcome of an appeal, but the license holder runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge receipt of an appeal, and will provide the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials accepted by the Board Chair as supplementary evidence, any materials submitted in response to the appeal, and relevant excerpts from the DEP's application review file will be sent to Board members with a recommended decision from DEP staff. The appellant, the license holder if different from the appellant, and any interested persons are notified in advance of the date set for Board consideration of an appeal or request for public hearing. The appellant and the license holder will have an opportunity to address the Board at the Board meeting. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, the license holder, and interested persons of its decision.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court (see 38 M.R.S. § 346(1); 06-096 C.M.R. ch. 2; 5 M.R.S. § 11001; and M.R. Civ. P. 80C). A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board's Executive Analyst at (207) 287-2452, or for judicial appeals contact the court clerk's office in which your appeal will be filed.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.

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

DEPARTMENT ORDER

IN THE MATTER OF

MALLINCKRODT US LLC	)	MAINE POLLUTANT DISCHARGE
ORRINGTON, PENOBSCOT COUNTY, MAINE	)	ELIMINATION SYSTEM PERMIT
GROUND WATER REMEDIATION	)	AND
ME0000639	)	WASTE DISCHARGE LICENSE
W0001048-5N-F-R **APPROVAL**	)	**RENEWAL**

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

APPLICATION SUMMARY

Mallinckrodt US LLC has filed an application with the Department to renew combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0000639/Maine Waste Discharge License (WDL) #W001048-5N-D-R (permit hereinafter), which was issued by the Department to Mallinckrodt on July 3, 2013. The permit authorized the discharge a monthly flow of 60,000 gallons per day (gpd) of treated groundwater from an on-site remediation project to the Penobscot River, Class B, in Orrington, Maine.

The July 3, 2013, permit was subsequently modified on May 10, 2016, to increase the monthly average flow limit for Outfall #001 from 60,000 gallons per day (gpd) to 100,000 gpd at the request of the permittee.

The former chlor-alkali manufacturing facility ceased operations in calendar year 2000. The wastewater treatment system continued operation thereafter to treat ground waters associated with a remediation project overseen by the Department's Bureau of Remediation and Waste Management. As an amendment to the December 8, 2003, application for permit renewal, the permittee submitted a document entitled, Draft Design Basis Report, Former HoltraChem Manufacturing Site, Orrington, Maine, August 19, 2011, prepared for Mallinckrodt by the consulting firm Woodard & Curran. The report describes the basis for the design of a ground water treatment plant (GWTP) to treat present and future contaminated ground water flows.

CONCLUSIONS

BASED on the findings in the attached **PROPOSED DRAFT** Fact Sheet dated March 21, 2019, and subject to the terms and conditions contained herein, 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., Section 464(4)(F), will be met, in that:

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

   (b) Where high quality waters of the State constitute an outstanding 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 quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.

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

ACTION

THEREFORE, the Department APPROVES the above noted application of MALLINCKRODT US LLC to discharge treated groundwater to the Penobscot River, Class B, in Orrington, 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 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. §10002 and *Rules Concerning the Processing of Applications and Other Administrative Matters*, 06-096 CMR 2(21)(A) (last amended June 9, 2018)]

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

DONE AND DATED AT AUGUSTA, MAINE, THIS _____ DAY OF _____ 2019.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:_____
Gerald D. Reid, Commissioner

Date of initial receipt of application May 21, 2018

Date of application acceptance May 21, 2018

Date filed with Board of Environmental Protection _____

This order prepared by GREGG WOOD, BUREAU OF WATER QUALITY

SPECIAL CONDITIONS

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

OUTFALL #001 – Final Effluent - The permittee is authorized to discharge **treated waste waters from Outfall #001** to the Penobscot River. Such discharges shall be limited and must be monitored by the permittee as specified below[(1)]

ROUTINE MONITORING

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	**Daily Maximum** as specified	**Monthly Average** as specified[(2)]	**Daily Maximum** as specified[(2)]	**Measurement Frequency** as specified	**Sample Type** as specified
Flow *[50050]*	100,000 gpd *[07]*	Report gpd *[07]*	---	---	Continuous *[99/99]*	Meter *[MT]*
Carbon tetrachloride *[32102]*	0.0025 lbs/day*[26]*	0.0025 lbs/day*[26]*	5 ug/L*[28]*	5 ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Chloropicrin *[77548]*	0.015 lbs/day*[26]*	0.015 lbs/day*[26]*	30 ug/L*[28]*	30 ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Hexachloroethane *[34396]*	0.0025 lbs/day*[26]*	0.0025 lbs/day*[26]*	5 ug/L*[28]*	5 ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Mercury (Total) [(3a)] *[71900]*	0.00046 lbs/day*[26]*	0.00085 lbs/day*[26]*	0.91 ug/L*[28]*	1.7 ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
pH *[00400]*	---	---	---	6.0 – 9.0 SU[(4)] *[12]*	Continuous *[99/99]*	Meter *[MT]*

SPECIAL CONDITIONS

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

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OUTFALL #002 – Internal waste stream - treated ground water. Sampling must be conducted at a point prior to mixing with any other waste stream whether it be treated or untreated. **(5)**

ROUTINE MONITORING

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	**Daily Maximum** as specified	**Monthly Average** as specified **(2)**	**Daily Maximum** as specified **(2)**	**Measurement Frequency** as specified	**Sample Type** as specified
Flow *[50050]*	Report gpd *[07]*	Report gpd *[07]*	---	---	Continuous *[99/99]*	Meter *[MT]*
Mercury (Total) **(3b)** *[71900]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Quarter *[01/90]*	Grab *[GR]*
pH *[00400]*	---	---	---	6.0 – 9.0 SU **(4)** *[12]*	Continuous *[99/99]*	Meter *[MT]*

SPECIAL CONDITIONS

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

Monitoring for the parameters below is only required if the permittee exceeds a numeric limitation for Carbon Tetrachloride, Chloropicrin, Hexachloroethane or Mercury as established in the routine monitoring on page 4 of this permit (6)

OUTFALL #001 – Final Effluent - The permittee is authorized to discharge **treated waste waters from Outfall #001** to the Penobscot River. Such discharges shall be limited and must be monitored by the permittee as specified below(1)

SUPPLEMENTAL MONITORING

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified(2)	Daily Maximum as specified(2)	Measurement Frequency as specified	Sample Type as specified
Flow *[50050]*	100,000 gpd *[07]*	Report gpd *[07]*	---	---	Continuous *[99/99]*	Meter *[MT]*
1,1-Dichloroethane *[34496]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
1,1-Dichloroethene *[34499]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
2,4,5-T *[39740]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Acetone *[81552]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Bromodichloromethane *[51073]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Bromoform *[32104]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Carbon disulfide *[77041]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Carbon tetrachloride *[32102]*	0.0025 lbs/day*[26]*	0.0025 lbs/day*[26]*	5 ug/L*[28]*	5 ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*

SPECIAL CONDITIONS

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

Monitoring for the parameters below is only required if the permittee exceeds a numeric limitation for Carbon Tetrachloride, Chloropicrin, Hexachloroethane or Mercury as established in the routine monitoring on page 4 of this permit [6]

OUTFALL #001 – Final Effluent

SUPPLEMENTAL MONITORING

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	**Daily Maximum** as specified	**Monthly Average** as specified[2]	**Daily Maximum** as specified[2]	**Measurement Frequency** as specified	**Sample Type** as specified
Chloroform *[32106]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Chloropicrin *[77548]*	0.015 lbs/day*[26]*	0.015 lbs/day*[26]*	30 ug/L*[28]*	30 ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Cis-1,2-Dichloroethene *[81686]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Dibromochloromethane *[32105]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Hexachloroethane *[34396]*	0.0025 lbs/day*[26]*	0.0025 lbs/day*[26]*	5 ug/L*[28]*	5 ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Manganese (Total) *[82060]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Mercury (Total) [3a] *[71900]*	0.00046 lbs/day*[26]*	0.00085 lbs/day*[26]*	0.91 ug/L*[28]*	1.7 ug/L*[28]*	3/Week *[03/07]*	Grab *[GR]*
Methylene Chloride *[34423]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Cresol (Total) *[79778]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*

SPECIAL CONDITIONS

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

Monitoring for the parameters below is only required if the permittee exceeds a numeric limitation for Carbon Tetrachloride, Chloropicrin, Hexachloroethane or Mercury as established in the routine monitoring on page 4 of this permit [6]

OUTFALL #001 – Final Effluent

SUPPLEMENTAL MONITORING

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	**Daily Maximum** as specified	**Monthly Average** as specified[2]	**Daily Maximum** as specified[2]	**Measurement Frequency** as specified	**Sample Type** as specified
Pentachloroethane *[81501]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
pH *[00400]*	---	---	---	6.0 – 9.0 SU[4] *[12]*	Continuous *[99/99]*	Meter *[MT]*
Tetrachloroethene *[78389]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Trans-1,2-Dichloroethene *[78376]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*
Trichloroethylene *[39180]*	Report lbs/day*[26]*	Report lbs/day*[26]*	Report ug/L*[28]*	Report ug/L*[28]*	1/Month *[01/30]*	Grab *[GR]*

SPECIAL CONDITIONS

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

(1) **Effluent sampling** for Outfall #001 must be conducted at a valved sample point inside the treatment building just prior to the new 4-inch diameter discharge line. Effluent sampling for Outfall #002 must be conducted at a valved sample point inside the new treatment building just prior to combining with the other water streams at Outfall #001. Any change in sampling location(s) must be reviewed and approved by the Department in writing.

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 April 1, 2010).

(2) **Reporting Limits (RLs)** - For the purposes of this permitting action, the Department's RLs for pollutants of concern are as follows:

Parameter	RL
1,1-Dichloroethane	3 ug/L
1,1-Dichloroethene	1.0 ug/L
2,4,5-Trichlorophenoxy acetic acid	10 ug/L
Acetone	25 ug/L
Bromodichloromethane	1 ug/L
Bromoform	1 ug/L
Carbon disulfide	5 ug/L
Carbon tetrachloride	1 ug/L
Chloroform	1 ug/L
Chloropicrin	5 ug/L

SPECIAL CONDITIONS

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

Footnotes:

Parameter	RL
Cis-1,2 Dichloroethene	1 ug/L
Dibromochloromethane	1 ug/L
Hexachloroethane	1 ug/L
Manganese (Total)	100 ug/L
Mercury (Total) Method 1631	0.05 ug/L
Mercury (Total) Method 245	0.2 ug/L
Methylene Chloride	5 ug/L
Cresol (Total)	1 ug/L
Pentachloroethane	10 ug/L
Tetrachloroethene	1 ug/L
Trans 1,2-Dichloroethene	1 ug/L
Trichloroethylene	1 ug/L

(3) **Mercury**

a) **Outfall #001** – Sampling and analysis must be conducted in accordance with EPA's "clean sampling techniques" found in EPA Method 1669, Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels. All mercury analysis shall be conducted in accordance with EPA Method 1631, Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry.

b) **Outfall #002** – 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.

(4) **pH** - Criteria found at 06-096 CMR Department rule Chapter 525 (4)(VIII)(A) (1&2) regarding pH limitations under continuous monitoring is applicable to these discharges when continuous monitoring is utilized.

(5) **Outfall #002** - Additional monitoring may be required by the Department in the Comprehensive Monitoring Plan which may include analysis of separate waste streams prior to co-mingling with other treated or untreated waste streams.

SPECIAL CONDITIONS

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

Footnotes:

(6) **Outfall #001 Supplemental monitoring– Monitoring for the parameters on pages 6,7,8 of this permit is only required if the permittee exceeds a numeric limitation for Carbon Tetrachloride, Chloropicrin, Hexachloroethane or Mercury as established in the routine monitoring on page 4 of this permit.** Once the permittee has completed the four consecutive months of testing, the Department will conduct a statistical evaluation in accordance with the statistical approach outlined in the 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 determine which, if any, parameter(s) exceed or have a reasonable potential to exceed the effluent limits established in this permit. For any parameter(s) identified as exceeding or having a reasonable potential to exceed the limits established in this permit, the permittee will be notified in writing by the Department of this determination and the permittee will be required to continue to monitor for said parameter(s) on a 1/Month basis until otherwise specified by the Department. For the remaining parameters, the permittee will be notified in writing by the Department that it is relieved of the requirement for monitoring for these parameters and the permittee will return to monitoring for the parameters in Routine Monitoring.

B. NARRATIVE EFFLUENT LIMITATIONS

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

2. The effluent must not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated for the classification of the receiving waters.

3. The discharge must not impart visible discoloration, taste, turbidity, toxicity, radioactivity or other properties 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.

SPECIAL CONDITIONS

C. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a minimum of a **Grade I P/C** 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 May 21, 2018; 2) the terms and conditions of this permit; and 3) only from the outfall(s) identified in this permit. Discharges of waste water from any other point source are not authorized under this permit, and must be reported in accordance with Standard Condition D(1)(f), *Twenty-four hour reporting*, of this permit.

E. NOTIFICATION REQUIREMENTS

In accordance with Standard Condition D, the permittee must 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 must 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

The permittee must have a current written comprehensive Operation & Maintenance (O&M) Plan for this facility. The plan must specify how the permittee will 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 must evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the wastewater treatment facility to ensure that it is up-to-date. The O&M Plan must be kept on-site at all times and made available to Department and USEPA personnel upon request.

Within 90 days of completion of new and or substantial upgrades of the wastewater treatment facility, the permittee must 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 must 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 C** of the Fact Sheet for an acceptable certification form to satisfy this Special Condition.

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

The Department reserves the right to establish whole effluent toxicity (WET), analytical chemistry and/or priority pollutant testing pursuant to 06-096 CMR Department rule, Chapter 530, *Surface Water Toxics Control Program*, or other toxicity testing if new information becomes available that indicates the discharge may cause or have a reasonable potential to cause exceedances of ambient water quality criteria/thresholds.

SPECIAL CONDITIONS

H. MONITORING AND REPORTING

Electronic Reporting

NPDES Electronic Reporting, 40 C.F.R. 127, requires MEPDES permit holders to submit monitoring results obtained during the previous month on an electronic discharge monitoring report to the regulatory agency utilizing the USEPA electronic system.

Electronic Discharge Monitoring Reports (DMRs) submitted using the USEPA NetDMR system must be:

1. Submitted by a facility authorized signatory; and
2. Submitted no later than **midnight on the 15th day of the month** following the completed reporting period.

Documentation submitted in support of the electronic DMR may be attached to the electronic DMR. Toxics reporting must be done using the DEP Toxsheet reporting form. An electronic copy of the Toxsheet reporting document must be submitted to your Department compliance inspector as an attachment to an email. In addition, a hardcopy form of this sheet must be signed and submitted to your compliance inspector, or a copy attached to your NetDMR submittal will suffice. Documentation submitted electronically to the Department in support of the electronic DMR must be submitted no later than midnight 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 establish limitations or require additional monitoring, inspections and/or reporting based on new information. The permittee mas also petition the Department at any time for authorization to permit requirements related to monitoring parameters and/or frequency, effluent limitations or other changes based on new information No such changes shall take effect without a formal modification of this permit issued by the Department.

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.

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A. GENERAL PROVISIONS

1. **General compliance**. All discharges shall be consistent with the terms and conditions of this permit; any changes in production capacity or process modifications which result in changes in the quantity or the characteristics of the discharge must be authorized by an additional license or by modifications of this permit; it shall be a violation of the terms and conditions of this permit to discharge any pollutant not identified and authorized herein or to discharge in excess of the rates or quantities authorized herein or to violate any other conditions of this permit.

2. Other materials. Other materials ordinarily produced or used in the operation of this facility, which have been specifically identified in the application, may be discharged at the maximum frequency and maximum level identified in the application, provided:

(a) They are not

(i) Designated as toxic or hazardous under the provisions of Sections 307 and 311, respectively, of the Federal Water Pollution Control Act; Title 38, Section 420, Maine Revised Statutes; or other applicable State Law; or
(ii) Known to be hazardous or toxic by the licensee.

(b) The discharge of such materials will not violate applicable water quality standards.

3. Duty to comply. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of State law and the Clean Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

(a) The permittee shall comply with effluent standards or prohibitions established under section 307(a) of the Clean Water Act, and 38 MRSA, §420 or Chapter 530.5 for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
(b) Any person who violates any provision of the laws administered by the Department, including without limitation, a violation of the terms of any order, rule license, permit, approval or decision of the Board or Commissioner is subject to the penalties set forth in 38 MRSA, §349.

4. Duty to provide information. The permittee shall furnish to the Department, within a reasonable time, any information which the Department may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The permittee shall also furnish to the Department upon request, copies of records required to be kept by this permit.

5. Permit actions. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

6. Reopener clause. The Department reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedule of compliance or other provisions which may be authorized under 38 MRSA, §414-A(5).

7. Oil and hazardous substances. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under section 311 of the Federal Clean Water Act; section 106 of the Federal Comprehensive Environmental Response, Compensation and Liability Act of 1980; or 38 MRSA §§ 1301, et. seq.

8. Property rights. This permit does not convey any property rights of any sort, or any exclusive privilege.

9. Confidentiality of records. 38 MRSA §414(6) reads as follows. "Any records, reports or information obtained under this subchapter is available to the public, except that upon a showing satisfactory to the department by any person that any records, reports or information, or particular part or any record, report or information, other than the names and addresses of applicants, license applications, licenses, and effluent data, to which the department has access under this subchapter would, if made public, divulge methods or processes that are entitled to protection as trade secrets, these records, reports or information must be confidential and not available for public inspection or examination. Any records, reports or information may be disclosed to employees or authorized representatives of the State or the United States concerned with carrying out this subchapter or any applicable federal law, and to any party to a hearing held under this section on terms the commissioner may prescribe in order to protect these confidential records, reports and information, as long as this disclosure is material and relevant to any issue under consideration by the department."

10. Duty to reapply. If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit.

11. Other laws. The issuance of this permit does not authorize any injury to persons or property or invasion of other property rights, nor does it relieve the permittee if its obligation to comply with other applicable Federal, State or local laws and regulations.

12. Inspection and entry. The permittee shall allow the Department, or an authorized representative (including an authorized contractor acting as a representative of the EPA Administrator), upon presentation of credentials and other documents as may be required by law, to:

(a) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
(b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;
(c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and
(d) Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

B. OPERATION AND MAINTENACE OF FACILITIES

1. General facility requirements.

(a) The permittee shall collect all waste flows designated by the Department as requiring treatment and discharge them into an approved waste treatment facility in such a manner as to

maximize removal of pollutants unless authorization to the contrary is obtained from the Department.

(b) The permittee shall at all times maintain in good working order and operate at maximum efficiency all waste water collection, treatment and/or control facilities.

(c) All necessary waste treatment facilities will be installed and operational prior to the discharge of any wastewaters.

(d) Final plans and specifications must be submitted to the Department for review prior to the construction or modification of any treatment facilities.

(e) The permittee shall install flow measuring facilities of a design approved by the Department.

(f) The permittee must provide an outfall of a design approved by the Department which is placed in the receiving waters in such a manner that the maximum mixing and dispersion of the wastewaters will be achieved as rapidly as possible.

2. Proper operation and maintenance. 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. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

3. Need to halt or reduce activity not a defense. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. Duty to mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge or sludge use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

5. Bypasses.

(a) Definitions.

(i) Bypass means the intentional diversion of waste streams from any portion of a treatment facility.

(ii) Severe property damage means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

(b) Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (c) and (d) of this section.

(c) Notice.

(i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.

(ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D(1)(f), below. (24-hour notice).

(d) Prohibition of bypass.

(i) Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless:

(A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
(C) The permittee submitted notices as required under paragraph (c) of this section.

(ii) The Department may approve an anticipated bypass, after considering its adverse effects, if the Department determines that it will meet the three conditions listed above in paragraph (d)(i) of this section.

6. Upsets.

(a) Definition. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

(b) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph (c) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

(c) Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:

(i) An upset occurred and that the permittee can identify the cause(s) of the upset;
(ii) The permitted facility was at the time being properly operated; and
(iii) The permittee submitted notice of the upset as required in paragraph D(1)(f) , below. (24 hour notice).
(iv) The permittee complied with any remedial measures required under paragraph B(4).

(d) Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

C. MONITORING AND RECORDS

1. General Requirements. This permit shall be subject to such monitoring requirements as may be reasonably required by the Department including the installation, use and maintenance of monitoring equipment or methods (including, where appropriate, biological monitoring methods). The permittee shall provide the Department with periodic reports on the proper Department reporting form of monitoring results obtained pursuant to the monitoring requirements contained herein.

2. Representative sampling. Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge. If effluent limitations are based wholly or partially on quantities of a product processed, the permittee shall ensure samples are representative of times when production is taking place. Where discharge monitoring is required when production is less than 50%, the resulting data shall be reported as a daily measurement but not included in computation of averages, unless specifically authorized by the Department.

3. Monitoring and records.

(a) Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

(b) Except for records of monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years, the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Department at any time.

(c) Records of monitoring information shall include:

(i) The date, exact place, and time of sampling or measurements;
(ii) The individual(s) who performed the sampling or measurements;
(iii) The date(s) analyses were performed;
(iv) The individual(s) who performed the analyses;
(v) The analytical techniques or methods used; and
(vi) The results of such analyses.

(d) Monitoring results must be conducted according to test procedures approved under 40 CFR part 136, unless other test procedures have been specified in the permit.

(e) State law provides that any person who tampers with or renders inaccurate any monitoring devices or method required by any provision of law, or any order, rule license, permit approval or decision is subject to the penalties set forth in 38 MRSA, §349.

D. REPORTING REQUIREMENTS

1. Reporting requirements.

(a) Planned changes. The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when:

(i) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); or

(ii) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under Section D(4).

(iii) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan;

(b) Anticipated noncompliance. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(c) Transfers. This permit is not transferable to any person except upon application to and approval of the Department pursuant to 38 MRSA, § 344 and Chapters 2 and 522.

(d) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.

(i) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Department for reporting results of monitoring of sludge use or disposal practices.

(ii) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136 or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Department.

(iii) Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified by the Department in the permit.

(e) Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.

(f) Twenty-four hour reporting.

(i) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance

has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(ii) The following shall be included as information which must be reported within 24 hours under this paragraph.

(A) Any unanticipated bypass which exceeds any effluent limitation in the permit.
(B) Any upset which exceeds any effluent limitation in the permit.
(C) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Department in the permit to be reported within 24 hours.

(iii) The Department may waive the written report on a case-by-case basis for reports under paragraph (f)(ii) of this section if the oral report has been received within 24 hours.

(g) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (d), (e), and (f) of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph (f) of this section.

(h) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Department, it shall promptly submit such facts or information.

2. Signatory requirement. All applications, reports, or information submitted to the Department shall be signed and certified as required by Chapter 521, Section 5 of the Department's rules. State law provides that any person who knowingly makes any false statement, representation or certification in any application, record, report, plan or other document filed or required to be maintained by any order, rule, permit, approval or decision of the Board or Commissioner is subject to the penalties set forth in 38 MRSA, §349.

3. Availability of reports. Except for data determined to be confidential under A(9), above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. As required by State law, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal sanctions as provided by law.

4. Existing manufacturing, commercial, mining, and silvicultural dischargers. In addition to the reporting requirements under this Section, all existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Department as soon as they know or have reason to believe:

(a) That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

(i) One hundred micrograms per liter (100 ug/l);
(ii) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
(iii) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with Chapter 521 Section 4(g)(7); or
(iv) The level established by the Department in accordance with Chapter 523 Section 5(f).

(b) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following ``notification levels'':

(i) Five hundred micrograms per liter (500 ug/l);
(ii) One milligram per liter (1 mg/l) for antimony;
(iii) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with Chapter 521 Section 4(g)(7); or
(iv) The level established by the Department in accordance with Chapter 523 Section 5(f).

5. Publicly owned treatment works.

(a) All POTWs must provide adequate notice to the Department of the following:

(i) Any new introduction of pollutants into the POTW from an indirect discharger which would be subject to section 301 or 306 of CWA or Chapter 528 if it were directly discharging those pollutants.
(ii) Any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of issuance of the permit.
(iii) For purposes of this paragraph, adequate notice shall include information on (A) the quality and quantity of effluent introduced into the POTW, and (B) any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

(b) When the effluent discharged by a POTW for a period of three consecutive months exceeds 80 percent of the permitted flow, the permittee shall submit to the Department a projection of loadings up to the time when the design capacity of the treatment facility will be reached, and a program for maintaining satisfactory treatment levels consistent with approved water quality management plans.

E. OTHER REQUIREMENTS

1. Emergency action - power failure. Within thirty days after the effective date of this permit, the permittee shall notify the Department of facilities and plans to be used in the event the primary source of power to its wastewater pumping and treatment facilities fails as follows.

(a) For municipal sources. During power failure, all wastewaters which are normally treated shall receive a minimum of primary treatment and disinfection. Unless otherwise approved, alternate power supplies shall be provided for pumping stations and treatment facilities. Alternate power supplies shall be on-site generating units or an outside power source which is separate and independent from sources used for normal operation of the wastewater facilities.

(b) For industrial and commercial sources. The permittee shall either maintain an alternative power source sufficient to operate the wastewater pumping and treatment facilities or halt, reduce or otherwise control production and or all discharges upon reduction or loss of power to the wastewater pumping or treatment facilities.

2. Spill prevention. (applicable only to industrial sources) Within six months of the effective date of this permit, the permittee shall submit to the Department for review and approval, with or without conditions, a spill prevention plan. The plan shall delineate methods and measures to be taken to prevent and or contain any spills of pulp, chemicals, oils or other contaminates and shall specify means of disposal and or treatment to be used.

3. **Removed substances.** Solids, sludges trash rack cleanings, filter backwash, or other pollutants removed from or resulting from the treatment or control of waste waters shall be disposed of in a manner approved by the Department.

4. **Connection to municipal sewer.** (applicable only to industrial and commercial sources) All wastewaters designated by the Department as treatable in a municipal treatment system will be cosigned to that system when it is available. This permit will expire 90 days after the municipal treatment facility becomes available, unless this time is extended by the Department in writing.

F. DEFINITIONS. For the purposes of this permit, the following definitions shall apply. Other definitions applicable to this permit may be found in Chapters 520 through 529 of the Department's rules

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For bacteria, the average shall be the geometric mean.

Average monthly discharge limitation means the highest allowable average of daily discharges over a calendar month, calculated as the sum of all daily discharges measured during a calendar month divided by the number of daily discharges measured during that month. Except, however, bacteriological tests may be calculated as a geometric mean.

Average weekly discharge limitation means the highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week.

Best management practices ("BMPs") means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the State. BMPs also include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.

Composite sample means a sample consisting of a minimum of eight grab samples collected at equal intervals during a 24 hour period (or a lesser period as specified in the section on monitoring and reporting) and combined proportional to the flow over that same time period.

Continuous discharge means a discharge which occurs without interruption throughout the operating hours of the facility, except for infrequent shutdowns for maintenance, process changes, or other similar activities.

Daily discharge means the discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the daily discharge is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurement, the daily discharge is calculated as the average measurement of the pollutant over the day.

Discharge Monitoring Report ("DMR") means the EPA uniform national form, including any subsequent additions, revisions, or modifications for the reporting of self-monitoring results by permittees. DMRs must be used by approved States as well as by EPA. EPA will supply DMRs to any approved State upon request. The EPA national forms may be modified to substitute the State Agency name, address, logo, and other similar information, as appropriate, in place of EPA's.

Flow weighted composite sample means a composite sample consisting of a mixture of aliquots collected at a constant time interval, where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab sample means an individual sample collected in a period of less than 15 minutes.

Interference means a Discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

(1) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and
(2) Therefore is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation) or of the prevention of sewage sludge use or disposal in compliance with the following statutory provisions and regulations or permits issued thereunder (or more stringent State or local regulations): Section 405 of the Clean Water Act, the Solid Waste Disposal Act (SWDA) (including title II, more commonly referred to as the Resource Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to subtitle D of the SWDA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection, Research and Sanctuaries Act.

Maximum daily discharge limitation means the highest allowable daily discharge.

New source means any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced:

(a) After promulgation of standards of performance under section 306 of CWA which are applicable to such source, or
(b) After proposal of standards of performance in accordance with section 306 of CWA which are applicable to such source, but only if the standards are promulgated in accordance with section 306 within 120 days of their proposal.

Pass through means a discharge which exits the POTW into waters of the State in quantities or concentrations which, alone or in conjunction with a discharge or discharges from other sources, is a cause of a violation of any requirement of the POTW's NPDES permit (including an increase in the magnitude or duration of a violation).

Permit means an authorization, license, or equivalent control document issued by EPA or an approved State to implement the requirements of 40 CFR parts 122, 123 and 124. Permit includes an NPDES general permit (Chapter 529). Permit does not include any permit which has not yet been the subject of final agency action, such as a draft permit or a proposed permit.

Person means an individual, firm, corporation, municipality, quasi-municipal corporation, state agency, federal agency or other legal entity.

Point source means any discernible, confined and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation or vessel or other floating craft, from which pollutants are or may be discharged.

Pollutant means dredged spoil, solid waste, junk, incinerator residue, sewage, refuse, effluent, garbage, sewage sludge, munitions, chemicals, biological or radiological materials, oil, petroleum products or byproducts, heat, wrecked or discarded equipment, rock, sand, dirt and industrial, municipal, domestic, commercial or agricultural wastes of any kind.

Process wastewater means any water which, during manufacturing or processing, comes into direct contact with or results from the production or use of any raw material, intermediate product, finished product, byproduct, or waste product.

Publicly owned treatment works ("POTW") means any facility for the treatment of pollutants owned by the State or any political subdivision thereof, any municipality, district, quasi-municipal corporation or other public entity.

Septage means, for the purposes of this permit, any waste, refuse, effluent sludge or other material removed from a septic tank, cesspool, vault privy or similar source which concentrates wastes or to which chemicals have been added. Septage does not include wastes from a holding tank.

Time weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected over a constant time interval.

Toxic pollutant includes any pollutant listed as toxic under section 307(a)(1) or, in the case of sludge use or disposal practices, any pollutant identified in regulations implementing section 405(d) of the CWA. Toxic pollutant also includes those substances or combination of substances, including disease causing agents, which after discharge or upon exposure, ingestion, inhalation or assimilation into any organism, including humans either directly through the environment or indirectly through ingestion through food chains, will, on the basis of information available to the board either alone or in combination with other substances already in the receiving waters or the discharge, cause death, disease, abnormalities, cancer, genetic mutations, physiological malfunctions, including malfunctions in reproduction, or physical deformations in such organism or their offspring.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

Whole effluent toxicity means the aggregate toxic effect of an effluent measured directly by a toxicity test.

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

AND

MAINE WASTE DISCHARGE LICENSE

FACT SHEET

DATE: **March 7, 2019**

PERMIT NUMBER: **ME0000639**
WASTE DISCHARGE LICENSE: **W001048-5N-F-R**

NAME AND ADDRESS OF APPLICANT:

MALLINCKRODT US LLC
c/o Woodard & Curran
41 Hutchins Drive
Portland, Maine 04012

COUNTY: **Penobscot**

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

99 Industrial Way
Orrington, Maine 04474

RECEIVING WATER/CLASSIFICATION: **Penobscot River/Class B**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **Mr. David W. Dedian**
Senior VP/Senior Area Mgr.
Woodard & Curran
(207) 558-3697
e-mail: ddedian@woodardcurran.com

1. APPLICATION SUMMARY

a. Application: Mallinckrodt US LLC has filed an application with the Department to renew combination Maine Pollutant Discharge Elimination System (MEPDES) permit #ME0000639/Maine Waste Discharge License (WDL) #W001048-5N-D-R (permit hereinafter), which was issued by the Department to Mallinckrodt on July 3, 2013. The permit authorized the discharge a monthly flow of 60,000 gallons per day (gpd) of treated groundwater from an on-site remediation project to the Penobscot River, Class B, in Orrington, Maine.

The July 3, 2013, permit was subsequently modified on May 10, 2016, to increase the monthly average flow limit for Outfall #001 from 60,000 gallons per day (gpd) to 100,000 gpd at the request of the permittee.

1. APPLICATION SUMMARY (cont'd)

The manufacturing facility ceased operations in September 2000. The wastewater treatment system continued operation thereafter to treat ground waters associated with a remediation project overseen by the Department's Bureau of Remediation and Waste Management. As an amendment to the December 8, 2003, application for permit renewal, the permittee submitted a document entitled, Draft Design Basis Report, Former HoltraChem Manufacturing Site, Orrington, Maine, August 19, 2011, prepared for Mallinckrodt by the consulting firm Woodard & Curran. The report describes the basis for the design of a new ground water treatment plant (GWTP) to treat present and future contaminated ground water flows. The permittee was seeking authorization to discharge up to a monthly average flow of 60,000 gpd. Significant remediation activities have occurred at the site since 2011 and site conditions have changed due to removal of contaminated soils and continue to improve. Approval to construct the new treatment plant was provided by the MEDEP and the new GWTP was constructed, started/commissioned and became operational on or about September 1, 2012. The plant permit was subsequently approved through a minor modification for a monthly average discharge of 100,000 gpd.

b. Source description & waste water treatment – The April 2000 licensing action contained terms and conditions to limit the quantity of pollutants discharged from a facility that from its construction in 1967 to September 2000, engaged in the manufacture of chlorine and related products including: sodium hydroxide, (caustic soda), sodium hypochlorite (chlorine bleach), hydrochloric acid and chloropicrin. However, since operations have ceased the GWTP is treating only groundwater and residual water from remediation activities.

The former manufacturing facility was sited on a 235-acre parcel of land. The immediate manufacturing operations involved 12 of the acres. The site remediation program has removed two of the former landfills (Landfill 1 & 2) and capped the remaining three landfills that remain on site in accordance with Department requirements. These former landfills were utilized between 1970 and 1983. The site also contained six separate leachfields to dispose of sanitary waste waters including mercury residues and laboratory wastes. All of these leachfields have been removed and/or closed.

The following italicized text is taken from the BEP's August 19, 2010, Order of Appeal;

"Groundwater Collection and Waste Water Treatment - The Commissioner's Order at pages 34-35, paragraph 7, requires the continued operation of the existing groundwater collection systems and wastewater treatment plant. The provision also includes shut down criteria for when the wastewater treatment plant could be terminated. Ms. Ladner testified that the requirement for treatment of contaminated waters, including language for termination of the system, is typical of remediation orders. Mallinckrodt has not objected to the need for the collection and treatment of groundwater or the operation of a wastewater treatment plant to treat

1. APPLICATION SUMMARY (cont'd)

contamination. It has not objected to the shutdown criteria. Mallinckrodt has proposed to build a new wastewater treatment plant on-site.

The requirement for continued operation of the wastewater treatment plant and groundwater collection systems is upheld; however, given that mercury contaminated wastes will remain on-site in Landfills 3, 4 and 5, and possibly elsewhere as discussed in Findings of Fact 10(C) and 10(D) of this Decision, the Board finds that the groundwater collection and treatment system must be revised. …The groundwater extraction treatment system must be designed to address mercury contamination as well as organic contaminants including carbon tetrachloride which evidence indicates has leaked and may continue to leach from wastes in the vicinity of Landfill 4. The water collected from the areas around Landfills 3,4 and 5 cannot be used to dilute concentrations of mercury in treated discharge water. Rather, the water from this area must be monitored for compliance with the media protection standards prior to being combined with groundwater collected from the vicinity of Landfill Area 1. The Board finds that the Department will determine when the system may be shut down, and the level of groundwater monitoring required to determine whether the system needs to be reactivated to address contaminated groundwater."

Wastewater Discharge - The discharge limits should be established based upon both concentration of contaminant and the mass of contaminant. Wastewater discharges shall be monitored in such a fashion as to measure continuously the liquid volume rate of discharge, pH, and three times per week for mercury. Other parameters with set discharge limits should continue to be monitored based on the current permit schedule. The wastewater discharge limits should be set in terms of both concentration and mass, maximum daily and monthly average mass discharge limit for mercury, carbon tetrachloride, trichloroethylene, chloropicrin and other contaminants of concern as the Department deems necessary.

As noted above, Mallinckrodt constructed the planned new GWTP to address contaminated groundwater at the Site and it has been in operation since 2012. This system has been collecting and treating the groundwater and construction wastewaters generated during the ongoing remedial efforts (building demolition, soils removal and restoration and landfill capping/remediation/removal). The GWTP has generally met the discharge requirements over the past permit period and continues to meet the conditions of the permit issued July 3, 2013 (as modified by a minor modification on May 10, 2016).

The previous permit established limitations and monitoring requirements for two outfalls. Waste streams contributing to Outfall #001 identified in HMC's 4/95 WDL application for renewal included various process waste waters, wash waters and storm water. All process waste waters associated with the operational manufacturing facility were treated in a batch mode of operation and tested for compliance (internal Outfall #002) and were conveyed to Outfall #001 for discharge to the Penobscot River via a

1. APPLICATION SUMMARY (cont'd)

ductile iron pipe measuring 18 inches in diameter with approximately one foot of water over the top of the pipe at mean low water. All of these process waste streams have since been eliminated.

The design of the ground water treatment plant in basic terms, consists of two trains, each designed for a flow of at least 30 gpm and not to exceed 100,000 gallons per day 1) flows from the southerly stream interceptor trench (SSIT), stormwater, construction dewatering, remediation side streams, and miscellaneous flows, all of which may require silica and/or gross solids removal via CoMag™ ballasted flocculation treatment, pH adjustment and filtration prior to Mersorb treatment; and 2) extracted groundwater from various areas of the Site, all of which is expected to be free of silica and solids, and requires only simple bag filtration prior to Mersorb treatment. Note, flow from the SSIT is anticipated to cease in the next 12 to 18 months as the remedial action progresses and contaminated soil is removed.

OUTFALL #001

Outfall #001 discharges all water from the waste water treatment plant. This includes groundwater extracted downgradient of the landfills and contains mercury and a number of organic contaminants. This stream consists of groundwater from the currently-operating temporary GWES in the former Landfill 1 Area including two (2) extraction wells (EW-3 and EW-5) that discharge to the GWTP via a 1.5-inch high-density polyethylene (HDPE) pipe (force main) along the southerly side of the Site. The current flow from the temporary GWES is about 32 gpm. This system will remain operating until the Final GWES is operational.

This groundwater flows through a five (5) micron bag filter; up to ten Mersorb vessels, and a final one (1) micron bag filter. Mersorb is a proprietary formulation of granulated activated carbon (GAC) contains sulfur to enhance the GAC's ability to adsorb mercury. Conventional GAC may be utilized in addition to Mersorb depending on the relative concentration of VOCs and mercury. The treated groundwater is discharged continuously through a new 4-inch diameter line that discharges to the Penobscot River. The sampling location for Outfall #001 is a valved sample point inside the new GWTP, just prior to the new 4-inch diameter discharge line. The October 3, 2011 application amendment indicates potential future groundwater flows from additional extraction wells at the former area of Landfill 1 and Landfills, 3 and 4 that have been factored into the treatment plant design. The Design Memo of the final groundwater extraction system (GWES) was approved on October 30, 2018 by the Maine Department of Environmental Protection (MEDEP)

1. APPLICATION SUMMARY (cont'd)

The final GWES force main must also include capacity for eventual groundwater extraction from the Landfills 3 through 5 area (Landfills 3-5). An additional hydrogeological investigation is scheduled for the Landfills 3-5 area, as described in the July 19, 2018 Pre-Design Work Plan for Landfills 3 through 5 Bedrock Groundwater Assessment. Based on results of hydrogeologic investigations and testing, a conceptual GWES design will be proposed for this area, which will include GWES flow. Until that time, the maximum flow from the Landfills 3-5 GWES will be 10 gpm based on the anticipated groundwater flow through shallow bedrock in that area of the Site (as discussed in the July 19, 2018 Pre-Design Work Plan). This flow is used to size the pumps for the GWES. The treatment plant extraction system has been modified to include more extraction wells pumping at lower flows to meet the requirements noted above and avoid over pumping and capture of clean water.

OUTFALL #002

Groundwater extracted from the SSIT is pumped from a collection sump and delivered via an underground pipeline to a 10,000-gallon mix tank where reagents may be added to precipitate dissolved silica. A separate stream that includes stormwater and potential wastewater related to site remediation is pumped via a separate underground line to two 15,000-gallon storage tanks. Water stored in the tanks may be combined with the SSIT stream or treated separately. The first component of the treatment train is the CoMag system, a process that enhances removal of precipitated solids. Sludge produced by the CoMag system is further conditioned with polymer and dewatered in a filter press. The solids are managed in accordance with applicable federal, state and/or local rules and regulations. Water processed through the CoMag system is adjusted to a pH of approximately 10.5 and trace solids are removed by filtration. The pH is then adjusted to between 6.0 – 9.0 standard units and dissolved contaminants are removed in a separate bank of up to ten Mersorb vessels. The treated wastewater is discharged as Outfall #002, inside the GWTP. The sampling location for Outfall #002 is a valved sample point inside the new treatment building, just prior to combining with the other water streams at Outfall #001.

The permittee has indicated there are plans to modify the facility treatment facility during the five-year term of this permit. Once completed, Outfall #002 will no longer be necessary and can be removed from the permit. The permittee will be required to submit an application to the Department to remove the limitations and monitoring requirements for Outfall #002 once construction at the facility is completed. As noted above this will include removal of flow from the SSIT.

1. APPLICATION SUMMARY (cont'd)

c. Regulatory authority- On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (EPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine. From that point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System (MEPDES) permit program and permit #ME000639 (same as the NPDES permit number) will be utilized as the primary reference number for the Mallinckrodt facility.

d. Regulatory history – Relevant regulatory actions for the former manufacturing facility include, but are not limited to, the following;

December 21, 1971 - Sobin Chlor-Alkali, Inc. filed a document, *Registration For The Discharge of Mercury and Mercury Compounds Into Waters Of The State* with the State of Maine's Environmental Improvement Commission. The document (registration #Hg 8) stated that between July 15 and December 21, 1971, the manufacturing facility in Orrington had discharged a minimum and maximum concentrations of elemental mercury of 2.2 ug/L and 14 ug/L respectively. The document also indicated that those minimum and maximum concentrations resulted in mass discharges ranging from 0.087 lbs/day to 0.348 lbs/day respectively, based on a maximum discharge flow rate of 4.6 million gallons per day.

2. PERMIT SUMMARY

October 13, 1976 - The Department issued WDL #1048 to IMC Chemical Group, Inc. which authorized the discharge of waste waters containing mercury.

June 30, 1977 - The Department amended WDL #1048. The licensee requested the modification to cover a major expansion and production increase at the facility. The monthly average and daily maximum mass limitations for mercury remained the same as the 10/13/76 WDL.

October 22, 1980 - The Department amended WDL #1048 to remove the limitations and monitoring requirements for sodium chlorate and sodium dichromate.

October 28, 1981 - The Department issued a renewal of WDL #1048 in the name of LCP Chemicals - Maine, Inc. Mercury limitations were carried forward from the 10/13/76 licensing action.

July 14, 1982 - The Department modified WDL #1048 by eliminating the monitoring requirement for suspended solids but retained the suspended solids limitation.

2. PERMIT SUMMARY (cont'd)

December 13, 1989 - LCP, Inc. entered into a Consent Agreement with the Board of Environmental Protection and Maine Attorney General's office to resolve violations of LCP's water Discharge License. The Consent Agreement required LCP to pay a monetary penalty and implement corrective measures and improvements of its waste water treatment facility including the requirement for a Spill Prevention and Countermeasure Control (SPCC) plan; the design of a final effluent treatment system to adjust and continuously monitor for pH and collect flow-proportional effluent samples and record daily total flow discharged.

May 3, 1990 - The U.S. Environmental Protection Agency (EPA) issued a public notice draft National Pollutant Discharge Elimination System (NPDES) permit #ME0000639.

May 17, 1990 - The Department issued WDL #W001048-44-B-R to LCP Chemicals carrying forward all the license limits and monitoring requirements of the 10/28/81 license.

June 18, 1990 - Pursuant to Section 401 of the Clean Water Act (CWA), the Department issued a water quality certification for public notice draft NPDES permit #ME0000639, dated 5/30/90.

July 2, 1990 - The EPA issued NPDES permit #ME0000639 to LCP Chemicals.

April 26, 1993 - LCP Chemicals submitted a letter to EPA requesting a modification of NPDES permit #ME0000639. The permittee requested a change in reporting whole effluent toxicity (WET) test results from an endpoint of LC50 to an endpoint of no observed effect concentration (NOEC). In addition, the permittee requested that Outfall #003 (storm water) be removed from the permit and be covered under a General StormWater Permit.

April 11, 1994 - The HMC filed an application with the Department to transfer WDL #W001048-44-B-R from LCP Chemicals to the HMC.

June 17, 1994 - The Department issued Order #W001048-44-B-T transferring WDL #W001048-44-B-R to the HMC.

December 28, 1994 - The Department issued a letter to EPA supporting HMC's permit modification request of 4/26/93.

January 1995 - The HMC submitted an application to the EPA for renewal of NPDES permit #ME0000639.

April 5, 1995 - The EPA issued a public notice draft permit modification of NPDES permit #ME0000639. The modification approved the permittee's request of 4/26/93.

April 28, 1995 - The HMC submitted an application to the Department for the renewal of WDL #W001048-44-B-R.

2. PERMIT SUMMARY (cont'd)

May 25, 1995 - The EPA issued an administrative modification of NPDES permit #ME0000639 by issuing a new cover page with a name change for the permit to reflect the fact that HMC purchased LCP Chemicals.

June 7, 1995 - The EPA deemed HMC's 1/95 application submission for the renewal of NPDES permit #ME0000639 complete for processing.

June 14, 1995 - The HMC issued a letter to EPA withdrawing the portion of the 4/26/93 permit modification that sought to have Outfall #003 (storm water) covered under a General Storm Water permit. The withdrawal resulted from the fact that random sampling of the outfall by EPA personnel in the spring of 1995 indicated that detectable levels of mercury were present in the discharge.

June 28, 1995 - The Department issued a Section 401 water quality certification, with conditions, of the 4/5/95 NPDES permit modification.

June 29, 1995 - The EPA issued a permit modification of NPDES permit #ME0000639. The modification changed the name from LCP Chemicals to HMC and deleted WET limits and replaced them with a once per year reporting requirement.

August 8, 1995 - A meeting between HoltraChem personnel, HoltraChem's consultant and legal counsel, Department personnel and an attorney from the State's Attorney's General Office was held in the Department's Southern Maine Regional Office to discuss a strategy for permitting/licensing Outfall #003 in the pending permit/license renewals. All parties agreed that in light of the then current Maine law, 38 M.R.S.A., §420(1) prohibiting new discharges of mercury, the discharge of detectable levels of mercury via Outfall #003 would best be managed/regulated under the on-going federal Resource Conservation Recovery Act (RCRA) Corrective Action Program.

August 24, 1995 - The HMC's legal counsel issued a letter to the Department confirming the agreement from the 8/8/95 meeting and the company's commitment to address the discharge of mercury from Outfall#003 under the RCRA Corrective Action Process.

August 28, 1996 - The Department issued a letter to the HMC stating that based on five quarterly Whole Effluent Toxicity (WET) tests and five chemical specific (priority pollutant) tests conducted in 1995 and 1996, no reasonable potential to violate water quality criteria existed for the effluent discharged from Outfall #001.

April 9, 1997 - Pursuant to Section 308 of the Clean Water Act, the EPA issued a letter to the HMC requesting additional information regarding dry weather and wet weather sampling for mercury at Outfall #003.

2. PERMIT SUMMARY (cont'd)

May 1, 1997 - The HMC submitted a letter to the Department and EPA proposing to accept lower monthly average and daily maximum license/permit limitations for mercury based on a statistical past demonstrated performance evaluation of the process waste water effluent data for 1994-1996.

June 1997 - The State legislature enacted a law that amended Maine law 38 M.R.S.A., Section 420 regarding the discharges of mercury. The law established more stringent limitations for the discharge of mercury and a compliance schedule to meet the new limits for certain facilities meeting specific criteria.

December 1997 - The HMC and the Department entered into an Administrative Consent Agreement and Enforcement Order to resolve violations of HMC's water discharge license and discharges of hazardous waste without a license.

June 1999 - The State legislature enacted a law that amended Maine law 38 M.R.S.A. Section 420 regarding the discharges of mercury. The law required the Department to propose new water quality standards for mercury- and required the Department to establish interim discharge limitations and pollution prevention plans for facilities discharging mercury.

September 15, 1999 - Per a request by the Department, the HMC submitted additional information (a supplement to the 4/28/95 WDL application) on a new waste water treatment facility.

April 10, 2000 – The Department issued WDL #W001048-5N-C-R, to HoltraChem Manufacturing Company LLC with an expiration date of December 31, 2003.

December10, 2003 – Mallinckrodt Inc. submitted a timely and complete application to the Department to renew the WDL issued on April 10, 2000.

November 24, 2008 – The Department issued a Compliance Order to United States Surgical Corporation and Mallinckrodt designating the former HoltraChem site in Orrington, Maine as an Uncontrolled Hazardous Substance Site. In general, the Order required Mallinckrodt to submit to the Department for review and approval; 1) a Dismantling Plan, 2) a Corrective Measures Implementation Plan, 3) a modification to the existing Sediment Prevention Plan, and 4) a revised Comprehensive Monitoring Plan. The Order also required continued operation of the wastewater treatment plant and groundwater collections systems.

December 19, 2008 – Mallinckrodt filed an appeal with the Board of Environmental Protection (BEP) of the Compliance Order issued by the Department on November 24, 2008.

August 19, 2010 – The BEP issued an Order of Appeal that modified the terms and conditions of the Department Compliance order issued on November 24, 2008.

2. PERMIT SUMMARY (cont'd)

September 17, 2010 – Mallinckrodt filed a Petition For Review of Final Agency Action (M.R.CIV.P.80C) With Independent Claim For Relief with the Superior Court in Bangor, Maine.

October 3, 2011 – Mallinckrodt amended its December 2003 application for WDL renewal by submitting a copy of a document entitled, Draft Design Basis Report, Former HoltraChem Manufacturing Site, Orrington, Maine, dated August 19, 2011. The report contained the design basis for a new waste water treatment system to be constructed by July 2012, to treat all contaminated surface and ground waters that are collected pursuant to the BEP Order of Appeal dated August 19, 2010.

July 3, 2013 – The Department issued combination MEPDES permit #ME0000639/WDL #W001048-5N-D-R, for five-year term.

May 10, 2016 – The Department issued a modification of the 7/3/13 MEPDES permit/WDL that increased the monthly average flow limit for Outfall #001 from 60,000 gallons per day (gpd) to 100,000 gpd at the request of the permittee.

May 21, 2018 – Mallinckrodt filed a timely and complete application to the Department to renew the MEPDES/WDL for the Orrington facility.

3. CONDITIONS OF PERMIT

Maine law, 38 M.R.S. §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.

Maine law 38 M.R.S. §414-A(1)(D). *Conditions of Licenses* states " *The department shall issue a license for the discharge of any pollutants only if it finds that the discharge will be subject to effluent limitations that require application of the best practicable treatment. "Effluent limitations" means any restriction or prohibition including, but not limited to, effluent limitations, standards of performance for new sources, toxic effluent standards and other discharge criteria regulating rates, quantities and concentrations of physical, chemical, biological and other constituents that are discharged directly or indirectly into waters of the State. "Best practicable treatment" means the methods of reduction, treatment, control and handling of pollutants, including process methods, and the application of best conventional pollutant control technology or best available technology economically achievable, for a category or class of discharge sources that the department determines are*

3. CONDITIONS OF PERMIT (cont'd)

best calculated to protect and improve the quality of the receiving water and that are consistent with the requirements of the Federal Water Pollution Control Act, as amended, and published in 40 Code of Federal Regulations. If no applicable standards exist for a specific activity or discharge, the department must establish limits on a case-by-case basis using best professional judgment, after consultation with the applicant and other interested parties of record. In determining best practicable treatment for each category or class, the department shall consider the existing state of technology, the effectiveness of the available alternatives for control of the type of discharge and the economic feasibility of such alternatives. "

Maine law, 38 M.R.S. §420(1-B) *Certain deposits and discharges prohibited*, states in part *"No person, firm, corporation or other legal entity shall place, deposit, discharge or spill, directly or indirectly, into the ground water, inland surface waters or tidal waters of this State, or on the ice thereof, or on the banks thereof so that the same may flow or be washed into such waters, or in such manner that the drainage therefrom may flow into such waters, any of the following substances:*

Mercury - Facilities discharging mercury into the waters of the State shall make reasonable progress to develop, incorporate and continuously improve pollution prevention practices, and implement economically achievable future improvements in wastewater technology, in order to reduce their dependence upon mercury products, reduce or remove discharges of mercury over time, and help in the restoration of the waters of the State. This subsection establishes ambient water quality criteria for mercury that identify that level of mercury considered safe for human health and the environment.

A. The ambient criteria for mercury are as follows:

(1) Ambient water quality criteria for aquatic life:

(a) Freshwater acute: 1.7 micrograms per liter;
(b) Freshwater chronic: 0.91 micrograms per liter;
(c) Saltwater acute: 2.1 micrograms per liter; and
(d) Saltwater chronic: 1.1 micrograms per liter; and

(2) Fish tissue residue criterion for human health: 0.2 milligrams per kilogram in the edible portion of fish.

3. CONDITIONS OF PERMIT (cont'd)

B. A facility is not in violation of the ambient criteria for mercury if:

(1) The facility is in compliance with an interim discharge limit established by the department pursuant to section 413, subsection 11; or

(2) The facility is in compliance with a remediation or corrective action plan, license or order approved either by the department pursuant to section 1301, 1304, 1319, 1364 or 1365, or by the United States Environmental Protection Agency under federal law with the concurrence of the department. "

4. RECEIVING WATER STANDARDS

Maine law, 38 M.R.S., Section 467(7)(A)(6) indicates the Penobscot River main stem, from the Maine Central Railroad bridge in Bangor to a line extended in an east-west direction from a point 1.25 miles upstream of the confluence of Reeds Brook in Hampden, is classified as a Class B waterway. The Legislature finds that the free-flowing habitat of this river segment provides irreplaceable social and economic benefits and that this use must be maintained. Maine law, 38 M.R.S., Section 465(3) describes standards for classification of Class B waters, in part, as follows;

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

The dissolved oxygen content of Class B waters may not be less than 7 parts per million or 75% of saturation, whichever is higher, except that for the period from October 1st to May 14th, in order to ensure spawning and egg incubation of indigenous fish species, the 7-day mean dissolved oxygen concentration may not be less than 9.5 parts per million and the one-day minimum dissolved oxygen concentration may not be less than 8.0 parts per million in identified fish spawning areas. Between April 15th and October 31st, the number of Escherichia coli bacteria in these waters may not exceed a geometric mean of 64 CFU per 100 milliliters over a 90-day interval or 236 CFU per 100 milliliters in more than 10% of the samples in any 90-day interval.

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

5. RECEIVING WATER CONDITIONS

Table Category 4-B:(a) entitled, *Rivers And Streams Impaired By Pollutants – Pollution Control Requirements Reasonable Expected To Result in Attainment*, in a document entitled, State of Maine Department of Environmental Protection, 2016 Integrated Water Quality Monitoring and Assessment Report, published by the Department, states that ADB Assessment Unit ME01020000509_234R02, Veazie Dam to Reeds Brook (10.1 miles) has had impairment issues. More specifically, Nutrient/Eutrophication/Biological Indicators, dissolved oxygen and dioxin.

The Report lists all of Maine's fresh waters as, "*Category 5-C: Waters Impaired by Atmospheric Deposition of Mercury*." Impairment in this context refers to a statewide fish consumption advisory due to elevated levels of mercury in some fish tissues. The Report states, "All freshwaters are listed in Category 4A (TMDL Completed) due to USEPA approval of a Regional Mercury TMDL. 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 38 M.R.S. § 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 monthly average and daily maximum mercury mass and concentration limits for this facility and the facility has been in compliance with said limits 100% of the time during the previous 60 months.

Should future ambient water quality monitoring indicate water quality standards are not being achieved and the permittee is causing or contributing to the non-attainment, this permit may be reopened pursuant to Special Condition I, *Reopening of Permit For Modifications*, to establish additional limitations and or monitoring requirements to achieve applicable water quality standards.

6. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

OUTFALL #002 (internal waste stream)

a. Flow – The 7/3/13 permit renewal and 5/10/16 permit modification established a monthly average and daily maximum flow reporting requirements expressed in gallons per day (gpd) along with a continuous monitoring requirement. Both are being carried forward in this permitting action,

A review of the monthly Discharge Monitoring Report (DMR) data for the period August 2013 – December 2018 (most representative of the current discharges) indicates values were reported as follows;

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

OUTFALL #002 (internal waste stream)

Flow (DMRs = 64)

Value	Limit (gpd)	Range (gpd)	Mean (gpd)
Monthly average	Report	18,328-46,793	7,658
Daily maximum	Report	32,670-75,593	9,762

b. Mercury (total) - The 7/3/13 permit renewal and 5/10/6 permit modification established monthly average and daily maximum mass and concentration reporting requirements for total mercury along with a 1/discharge day monitoring requirement.

A review of the monthly Discharge Monitoring Report (DMR) data for the period January 2013 – December 2018 (most representative of the current discharges) indicates values were reported as follows;

Mercury (DMRs = 65) Mass

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Daily maximum	Report	<0.00003 – 0.000095	0.0

Mercury (DMRs = 65) Concentration

Value	Limit (ug/L)	Range (ug/L)	Mean (ug/L)
Monthly average	Report	<0.20 – 0.78	0.0
Daily maximum	Report	<0.20 – 0.26	0.0

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, referred to hereinafter as the EPA and Department monitoring frequency reduction guidance 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 65 months of data (January 2013 – December 2018. The facility has only reported one detectable concentration (March 2015) in the 65-month evaluation period. Therefore, this permitting action is reducing the monitoring frequency for mercury from 1/Discharge day to 1/Quarter.

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

OUTFALL #002 (internal waste stream)

c. pH – The 7/3/13 permit renewal and 5/10/16 permitting modification established a daily maximum technology-based pH range limitation of 6.0 – 9.0 standard units along with a continuous monitoring requirement. The limits were originally derived based on BPT standard set forth in NEGs as published in 40 CFR, Part 415, Subpart F, §415.62 when the facility was operating as a chlor-alkali facility. The manufacturing facility is no longer operational and is not subject to 40 CFR Part 415 limitations and monitoring requirements. However, being that pH adjustment is an integral part of the treatment process for waste waters discharged from Outfall #002, the pH limitations are being carried forward in this permitting action.

A review of the monthly Discharge Monitoring Report (DMR) data for the period August 2013 – December 2018 (most representative of the current discharges) indicates values were reported as follows;

pH (DMRs = 65)

Value	Limit (su)	Low (su)	High (su)
Daily maximum	6.0 – 9.0	6.9	8.0

OUTFALL #001 – Final effluent

For Outfall #001, the 7/3/13 permit renewal and the 5/10/16 permit modification established two set of limitations and monitoring requirements. One set of monitoring requirements referred to as Routine Monitoring includes flow, carbon tetrachloride, chloropicrin, hexachlorethane, total mercury and pH. Flow and pH are monitored continuously, carbon tetrachloride, chloropicrin and hexachlorethane are monitored 1/Month and mercury is monitored 3/Week. These parameters were selected for routine monitoring because historic monitoring of groundwater beneath the remediation site had indicated these pollutants were the mostly likely to be detected in waste streams being treated at the waste water treatment facility.

The other set of monitoring requirements referred to as Supplemental Monitoring consists of a suite of 17 compounds (most are volatile organic compounds which may or may not be detectable in new waste streams that are introduced into the waste water treatment facility). The 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor for these compounds for ten consecutive months if a new waste stream was introduced into the treatment facility. After ten months of monitoring, the Department would conduct a statistical evaluation on the data to determine if there was a reasonable potential for any of these compounds to be discharged. If a pollutant was never detected, the permittee would be authorized to cease monitoring the compound. If a pollutant was detected, the Department would consider reopening the permit to establish numeric limitations and monitoring requirement for said pollutant(s).

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

OUTFALL #001 – Routine monitoring - Final effluent

The Supplemental Monitoring regime is being modified in this permitting action. This permit eliminates the triggers of a new waste stream or an increase of flow greater than 10%. The Supplemental Monitoring is only required if the permittee exceeds one of the numeric limits for the four Routine Monitoring parameters (excluding flow and pH). If Supplemental Monitoring is triggered, the permittee will conduct Supplemental Monitoring for four months and then the Department will conduct its statistical evaluation. The Department's Bureau of Remediation and Waste Management is in agreement with this monitoring, reporting and assessment approach.

d. Flow – The 5/10/16 permitting action established a monthly average flow limit of 100,000 gpd and a daily maximum reporting requirement along with a continuous monitoring requirement. All three are being carried forward in this permit.

A review of the monthly Discharge Monitoring Report (DMR) data for the period August 2013 – December 2018 (most representative of the current discharges) indicates values were reported as follows;

Flow (DMRs = 65)

Value	Limit (gpd)	Range (gpd)	Mean (gpd)
Monthly Average	100,000	8,694 – 79,107	40,240
Daily maximum	Report	32,214 – 114,601	66,015

e. Dilution Factors: Dilution factors associated with the permitted discharge flow of 100,000 gpd (0.100 MGD) from the facility were derived in accordance with Department rule, 06-096 CMR, Chapter 530 Section 4.A *Surface Water Toxics Control Program* are calculated as follows:

Modified Acute[(1)] = 814 cfs $\Rightarrow \frac{(814 \text{ cfs})(0.6464) + (0.100 \text{ MGD})}{(0.100 \text{ MGD})} = 5{,}262{:}1$

Acute: 1Q10 = 3,256 cfs $\Rightarrow \frac{(3{,}256 \text{ cfs})(0.6464) + (0.100 \text{ MGD})}{(0.100 \text{ MGD})} = 21{,}048{:}1$

Chronic: 7Q10 =3,830 cfs $\Rightarrow \frac{(3{,}830 \text{ cfs})(0.6464) + (0.100 \text{ MGD})}{(0.100 \text{ MGD})} = 24{,}758{:}1$

Harmonic Mean: = 9,101 cfs $\Rightarrow \frac{(9{,}101 \text{ cfs})(0.6464) + (0.100 \text{ MGD})}{(0.100 \text{ MGD})} = 58{,}830{:}1$

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

OUTFALL #001 – Routine monitoring - Final effluent

Footnotes:

(1) Chapter 530(4)(a) states that analyses using numeric 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. The 1Q10 is the lowest one day flow over a Ten-year recurrence interval. The regulation goes on to say that 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, up to and including all of it. Based on Department information as to the mixing characteristics of the discharge, and a 1997 dye study, the Department has made the determination that the discharge does not receive rapid and complete mixing with the receiving water. Therefore, the default stream flow of 1/4 of the 1Q10 is applicable in acute statistical evaluations pursuant to Department Rule Chapter 530.

f. Mercury (Total) – The 7/3/13 permit and the 5/10/16 permit modification established monthly average and daily maximum water quality based mass limitations of 0.00046 lbs/day and 0.00085 lbs/day respectively, based on a November 24, 2008, Department Compliance Order issued by the Bureau of Remediation and Waste Management.

On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt designating the former HoltraChem site in Orrington, Maine as an Uncontrolled Hazardous Substance Site. In general, the Order required Mallinckrodt to submit to the Department for review and approval; 1) a Dismantling Plan, 2) a Corrective Measures Implementation Plan, 3) a modification to the existing Sediment Prevention Plan, and 4) a revised Comprehensive Monitoring Plan. The Order also required the continued operation of the wastewater treatment plant and groundwater collections systems. Mallinckrodt appealed the Compliance Order to the Board of Environmental Protection (BEP). On August 19, 2010, the BEP issued an Order of Appeal that modified the terms and conditions of the Department's November 24, 2008, Compliance Order.

As it relates to the discharge of mercury, the Department's Compliance Order (page 35, paragraph 7) states in part "*Mallinckrodt may not petition the Commissioner for the termination of the groundwater collection and treatment system until any plume of contaminants in groundwater on the site and any plume of contaminations that emanate from the Site following the discontinuance of the pump and treat system has reached the Media Protection Standards (MPS) specified in this Order.*" Attachment #2, Numeric

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

OUTFALL #001 – Routine monitoring - Final effluent

Media Protection Standards (MPS), lists the on-site surface water MPS for mercury as 0.91 ug/L. It is noted the 0.91 ug/L value is listed in Maine law 38 M.R.S. §420(1-B)(A)(1)(b) as the fresh water chronic ambient water quality criteria (AWQC) for mercury. Chronic AWQC values are utilized to establish monthly average limitations in MEPDES permits. The Compliance Order did not address the acute AWQC utilized to establish daily maximum limitations in MEPDES permits.

The BEP Order of Appeal (page 44, Paragraph E) states in part, "*Therefore, discharge limits should be established based on both concentration of the contaminant and the mass of the contaminant. Wastewater discharges shall be monitored in such a fashion as to measure continuously the liquid volume rate of discharge, and at least once daily the amount of mercury and other parameters with set discharge limits. The wastewater discharge limits should be set in terms of both concentration and maximum daily and monthly average mass discharge limit for mercury, carbon tetrachloride, trichloroethylene, chloropicrin and other contaminates of concern as the Department deems necessary.*"

To address the BEP's directive to establish monthly average and daily maximum mass and concentration limits for mercury and to be consistent with the Department's use of the chronic AWQC in Maine law 38 M.R.S.§420(1-B)(A)(1)(b) to establish monthly average limits, 7/3/13 permit and the 5/10/16 permit modification utilized the acute AWQC of 1.7 ug/L found in Maine law 38 M.R.S. §420(1-B)(A)(1)(a) to evaluate establishing daily maximum limitations for mercury.

Therefore, utilizing the AWQC cited above and a monthly average flow limit of 60,000 gpd (0.060 MGD) at that time, mass limits for mercury were calculated as follows:

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.00091 mg/L) = 0.00046 lbs/day

Daily maximum: (0.060 MGD)(8.34 lbs/gal)(0.0017 mg/L) = 0.00085 lbs/day

A review of the monthly Discharge Monitoring Report (DMR) data for the period August 2013 – December 2018 (most representative of the current discharges) indicates values were reported as follows;

Mercury - Mass (DMRs = 64)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly Average	0.00046	0.00	0.00
Daily maximum	0.00085	<0.000009-0.00032	0.000042

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

OUTFALL #001 – Routine monitoring - Final effluent

Mercury - Concentration (DMRs = 65)

Value	Limit (ug/L)	Range (ug/L)	Mean (ug/L)
Monthly Average	0.91	0.0 – 0.19	0.06
Daily maximum	1.7	0.02 – 0.79	0.11

Given the facility's compliance record in the 65-month evaluation period and taking into consideration the EPA and Department monitoring frequency reduction guidance documents, 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 65 months of data (January 2013 – December 2018). The facility has only reported one detectable concentration (March 2015) in the 65-month evaluation period. Therefore, this permitting action is reducing the monitoring frequency for mercury from 3/Week to 1/Month.

For the remaining parameters regulated by this permit [Section 6(g) – 6(aa)] the Department evaluated the same three criteria as mercury, 1) anti-backsliding provisions of the Clean Water Act, 2) applicable statutes and rules regarding establishing limitations for toxic pollutants and 3) other final agency actions issued by the Department. The monthly average and daily maximum concentration limits established in 7/3/13 permit for said parameters were established based on the most stringent limitations after taking into consideration the three criteria. The evaluations indicate the Media Protection Standards (MPS) established in *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order issued by the Department on November 24, 2008 are the most stringent for each parameter. As for mass limits, 06-096 CMR Chapter 523, §6(f)(1) states, "*All pollutants limited in permits shall have limitations, standards or prohibitions expressed in terms of mass*." To be consistent with all other MEPDES permits issued by the Department, the monthly average flow for the facility at the time of the 7/3/13 (60,000 gpd) was used to calculate mass limits. Therefore, the mass limits for the parameters of concern were based on the formula of monthly average design flow expressed in million gallons per day (MGD) times the applicable concentration limit expressed in milligrams per liter (mg/L) times a conversion factor of 8.34 pounds per gallon (lbs/gal).

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

OUTFALL #001 – Routine monitoring - Final effluent

g. Carbon tetrachloride – The 7/3/13 permitting action established monthly average and daily maximum water quality-based mass and concentrations limits for carbon tetrachloride to be consistent with the Department's November 24, 2008, Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Carbon tetrachloride	0.0025	0.0025	5	5

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to evaluate the limits for carbon tetrachloride established in this permitting action.

1. Antibacksliding – - Federal regulation 40 CFR, §122(l) states in general, the regulation states that except for provisions specified in the regulation, effluent limitations, standards or conditions must be at least as stringent as the final effluent limitations, standards or conditions in the previous permit. Applicable exceptions include (a) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation (b) a permittee has installed best practicable treatment but has been unable to achieve compliance with technology based limitations and (c) information is available which was not available at the time of the permit issuance (other than revised regulations, guidance or test methods) and which would justify the application of less stringent effluent limitations at the time of permit issuance. Antibacksliding is applicable for limitations and monitoring requirements for carbon tetrachloride established in the permitting action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to carbon tetrachloride. The Department is not aware of any other entity discharging carbon tetrachloride to the Penobscot River. Therefore, the Department allocated the entire assimilative capacity for carbon tetrachloride to Mallinckrodt. Being that a designated use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 0.23 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure."*

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

OUTFALL #001 – Routine monitoring - Final effluent

The Department has calculated a human health assimilative capacity of 8.3 lbs/day of carbon tetrachloride at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

Department rule Chapter 584 establishes AWQC for carbon tetrachloride as follows;

0.89 ug/L (organisms only) 0.23 ug/L (water & organisms)

Human heath (water & organisms)

Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
AWQC = 0.23 ug/L
0.23 ug/L(0.75) = 0.17 ug/L or 0.00017 mg/L
Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00017 mg/L) = 8.3 lbs/day

Therefore, the mass segment allocations for carbon tetrachloride for the permittee can be calculated as follows:

Monthly average: (Human health AC mass)(% of carbon tetrachloride allocated)
(8.3 lbs/day)(1.0) = 8.3 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD The calculation is as follows

$$\frac{8.3 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 17 \text{ mg/L or } 17{,}000 \text{ ug/L}$$

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

OUTFALL #001 – Routine monitoring - Final effluent

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for carbon tetrachloride as 3.0 ug/L. However on October 19, 2012, the Maine Center of Disease Control and Prevention (MCDC) in the Department of Health and Human Services (DHHS) released a revised list of the State's Maximum Exposure Guidelines (MEG). The revised MEG for carbon tetrachloride is 5.0 ug/L. Therefore, utilizing the MEG of 5.0 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for carbon tetrachloride can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.005 mg/L) = 0.0025 lbs/day

   Being as there is no acute AWQC for carbon tetrachloride, the daily maximum limits are the same as the monthly average limits.

   After taking into consideration the three evaluations, this permitting action is carrying forward the monthly average and daily maximum concentrations limits in the 7/3/13 permit for carbon tetrachloride to be consistent with the Department's November 24, 2008 Compliance Order and antibacksliding provisions as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Carbon tetrachloride	0.0025	0.0025	5	5

A review of the monthly Discharge Monitoring Report (DMR) data for the period August 2013 – December 2018 (most representative of the current discharges) indicates values were reported as follows;

Carbon tetrachloride - Mass (DMRs = 65)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly Average	0.0025	<0.00012-<0.000254	N/A
Daily maximum	0.0025	<0.00012-<0.000254	N/A

Carbon tetrachloride - Concentration (DMRs = 65)

Value	Limit (ug/L)	Range (ug/L)	Mean (ug/L)
Monthly Average	5	<1.0 - <1.0	N/A
Daily maximum	5	<1.0 - <1.0	N/A

This permit is carrying forward the 1/Month monitoring requirement.

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

OUTFALL #001 – Routine monitoring - Final effluent

h. Chloropicrin (trichloronitromethane) – The 7/3/13 permitting action established monthly average and daily maximum water quality-based mass and concentrations limits for carbon tetrachloride to be consistent with the Department's November 24, 2008 Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Chloropicrin	0.015	0.015	30	30

1. Antibacksliding – Antibacksliding is applicable as limitations and monitoring requirements were established in the previous permitting action.

2. Maine laws and Department rules – Department rule Chapter 584 does not establish any AWQC for chloropicrin.

3. Other final agency actions On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order issued by the Department lists the MPS for chloropicrin as 30 ug/L. Therefore, utilizing the MPS of 30 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for chloropicrin can be calculated as follows:

   Monthly average:(0.060 MGD)(8.34 lbs/gal)(0.030 mg/L) = 0.015 lbs/day

   After taking into consideration the three evaluations, this permitting action is carrying forward the monthly average and daily maximum water quality-based mass and concentration limits for chloropicrin to be consistent with the Department's November 24, 2008, Compliance Order and antibacksliding provisions as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Chloropicrin	0.015	0.015	30	30

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

OUTFALL #001 – Routine monitoring - Final effluent

A review of the monthly Discharge Monitoring Report (DMR) data for the period August 2013 – December 2018 (most representative of the current discharges) indicates values were reported as follows;

Chloropicrin (trichloronitromethane) - Mass (DMRs = 65)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly Average	0.015	<0.00006 – 0.050	N/A
Daily maximum	0.015	<0.00006 – 0.050	N/A

Chloropicrin (trichloronitromethane) - Concentration (DMRs = 65)

Value	Limit (ug/L)	Range (ug/L)	Mean (ug/L)
Monthly Average	30	<0.5 – 0.7	N/A
Daily maximum	30	<0.5 – 0.7	N/A

This permit is carrying forward the 1/Month monitoring requirement.

i. Hexachloroethane – The 7/3/13 permitting action established monthly average and daily maximum water quality based-mass and concentrations limits for hexachlorethane to be consistent with the Department's November 24, 2008, Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Hexachloroethane	0.0025	0.0025	5	5

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for hexachloroethane in this permitting action.

1. Antibacksliding – Antibacksliding is applicable as limitations and monitoring requirements were established in the previous permitting action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to hexachloroethane. The Department is not aware of any other entity discharging hexachloroethane to the Penobscot River. Therefore, if appropriate, the Department would allocate the entire human health assimilative capacity for hexachloroethane to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 1.04 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure."*

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

OUTFALL #001 – Routine monitoring - Final effluent

Department rule Chapter 584 establishes AWQC for hexachloroethane is as follows;

Human Health – 1.78 ug/L (organisms only) 1.04 ug/L (water & organisms)

The Department has calculated a human health assimilative capacity of 38 lbs/day of hexachloroethane at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
AWQC = 1.04 ug/L
1.04 ug/L(0.75) = 0.78 ug/L or 0.00078 mg/L

Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00078 mg/L) = 38 lbs/day

Therefore, the mass segment allocations for hexachlorethane for the permittee can be calculated as follows:

Monthly average: (Human health AC mass)(% of hexachloroethane allocated)
(38 lbs/day)(1.0) = 38 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{38 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 76 \text{ mg/L or } 76{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for hexachloroethane as 7.0 ug/L. The MCDC's revised MEG for hexachloroethane is 5 ug/L. Therefore, utilizing the MEG of 5.0 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for hexachloroethane can be calculated as follows:

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.005 mg/L) = 0.0025 lbs/day

Being as there is no acute AWQC for hexachloroethane, the daily maximum limits are the same as the monthly average limits.

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

OUTFALL #001 – Routine monitoring - Final effluent

After taking into consideration the three evaluations, this permitting action is carrying forward the monthly average and daily maximum mass and concentrations limits in the 7/3/13 permitting action for hexachloroethane to be consistent with the Department's November 24, 2008, Compliance Order as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Hexachloroethane	0.0025	0.0025	5	5

A review of the monthly Discharge Monitoring Report (DMR) data for the period August 2013 – December 2018 (most representative of the current discharges) indicates values were reported as follows;

Hexachloroethane - Mass (DMRs = 65)

Value	Limit (lbs/day)	Range (lbs/day)	Mean (lbs/day)
Monthly Average	0.0025	<0.00002-0.000582	N/A
Daily maximum	0.0025	<0.00002-0.000582	N/A

Hexachloroethane - Concentration (DMRs = 65)

Value	Limit (ug/L)	Range (ug/L)	Mean (ug/L)
Monthly Average	5	<0.19 – 2.20	<0.19
Daily maximum	5	<0.19 – 2.20	<0.19

This permit is carrying forward the 1/Month monitoring requirement.

j. pH – The previous permitting action established a daily maximum technology-based pH range limitation of 6.0 – 9.0 standard units along with a continuous monitoring requirement. The limits were originally established based on the former chlor-alkali facility was subject to 40 CFR Part 415. Though no longer operational as a chlor-alkali facility, the Department carried the limit range forward because pH adjustment is an integral part of the treatment process for waste waters discharged from Outfall #001.

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

OUTFALL #001 – Routine monitoring - Final effluent

A review of the monthly Discharge Monitoring Report (DMR) data for the period May 2009 – May 2011 (most representative of the current discharges) indicates values were reported as follows;

pH (DMRs = 65)

Value	Limit (su)	Low (su)	High (su)
Daily maximum	6.0 – 9.0	6.3	8.5

The pH limitations and continuous monitoring requirement are being carried forward in this permitting action.

OUTFALL #001 – Supplemental Monitoring - Final effluent

k. 1,1-Dichloroethane - The 7/3/13 permitting action did not establish monthly average or daily maximum mass or concentrations limits for 1,1 Dichlorethane but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

As with the routine monitoring parameters, the Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits and monitoring requirements for 1,1 Dichlorethane in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no numeric limitations were established in the previous permitting action.

2. Maine laws and Department rules – – Department rule Chapter 584 does not establish any AWQC for 1,1 Dichloroethane.

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for 1,1-dichloroethane as 70 ug/L. However ,on October 19, 2012, the MCDC in the DHHS released a revised list of the State's MEGs. The revised MEG for 1,1-dichloroethane is listed as 60 ug/L. Therefore, utilizing the MEG of 60 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for 1,1-dichloroethane can be calculated as follows:

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.060 mg/L) = 0.030 lbs/day

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

OUTFALL #001 – Supplemental monitoring - Final effluent

Being as there is no acute AWQC for 1,1-dichloroethane, the daily maximum limits are the same as the monthly average limits.

The Department's November 24, 2008, Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
1,1-Dichloroethane	0.030	0.030	60	60

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for 1,1-Dichlorethane for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

l. 1,1-Dichloroethene - The 7/3/13 permitting action did not establish monthly average or daily maximum mass or concentrations limits for 1,1 Dichlorethene but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous permitting action.

2. Maine laws and Department rules – Department rule Chapter 584 does not establish any AWQC for 1,1-dichloroethene.

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for 1,1-dichloroethene as 0.60 ug/L. The MCDC's revised MEG for 1,1-dichloroethene is 40 ug/L. The USEPA MCL for 1,1-dichloroethene in drinking water is 7.0 ug/L. Therefore, utilizing the MCL of 7.0 ug/L since it is more stringent than the MEG of 40 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for 1,1-dichloroethene can be calculated as follows:

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

OUTFALL #001 – Supplemental monitoring - Final effluent

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.007 mg/L) = 0.0035 lbs/day

Being as there is no acute AWQC for 1,1-dichloroethene, the daily maximum limits are the same as the monthly average limits.

The Department's November 24, 2008 Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
1,1-Dichloroethene	0.0035	0.0035	7	7

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for 1,1-Dichlorethene for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

m. Cis-1,2-dichloroethene – The previous permitting action did not establish any limitations for Cis-1,2-dichloroethene but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous licensing action.

2. Maine laws and Department rules – Department rule Chapter 584 does not establish any AWQC for Cis-1,2-dichloroethene.

3. Other final agency actions On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order issued by the Department lists the MPS for Cis-1,2-dichloroethene as 70 ug/L. The MCDC's revised MEG for Cis-1,2-dichloroethene is 10 ug/L. Therefore, utilizing the MEG of 10 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for Cis-1,2-dichloroethene can be calculated as follows:

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

OUTFALL #001 – Supplemental monitoring - Final effluent

Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.010 mg/L) = 0.0005 lbs/day

The Department's November 24, 2008, Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Cis-1,2-dichloroethene	0.005	0.005	10	10

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for Cis-1,2-dichloroethene for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

n. Trans-1,2- Dichloroethene – The previous permitting action did not establish any limitations for Trans 1,2-Dichlorethene but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for Trans, 1,2 dichloroethene in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous licensing action.

2. Maine laws and Department rules – 06-096 CMR, Department rule Chapter 530, Surface Water Toxics Control Program Pollutants establishes AWQC for Trans, 1,2 dichloroethene. Chapter 530 §4(C), states *"The background concentration of specific chemicals must be included in all calculations using the following procedures. The Department may publish and periodically update a list of default background concentrations for specific pollutants on a regional, watershed or statewide basis. In doing so, the Department shall use data collected from reference sites that are measured at points not significantly affected by point and non-point discharges and best calculated to accurately represent ambient water quality conditions. The Department shall use the same general methods as those in*

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

OUTFALL #001 – Supplemental monitoring - Final effluent

section 4(D) to determine background concentrations. For pollutants not listed by the Department, an assumed concentration of 10% of the applicable water quality criteria must be used in calculations." The Department has no information on the background levels of Trans-1,2-dichloroethene in the water column in the Penobscot River in the vicinity of the permittee's outfall. Therefore, a default background concentration of 10% of the applicable water quality criteria is being used in the calculations of this permitting action.

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

Chapter 530 §(3)(E) states *"... that a discharge contains pollutants or WET at levels that have a reasonable potential to cause or contribute to an exceedance 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.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

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.

The watershed approach to evaluating limitations for pollutants of concern is applicable to Trans-1,2-dichloroethene. The Department is not aware of any other entity discharging Trans-1,2-dichloroethene to the Penobscot River. Therefore, the Department allocated the entire human health assimilative capacity for Trans-1,2-dichloroethene to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 140 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure."*

The Department has calculated a human health assimilative capacity of 5,152 lbs/day of Trans-1,2-dichloroethene at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), and critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

Human heath (water & organisms)

Human Health – 5,500 ug/L (organisms only) 140 ug/L (water & organisms)

Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
AWQC = 140 ug/L
140 ug/L(0.75) = 105 ug/L or 0.105 mg/L

Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.105 mg/L) = 5,152 lbs/day

Therefore, the mass segment allocations for Trans-1,2-dichloroethene for the permittee can be calculated as follows:

Monthly average: (Human health AC mass)(% of Trans-1,2-dichloroethene allocated)
(5,152 lbs/day)(1.0) = 5,152 lbs/day

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

OUTFALL #001 – Supplemental monitoring - Final effluent

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{5{,}152 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 10{,}295 \text{ mg/L or } 10{,}295{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for Trans-1,2-dichloroethene as 100 ug/L. Therefore, utilizing the MPS of 100 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for Trans-1,2-dichloroethene can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.10 mg/L) = 0.050 lbs/day

   Being as there is no acute AWQC for Trans-1,2-dichloroethene, the daily maximum limits are the same as the monthly average limits.

   The Department's November 24, 2008, Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Trans-1,2-dichloroethene	0.050	0.050	100	100

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for Trans-1,2-dichloroethene for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

o. 2,4,5-Trichlorophenoxyacetic acid (2,4,5-T) – The previous permitting action did not establish any limitations for 2,4,5-T but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility

   1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous permitting action.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

2. Maine laws and Department rules – – Department rule Chapter 584 does not establish any AWQC for 2,4,5 T.

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for 2,4,5-T as 50 ug/L. The MCDC's revised MEG for 2,4,5-T is 70 ug/L. Therefore, utilizing the MEG of 70 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for 2,4,5-T can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.070 mg/L) = 0.035 lbs/day

   Being as there is no acute AWQC for 2,4,5-T the daily maximum limits are the same as the monthly average limits.

   The Department's November 24, 2008, Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
2,4,5-T	0.035	0.035	70	70

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for 2,4,5 T for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

p. Acetone - The previous permitting action did not establish any limitations for acetone but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous permitting action.

2. Maine laws and Department rules – – Department rule Chapter 584 does not establish any AWQC for acetone.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for acetone as 700 ug/L. The MCDC's revised MEG for acetone is 6,000 ug/L. Therefore, utilizing the MEG of 6,000 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for acetone can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(6.00 mg/L) = 3.0 lbs/day

   Being as there is no acute AWQC for acetone, the daily maximum limits are the same as the monthly average limits.

   The Department's November 24, 2008 Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Acetone	3.0	3.0	6,000	6,000

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for acetone for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

q. Bromodichloromethane (Dichlorobromomethane) - The previous permitting action did not establish any limitations for Bromodichloromethane (Dichlorobromomethane) but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

   1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous permitting action.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

2. Maine laws and Department rules - The watershed approach to evaluating limitations for pollutants of concern is applicable to bromodichloromethane. The Department is not aware of any other entity discharging bromodichloromethane to the Penobscot River. Therefore, the Department allocated the entire human health assimilative capacity for bromodichloromethane to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 0.53 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure."*

   The Department has calculated a human health assimilative capacity of 20 lbs/day of bromodichloromethane at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

   Human heath (water & organisms)

   Chapter 584 establishes AWQC for bromodichloromethane as follows;

   Human Health – 9.3 ug/L (organisms only) 0.53 ug/L (water & organisms)

   Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
   AWQC = 0.53 ug/L
   0.53 ug/L(0.75) = 0.40 ug/L or 0.00040 mg/L

   Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.0004 mg/L) = 19.6 or 20 lbs/day

   Therefore, the mass segment allocations for bromodichloromethane for the permittee can be calculated as follows:

   Monthly average: (Human health AC mass)(% of bromodichloromethane allocated)
   (20 lbs/day)(1.0) = 20 lbs/day

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

OUTFALL #001 – Supplemental monitoring - Final effluent

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{20 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 40 \text{ mg/L or } 40{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for bromodichloromethane as 6 ug/L. Therefore, utilizing the MPS of 6 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for bromodichloromethane can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.006 mg/L) = 0.0030 lbs/day

   Being as there is no acute AWQC for bromodichloromethane, the daily maximum limits are the same as the monthly average limits.

   The Department's November 24, 2008, Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Bromodichloromethane	0.003	0.003	6	6

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for bromodichloromethane for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

r. Bromoform – The previous permit did not establish any limitations for Bromoform but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for bromoform in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous permitting action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to bromoform. The Department is not aware of any other entity discharging bromoform to the Penobscot River. Therefore, the Department allocated the entire human health assimilative capacity for bromoform to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 4.2 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure."*

   The Department has calculated a human health assimilative capacity of 154 lbs/day of bromoform at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

   Human heath (water & organisms)

   Department rule Chapter 584 establishes AWQC for bromoform as follows;

   Human Health – 73 ug/L (organisms only) 4.2 ug/L (water & organisms)

   Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
   AWQC = 4.2 ug/L
   4.2 ug/L(0.75) = 3.15 ug/L or 0.00315 mg/L

   Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00315 mg/L) = 154 lbs/day

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

OUTFALL #001 – Supplemental monitoring - Final effluent

Therefore, the mass segment allocations for bromoform for the permittee can be calculated as follows:

Monthly average: (Human health AC mass)(% of bromoform allocated)
(154 lbs/day)(1.0) = 154 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{154 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 309 \text{ mg/L or } 309{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for bromoform as 44 ug/L. The MCDC's revised MEG for bromoform is 40 ug/L. Therefore, utilizing the MEG of 40 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for bromoform can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.040 mg/L) = 0.020 lbs/day

   Being as there is no acute AWQC for bromoform, the daily maximum limits are the same as the monthly average limits.

   The Department's November 24, 2008, Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Bromoform	0.020	0.020	40	40

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for bromoform for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

s. Carbon disulfide The previous permit did not establish limits for carbon disulfide but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous permitting action.

2. Maine laws and Department rules – Department rule Chapter 584 does not establish any AWQC for carbon disulfide.

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for carbon disulfide as 600 ug/L. Therefore, utilizing the MPS of 600 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for carbon disulfide can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.600 mg/L) = 0.30 lbs/day

   Being as there is no acute AWQC for carbon disulfide, the daily maximum limits are the same as the monthly average limits.

   The Department's November 24, 2008, Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Carbon disulfide	0.30	0.30	600	600

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for carbon disulfide for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

t. Chloroform – The previous permit did not establish any limitations for chloroform but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for chloroform in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous permitting action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to chloroform. The Department is not aware of any other entity discharging chloroform to the Penobscot River. Therefore, the Department allocated the entire human health assimilative capacity for chloroform to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 5.4 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure."*

   The Department has calculated a human health assimilative capacity of 199 lbs/day for chloroform at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

   Human heath (water & organisms)

   Department rule Chapter 584 establishes AWQC for chloroform as follows;

   Human Health – 94 ug/L (organisms only) 5.4 ug/L (water & organisms)

   Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
   AWQC = 5.4 ug/L
   5.4 ug/L(0.75) = 4.05 ug/L or 0.00405 mg/L

   Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00405 mg/L) = 199 lbs/day

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

OUTFALL #001 – Supplemental monitoring - Final effluent

Therefore, the mass segment allocations for chloroform for the permittee can be calculated as follows:

Monthly average: (Human health AC mass)(% of chloroform allocated)
(199 lbs/day)(1.0) = 199 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{199 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 397 \text{ mg/L or } 397{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for chloroform as 57 ug/L. The MCDC's revised MEG for chloroform is 70 ug/L. Therefore, utilizing the MEG of 70 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for chloroform can be calculated as follows:
Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.070 mg/L) = 0.035 lbs/day

Being as there is no acute AWQC for chloroform, the daily maximum limits are the same as the monthly average limits.

The Department's November 24, 2008 Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Chloroform	0.035	0.035	70	70

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for chloroform for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

u. Dibromochloromethane – The previous permit did not establish any limitations for dibromochloromethane but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for dibromochloromethane in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous permitting action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to dibromochloromethane. The Department is not aware of any other entity discharging dibromochloromethane to the Penobscot River. Therefore, the Department allocated the entire human health assimilative capacity for dibromochloromethane to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 0.4 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure."*

The Department has calculated a human health assimilative capacity of 15 lbs/day for dibromochloromethane at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

Human heath (water & organisms)

Department rule Chapter 584 establishes AWQC for dibromochloromethane as follows;

Human Health – 6.94 ug/L (organisms only) 0.4 ug/L (water & organisms)

Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
AWQC = 0.4 ug/L
0.4 ug/L(0.75) = 0.30 ug/L or 0.00030mg/L

Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00030 mg/L) = 15 lbs/day

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

OUTFALL #001 – Supplemental monitoring - Final effluent

Therefore, the mass segment allocations for dibromochloromethane for the permittee can be calculated as follows:

Monthly average: (Human health AC mass)(% of dibromochloromethane allocated)
(15 lbs/day)(1.0) = 15 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD The calculation is as follows

$$\frac{15 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 30 \text{ mg/L or } 30{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for dibromochloromethane as 4 ug/L. Therefore, utilizing the MPS of 4 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for dibromochloromethane can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.004 mg/L) = 0.002 lbs/day

   Being as there is no acute AWQC for dibromochloromethane, the daily maximum limits are the same as the monthly average limits.

   The Department's November 24, 2008, Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Dibromochloromethane	0.002	0.002	4	4

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for Dibromochloromethane for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

v. Manganese (Total) – The previous permit did not establish limitations for manganese but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for manganese in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous permitting action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to manganese. The Department is not aware of any other entity discharging manganese to the Penobscot River. Therefore, if appropriate, the Department would allocate the entire human health assimilative capacity for manganese to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for organisms only of 100 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure."*

The Department has calculated a human health assimilative capacity of 36,798 lbs/day of manganese at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

Human heath (organisms only)

Department rule Chapter 584 establishes AWQC for manganese is as follows;

Human Health – 100 ug/L (organisms only)

Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
AWQC = 100 ug/L
100 ug/L(0.75) = 75 ug/L or 0.075 mg/L

Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.075 mg/L) = 3,680 lbs/day

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

OUTFALL #001 – Supplemental monitoring - Final effluent

Therefore, the mass segment allocations for manganese for the permittee can be calculated as follows:

Monthly average: (Human health AC mass)(% of manganese allocated)
(3,680 lbs/day)(1.0) = 3,680 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{3{,}680 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 7{,}354 \text{ mg/L or } 7{,}354{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for manganese as 500 ug/L. Therefore, utilizing the MPS of 500 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for manganese can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.50 mg/L) = 0.25 lbs/day

   Being as there is no acute AWQC for manganese, the daily maximum limits are the same as the monthly average limits.

   The Department's November 24, 2008 Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Manganese	0.25	0.25	500	500

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for manganese for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

w. Methylene chloride – The previous permit did not establish limitations for methylene chloride but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for methylene chloride in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous permitting action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to methylene chloride. The Department is not aware of any other entity discharging methylene chloride to the Penobscot River. Therefore, the Department allocated the entire human health assimilative capacity for methylene chloride to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 4.6 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure."*

   The Department has calculated a human health assimilative capacity of 169 lbs/day of methylene chloride at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

   Human heath (water & organisms)

   Department rule Chapter 584 establishes AWQC for methylene chloride is as follows;

   Human Health – 320 ug/L (organisms only) 4.6 ug/L (water & organisms)

   Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
   AWQC = 4.6 ug/L
   4.6 ug/L(0.75) = 3.45 ug/L or 0.00345 mg/L

   Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00345 mg/L) = 169 lbs/day

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

OUTFALL #001 – Supplemental monitoring - Final effluent

Therefore, the mass segment allocations for methylene chloride for the permittee can be calculated as follows:

Monthly average: (Human health AC mass)(% of methylene chloride allocated)
(169 lbs/day)(1.0) = 169 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{169 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 338 \text{ mg/L or } 338{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for methylene chloride as 5.0 ug/L. Therefore, utilizing the MPS of 5.0 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for methylene chloride can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.005 mg/L) = 0.0025 lbs/day

   Being as there is no acute AWQC for methylene chloride, the daily maximum limits are the same as the monthly average limits.

   The Department's November 24, 2008 Compliance Order establish limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Methylene chloride	0.0025	0.0025	5	5

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for methylene chloride for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

x. Cresol (total) – The previous permitting action did not establish any limitations for p-cresol or total cresol but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous permitting action.

2. Maine laws and Department rules – Department rule Chapter 584 does not establish any AWQC for total-cresol.

3. Other final agency actions On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order issued by the Department lists the MPS for p-cresol as 3.5 ug/L and m-cresol as 35 ug/L. The MCDC's revised MEGs for p-cresol and m-cresol are 4.0 ug/L and 40 ug/L respectively. Therefore, utilizing the more stringent MEG of 4.0 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for total cresol can be calculated as follows:

Monthly average:(0.060 MGD)(8.34 lbs/gal)(0.004 mg/L) = 0.002 lbs/day

The Department's November 24, 2008, Compliance Order as established limitations follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Total cresol	0.002	0.002	4	4

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for total cresol for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

y. Pentachloroethane – The previous permitting action did not establish any limitations for pentachloroethane but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

1. Antibacksliding – Antibacksliding is not applicable as no limitations or monitoring requirements were established in the previous permitting action.

2. Maine laws and Department rules – Department rule Chapter 584 does not establish any AWQC for pentachloroethane.

3. Other final agency actions On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order issued by the Department lists the MPS for pentachloroethane as 13 ug/L. Therefore, utilizing the MPS of 13 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for pentachloroethane can be calculated as follows:

   Monthly average:(0.060 MGD)(8.34 lbs/gal)(0.013 mg/L) = 0.0065 lbs/day

   The Department's November 24, 2008, Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Pentachloroethane	0.0065	0.0065	13	13

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for pentachloroethane for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

z. Tetrachloroethene – The previous permit did not establish limitations for tetrachloroethene but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for tetrachloroethene in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were established in the previous permitting action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to tetrachloroethene. The Department is not aware of any other entity discharging tetrachloroethene to the Penobscot River.

   Therefore, the Department allocated the entire human health assimilative capacity for tetrachloroethene to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 0.59 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure."*

   The Department has calculated a human health assimilative capacity of 22 lbs/day of tetrachloroethene at Mallinckrodt. The human health assimilative capacity (AC) at Mallinckrodt is calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flow (harmonic mean = 9,101 cfs). The calculation is as follows:

   Human heath (water & organisms)

   Department rule Chapter 584 establishes AWQC for tetrachloroethene is as follows;

   Human Health – 1.77 ug/L (organisms only) 0.59 ug/L (water & organisms)

   Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
   AWQC = 0.59 ug/L
   0.59 ug/L(0.75) = 0.44 ug/L or 0.00044 mg/L

   Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.00044 mg/L) = 22 lbs/day

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

OUTFALL #001 – Supplemental monitoring - Final effluent

Therefore, the mass segment allocations for tetrachloroethene for the permittee can be calculated as follows:

Monthly average: (Human health AC mass)(% of tetrachloroethene allocated)
(22 lbs/day)(1.0) = 22 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{22 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 44 \text{ mg/L or } 44{,}000 \text{ ug/L}$$

3. Other final agency actions – On November 24, 2008, the Department issued a Compliance Order to Mallinckrodt with *Attachment #2, Numeric Media Protection Standards (MPS),* of the Compliance Order listing the MPS for tetrachloroethene as 5.0 ug/L. Therefore, utilizing the MPS of 5.0 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for tetrachloroethene can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.005 mg/L) = 0.0025 lbs/day

   Being as there is no acute AWQC for tetrachloroethene, the daily maximum limits are the same as the monthly average limits.

   The Department's November 24, 2008, Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Tetrachloroethene	0.0025	0.0025	5	5

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for tetrachloroethene for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

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

OUTFALL #001 – Supplemental monitoring - Final effluent

aa. Trichloroethylene – The previous permit did not establish limitations for trichloroethylene but did require the permittee to report both monthly average and daily maximum mass and concentrations for a minimum of ten months if a new waste stream was introduced into the waste water treatment facility.

The Department is taking into consideration antibacksliding, applicable Maine laws and Department rules and other final agency actions issued by the Department to establish limits for trichloroethylene in this permitting action.

1. Antibacksliding – Antibacksliding is not applicable as no limitations were not established in the previous permitting action.

2. Maine laws and Department rules – The watershed approach to evaluating limitations for pollutants of concern is applicable to trichloroethylene. The Department is not aware of any other entity discharging trichloroethylene to the Penobscot River. Therefore, the Department allocated the entire acute, chronic or human health assimilative capacity for trichloroethylene to Mallinckrodt. Being that a designate use of the Penobscot River at the point of discharge is a "*drinking water supply after treatment*" the human health criteria for water & organisms of 2.37 ug/L is the applicable AWQC for evaluation. Chapter 530 §4(B)(3) requires that "*Analyses using human health criteria must be based on harmonic mean or other stream flows consistent with the duration of exposure."*

   The Department has calculated acute, chronic and human health assimilative capacities (AC) of 287,913 lbs/day, 697,964 lbs/day and 88 lbs/day respectively, for trichloroethylene at Mallinckrodt. The ACs at Mallinckrodt were calculated based on 75% of the applicable AWQC (taking into consideration the 10% reduction to account for background, 15% reduction for reserve, totaling 25%), critical low flows (1Q10 = 3,256 cfs, 7Q10 = 3,830 cfs and harmonic mean = 9,101 cfs). The calculations are as follows:

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

OUTFALL #001 – Supplemental monitoring - Final effluent

Department rule Chapter 584 establishes AWQC for trichloroethylene as follows;

Acute – 21,900 ug/L Chronic – 45,000 ug/L
Human Health – 16.2 ug/L (organisms only) 2.37 ug/L (water & organisms)

Acute

1Q10 @ Mallinckrodt = 3,256 cfs or 2,105 MGD
AWQC = 21,900 ug/L
21,900 ug/L(0.75) = 16,425 ug/L or 16.4 mg/L

Acute AC = (2,105 MGD)(8.34 lbs/gal)(16.4 mg/L) = 287,913 lbs/day

Therefore, the mass segment allocations for trichloroethylene for the permittee can be calculated as follows:

Daily maximum: (Acute AC mass)(% of trichloroethylene allocated)
(287,913 lbs/day)(1.0) = 287,913 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD The calculation is as follows

$$\frac{287{,}913 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 575{,}370 \text{ mg/L or } 5.75 \times 10^{8} \text{ ug/L}$$

Chronic

7Q10 @ Mallinckrodt = 3,830 cfs or 2,476 MGD
AWQC = 45,000 ug/L
45,000 ug/L(0.75) = 33,750 ug/L or 33.8 mg/L

Chronic AC = (2,476 MGD)(8.34 lbs/gal)(33.8 mg/L) = 697,964 lbs/day

Therefore, the mass segment allocations for trichloroethylene for the permittee can be calculated as follows:

Daily maximum: (Chronic AC mass)(% of trichloroethylene allocated)
(697,964 lbs/day)(1.0) = 697,964 lbs/day

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

OUTFALL #001 – Supplemental monitoring - Final effluent

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD. The calculation is as follows

$$\frac{697{,}964 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 1{,}394{,}813 \text{ mg/L or } 1.4 \times 10^9 \text{ug/L}$$

Human heath (water & organisms)

Harmonic mean @ Mallinckrodt = 9,101 cfs or 5,883 MGD
AWQC = 2.37 ug/L
2.37 ug/L(0.75) = 1.8 ug/L or 0.0018 mg/L

Human health AC = (5,883 MGD)(8.34 lbs/gal)(0.0018 mg/L) = 88 lbs/day

Therefore, the mass segment allocations for trichloroethylene for the permittee can be calculated as follows:

Monthly average: (Human health AC mass)(% of trichloroethylene allocated)
(88 lbs/day)(1.0) = 88 lbs/day

The discharge concentration can be calculated based on the AC and the permitted flow of 60,000 gpd or 0.060 MGD The calculation is as follows

$$\frac{88 \text{ lbs/day}}{(0.060 \text{ MGD})(8.34 \text{ lbs/gal})} = 176 \text{ mg/L or } 176{,}000 \text{ ug/L}$$

3. Other final agency actions – *Appendix #3, Surface Water Analysis – Onsite Maximum Concentrations,* of the November 24, 2008, Compliance Order issued by the Department lists the MPS for trichloroethylene as 5.0 ug/L. The MCDC's revised MEG for trichloroethylene is 4.0 ug/L. Therefore, utilizing the MEG of 4.0 ug/L and the monthly average flow limit of 60,000 gpd (0.060 MGD), mass limits for trichloroethylene can be calculated as follows:

   Monthly average: (0.060 MGD)(8.34 lbs/gal)(0.004 mg/L) = 0.0020 lbs/day

   The Department's November 24, 2008, Compliance Order established limitations as follows;

Parameter	Monthly Avg. Mass (lbs/day)	Daily Max. Mass (lbs/day)	Monthly Avg. Concentration ug/L	Daily Max. Concentration ug/L
Trichloroethylene	0.0020	0.0020	4	4

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

OUTFALL #001 – Supplemental monitoring - Final effluent

Though the Department's November 24, 2008, Compliance Order established limitations, the 7/3/13 permit renewal and 5/10/16 permit modification only required the permittee to monitor and report values at a frequency of 1/Month for trichloroethylene for ten (10) months if a new waste stream was conveyed to the waste water treatment facility. This permit is revising the testing regime to only require supplemental monitoring if the numeric limitations for any of the four routine monitoring parameters (carbon tetrachloride, chloropicrin, hexachloroethane and mercury) are exceeded.

bb. Whole Effluent Toxicity (WET) & Chemical-Specific Testing – The previous permitting action did not establish surveillance (1/Year) and or screening level WET or chemical specific testing because the facility was waived from the testing requirements. Maine law, 38 M.R.S., Sections 414-A and 420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department Rules, 06-096 CMR Chapter 530, *Surface Water Toxics Control Program*, and Chapter 584, *Surface Water Quality Criteria for Toxic Pollutants* set forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET monitoring assesses impacts to 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 IV frequency category as the facility has a chronic dilution factor of >500:1 and a Q ≤1.0 MGD. Chapter 530(1)(D)(1) specifies that routine screening and surveillance level testing requirements are as follows:

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

OUTFALL #001 – Supplemental monitoring - Final effluent

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.

Level	WET Testing	Priority pollutant testing	Analytical chemistry
IV	1 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

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

Department rule Chapter 530(D)(3)(b) states in part, Dischargers in Levels IV may be waived from conducting surveillance and screening testing for individual WET species or chemicals provided that testing in the preceding 60 months does not indicate any reasonable potential to exceed or exceedance applicable AWQC or critical AWQC thresholds.

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 exceedance 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."*

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

OUTFALL #001 – Supplemental monitoring - Final effluent

Statistical evaluation

On February 7, 2019, the Department conducted a statistical evaluation on the most recent 60 months of chemical specific data required by the permit that indicated the discharge did not exceed or have a reasonable potential (RP) to exceed the critical acute, chronic, or human health AWQC thresholds (0.02% , 0.004% and 0.0017 respectively) which are the mathematical inverse of the applicable dilution factors.

Given the absence of exceedances or reasonable potential to exceed applicable AWQC, this permitting action is again waiving surveillance and screening level WET and chemical specific testing. In accordance with Department rule Chapter 530(2)(D)(4) and Special Condition G,*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.

7. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

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

8. PUBLIC COMMENTS

Public notice of this application was made in the Bangor Daily News newspaper on May 19, 2018. 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 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 30-day formal comment period.

ATTACHMENT A

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

CHAPTER 530.2(D)(4) CERTIFICATION

MEPDES#_____Facility Name_____

Since the effective date of your permit, have there been;		NO	YES Describe in comments section
1	Increases in the number, types, and flows of industrial, commercial, or domestic discharges to the facility that in the judgment of the Department may cause the receiving water to become toxic?	☐	☐
2	Changes in the condition or operations of the facility that may increase the toxicity of the discharge?	☐	☐
3	Changes in storm water collection or inflow/infiltration affecting the facility that may increase the toxicity of the discharge?	☐	☐
4	Increases in the type or volume of hauled wastes accepted by the facility?	☐	☐

COMMENTS:

Name (printed): _____

Signature:_____Date: _____

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

This form may be used to meet the requirements of Chapter 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.

Scheduled Toxicity Testing for the next calendar year

Test Conducted	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter
WET Testing	□	□	□	□
Priority Pollutant Testing	□	□	□	□
Analytical Chemistry	□	□	□	□
Other toxic parameters [1]	□	□	□	□

Please place an "X" in each of the boxes that apply to when you will be conducting any one of the three test types during the next calendar year.

[1] This only applies to parameters where testing is required at a rate less frequently than quarterly.