



STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION



JANET T. MILLS
GOVERNOR

GERALD D. REID
COMMISSIONER

May 4, 2020

Mr. John Eliasberg
Georges Pond Association
P.O. Box 30
Franklin, ME. 04634
john.eliasberg@gmail.com

*Sent via electronic mail
Delivery confirmation requested*

RE: *Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0002810
Maine Waste Discharge License (WDL) Application #W009231-5U-A-N
Finalized MEPDES Permit*

Dear Mr. Eliasberg:

Enclosed please find a copy of your **final** MEPDES permit and Maine WDL which was approved by the Department of Environmental Protection. Please read this permit and its attached conditions carefully. Compliance with this license will protect water quality.

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

If you have any questions regarding the matter, please feel free to call me at 287-7823.

Your Department compliance inspector copied below is also a resource that can assist you with compliance. Please do not hesitate to contact them with any questions.

Thank you for your efforts to protect and improve the waters of the great state of Maine!

Sincerely,

Cindy L. Dionne
Division of Water Quality Management
Bureau of Water Quality
ph: 207-287-7823

Enc.

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

Georges Pond Association

May 4, 2020

Page 2 of 2

cc: Barry Mower, DEP
Linda Bacon, DEP
Pamela Parker, DEP
Clarissa Trasko, DEP
Lori Mitchell, DEP
Ellen Weitzler, USEPA
Alex Rosenberg, USEPA
Sandy Mojica, USEPA
Solanch Pastrana-Del Valle, USEPA
Marelyn Vega, USEPA
Richard Carvalho, USEPA
Shelley Puleo, USEPA



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.



DEPARTMENT ORDER

IN THE MATTER OF

GEORGES POND ASSOCIATION)	MAINE POLLUTANT DISCHARGE
FRANKLIN, HANCOCK COUNTY, MAINE)	ELIMINATION SYSTEM PERMIT
CHEMICAL TREATMENT DISCHARGE)	AND
ME0002810)	WASTE DISCHARGE LICENSE
W009231-5U-A-N)	NEW
		APPROVAL

In compliance with the applicable provisions of *Pollution Control*, 38 M.R.S. §§ 411 – 424-B, *Water Classification Program*, 38 M.R.S. §§ 464 – 470 and *Federal Water Pollution Control Act*, Title 33 U.S.C. § 1251, and applicable rules of the Department of Environmental Protection (Department), the Department has considered the application of GEORGES POND ASSOCIATION (permittee), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

The permittee has submitted an application to the Department for a new combination Maine Pollutant Discharge Elimination System (MEPDES) permit /Maine Waste Discharge License (WDL). The Department has assigned a permit number of MEPDES ME0002810/WDL W009231-5U-A-N. The permittee has applied for authorization to discharge aluminum sulfate (alum) and/or sodium aluminate to Georges Pond in Franklin, Maine, Class GPA, to control the growth of algae in the pond by inactivating iron-bound phosphorus in surficial sediments.

PERMIT SUMMARY

This permit requires the permittee to comply with technology based and water quality based limitations, conduct visual and ambient water quality monitoring, recordkeeping and submit a report to the Department following each application or series of applications.

CONCLUSIONS

Based on the findings in the attached Fact Sheet, May 4, 2020, and subject to the terms and conditions of this permit, the Department makes the following **CONCLUSIONS**:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.
2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.
3. The provisions of the State's antidegradation policy, *Classification of Maine Waters*, 38 M.R.S. § 464(4)(F), will be met, in that:
 - (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;
 - (b) Where high quality waters of the State constitute an outstanding natural resource, that water quality will be maintained and protected;
 - (c) Where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;
 - (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification that higher water quality will be maintained and protected; and
 - (e) Where a discharge will result in lowering the existing water quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.
4. The discharge will be subject to effluent limitations that require application of best practicable treatment as defined in 38 M.R.S. § 414-A(1)(D).


ACTION

Based on the findings and conclusions as stated above, the Department APPROVES the application of GEORGES POND ASSOCIATION to discharge aluminum sulfate (alum) and/or sodium aluminate to Georges Pond in Franklin, Maine, Class GPA, to control algal growth, SUBJECT TO THE ATTACHED CONDITIONS, including:

1. "Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits," revised July 1, 2002, copy attached.
2. The attached Special Conditions, including any effluent limitations and monitoring requirements.
3. This permit becomes effective upon the date of signature below and expires 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)]

DONE AND DATED AT AUGUSTA, MAINE, THIS 4 DAY OF May, 2020.

COMMISSIONER OF ENVIRONMENTAL PROTECTION

BY: 

 For Gerald D. Reid, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application February 5, 2020.

Date of application acceptance February 19, 2020.

FILED
MAY 4, 2020
State of Maine
Board of Environmental Protection

Date filed with Board of Environmental Protection

SPECIAL CONDITIONS

A. NARRATIVE EFFLUENT LIMITATIONS

1. The permittee must not discharge effluent that contains a visible oil sheen, foam or floating solids at any time which would impair the uses designated by the classification of the receiving waters.
2. The permittee must not discharge effluent that contains materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the uses designated by the classification of the receiving waters.
3. The permittee must not discharge effluent that imparts color, taste, turbidity, toxicity, radioactivity or other properties which cause those waters to be unsafe for the designated uses and characteristics ascribed to their classification.
4. The permittee must not discharge effluent that lowers 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.

B. AUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with: 1) the permittee's General Application for Waste Discharge License (WDL)/Maine Pollutant Discharge Elimination System (MEPDES) permit, accepted for processing on February 19, 2020; and 2) the terms and conditions of this permit. Discharges of wastewater to a surface waterbody 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.

C. NOTIFICATION REQUIREMENTS

At least three (3) days prior to the commencement of a discharge, the permittee is required to notify the Department's compliance inspector and the Department's Lake Assessment Section Leader to inform them of the discharge event(s). In accordance with Standard Condition D, the permittee must notify the Department of any substantial change (realized or anticipated) in the volume or character of pollutants being introduced into the receiving waters.

D. OPERATORS RESPONSIBILITIES

1. **Operator** – For the purpose of this permit, means any entity associated with the application of chemicals which results in a discharge to Georges Pond that meets either of the following two criteria:
 - (a) **Applicator** – For the purpose of this permit is defined as any entity who performs the application of chemicals or who has day-to-day control of the application (i.e., they are authorized to direct workers to carry out those activities); or

SPECIAL CONDITIONS

D. OPERATORS RESPONSIBILITIES (cont'd)

- (b) Decision maker** – For the purpose of this permit is defined as any entity with control over the decision to perform chemical applications including the ability to modify those decisions.

Operators must comply with all applicable statutes, regulations and other requirements including, but not limited to requirements contained in the labeling of the chemical products. If Operators are found to have applied a chemical in a manner inconsistent with any relevant water-quality related labeling requirements or the Chemical Discharge Management Plan (CDMP) required by Special Condition G of this permit, the Department will presume that the effluent limitation to minimize chemicals entering the waters of the State has been violated under the MEPDES permit. The Department considers many provisions of chemical labeling such as those relating to application sites, rates, frequency, and methods, as well as provisions concerning proper storage and disposal of chemical wastes and containers to be requirements that are necessary to protect water quality.

2. Applicator Responsibilities

- a. To meet the effluent limitations of this permit, all Applicators must implement the following conditions to minimize the discharge of chemicals to Georges Pond through the use of Chemical Management Measures (CMMs). For the purposes of this permit, CMMs are defined as any practice used to meet the effluent limitations that comply with manufacturer specifications, industry standards and recommended industry practices related to the application, relevant legal requirements and other provisions that a prudent Operator would implement to reduce and/or eliminate chemical discharges to Georges Pond.
- b. Use only the amount of chemical and frequency of chemical application necessary to control the target nutrient (in this case phosphorus to control algae), using equipment and application procedures appropriate for this task.
- c. Maintain application equipment in proper operating condition, including requirement to calibrate, clean, and repair such equipment and prevent leaks, spills, or other unintended discharges.
- d. Assess weather conditions (e.g. temperature, precipitation and wind speed) in the treatment area to ensure application is consistent with all applicable requirements.

SPECIAL CONDITIONS

D. OPERATORS RESPONSIBILITIES (cont'd)

3. Decision Makers Responsibilities

a. General

1. To meet the effluent limitations in this permit, all Decision-makers must minimize the discharge of chemicals to Georges Pond through the use of CMMs.
2. To the extent the Decision-maker determines the amount of chemical or frequency of the application, the Decision-maker must use only the amount of chemical and frequency of chemical application necessary to control the target nutrient.

b. Identify the Problem

1. Identify areas with nutrient problems and characterize the extent of the problems, including, for example, water use goals not attained (e.g. human health, fisheries, recreation);
2. Identify target nutrient(s);
3. Identify possible factors causing or contributing to the nutrient problem;
4. Establish any nutrient and site-specific action threshold(s). Action threshold is defined as the point at which environmental conditions necessitate that chemical control action be taken based on economic, human health, aesthetic, or other effects. An action threshold may be based on current and/or past environmental factors that are or have been demonstrated to be conducive to emergence and/or growth of algae, as well as past and/or current algal presence. Action thresholds are those conditions that indicate both the need for control actions and the proper timing of such actions.

SPECIAL CONDITIONS

D. OPERATORS RESPONSIBILITIES (cont'd)

- c. Chemical Management Options.** Prior to the first chemical application that will result in a discharge to Georges Pond, the Decision Maker must select and implement efficient and effective means of CMMs that minimize discharges resulting from the application of chemicals to control algae by way of sequestering internal phosphorus in the ponds' sediment. In developing the CMM for each chemical management area, the Decision-maker must evaluate the following management options, including a combination of these management options, considering impact to water quality, impact to non-target organisms, feasibility, and cost effectiveness:
1. No action
 2. Prevention
 3. Mechanical or physical methods
 4. Cultural methods
 5. Biological control agents
 6. Chemical addition
- d. Chemical Use.** If a chemical addition to the pond is selected to manage internal recycling of phosphorus to control algae growth, the Decision-maker must:
1. Conduct surveillance in an area that is representative of the nutrient problem prior to each chemical application to assess the chemical management area and characterize pretreatment conditions; and
 2. Reduce the impact on the environment and non-target organisms by applying the chemical only at a dosage rate that minimizes effects to non-target organisms while remaining effective for target species.

E. WATER QUALITY-BASED EFFLUENT LIMITATIONS

All Operators must control discharges as necessary to meet applicable numeric and narrative state water quality standards for any discharges authorized under this permit, with compliance required upon beginning such discharge.

If at any time an Operator becomes aware (e.g., through self-monitoring or by notification from the state or third party), or the State determines that the Operator's discharge causes or contributes to an excursion of any applicable water quality standard, the Operator must take appropriate corrective action(s) up to and including the ceasing of the discharge, if necessary.

SPECIAL CONDITIONS

F. MONITORING

- a. **Visual Monitoring Requirements for Applicators** - During any chemical application with discharges authorized under this permit, all Applicators must, when considerations for safety and feasibility allow, visually assess the area to and around where chemicals were applied for possible and observable adverse incidents (defined in Special Condition G(4)(b) of this permit) caused by application of chemical, including the unanticipated death or distress of non-target organisms and disruption of wildlife habitat, recreational or municipal water use.
- b. **Visual Monitoring Requirements for all Operators** - During any Operator post-application surveillance of any chemical application with discharges authorized under this permit, all Operators must visually assess the area to and around where chemicals were applied for possible and observable adverse incidents caused by application of chemicals, including the unanticipated death or distress of non-target organisms and disruption of wildlife habitat, recreational or municipal water use.

See Special Condition H, *Recordkeeping And Reporting*, (10) of this permit for recordkeeping requirements.

G. CHEMICAL DISCHARGE MANAGEMENT PLAN (CDMP)

Prior to the application of a chemical, the Decision maker must prepare a CDMP and submit it to the Department for review and comment.

The CDMP does not contain effluent limitations; the effluent limitations are specified in Special Conditions A, D and E of this permit. The CDMP documents how Decision-makers will implement the effluent limitations in Special Conditions A, D and E of this permit, including the evaluation and selection of CMMs to meet those effluent limitations in order to minimize discharges. In the CDMP, Decision-makers may incorporate by reference any procedures or plans in other documents that meet the requirements of this permit. If Decision-makers rely upon other documents to comply with the effluent limitations in this permit, such as a pre-existing chemical management plan, the Decision-maker must attach to the CDMP a copy of any portions of any documents that are used to document the implementation of the effluent limitations.

- a. **Contents of the Chemical Discharge Management Plan.** The CDMP must include the following elements:
 1. **Chemical Discharge Management Team** - Decision-makers must identify all the persons (by name and contact information) that compose the team as well as each person's individual responsibilities, including:
 - a. Person(s) responsible for managing chemicals in relation to the chemical management area.
 - b. Person(s) responsible for developing and revising the CDMP; and
 - c. Person(s) responsible for developing, revising, and implementing corrective actions and other effluent limitation requirements;

SPECIAL CONDITIONS

G. CHEMICAL DISCHARGE MANAGEMENT PLAN (cont'd)

2. **Problem Identification** - Decision-makers must document the following:
 - a. **Nutrient problem description.** Document a description of the nutrient problem at the chemical management area, including identification of the target nutrients, source(s) of the nutrients problem, and source of data used to identify the problem.
 - b. **Action Threshold(s).** Describe the action threshold(s) for the Chemical management area, including data used in developing the action threshold(s) and method(s) to determine when the action threshold(s) has been met.
 - c. **General location map.** In the plan, include a general location map (e.g., USGS quadrangle map, a portion of a city or county map, or other map) that identifies the geographic boundaries of the area to which the plan applies and location of Georges Pond and;
 - d. **Water quality standards.** Document any water(s) identified as impaired by a substance which either is an active ingredient or a chemical that has degraded from an active ingredient.
3. **Chemical Management Options Evaluation** - Decision-makers must document the evaluation of the chemical management options, including combination of the chemical management options, to control the target nutrient(s). Chemical management options include the following: No action, prevention, mechanical/physical methods, cultural methods, biological control agents, and chemical addition. In the evaluation, Decision-makers must consider the impact to water quality, impact to non-target organisms, feasibility, cost effectiveness, and any relevant previous CMMs.
4. **Response Procedures**
 - a. **Spill Response Procedures** - At a minimum, Decision-makers must have:
 1. Procedures for expeditiously stopping, containing, and cleaning up leaks, spills, and other releases to waters of the State. Employees who may cause, detect, or respond to a spill or leak must be trained in these procedures and have necessary spill response equipment available. If possible, one of these individuals should be a member of the CDMP team.
 2. Procedures for notification of appropriate facility personnel and emergency response agencies.

SPECIAL CONDITIONS

G. CHEMICAL DISCHARGE MANAGEMENT PLAN (cont'd)

- b. **Adverse Incident Response Procedures** – For the purposes of this permit means an unusual or unexpected incident that an Operator has observed upon inspection or of which the Operator otherwise become aware, in which:

- (1) There is evidence that a person or non-target organism has likely been exposed to a chemical residue, and
- (2) The person or non-target organism suffered a toxic or adverse effect.

The phrase toxic or adverse effects includes effects that occur within waters of the State on non-target plants, fish or wildlife that are unusual or unexpected (e.g., effects are to organisms not otherwise described on the chemical product label or otherwise not expected to be present) as a result of exposure to a chemical residue, and may include:

- Distressed or dead juvenile and small fishes
- Washed up or floating fish
- Fish swimming abnormally or erratically
- Fish lying lethargically at water surface or in shallow water
- Fish that are listless or nonresponsive to disturbance
- Stunting, wilting, or desiccation of non-target submerged or emergent aquatic plants
- Other dead or visibly distressed non-target aquatic organisms (amphibians, turtles, invertebrates, etc.)

The phrase, toxic or adverse effects, also includes any adverse effects to humans (e.g., skin rashes) or domesticated animals that occur either from direct contact with or as a secondary effect from a discharge (e.g., sickness from consumption of plants or animals containing the applied chemicals) to waters of the State that are temporally and spatially related to exposure to a chemical residue (e.g., vomiting, lethargy). At a minimum, Decision-makers must have:

1. Procedures for responding to any adverse incident resulting from chemical applications;
2. Procedures for notification of the adverse incident, both internal to the Decision-maker's agency/organization and external. Contact information for state/federal permitting agency, nearest emergency medical facility, and nearest hazardous chemical responder must be in locations that are readily accessible and available.

SPECIAL CONDITIONS

G CHEMICAL DISCHARGE MANAGEMENT PLAN (cont'd)

5. **Signature Requirements** – Decision-makers must sign, date and certify the CDMP in accordance with Standard Conditions entitled, *Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits,*” revised July 1, 2002.

b. **Chemical Discharge Management Plan Availability.** Decision-makers must retain a copy of the current CDMP, along with all supporting maps and documents, at the address provided in the application for this permit. The CDMP and all supporting documents must be readily available, upon request, and copies of any of these documents provided, upon request, to the State, federal, or local agencies governing discharges or chemical applications within their respective jurisdictions.

H. RECORDKEEPING AND REPORTING

Decision-maker requirements:

1. Copy of the application submitted to the Department and any correspondence exchanged between the Decision-maker or Applicator and the Department specific to coverage under this permit;
2. Information on each chemical treatment area to which chemicals are discharged, including a description of treatment area, including location and size of treatment area and identification of any waters of the State, either by name or by location, to which chemicals are discharged;
3. Target nutrient(s) and explanation of need for control;
4. Description of chemical management measure(s) implemented prior to the first chemical application;
5. Company name and contact information for the chemical applicator and documentation of equipment calibration;
6. Name of each chemical product used including the U.S. Environmental Protection Agency (EPA) and State of Maine Department of Agriculture’s Board of Pesticide registration number if applicable;
7. Quantity of each chemical product applied to each treatment area;
8. Chemical application start date;
9. Chemical application end date; and

SPECIAL CONDITIONS

H. RECORDKEEPING AND REPORTING (cont'd)

10. Whether or not visual monitoring and or ambient water quality monitoring was conducted during chemical application and/or post-application and if not, why not and whether monitoring identified any possible or observable adverse incidents caused by application of chemicals.

Ambient water quality 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 must be analyzed by a laboratory certified by the State of Maine's Department of Human Services. Samples that are sent to a publicly owned treatment works licensed pursuant to *Waste discharge licenses*, 38 M.R.S. § 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 December 19, 2018).

Treatment monitoring protocol is outlined in **Attachment A** of this permit, along with four excel spreadsheets that must be completed and submitted to the Department as stated below.

Within 90 days following the discharge of chemicals, the Decision maker must submit a report to the Department with documentation addressing items in Special Condition H (2)-H(10) of this permit including a summary of any analytical test results associated with ambient water quality monitoring. The report must be submitted to the Department's compliance inspector at the following address:

Department of Environmental Protection
Eastern Maine Regional Office
Bureau of Water Quality
Division of Water Quality Management
106 Hogan Road
Bangor, Maine 04401

SPECIAL CONDITIONS

I. REOPENING OF PERMIT FOR MODIFICATIONS

In accordance with 38 M.R.S. § 414-A(5) and upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at any time and with notice to the permittee, modify this permit to: 1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded, (2) require additional monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

J. SEVERABILITY

In the event that any provision(s), 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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STANDARD CONDITIONS APPLICABLE TO ALL PERMITS

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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).

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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 of 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 MAINTENANCE 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

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- 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.

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- (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.

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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.

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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

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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).

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- (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.

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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 contaminants 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.

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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.

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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.

ATTACHMENT A

ALUM TREATMENT MONITORING PROTOCOL

Purpose

The purpose of this document is to provide a monitoring protocol for individuals or organizations who have successfully completed their General Application for Waste Discharge License / Maine Pollutant Discharge Elimination System Permit requirements and are in the process of receiving or have received approval from the State of Maine for the discharge of aluminum sulfate and sodium aluminate to a lake for the purpose of binding phosphorus to reduce algal growth. The goals of this monitoring protocol are two-fold, to ensure that application parameters are being met by the applicator and to ensure that the health of the lake is maintained during application. This monitoring protocol supersedes any monitoring details that are provided during the application process and/or may be erroneously included in the permit application.

Background

Phosphorous is often the limiting nutrient in freshwater lake systems. Cyanobacteria and algal blooms in Maine are most often caused by elevated levels of phosphorus in the water column. These blooms are often a nuisance issue for lakeside residents and recreators but can have harmful health effects, especially under severe bloom conditions. In order to mitigate these blooms, a treatment (hereafter referred to as an *alum treatment*), consists of the application of 2:1 aluminum sulfate to sodium aluminate to selected areas of a lake. Alum treatments strip phosphorus from the water column because the aluminum strongly binds with the phosphorus, making it biologically unavailable. In addition, any unbound aluminum that settles on the lake bottom mitigates internal loading of the system by binding with phosphorus in the sediments. To be effective, alum treatments must be coincident with the implementation of a watershed management plan and remediation of phosphorus export sites within the watershed. Alum treatments are not recommended for lakes that have a high flushing rate as the longevity of the treatment is inversely related to flushing rate. Some lakes will have more than one lower-dose treatment within a year, or in consecutive years, rather than one high-dose treatment. This is more likely to occur in drinking water sources or when financial constraints make it necessary.

While doses will vary in an alum treatment, the application involves three potentially hazardous aspects: aluminum, a toxin for most organisms; sodium aluminate, a high pH substance; and, aluminum sulfate, a low pH substance. Aluminum is considered a non-essential metal because most aquatic life do not need it to function. High alum concentrations can be toxic to sensitive zooplankton and fish. The alum treatment will shift the zooplankton community to one more typical of lower nutrient lakes, so some zooplankton mortality would be expected even if aluminum toxicity were not an issue. Fish gills are sensitive to high aluminum concentrations. Fish have the ability to quickly move away from a treatment area; additionally, the application

approach is designed to protect fish by conducting consecutive treatments such that the distance between consecutively-treated sectors is maximized. During the treatment, the applicator balances the ratio of the two chemicals to maintain a neutral pH and promote the flocculation of aluminum. Because the toxicity of aluminum is minimized when a neutral pH is maintained (pH around 7), it is extremely important to monitor the pH levels during the alum application.

If the chemicals do not mix properly, issues can develop. Elevated levels of aluminum can affect an organism's ability to regulate ions, inhibit respiratory function, and its accumulation can lead to respiratory dysfunction and death. Aluminum has also been shown to cause neurological problems and bone diseases in cases of high exposure. The 2018 freshwater EPA aquatic life criteria for total recoverable aluminum are 1 - 4,800 µg/L for acute exposure (1 hour) and 0.63 - 3,200 µg/L for chronic exposure (4 days). These values vary as a function of a site's pH, total hardness, and DOC, and acute exposure levels are recommended not to be exceeded more than once every three years on average.

There are other considerations in the monitoring process to consider. High temperatures during application, although uncommon, can cause stress to organisms. Because the flocculation of the aluminum is an exothermic reaction, it is important to monitor the temperature of the ambient water during application. In addition, application rates will be chosen to minimize toxic conditions in the expected mixing zone.

Even if conditions appeared optimal during the application process, it is possible an organism such as a fish swam directly behind the manifold or in some other way was killed by the process. For this reason, individual fish are not necessarily indicative of a problem with the application. Instead, an individual dead fish should signal heightened awareness and observation. If a "fish kill", defined as a total of 100 fish or 50 of one species, occurs it does signal a significant issue with the application process.

Please note that if application takes place on a drinking water source there will be other factors for consideration including distance from source water intake structures and the EPA recommended secondary maximum contaminant level of 0.05–0.2 mg/L for aluminum in drinking water, however this document does not provide guidance for these additional considerations with the exception of application of alum in multiple lower doses, and regular monitoring of aluminum at the intake pipe to monitor concentrations from which stop-work orders may be issued.

Equipment (at minimum)

- Secchi disc
 - Weighted Secchi disk
 - Surveyors tape
 - Underwater viewing scope
- Water core sampling device
 - Food grade 10 m length of tubing weighted on one end and demarcated with depth in meters
 - Mixing container
- Sonde or multiparameter meter
 - Calibration solutions
 - pH probe
 - Conductivity probe
 - Temperature probe
 - DO probe
- Alkalinity titration kit
- Zooplankton nets and towline
- Grab sampling device (e.g., Kemmerer)
- Sample containers (with labels)
 - Sample bottles for water samples
 - Sealable plastic bags or similar container for freezing sediment samples
 - Sample bottles pre-dosed with either alcohol or formalin for zooplankton
 - Sample bottles pre-dosed with Lugol's or another preservative for phytoplankton
- Sediment corer, extrusion rod, baster and stainless-steel spatula
- Data sheets
 - Meter calibration log
 - Map of project site(s)
 - Daily data sheets
 - Site monitoring data sheets
 - Plume monitoring data sheets
- Weather-proof paper
- Permanent markers
- Pencils and waterproof pens
- Clipboard
- Document storage container or clipboard
- GPS
- Personal gear (sunscreen, water, food, appropriate clothing, etc.)
- Camera
- In-situ underwater camera
- Buoy and anchor that can be left as a permanent marker for control site.
- Depth sensor
- Motor boat
 - Anchor with chain and line
 - Personal flotation devices and any other safety equipment needed for operation on the water

Parameter Summaries

Secchi transparency is a measure of water clarity. A Secchi Disc is lowered into the water and viewed through a scope to determine at what point the disc is no longer visible.

Dissolved oxygen (DO), Temperature (temp), Conductivity (SPC), and pH are ideally measured with a multimeter or sonde, to characterize conditions in the water column from the surface of the lake to the bottom. Profiles are obtained by recording readings in one-meter increments from the surface down to the bottom. Conductivity and pH may be measured using other instruments that require acquiring a grab sample of water at each depth, but this is labor intensive.

DO content is a measure of the oxygen in the water; most aquatic life requires oxygen to survive. Temp refers to water temperature, the thermal energy in the water.

Conductivity is the ability of a material to conduct electrical current. In Maine lakes, it is proportional to the concentration of ions in the water column. SPC stands for specific conductivity, which is conductivity corrected to 25° Centigrade.

pH refers to how acidic or basic a solution is. It is a logarithmic scale and represents the inverse concentration of hydrogen ions. The pH scale does not have fixed limits but traditionally varies from 0 to 14, acidic to basic, respectively. A pH of 7 is considered neutral and indicates a molarity (molar concentration) of 0.000001 hydrogen ions. The average pH of Maine lakes is near 7, or circumneutral; the proportion of aluminum containing chemicals injected into the lake, will be adjusted to maintain neutrality.

Alkalinity is a measure of the ability of the lake water to resist changes in pH, specifically in the neutralization of acids. Measurements can be made in the field by performing titrations on water samples using 0.02 N sulfuric acid and bromocresol green-methyl red indicator. Alkalinity samples will be collected using a grab sampler and analyzed shortly following collection.

Phytoplankton samples are obtained from composited epilimnetic core samples and analyzed by a qualified taxonomist. Phytoplankton are preserved with Lugol's solution, glutaraldehyde or M3, depending on the preferences of the taxonomist. Phytoplankton samples are evaluated to assess species, density and community assemblages present. These attributes are important to better understand treatment impacts and health of the lake. In Maine lakes, phytoplankton composition and abundance are directly related to the availability of phosphorus, thus alum treatments are expected to result in changes to populations of these primary producers. If a bloom occurs following an alum treatment, weekly phytoplankton samples should be collected through the bloom period, and at least one sample should be collected, immediately frozen and tested for cyanotoxins, including microcystins. Because phytoplankton samples are preserved, they do not need refrigeration but should be kept in a cool, dark place.

Zooplankton samples should be collected using either a 63-micron or 80-micron mesh sized Wisconsin Net and analyzed by a qualified taxonomist. The same net should be used throughout the treatment monitoring for consistency so that the samples will be directly comparable. Zooplankton samples are preserved with ethyl alcohol, buffered formalin or glutaraldehyde, depending on the preference of the taxonomist. Zooplankton samples are evaluated to assess species, densities and community assemblages present. Zooplankton are consumers of primary producers at the base of many food chains and are expected to be impacted by the alum treatment due to a change in food availability. Because zooplankton samples are preserved, they do not need refrigeration but should be kept in a cool, dark place.

Total phosphorous is a measure of all the phosphorus in a solution. Phosphorus is the limiting nutrient in almost all Maine freshwater systems, thus it limits biological growth in a lake system. In Maine, dissolved or soluble reactive phosphorus is quickly taken up by phytoplankton, thus total phosphorus provides more insight into a lake's trophic condition. An alum treatment strips phosphorus from the water column and traps phosphorus in the sediments, by permanently bonding with phosphorus and rendering it biologically unavailable. Total phosphorus samples must be analyzed by a laboratory certified by the state of Maine to analyze total phosphorus to a detection limit of 1 part-per-billion (ppb), that has also proven capability to the Lake Assessment Section. Total phosphorus samples must be immediately stored on ice and refrigerated as soon as possible.

Aluminum is the active component in an alum treatment. Samples for determination of both total aluminum and dissolved aluminum concentrations are obtained to compare concentrations in the water column to both pre-treatment concentrations and concentrations predicted by the dosing calculations. Total aluminum includes dissolved aluminum and aluminum bound to other substances. Dissolved aluminum is more toxic than bound aluminum. In the event of a fish-kill or other unanticipated effect, it will be important to have both concentrations to determine the degree to which the treatment was the cause. Aluminum samples must be immediately stored on ice and refrigerated as soon as possible.

Chlorophyll-a is the molecule used by photosynthetic organisms which transforms sunlight into biomass. Measurement of chlorophyll in the warm upper layer of water in a lake provides a proxy for amount of phytoplankton in the water column and provides insight into trophic state of the lake. Samples on which Chlorophyll-a is determined, are obtained from composited epilimnetic core water. Chlorophyll samples must be immediately stored on ice and refrigerated as soon as possible. They must also be filtered within 24 hours, and filters frozen until submitted to the analytical lab.

Sediment samples of two types are analyzed associated with an alum treatment. In both cases, sediments are obtained using a simple Hongvie style gravity corer. Before planning for an alum treatment begins, **sediment condition** is assessed. Three sediment samples from the top 2 cm of

the core are composited and used to determine the ratios of Al to Fe and Al to P, using the modified Psenner technique. Ratios of Al:Fe less than 3 and/or Al:P less than 25 indicate that the sediments are able to release phosphorus under anoxic conditions. Such ratios are found in lakes on which alum treatments are considered. This test is performed on samples taken from at least three locations in the lake before proceeding with planning for an alum treatment. Composited sediment samples to characterize ***sediment condition*** should be taken at approximately the same location prior to an alum treatment, within one week after the end of the treatment, one year after the treatment, and at 5-year intervals thereafter for the foreseeable future to track longevity of the treatment.

Note: The sediment condition analysis is different than the ***sediment evaluation*** which was done before applying for a permit to determine how much alum is needed to bind phosphorus in the sediment. This sediment collection is similar to what is described above, but the top 10 cm of sediment is collected and composited from three sediment cores from each location. A minimum of three locations should be evaluated. Essentially the sediment is titrated with an alum slurry to determine the appropriate quantity of aluminum needed to inactivate the phosphorus in the sediment. These composited samples should be analyzed by a certified laboratory using a modified Psenner Al/Fe/P speciation technique.

Either of these sediment samples must be immediately stored on ice and frozen as soon as possible; if analysis is anticipated to be delayed for more than a few months, samples should be stored in an ultra-low temperature freezer.

Fish and aquatic life surveys are necessary to assess possible effects of aluminum toxicity and/or pH fluctuations. Generally, the sector approach to treatment and limits on delivery concentrations are designed to minimize risk to the lake ecosystem. Nevertheless, surveys should be conducted along shorelines daily during treatment or the morning following treatments and for a few weeks following the treatment. Use of underwater cameras to look at the benthic environment in treatment areas may be valuable in identifying instances of poisoning; this can be done at the same time as investigating settling of aluminum floc on the lake bottom. Surveyors should look for fish, shellfish, snail, amphibian, and bird fatalities as these can be indicators of potential aluminum or pH toxicity. Notes regarding typical animal processes such as insect emergence, should also be made as they provide some indication that those processes have not been harmed.

Floc evaluation with a submersible camera should be performed in application plumes and at post-treatment sites in the benthic environment.

In application plumes, monitors should be evaluating the formation of floc, the depth of mixing, and the speed of settling. These should be looked at between 50' and 100' behind the application vessel. The floc will look like white snow-like accumulations settling through the water column.

Take note of these to ensure that mixing depth is consistent with minimizing toxicity to the aquatic environment as outlined in the application for discharge.

In post-treatment sites, monitors should be looking for visual evidence (bright white) floc settled and blanketing the benthic environment. If floc is not visually evident, it is possible that it has settled into the unconsolidated benthic sediments. In such a case, attempt to agitate the sediments. The behavior of a sediment plume changes in an area that has been treated with alum generally becoming less persistent and dispersing less (the plume is not as tall and settling out more quickly).

pH “jar” test is used to ensure that pH levels are correct in the ratio of deliveries for the two aluminum colloids. By taking a sample of the treatment lake’s water and applying differing amounts of the two chemicals to neutralize pH (pH 7), the optimal application ratio to minimize toxicity can be determined. This test should be performed by the applicator at the beginning of the treatment process to determine optimal delivery ratio. Should significant pH swings occur, it may be required to take additional pH jar tests.

DEP Maine Lake Assessment Quality Assurance Program Plan (QAPP) includes SOPs for the use of the sampling equipment mentioned and specific details regarding the collection of many of the samples mentioned.

Data Recorded must be detailed, legible and accurate. Copies of field forms are attached to this document. Copies of all data collected must be submitted to the DEP Lake Assessment Section.

Monitoring Regime

The accompanying table lays out the monitoring regimes required prior to the treatment, during the treatment and post-treatment. The table includes location of sampling and the list of parameters described above. Those conducting the monitoring must have Certifications through the DEP or LSM to obtain the data and collect the various samples.

For further information or if you have any questions, please contact Linda Bacon at 207-441-0462 or at: Linda.C.Bacon@maine.gov

Time-frame	Prior to Treatment		During Treatment						Post-Treatment		
	Within a week before treatment starts		Daily			During application	Evening or early the next morning	After 3 days but within a week of completing treatment	Monthly after treatment		
Location	Approximate center of area to be treated****	Control site *	Control site *	Location to be treated that day	Location treated previous day	Aluminum sampling location **	In plume (50' to 100' behind barge) †	Shoreline (especially downwind shore)	Approximate center of treated area****	Control site *	Deep hole
Secchi transparency	x	x	x	x	x				x	x	x
Dissolved oxygen profile	x	x	x	x	x				x	x	x
Temperature profile	x	x	x	x	x		temp checks		x	x	x
Conductivity & pH profile	x	x	x	x	x		x		x	x	x
Nitrogen(NO3+NO2-N, NH4-N, TKN) (composite of 3 epilimnetic cores)	x	x							x	x	x
Alkalinity (composite of 3 epilimnetic cores before and after treatment; during treatment: composite of three 10-meter cores***)	x	x	x	x	x		x		x	x	x
Alkalinity (grab, 1 meter from the bottom)	x	x	x	x	x		x		x	x	x
Phytoplankton & Chlorophyll-a (composite of 3 epilimnetic cores)	x	x							x	x	x
Total & Diss. Aluminum** (composite of 3 epilimnetic cores before and after treatment; during treatment: composite of three 10-meter cores***)	x	x				x			x	x	x
Total & Diss. Aluminum** (grab, 1 meter from the bottom)	x	x				x			x	x	x
Total phosphorous grabs (if lake < 8m deep, every meter to one meter above bottom; if lake >8m deep, odd meters to one meter from bottom)	x								x		x
Zooplankton††† (min. of 5 tows when depth is <50', 3 tows when depth is >50')	x								x		
Sediment (three surface samples obtained with gravity core, composited)	x								x		
Fish & AQ life survey (mussels, insect hatches, snails, birds) ††	x	x	x	x	x	x	x	x	x	x	
Floc evaluation with camera	test		x	x	x	x	x	x			
pH jar test (performed by applicator)	x										

* Control site should be located outside of treatment area in a location that is similar in depth and nature to the areas designated for treatment. Measurements taken here should attempt to be at the same time each day.

** Aluminum sampling will occur prior to treatment, and at least once a week during treatment, and post-treatment. During treatment, the location will be within the area of application that day. A sample will be collected prior to application and at that same location again 1, 2, and 3 days after application has taken place.

*** If lake is shallower than 10 meters, core is taken to 1 meter above bottom.

**** If the center of the area to be treated is within 500' of the deep hole, the deep hole can be used.

† This needs to be done often (nearly continuously) during the first days to ensure proper application and chemistry, less frequently thereafter. It should be performed at several depths but does not need a full depth profile.

†† Survey prior to treatment are necessary to distinguish between normal fish mortality and those caused by the treatment. A fish kill is defined as a total of 100 fish, or, 50 fish of one species.

††† Zooplankton net mesh size can be 63 or 80 microns, as long as the net mesh size is recorded and is consistent across the monitoring period. Record number of tows, length of tows and diameter of net opening so that volume filtered can be calculated.

Floc Drift Sector Map

Sector:

Application time:

Monitoring time:

North

Draw in
north
arrow

Estimated drift floc distance:

Estimated drift floc distance:

|

Draw in sector boundaries & estimated floc extent

Estimated drift floc distance:

Estimated drift floc distance:

Turbidity:

Mixing zone:

Pass 1: Location 1: m Location 2: m Location 3: m

Floc observed until what depth:

Pass 1: Location 1: m Location 2: m Location 3: m

Pass 2: Location 1: m Location 2: m Location 3: m

Alkalinity taken at what depth(s) and type:

Pass 1: Location 1: m C / G Location 2: m C / G Location 3: m C / G

Pass 2: Location 1: m C / G Location 2: m C / G Location 3: m C / G

Turbidity:

Time series:

Location:

Depth:

Barge passage time:

First sample time:

Minutes after barge passage: 1
2
3
4
5
6
7
8
9
10
15
20

ALUM TREATMENT - Daily Sheet**Lake:**

Date:	Start Time:	Day Count of Treatment:
Staff:		
Weather Conditions:		
Sectors treated previous day and order:		
Sectors to be treated and order:		
Activities to be completed:		
<input type="checkbox"/> Sensor calibrations & battery checks		
<input type="checkbox"/> "Control" sector monitoring		
<input type="checkbox"/> AM sector measurements prior to treatment:		
<input type="checkbox"/> Measurement of previously treated sectors:		
<input type="checkbox"/> Al samples in week stages. Block:	Sector:	Stage:
<input type="checkbox"/> Plume measurements in sectors:		
<input type="checkbox"/> Sectors post-treatment or other testing:		

Equipment:	
<input type="checkbox"/> Project sheet	<input type="checkbox"/> Pine multimeter
<input type="checkbox"/> Day sheet	<input type="checkbox"/> DEP multimeter
<input type="checkbox"/> Sector sheets	<input type="checkbox"/> Oakton conductivity meter
<input type="checkbox"/> Plume sheets	<input type="checkbox"/> Turbidity meter & vials (as needed)
<input type="checkbox"/> Write-in-rain copies of sheets	<input type="checkbox"/> Kimwipes
<input type="checkbox"/> Sharpies	<input type="checkbox"/> Kemmerer sampler
<input type="checkbox"/> Pencils	<input type="checkbox"/> Core tube & valve
<input type="checkbox"/> Access badge	<input type="checkbox"/> Collection jug
<input type="checkbox"/> Whaler key	<input type="checkbox"/> Secchi disk
<input type="checkbox"/> Gasoline	<input type="checkbox"/> Scope
<input type="checkbox"/> Life jackets	<input type="checkbox"/> Phones
<input type="checkbox"/> Cooler	<input type="checkbox"/> Garmin GPS
<input type="checkbox"/> Ice	<input type="checkbox"/> Tablet & Bad Elf GPS
<input type="checkbox"/> Al sample bottles (M, T, W, R) 2x T Al, 2x D Al	<input type="checkbox"/> Sunscreen
<input type="checkbox"/> Alk sample bottles	<input type="checkbox"/> Sun protection
<input type="checkbox"/> HETL COCs	<input type="checkbox"/> Hat
<input type="checkbox"/> Handheld sonar depth transducer	<input type="checkbox"/> Drinking water
<input type="checkbox"/> MarCum underwater camera	<input type="checkbox"/> Snacks

Notes on the day:

At end of sampling day:

- Check weather
- Discuss with Solitude next sampling
- Determine who is sampling tomorrow
- Scan/copy datasheets
- Contact all parties directly involved about plan and Erica, Scott, Linda, & Ken

Contact information:

LSM	Scott Williams: 207-576-7839
LSM	Tristan Taber: 207-441-7609
DEP	Linda Bacon: 207-649-4238
WRS	Ken Wagner: 413-219-8071
Eco.Inst.	Jen Jespersen 293-8073

- Important notes:**
- The pH of DI water should measure around 5.65.
 - When adjusting barometric pressure on sensors, use weather service readings for municipality and convert using table provided to find true barometric pressure.
 - With camera look for patchiness, this is a problem.
 - The conductivity should be higher by 20 - 40 in the plume.
 - It is important to determine the mixing zone of the treatment; it should be around 5 meters. If it is too shallow this could mean potential issues in toxicity.
 - Text the workers on the barge, it is loud, they can't always hear calls.

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

FINAL FACT SHEET

Date: **May 4, 2020**

PERMIT NUMBER: **ME0002810**

LICENSE NUMBER: **W009231-5U-A-N**

NAME AND ADDRESS OF APPLICANT:

**GEORGES POND ASSOCIATION
P.O. Box 30
Franklin, Maine 04634**

COUNTY: **Hancock County**

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

**Georges Pond
Franklin, Maine**

RECEIVING WATER(S)/CLASSIFICATION: **Georges Pond/Class GPA**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER:

**Mr. John Eliasberg
President
Georges Pond Association
Tel: 858-775-1674
e-mail: john.eliasberg@gmail.com**

1. APPLICATION SUMMARY

- a. Application: Georges Pond Association (permittee) has submitted an application to the Department of Environmental Protection (Department) for a new combination Maine Pollutant Discharge Elimination System (MEPDES) permit /Maine Waste Discharge License (WDL). The Department has assigned a permit number of MEPDES ME0002810/WDL W009231-5U-A-N. The permittee has applied for authorization to discharge aluminum sulfate (alum) and/or sodium aluminate to Georges Pond in Franklin, Maine, Class GPA, to control the growth of algae in the pond by inactivating iron-bound phosphorus in surficial sediments.

1. APPLICATION SUMMARY (cont'd)

Parts of this summary are excerpts of the “Georges Pond CDMP” submitted as part of this application.

Georges Pond is located just north of the coastal U.S. Route 1 corridor on Taunton Bay and Hog Bay in Franklin, Maine. See **Attachment A** of this Fact Sheet for a location map. The pond covers 146 hectares (358 ac) of area to a maximum depth slightly more than 14 m (45 ft) and an average depth of 4.3 m (14 ft). Residence time for water in the pond averages about two years. The watershed covers approximately 257 hectares (636 ac, just under 1 square mile).

There has been concern over deteriorating conditions in Georges Pond for about seven years. Cyanobacteria blooms have appeared during summer and have been severe at times since 2012, but not consistently. Georges Pond's water quality is considered below average, and the potential for nuisance algal blooms is high as a result of low levels of dissolved oxygen in deep areas of the lake and internal recycling of phosphorus. Water quality data have been collected by Maine DEP and volunteer lake monitors intermittently since 1977 at the deep hole. This includes 18 years of data collection over the 41-year monitoring period.

Georges Pond has experienced a significant shift in water quality since sampling began in 1977. Most notably, since 2012, the lake has experienced a significant decrease in water clarity (to <2 m in some years), a significant increase in chlorophyll-a (at concentrations 5 to 10+ times greater than historic levels), an increase in the area of anoxia at the bottom of the lake (from below 8 m to 4 m), and reoccurring nuisance algal blooms (in four of the past eight years). Understanding the increase in anoxia in recent years is especially important considering the relationship between depth and area or volume in Georges Pond. The bathymetry indicates a fairly uniform decline in area with declining water level to a depth of 7 m, then a steep reduction in the amount of area with each increment of water depth greater than 8 m. This is important because only a small area of the lake (4%) is associated with the deepest water, meaning that there is a very small volume of water (2%) below a depth of about 8 m, compared to 26% of the area and 9% of the volume greater than 6 m. Anoxia has commonly occurred at depths between 6 and 8 m (and as shallow as 4m in 2012) in recent years, representing a relatively large range of area and possible internal loading contribution in Georges Pond.

1. APPLICATION SUMMARY (cont'd)

A watershed-based protection plan (WBPP) was completed by the Hancock County Soil & Water Conservation District and the Georges Pond Association in March 2018. That plan identified 53 sites at which erosion was occurring and could add to phosphorus loading to Georges Pond. It also noted the likelihood of internal loading but focused on watershed improvements. A more intense bi-weekly monitoring program was initiated in 2019 to inform a new 10-year Watershed-Based Management Plan for Georges Pond that will be finalized in January 2020. Starting in 2018, a team of scientists and local stakeholders worked collaboratively over a one-year period to set a realistic water quality goal that would prevent the future occurrence of nuisance algal blooms in Georges Pond. An average phosphorus concentration of 10 ppb is a desirable target to improve water quality. This equates to a phosphorus loading goal of 90 kg/yr. Reducing this load even further would provide a margin of safety for years of extreme heat or high precipitation and be more protective from future development.

Because there is little that can be done about atmospheric or wildlife inputs, the three other primary sources (internal load, septic systems and watershed runoff) must be addressed to achieve the loading reductions needed to make necessary improvements in water quality. To meet the goal, the amount of phosphorus entering the lake will need to be reduced by 52% (98 kg P/yr.). This represents 90% of the internal load and 10% of the external load from watershed runoff, over the next 10 years. A 90% reduction in internal loading is possible and seen as the option with the greatest potential for success but will not be enough to reach the target of 10 ppb without addressing the load from the watershed. Even with treatment of the internal load, it will build again over time in the absence of managing external sources. In 2019 the Georges Pond Association (GPA) was awarded a phase I watershed protection (319) grant from Maine DEP (US EPA) to address sources of NPS pollution throughout the watershed.

The Georges Pond Technical Advisory Committee reviewed and discussed the results of relevant documents developed over the one-year planning period in order to develop a water quality goal. Specifically, the committee reviewed the results of water quality sampling by the Georges Pond Association and Maine DEP, water quality analyses conducted by Ecological Instincts, watershed modeling and internal loading analysis conducted by WRS, and the sediment analysis conducted by the University of Maine. Previous watershed assessment work, including a watershed survey and follow-up assessment work in 2019 was also considered to increase the probability that water quality goals could be met based on estimated load reductions. Reducing the internal load by 90% (32 -95 kg/yr.), and the watershed load by 10% (3.2 kg/yr.) will result in a reduction of the total phosphorus load to Georges Pond by 35 - 43% or approximately 35 - 98 kg/yr.

These reductions are expected to result in a reduction of the in-lake total phosphorus concentration to 10 ppb, increase summer water clarity readings to between 3.9 m – 4.3 m (12.8 ft- 14.1 ft), and result in a minimum probability of algal blooms (.1 - .3%).

1. APPLICATION SUMMARY (cont'd)

The internal loading analysis and feasibility study conducted by WRS provided recommendations for inactivating phosphorus in Georges Pond's sediments by treatment with alum. The rationale for this treatment is that watershed runoff controls alone cannot improve water quality to the degree needed to prevent nuisance algal blooms. Georges Pond has experienced frequent cyanobacteria blooms since 2012, which are only expected to increase with warmer predicted temperatures and an increase in the zone of anoxia in the lake over time. Algal blooms both promote and are encouraged by low oxygen at the bottom of the lake, creating a cyclical process resulting in excessive algae growth and low oxygen supporting each other. Aluminum has been the phosphorus binder of choice in New England for the past 30 years, including successful applications in several Maine lakes that have resulted in improved water quality that extended two to three decades.

The goal of the Georges Pond alum treatment is to modify the lake's natural chemical balance by increasing the amount of available aluminum in the sediments in order to bind the available phosphorus. The alum treatment is designed to address 90% of the internal phosphorus load in the lake by inactivating phosphorus in the deepest areas of the lake where anoxia is occurring (>5m) equating to a reduction of 94.5 kg P/yr., reducing the internal load from 105 kg/yr. to 10.5 kg/yr. The area of the lake to be treated and the treatment dose are subject to consensus by GPA and is heavily influenced by availability of funding. Current management recommendations include treating all areas in Georges deeper than 5 m with a dose of aluminum between 35 and 45 g/m². This represents an area of approximately 131 acres (Figure 23) and is estimated to cost around \$206,000 and \$265,000 for a one-time treatment, though final costs won't be determined until a contractor has been selected.

Superior benefits and maximum longevity (10 – 20 years or more) would be expected from application at the highest dose (WRS, 2019). Separating the treatment into two treatments over a span of several years is also considered a feasible option which may reap additional water quality benefits (e.g. stripping phosphorus out of the water column twice rather than once) but will increase the overall cost of the treatment. Monitoring will be conducted before, during and after the alum treatment. Post-alum treatment monitoring will help determine if additional alum is needed to treat other areas of the lake (e.g. 4-5m).

1. APPLICATION SUMMARY (cont'd)

Aluminum sulfate can be applied by itself where alkalinity is high, but in most cases with a high dose to inactivate sediment phosphorus, sodium aluminate is applied with the aluminum sulfate to keep the pH stable. Polyaluminum chloride is gaining popularity for inflow and water column treatments. There is another binder that has been used in recent years called Phoslock, which is bentonite clay with lanthanum attached to binding sites. It may do a superior job capturing phosphorus from the water column and may do as good a job on surficial sediments, but at a cost much higher than that of an appropriate aluminum dose. Given the cost factor and experience with aluminum, dosing the sediments with aluminum is recommended. Successful aluminum treatment is a function of supplying an adequate dose to the appropriate treatment area. It is generally acknowledged that the targeted treatment area should be the area of sediment that can experience anoxia, which facilitates the release of phosphorus bound by iron (Fe-P). This zone can be delineated by making oxygen measurements right at the sediment-water interface. Often this area is defined by complete coverage of the bottom by organic sediment.

The 2020 application indicates the amount of liquid (alum and aluminate at 2:1 ratio by volume) needed per acre to do the treatment at 45 g/m² is 538 gal/ac. To avoid toxicity, an Al concentration of less than 5 mg/L is recommended, which equates to an applied dose of 25 g/m² with a 5 m vertical mixing zone. The total treatment with 45 g/m² of alum will be split into two applications 2-5 years apart starting in spring 2020 with the first treatment dose less than or equal to 25 g/m². That means that 269 gallons of liquid would be applied per acre per treatment day.

Dividing the treatment into a daily application rate of 15,000 gpd, 55 acres could be treated at 20-25 g/m² each day. A total of 70,500 gallons of liquid will be applied over 131 acres (5m depth and deeper) for the full alum treatment (or approximately 35,250 gallons per treatment). It is anticipated that each treatment will take 5 days to complete to account for weather and equipment issues that may arise, or 10 days in total to account for both planned treatments.

The chemicals are applied as liquids in concentrations of 5%. The method used to apply the chemicals to the pond is by a barge system that injects the liquid alum directly into the water column.

Treatment 1 is scheduled to take place after ice out in spring 2020 over a period of 3-5 days. A second treatment will be completed within five years of this permit approval. See **Attachment B** of this Fact Sheet for a treatment map.

The permittee has submitted a CDMP to the Department as an exhibit to the application for this permit. The Department has reviewed the CDMP and finds it acceptable as written. In addition, the permit has included a letter dated January 13, 2020, from the Environmental review Coordinator from the Maine Department of Inland Fisheries & Wildlife stating that after reviewing the CDMP, “anticipated improvements in water quality are expected to benefit the overall fisheries of the pond.”

2. PERMIT SUMMARY

This permit requires the permittee to comply with technology based and water quality-based limitations, conduct visual and ambient water quality monitoring, recordkeeping and submit a report to the Department following each application or series of applications.

3. CONDITIONS OF PERMITS

Conditions of licenses, 38 M.R.S. Section 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. § 420 and 06-096 CMR 530 require the regulation of toxic substances not to exceed levels set forth in *Surface Water Quality Criteria for Toxic Pollutants*, 06-096 CMR 584 (last amended February 16, 2020), and that ensure safe levels for the discharge of toxic pollutants such that existing and designated uses of surface waters are maintained and protected.

4. RECEIVING WATER STANDARDS

Standards for classification of lakes and ponds 38 M.R.S., §465-A(1) classifies Georges Pond as a Class GPA waterbody and describes the standards for classification of Class GPA waterbodies as follows;

Class GPA shall be the sole classification of great ponds and natural ponds and lakes less than 10 acres in size.

- A. *Class GPA waters must be of such quality that they are suitable for the designated uses of drinking water after disinfection, recreation in and on the water, fishing, agriculture, industrial process and cooling water supply, hydroelectric power generation, navigation and as habitat for fish and other aquatic life. The habitat must be characterized as natural.*
- B. *Class GPA waters must be described by their trophic state based on measures of the chlorophyll "a" content, Secchi disk transparency, total phosphorus content and other appropriate criteria. Class GPA waters must have a stable or decreasing trophic state, subject only to natural fluctuations and must be free of culturally induced algal blooms that impair their use and enjoyment. The number of Escherichia coli bacteria of human and domestic animal origin in these waters may not exceed a geometric mean of 29 per 100 milliliters or an instantaneous level of 194 per 100 milliliters.*
- C. *There may be no new direct discharge of pollutants into Class GPA waters. The following are exempt from this provision:*
 - (1) *Chemical discharges for the purpose of restoring water quality approved by the department;*

4. RECEIVING WATER STANDARDS (cont'd)

- (2) *Aquatic pesticide or chemical discharges approved by the department and conducted by the department, the Department of Inland Fisheries and Wildlife or an agent of either agency for the purpose of restoring biological communities affected by an invasive species;*
- (3) *Storm water discharges that are in compliance with state and local requirements and*
- (4) *Discharges of aquatic pesticides approved by the department for the control of mosquito-borne diseases in the interest of public health and safety using materials and methods that provide for protection of nontarget species. When the department issues a license for the discharge of aquatic pesticides authorized under this subparagraph, the department shall notify the municipality in which the application is licensed to occur and post the notice on the department's publicly accessible website.*

Discharges into these waters licensed prior to January 1, 1986 are allowed to continue only until practical alternatives exist. Materials may not be placed on or removed from the shores or banks of a Class GPA water body in such a manner that materials may fall or be washed into the water or that contaminated drainage may flow or leach into those waters, except as permitted pursuant to section 480-C. A change of land use in the watershed of a Class GPA water body may not, by itself or in combination with other activities, cause water quality degradation that impairs the characteristics and designated uses of downstream GPA waters or causes an increase in the trophic state of those GPA waters.

5. TERMS AND CONDITIONS

- A. **Applicators & Decision Makers** - In this permit, all Operators are classified as either "Applicators" or "Decision-makers" or both. An Applicator is an entity who performs the application of a chemical or who has day-to-day control of the application (i.e., they are authorized to direct workers to carry out those activities) that results in a discharge to waters of the State. A Decision-maker is an entity with control over the decision to perform applications, including the ability to modify those decisions that result in discharges to water of the State. As such, more than one Operator may be responsible for compliance with this permit for any single discharge from the application of chemicals.

This permit delineates the non-numeric effluent limitations into tasks that Department expects the Applicator to perform and tasks the Decision-maker to perform. In doing so, the permit assigns the Applicator and the Decision-maker different responsibilities.

5. TERMS AND CONDITIONS (cont'd)

1. **Applicators' Responsibilities** - Special Condition D(2) of this permit contains the general technology-based effluent limitations that all Applicators must perform. These effluent limitations are generally preventative in nature and are designed to minimize chemical discharges into waters of the State. All Applicators are required to minimize the discharge of chemicals to waters of the State by doing the following:

- a. **To the extent not determined by the Decision-maker, use only the amount of chemical and frequency of chemical application necessary to control the target nutrients, using equipment and application procedures appropriate for this task.**

Use of chemicals must be consistent with any other applicable state or federal laws. To minimize the total amount of chemicals discharged, Operators must use only the amount of chemical and frequency of chemical application necessary to control the target nutrients. Using only the amount of chemical and frequency of chemical application needed ensures maximum efficiency in pest control with the minimum quantity of chemical. Using only the amount and frequency of applications necessary can result in cost and time savings to the user. To minimize discharges of chemical, Operators should base the rate and frequency of application on what is known to be effective against the target nutrients.

- b. **Maintain chemical application equipment in proper operating condition, including requirement to calibrate, clean, and repair such equipment and prevent leaks, spills, or other unintended discharges.**

Common-sense and good housekeeping practices enable chemicals users to save time and money and reduce the potential for unintended discharge of chemicals to waters of the State. Regular maintenance activities should be practiced and improper chemical mixing and equipment loading should be avoided. When preparing the chemical for application be certain that they are mixed correctly and prepare only the amount of material that is needed. Carefully choose the chemical mixing and loading area and avoid places where a spill will discharge into Waters of the State. Some basic practices Operators should consider are:

- Inspect chemical containers at purchase to ensure proper containment;
- Maintain clean storage facilities for chemicals;
- Regularly monitor containers for leaks;
- Rotate chemical supplies to prevent leaks that may result from long term storage; and
- Promptly deal with spills following manufacturer recommendations.

5. TERMS AND CONDITIONS (cont'd)

To minimize discharges of chemicals, Applicators must ensure that the rate of application is calibrated (i.e. nozzle choice, droplet size, etc.) to deliver the appropriate quantity of chemicals needed to achieve greatest efficacy against the target nutrient. Improperly calibrated chemical equipment may cause either too little or too much chemical to be applied. This lack of precision can result in excess chemical being available or result in ineffective nutrient control. When done properly, equipment calibration can assure uniform application to the desired target and result in higher efficiency in terms of nutrient control and cost. It is important for Applicators to know that chemical application efficiency and precision can be adversely affected by a variety of mechanical problems that can be addressed through regular calibration. Sound maintenance practices to consider are:

- Choosing the right application equipment for the application.
 - Ensuring proper regulation of pressure and discharge rate to ensure desired application rate.
 - Calibrating application equipment prior to use to ensure the rate applied is that required for effective control of the target nutrient.
 - Cleaning all equipment after each use and/or prior to using another chemical unless a tank mix is the desired objective and cross contamination is not an issue.
 - Checking all equipment regularly (e.g., sprayers, hoses, nozzles, etc.) for signs of uneven wear (e.g., metal fatigue/shavings, cracked hoses, etc.) to prevent equipment failure that may result in inadvertent discharge into the environment.
 - Replacing all worn components of chemical application equipment prior to application.
- c. **Assess weather conditions (e.g. temperature, precipitation, and wind speed) in the treatment area to ensure application is consistent with all applicable state and federal requirements.**

Weather conditions may affect the results of chemical application. Applicators must assess the treatment area to determine whether weather conditions are suitable for chemical application.

2. **Decision-makers' Responsibilities** Special Condition D(3) of this permit contains the effluent limitations that Decision-makers must perform. The permit requires the Decision-makers, to the extent Decision-makers determine the amount of chemical or frequency of chemical application, to minimize the discharge of chemicals to waters of the State from the application of chemicals, through the use of Chemical Management Measure (CMMs), by using only the amount of chemical and frequency of chemical application necessary to control the target nuisance. For the purposes of this permit CMMs are defined as any practice used to meet the effluent limitations that comply with manufacturer specifications, industry standards and recommended industry practices related to the application of chemicals, relevant legal requirements and other provisions that a prudent Operator would implement to reduce and/or eliminate chemical discharges to waters of the State.

5. TERMS AND CONDITIONS (cont'd)

This permit is requiring certain Decision-makers to also comply with different technology-based effluent limitation than Applicators because they are considered the Best Available Technology Economically Achievable for these Operators. These requirements are aimed at reducing discharge of chemicals to waters of the State and lessening the adverse effects of chemicals that are applied. These requirements are divided into three different sections:

- Identify the problem,
- Chemical management options
- Chemical use.

Prior to each application or series of applications, Decision-makers must identify the problem prior to chemical application, consider using a combination of chemicals and non-chemical management measures, and perform surveillance before chemical application to reduce environmental impacts. This permit is requiring these additional technology-based effluent limitation requirements from Decision-makers and not the Applicators because the measures necessary to meet these requirements are within the control of the Decision-makers, not the Applicators.

B. Chemical Discharge Management Plan (CDMP)

Distinct from the technology-based or water quality-based effluent limitation provisions in the permit, Special Condition G of this permit requires Decision-makers to prepare a CDMP to document the implementation of CMMs being used to comply with the effluent limitations set forth in this permit. In general, Special Condition G of this permit requires that the following be documented in the CDMP:

- Chemical discharge management team information;
- Problem identification;
- Chemical management options evaluation;
- Response procedures pertaining to spills and adverse incidents;
- Documentation to support eligibility considerations under other federal laws, and

The CDMP must be kept up-to-date and modified whenever necessary to document any corrective actions as necessary to meet the effluent limitations in this permit.

The requirement to prepare a CDMP is not an effluent limitation because it does not restrict quantities, rates, and concentrations of constituents that are discharged. Instead, the requirement to develop a CDMP is a permit "term or condition" authorized under Sections 402(a)(2) and 308 of the Clean Water Act. The CDMP requirements set forth in the permit are terms or conditions because the Operator is documenting information on how it is complying with the effluent limitations (and inspection and evaluation requirements) contained elsewhere in the permit. Thus, the requirement to develop a CDMP and keep it updated is no different than other information collection conditions, as authorized by section 402(a)(2), in other permits. Failure to have a CDMP is a violation of the permit.

5. TERMS AND CONDITIONS (cont'd)

While Special Condition D of the permit requires the Operator to select CMMs to meet the effluent limitations in this permit, the CMMs themselves described in the CDMP are not effluent limitations because the permit does not impose on the Operator the obligation to comply with the CDMP; rather, the permit imposes on the Operator the obligation to meet the effluent limitations prescribed in Special Conditions A, D and E of this permit. Therefore, the Operator is free to change as appropriate the CMMs used to meet the effluent limitations contained in the permit. This flexibility helps ensure that the Operator is able to adjust its practices as necessary to ensure continued compliance with the permit's effluent limitations. However, the permit also contains a recordkeeping condition that requires that the CDMP be updated with any such changes in the Operator's practices. See Special Condition H of this permit. Thus, if an Operator's on-the-ground practices differ from what is in the CDMP, this would constitute a violation of the permit's recordkeeping requirement to keep the CDMP up-to-date, and not per se a violation of the permit's effluent limitations, which are distinct from the CDMP. The Department recognizes, however, that because the CDMP documents how the Operator is meeting the effluent limitations contained in the permit, not following through with actions identified by the Operator in the CDMP as the method of complying with the effluent limitations in the permit is relevant to evaluating whether the Operator is complying with the permit's effluent limitations.

Operators must comply with all applicable statutes, regulations and other requirements including, but not limited to requirements contained in the labeling of chemical products. If Operators are found to have applied a chemical in a manner inconsistent with any relevant water-quality related labeling requirements, the Department will presume that the effluent limitation to minimize chemical entering the waters of the State has been violated under the permit. The Department considers many provisions of labeling such as those relating to application sites, rates, frequency, and methods, as well as provisions concerning proper storage and disposal of chemical wastes and containers to be requirements that affect water quality.

If an Applicator applies a chemical at higher than the allowable rate, which results in excess product being discharged into waters of the State, the Department would find that this application was a misuse of the chemical and because of the misuse; the Department might also determine that the effluent limitation that requires the Operator to minimize discharges of chemical products to waters of the State was also violated, depending on the specific facts and circumstances. Therefore, chemical use inconsistent with certain labeling requirements could result in the Operator being held liable for permit or water quality violations.

1. Contents of the CDMP - The CDMP prepared under this permit must meet specific requirements in Special Condition G of this permit. Generally, Decision-makers must document the following:

- A chemical discharge management team;
- A description of the chemical management area and the pest problem;
- A description of chemical management options evaluation;
- Response procedures for spill response and adverse incident response; and
- Any eligibility considerations under other federal laws.

5. TERMS AND CONDITIONS (cont'd)

- a. Chemical Discharge Management Team** - The permit requires that a qualified individual or team of individuals be identified to manage chemical discharges covered under the permit. Identification of a chemical discharge management team ensures that appropriate persons (or positions) are identified as necessary for developing and implementing the plan. Inclusion of the team in the plan provides notice to staff and management (i.e., those responsible for signing and certifying the plan) of the responsibilities of certain key staff for following through on compliance with the permit's conditions and limits.

The chemical discharge management team is responsible for developing and revising the CDMP, implementing and maintaining the CMMs to meet effluent limitations, and taking corrective action where necessary. Team members should be chosen for their expertise in the relevant areas to ensure that all aspects of chemical management are considered in developing the plan. The CDMP must clearly describe the responsibilities of each team member to ensure that each aspect of the CDMP is addressed. The Department expects most Decision-makers will have more than one individual on the team, except for those with relatively simple plans and/or staff limitations. The permit requires that team members have ready access to any applicable portions of the CDMP and the permit.

- b. Problem Identification** - This section includes the pest problem description, action threshold(s), a general location map, and water quality standards.
- 1. Nutrient Problem Description** - The permit requires that the CDMP include a description of the nutrient problem at the Chemical management area. A detailed chemical management area description assists Decision-makers in subsequent efforts to identify and set priorities for the evaluation and selection of CMMs taken to meet effluent limitations set forth in Special Conditions A, D and E and in identifying necessary changes in nutrient management. The description must include identification of the target nutrient(s), source of the nutrient problem, and source of data used to identify the problem. The permit allows use of historical data or other available data (e.g., from another similar site) to identify the problem at the site. If other site data is used, the permittee must document in this section why data from the site is not available or not taken within the past year and explain why the data is relevant to the site. Additionally, the chemical management area descriptions should include any sensitive resources in the area, such as unique habitat areas, rare or listed species, or other species of concern that may limit chemical management options.
 - 2. General Location Map** - The CDMP must also contain a general location map of the site that identifies the geographic boundaries of the area to which the plan applies and location of Georges Pond.

5. TERMS AND CONDITIONS (cont'd)

- c. Description of Chemical Management Measures Options Evaluation** - The permit requires that the CDMP include a description of the CMMs implemented to meet the applicable technology-based or water quality-based effluent limitations. The description must include a brief explanation of the CMMs used at the site to reduce chemical discharge, including evaluation and implementation of the six management options (no action, prevention, mechanical/physical methods, cultural methods, biological control agents, and chemicals). Decision-makers must consider impact to non-target organisms, impact to water quality, feasibility, and cost effectiveness when evaluating and selecting the most efficient and effective means of CMMs to minimize chemical discharge to waters of the State.
1. **No Action** - No action is to be taken, although a nutrient problem has been identified. This may be appropriate in cases where, for example, available chemical management options may cause secondary or non-target impacts that are not justified, no available controls exist, or the algal levels are stable at a level that does not impair water body uses.
 2. **Prevention** - Preventing introductions of possible nutrients is the most efficient way to reduce the threat of nuisance species. Identifying primary pathways of introduction and actions to cut off those pathways is essential to prevention. Through a better understanding of the transportation and introduction of nutrients, private entities and the public have the necessary knowledge to assist in reducing conditions that encourage the spread of nutrients in their immediate surroundings. Increasing public awareness of algal blooms, its impacts, and what individuals can do to prevent proliferation is critical for prevention.
 3. **Mechanical or Physical Methods** - Mechanical control techniques will vary depending on the nutrients. Mechanical and biological controls will be the appropriate method in some cases, or a part of a combination of methods. In some instances, the need for chemical use in and adjacent to the affected habitat can be reduced or virtually eliminated with proper execution of CMMs.
 4. **Cultural Methods** - Cultural techniques include water-level drawdown.
 5. **Biological Control Agents** - Biological control of algae may be achieved through the introduction of grazers. While biological controls generally have limited application for control of weeds and algae, the Operator should fully consider this option in evaluating nutrient management options.

All five management options may not be available for the chemical treatment area. However, the CDMP must include documentation of how the five management options, including combination of these options, were evaluated prior to selecting a site-specific CMMs.

6. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has made a determination based on a best professional judgment that the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of the waterbody to meet standards for Class GPA classification.

7. PUBLIC COMMENTS

Public notice of this application was made in the Ellsworth American newspaper on or about February 1, 2020. The Department receives public comments on an application until the date a final agency action is taken on that application. Those persons receiving copies of draft permits have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to *Application Processing Procedures for Waste Discharge Licenses*, 06-096 CMR 522 (effective January 12, 2001).

8. DEPARTMENT CONTACTS

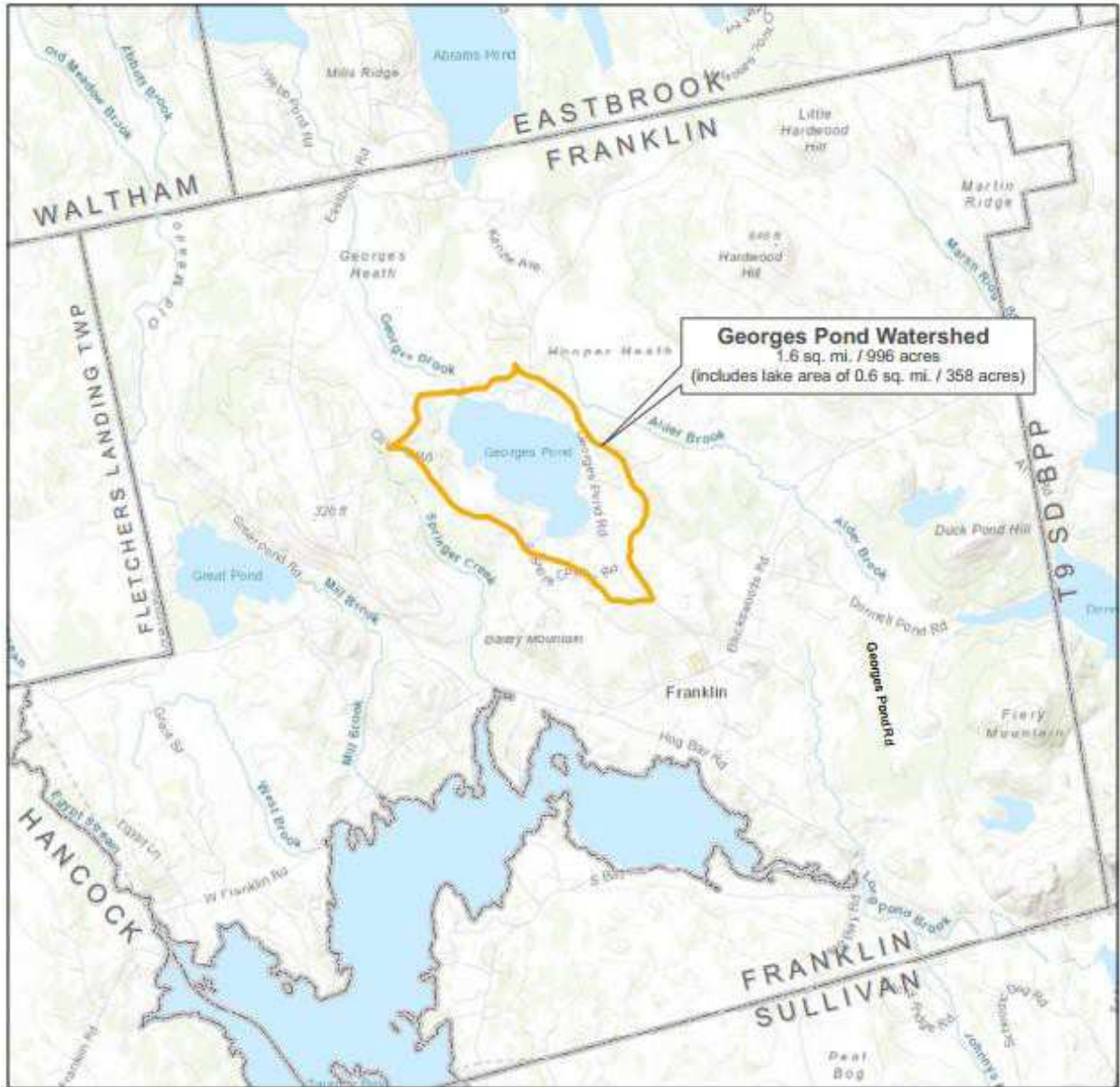
Additional information concerning this permitting action may be obtained from and written comments should be sent to:

Cindy Dionne
Division of Water Quality Management
Bureau of Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone (207) 287-7823
e-mail: cindy.l.dionne@maine.gov

9. RESPONSE TO COMMENTS

During the period of April 1, 2020 through the issuance date of the final permit, the Department solicited comments on the Proposed draft MEPDES permit to be issued to the permittee for the proposed discharge. The Department did not receive comments that resulted in any substantive change(s) in the terms and conditions of the permit. Therefore, the Department has not prepared a Response to Comments.

ATTACHMENT A



Georges Pond Watershed - Franklin, ME

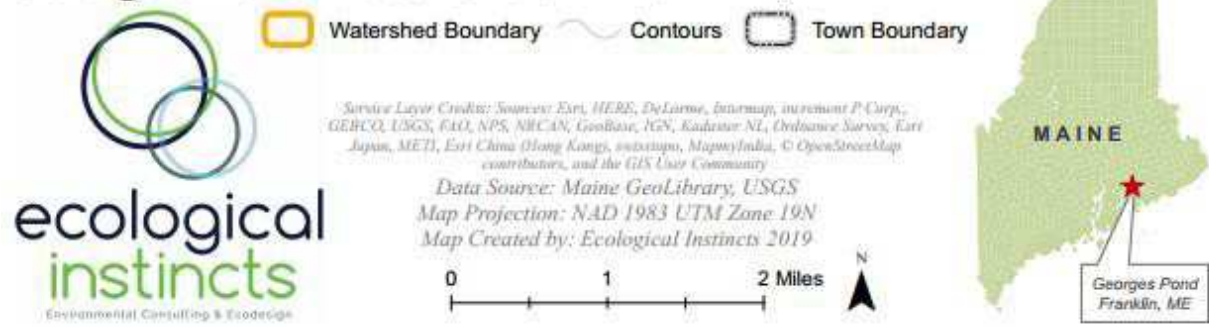


Figure 6- General location map of Georges Pond.

ATTACHMENT B

Georges Pond Alum Treatment Area

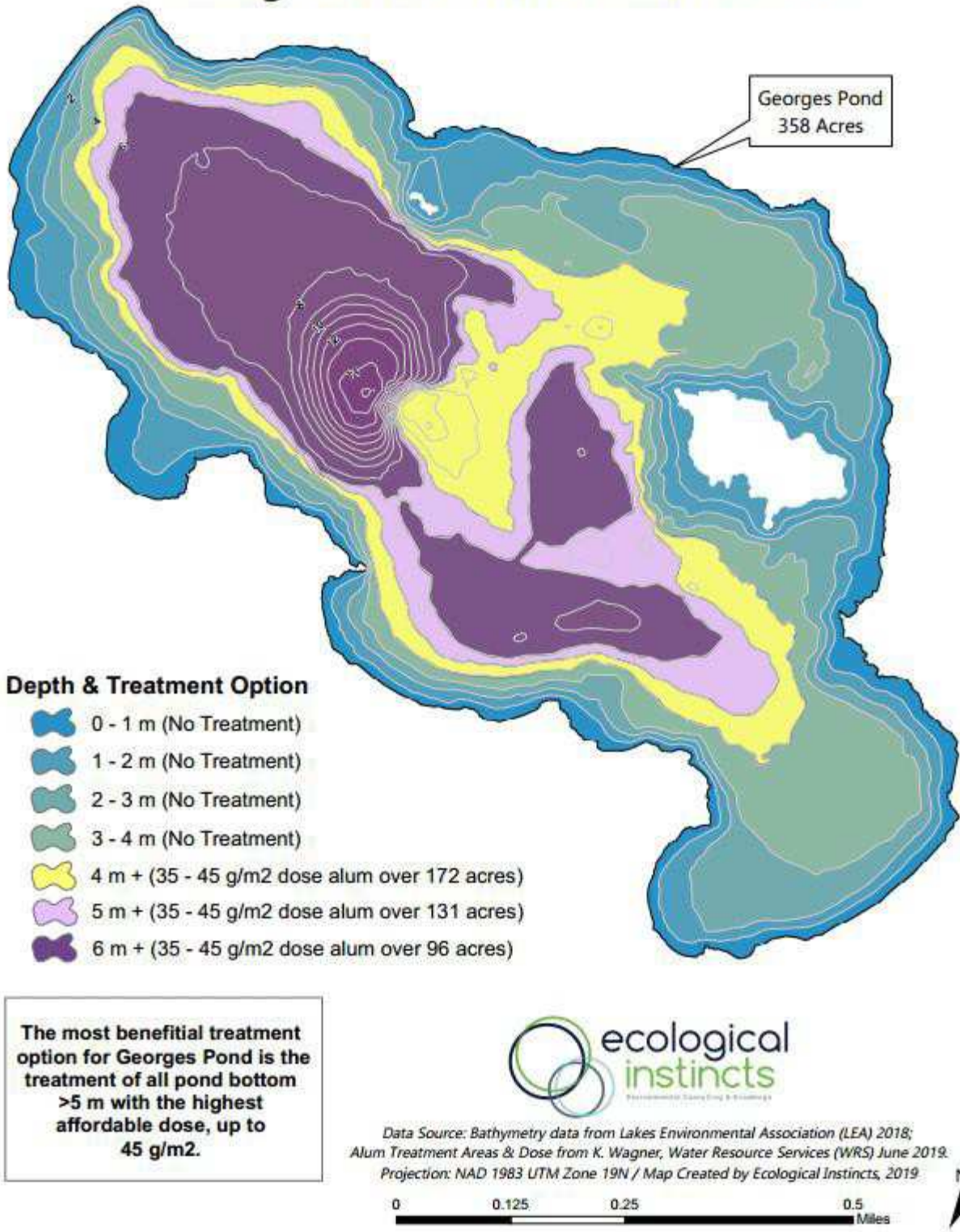


Figure 9- Georges Pond Alum Treatment Areas