AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Alden Research Laboratory, Inc.

is authorized to discharge from the facility located at

Alden Research Laboratory, Inc.
30 Shrewsbury Street
Holden, Massachusetts 01520-1843

to receiving water named

Chaffins Brook, Nashua River Watershed (MA81-33)

in accordance with effluent limitations, monitoring requirements and other conditions set forth herein:

This permit shall become effective on the first day of the calendar month following 60 days after signature if comments are received. If no comments are received, this permit shall become effective upon the date of signature.

This permit and the authorization to discharge expire at midnight, five (5) years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on July 15, 2006, modified on September 30, 2008, and expired (as modified) on June 30, 2011.

This permit consists of 13 pages in Part I, including effluent limitations, monitoring requirements, and state permit conditions, and 25 pages in Part II, including Standard Conditions and Definitions.

Signed this day of

_____
Ken Moraff, Acting Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

_____
David Ferris, Director
MA Wastewater Management Program
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

Part I.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge effluent from meter calibration and flow modeling to outfalls numbered 001 and 002. Such discharges shall be limited and monitored by the permittee as specified below.

Effluent Characteristic	Units	Discharge Limitation[1]		Monitoring Requirement	
		Average Monthly	Maximum Daily	Measurement Frequency	Sample[2] Type
Rhodamine WT Dye	µg/l	Report	10	1/week[3]	Grab
pH[4]	s.u.	6.5 to 8.3		1/week[3]	Grab
Food Coloring[5]	pounds	---	Report	1x/discharge event[3]	Calculate
Temperature	°F	---	Report	1x / discharge event[6,7]	Grab
Total Chlorine	µg/l	---	41.1	1x / discharge event[6]	Grab
Total Recoverable Copper	µg/l	---	7.3	1x / discharge event[6]	Grab

See page 3 for explanation of footnotes.

Footnotes:

[1] See Part I.A.3. for flow limits.

[2] Sampling shall be conducted at a point downstream of the discharge from the building and prior to mixing with any other stream. The sample must be representative of the discharge. All samples shall be tested using the analytical methods found in 40 CFR Part 136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR Part 136. Include each date of discharge on the appropriate DMR form.

[3] Measurement is required only when Rhodamine WT Dye or Food Coloring is discharged.

[4] See Part I.A.5.

[5] See Part I.A.7.

[6] Measurement is required only when municipal water is discharged.

[7] Measurement is required only when well water is discharged.

2. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge water associated with fish testing from outfalls numbered 003 and 004. Such discharges shall be limited by the permittee as specified below.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements	
		Average Monthly	Maximum Daily	Measurement Frequency	Sample Type[1]
pH	s.u.	Range of 6.5 to 8.3[2]		1x / discharge event	Grab
Temperature	°F	--	Report	1x / discharge event	Grab
Dissolved Oxygen	mg/l	No less than 6.0[2]		1x / discharge event	Grab
BOD_5	mg/l	--	Report	1x / discharge event	Grab
TSS	mg/l	--	Report	1x / discharge event	Grab
Total Nitrogen[3]	mg/l	--	Report	1x / discharge event	Grab
Total Phosphorus	mg/l	--	Report	1x / discharge event	Grab
Specific conductance	µmhos/cm	--	250	1x prior to discharge	Grab
Total Chlorine	µg/l	--	41.1	1x / discharge event	Grab
Total Recoverable Copper	µg/l	--	7.3	1x / discharge event	Grab

See page 5 for explanation of footnotes.

Footnotes:

[1] Sampling shall be conducted at a point downstream of the filtration unit and prior to mixing with any other stream. All samples shall be tested using the analytical methods found in 40 CFR Part 136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR Part 136. Include each date of fish testing water discharge on the appropriate DMR form.

[2] Requirement for State Certification, see Part I.A.5.

[3] Total Nitrogen shall be determined by performing the "Total Kjeldahl Nitrogen (as N)" test and the "Nitrate-Nitrite (as N)" test and adding the two test results together to produce a value for mg/l of Total Nitrogen.

3. During the period beginning the effective date and lasting through expiration, the permittee is authorized to discharge effluent from outfalls numbered 001, 002, 003, and 004. Such discharges shall be limited by the permittee as specified below.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirements	
		Average Monthly	Maximum Daily	Measurement Frequency[1]	Sample Type[2]
Combined Total Flow[3]	gpd	Report	100,000	Continuous	Estimate/Recorder

Footnotes:

[1] For flow at outfalls 001 and 002, report flow for each operating date when Rhodamine WT Dye and/ or Food Coloring is discharged. For outfalls 003 or 004, report flow for each date when fish testing water is discharged.

[2] Flow at outfall 001 and 002 shall be estimated. Flow at outfall 003 or 004 shall be measured continuously with a flow meter when fish testing water is discharged.

[3] The average monthly flow reporting requirement and maximum daily flow limit of 100,000 gpd shall be based on the cumulative discharge from outfalls 001, 002, 003 and 004 when dye, food coloring, municipal water and/or fish testing water is discharged.

Part I.A. (Continued)

4. The discharge shall not cause a violation of the water quality standards of the receiving waters.

5. The pH of the effluent shall be in the range of 6.5 to 8.3 standard units, but not more than 0.5 standard units outside of the naturally occurring range. There shall be no change from natural background conditions that would impair any use assigned to the class of the receiving water.

6. These waters shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this inland water, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom.

7. These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this inland water.

8. These waters shall be free from oil and grease, petrochemicals and other volatile or synthetic organic pollutants.

9. These waters shall have no taste or odor other than of natural origin.

10. There shall be no discharge from fish holding tanks, quarantine tanks, bag filters, filter backwash, and associated equipment. There shall be no discharge of aquaculture drugs, chemical additives, feed, or pesticides.

11. The permittee shall notify EPA and the State within 24 hours upon the occurrence of any water quality induced mortality of greater than 25 percent in any aquatic species in the fish testing facilities (excluding larval fish) during a single mortality event not related to research being conducted. Reporting shall be in accordance with requirements in Part II.D.1., Reporting Requirements.

12. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe (40 CFR §122.42):

    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*) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or

        (*iii*) Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts regulations.

b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent 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*) 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 40 CFR §122.21(g)(7); or

(*iv*) Any other notification level established by the Director in accordance with 40 CFR §122.44(f) and Massachusetts regulations.

c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or byproduct any toxic pollutant which was not reported in the permit application.

13. Alden Research Laboratory, Inc. must provide adequate notice to EPA and MassDEP of any substantial change in the volume or character of pollutants being discharged by Alden Research Laboratory. Information shall include:

a. The quantity and quality of effluent introduced into Alden Research Laboratory, Inc.'s discharge; and

b. Any anticipated impact on the receiving water from the change of effluent introduced from Alden Research Laboratory, Inc.

14. Toxics Control

a. The permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.

b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

B. SPECIAL CONDITIONS AND REQUIREMENTS

1. Structural Failure and/or Damage to Fish Testing Equipment

   The permittee must notify EPA and MassDEP in accordance with the following procedures when there is a "reportable failure" (as defined below) in, or damage to, the structure of an aquatic animal containment system (e.g., testing tanks) or its wastewater treatment system that results in an unanticipated discharge of pollutants to waters of the United States.

   a. For this facility, a "reportable failure" applies only to active testing tanks (containing fish and flowing water) and their ancillary components and refers to the collapse or damage of a unit or its wastewater treatment system; damage to pipes, valves, and other plumbing fixtures, and damage to or malfunction of screens or physical barriers in the system, which would prevent the system from containing water, sediment, and the aquatic animals being tested. Wastewater treatment systems include tanks used for the temporary storage of wastewater and/or settled solids removed from active testing tanks.

   b. The permittee must provide an oral report to EPA and MassDEP within 24 hours of discovery of any "reportable failure" as defined in Part I.B.1.a. or damage that results in a discharge of pollutants. This report shall describe the cause of the failure or damage in the containment system and identify materials that have been released to the environment as a result of this failure. Contact information for EPA and MassDEP is included in Part I.D.1.c.

   c. The permittee must provide a written report to EPA within 7 days of discovery of any "reportable failure" or damage that documents the cause, estimates the volume of material released as a result of the failure or damage, and outlines steps being taken to prevent a recurrence. Contact information for EPA and MassDEP is included in Part I.D.1.c.

2. Best Management Practices Plan

   a. The permittee shall develop, implement, and maintain a Best Management Practices (BMP) Plan designed to reduce or prevent the discharge of wastewater containing pollutants to waters of the United States. The BMP Plan shall be a written document that is consistent with the terms of the permit and identifies and describes the BMPs employed by the facility in storing and using dye or food coloring, operating the testing facility, using chemicals, cleaning the flume, screens, and other equipment, and disposing of any solid waste. BMPs include schedules of activities, maintenance procedures, and management practices to prevent or reduce the pollution of waters of the United States.

   b. The BMP Plan shall be completed or updated and certified by the Permittee within 90 days after the effective date of this permit. The Permittee shall certify the BMP Plan has been prepared, that it meets the requirements of this permit, and that it reduces the pollutants discharged in wastewater to the extent practicable. The BMP Plan and

Certification shall be signed in accordance with the requirements identified in 40 CFR §122.22. A copy of the BMP Plan and Certification shall be maintained at the facility and made available to EPA and MassDEP upon request.

c. The Permittee shall amend and update the BMP Plan within 14 days for any changes at the facility affecting the BMP Plan. Such changes may include, but are not limited to changes in the design, construction, operation, or maintenance of the facility, which have a significant effect on the potential for the discharge of pollutants to waters of the United States. The amended BMP Plan shall be certified as described in Part I.B.2.b. above.

d. The Permittee shall certify at least annually that the facility is in compliance with the BMP Plan. If the facility is not in compliance with any aspect of the BMP Plan, the annual certification shall state the non-compliance and the remedies which are being undertaken. Such annual certifications also shall be signed in accordance with the requirements identified in 40 CFR §122.22. The Permittee shall keep a copy of the current BMP Plan and all BMP Plan certifications (the initial certification, re-certifications, and annual certifications) signed during the effective period of this permit at the facility and shall make it available for inspection by EPA and MassDEP.

e. The BMP plan, at a minimum, shall include the following provisions:

i. Solids Control

(1) Identify and implement procedures for dye and food coloring use, routine cleaning of testing tanks and bag filters, and procedures to minimize any discharge of accumulated solids during the inventory and testing of aquatic animals at the facility.

(2) Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the U.S., except in cases where the permitting authority authorizes such discharge in order to benefit the aquatic environment.

ii. Biological Pollution

(1) Describe, in detail, and implement the precautions that will be exercised by the facility to prevent aquatic organisms that are not indigenous to the New England area and/or the United States from becoming established in local surface waters.

(2) Describe and implement procedures for storage and treatment of fish testing wastewater to prevent biological pollution (non-native organisms, fish parasites, and fish diseases) from entering the receiving water.

iii. Materials Storage

(1) Ensure proper storage of dye, food coloring, drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides or feed to waters of the U.S.

(2) Implement procedures for properly containing, cleaning, and disposing of any spilled material.

iv. Structural Maintenance

(1) Inspect the closed-loop recirculating systems, testing tanks, and the wastewater treatment system on a routine basis in order to identify and promptly repair any damage.

(2) Conduct regular maintenance of the once through flow systems and closed-loop recirculating systems, testing tanks, and the wastewater treatment system in order to ensure that they are properly functioning.

v. Recordkeeping

(1) Keep records documenting the frequency of cleaning, inspections, maintenance and repairs.

vi. Training

(1) In order to ensure the proper clean-up and disposal of spilled material adequately train all relevant facility personnel in spill prevention and how to respond in the event of a spill.

(2) Train staff on the proper operation and cleaning of wastewater treatment systems including training in proper use of equipment.

vii. Neutralization of Effluent

(1) Describe procedures for neutralizing and disposing of chlorinated water in fish testing tanks prior to the discharge of this effluent through Outfalls 003 and 004.

C. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from outfalls listed in Part I.A.1, Part I.A.2 and Part I.A.3 of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), fish holding tanks, bag filters, filter backwash, or associated equipment are not

authorized by this permit and shall be reported in accordance with Part I.A.11 and Part II.D.1.e(1) of the Standard Conditions of this permit (twenty-four hour reporting).

D. MONITORING AND REPORTING

1. **For a period of one year from the effective date of the permit**, the permittee may either submit monitoring data and other reports to EPA in hard copy form or report electronically using NetDMR, a web-based tool that allows permittees to electronically submit discharge monitoring reports (DMRs) and other required reports via a secure internet connection. **Beginning no later than one year after the effective date of the permit**, the permittee shall begin reporting using NetDMR, unless the facility is able to demonstrate a reasonable basis that precludes the use of NetDMR for submitting DMRs and reports. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

   a. Submittal of Reports Using NetDMR

      NetDMR is accessed from: http://www.epa.gov/netdmr. **Within one year of the effective date of this permit**, the permittee shall begin submitting DMRs and reports required under this permit electronically to EPA using NetDMR, unless the facility is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt-out request").

      DMRs shall be submitted electronically to EPA no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA, including the MassDEP Monthly Operations and Maintenance Report, as an electronic attachment to the DMR. Once a permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs (including Monthly Operation and Maintenance Reports) to MassDEP until further notice from MassDEP.

   b. Submittal of NetDMR Opt Out Requests

      Opt-out requests must be submitted in writing to EPA for written approval at least sixty (60) days prior to the date a facility would be required under this permit to begin using NetDMR. This demonstration shall be valid for twelve (12) months from the date of EPA approval and shall thereupon expire. At such time, DMRs and reports shall be submitted electronically to EPA unless the permittee submits a renewed opt-out request and such request is approved by EPA. All opt-out requests should be sent to the following addresses:

Attn: NetDMR Coordinator
U.S. Environmental Protection Agency, Water Technical Unit
5 Post Office Square, Suite 100 (OES04-4)
Boston, MA 02109-3912

and

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608

c. Submittal of Reports in Hard Copy Form

Monitoring results shall be summarized for each calendar month and reported on separate hard copy Discharge Monitoring Report Form(s) (DMRs) postmarked no later than the 15th day of the month following the completed reporting period. MassDEP Monthly Operation and Maintenance Reports shall be submitted as an attachment to the DMRs. Signed and dated originals of the DMRs, and all other reports or notifications required herein or in Part II shall be submitted to the Director at the following address:

U.S. Environmental Protection Agency
Water Technical Unit (OES04-SMR)
5 Post Office Square - Suite 100
Boston, MA 02109-3912
Phone: (617) 918-1054

Duplicate signed copies of all reports or notifications required above shall be submitted to the State at the following addresses:

MassDEP – Central Region
Bureau of Waste Prevention
627 Main Street
Worcester, MA 01608
(508) 792-7650

and

Massachusetts Department of Environmental Protection
Surface Water Discharge Permit Program
627 Main Street, 2nd Floor
Worcester, Massachusetts 01608
Phone: (508) 792-7650

Oral reports required in Part I.B.1.b., as well as in any other parts of this permit, shall be made to both EPA and to MassDEP using the contact information included in this section (Part I.D.1.c.).

E. REOPENER CLAUSE

This permit may be modified, or revoked and reissued, on the basis of new information in accordance with 40 CFR §122.62.

F. STATE PERMIT CONDITIONS

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53, and 314 C.M.R. 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.

2. This authorization also incorporates the state water quality certification issued by MassDEP under § 401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, § 27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.

3. Each agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the agency taking such action, and shall not affect the validity or status of this permit as issued by the other agency, unless and until each agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared invalid, illegal or otherwise issued in violation of state law such permit shall remain in full force and effect under federal law as a NPDES Permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of federal law, this permit shall remain in full force and effect under state law as a permit issued by the Commonwealth of Massachusetts.

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

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

a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405(d) of the CWA 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 requirements.

b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

Note: See 40 CFR §122.41(a)(2) for complete "Duty to Comply" regulations.

2. 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 notifications of planned changes or anticipated noncompliance does not stay any permit condition.

3. Duty to Provide Information

The permittee shall furnish to the Regional Administrator, within a reasonable time, any information which the Regional Administrator 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 Regional Administrator, upon request, copies of records required to be kept by this permit.

4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Federal regulations pertaining to permit modification, revocation and reissuance, and termination are found at 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. Oil and Hazardous Substance Liability

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the CWA, or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

a. In accordance with 40 CFR Part 2, any information submitted to EPA pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, EPA may make the information available to the public without further notice. If a claim is asserted, the information will be treated in accordance with the procedures in 40 CFR Part 2 (Public Information).

b. Claims of confidentiality for the following information will be denied:

(1) The name and address of any permit applicant or permittee;
(2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).

c. Information required by NPDES application forms provided by the Regional Administrator under 40 CFR §122.21 may not be claimed confidential. This includes information submitted on the forms themselves and any attachments used to supply information required by the forms.

8. Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Regional Administrator. (The Regional Administrator shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

9. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

10. Other Laws

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

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. 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 and with the requirements of storm water pollution prevention plans. 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 only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce 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.

3. 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.

4. Bypass

a. Definitions

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

(2) *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 be reasonably 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 provision of Paragraphs B.4.c. and 4.d. of this section.

c. Notice

(1) 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.
(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

d. Prohibition of bypass

Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(2) 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 preventative maintenance; and
(3) i) The permittee submitted notices as required under Paragraph 4.c. of this section.
ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in paragraph 4.d. of this section.

5. Upset

a. Definition. *Upset* means an exceptional incident in which there is an 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 B.5.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:

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated;
(3) The permittee submitted notice of the upset as required in paragraphs D.1.a. and 1.e. (Twenty-four hour notice); and
(4) The permittee complied with any remedial measures required under B.3. above.

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

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

b. Except for records for 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 (or longer as required by 40 CFR Part 503), 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 except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.

c. Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;
(2) The individual(s) who performed the sampling or measurements;
(3) The date(s) analyses were performed;
(4) The individual(s) who performed the analyses;
(5) The analytical techniques or methods used; and
(6) The results of such analyses.

d. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by

imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The permittee shall allow the Regional Administrator or an authorized representative (including an authorized contractor acting as a representative of the 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 CWA, any substances or parameters at any location.

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

(1) 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
(2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§122.42(a)(1).
(3) 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 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 Regional Administrator 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 after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

incorporate such other requirements as may be necessary under the CWA. (See 40 CFR Part 122.61; in some cases, modification or revocation and reissuance is mandatory.)

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

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

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

(3) Calculations for all limitations which require averaging or measurements shall utilize an arithmetic mean unless otherwise specified by the Director in the permit.

e. Twenty-four hour reporting.

(1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

(2) 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. (See 40 CFR §122.41(g).)
(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 Regional Administrator in the permit to be reported within 24 hours. (See 40 CFR §122.44(g).)

(3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

f. Compliance Schedules. Reports of compliance or noncompliance with, 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.

g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. 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 Regional Administrator, it shall promptly submit such facts or information.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.

3. Availability of Reports.

Except for data determined to be confidential under Paragraph A.8. above, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the State water pollution control agency and the Regional Administrator. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statements on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA.

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

Administrator means the Administrator of the United States Environmental Protection Agency, or an authorized representative.

Applicable standards and limitations means all, State, interstate, and Federal standards and limitations to which a “discharge”, a “sewage sludge use or disposal practice”, or a related activity is subject to, including “effluent limitations”, water quality standards, standards of performance, toxic effluent standards or prohibitions, “best management practices”, pretreatment standards, and “standards for sewage sludge use and disposal” under Sections 301, 302, 303, 304, 306, 307, 308, 403, and 405 of the CWA.

Application means the EPA standard national forms for applying for a permit, including any additions, revisions, or modifications to the forms; or forms approved by EPA for use in "approved States", including any approved modifications or revisions.

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and Escherichia coli, 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.

Average weekly discharge limitation means the highest allowable average of "daily discharges" measured during the calendar week divided by the number of "daily discharges" measured during the 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 United States." 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.

Best Professional Judgment (BPJ) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT), or other appropriate technology-based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Coal Pile Runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample means a sample consisting of a minimum of eight grab samples of equal volume collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period.

Construction Activities - The following definitions apply to construction activities:

(a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

(b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.

(c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

(d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

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 similar activities.

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

Daily Discharge means the discharge of a pollutant measured during the calendar day or any other 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 measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

Discharge Monitoring Report Form (DMR) means the EPA standard 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.

Discharge of a pollutant means:

(a) Any addition of any "pollutant" or combination of pollutants to "waters of the United States" from any "point source", or

(b) Any addition of any pollutant or combination of pollutants to the waters of the "contiguous zone" or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation (See "Point Source" definition).

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead

to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

This term does not include an addition of pollutants by any "indirect discharger."

Effluent limitation means any restriction imposed by the Regional Administrator on quantities, discharge rates, and concentrations of "pollutants" which are "discharged" from "point sources" into "waters of the United States", the waters of the "contiguous zone", or the ocean.

Effluent limitation guidelines means a regulation published by the Administrator under Section 304(b) of CWA to adopt or revise "effluent limitations".

EPA means the United States "Environmental Protection Agency".

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample – An individual sample collected in a period of less than 15 minutes.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

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

(a) Inhibits or disrupts the POTW, its treatment processes or operations, or its sludge processes, use or disposal; and

(b) 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 (CWA), the Solid Waste Disposal Act (SWDA) (including Title II, more commonly referred to as the Resources Conservation and Recovery Act (RCRA), and including State regulations contained in any State sludge management plan prepared pursuant to Subtitle D of the SDWA), the Clean Air Act, the Toxic Substances Control Act, and the Marine Protection Research and Sanctuaries Act.

Landfill means an area of land or an excavation in which wastes are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well, or waste pile.

Land application unit means an area where wastes are applied onto or incorporated into the soil surface (excluding manure spreading operations) for treatment or disposal.

Large and Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable "daily discharge" concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the Steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as "maximum concentration" or "Instantaneous Maximum Concentration" during the two hours of a chlorination cycle (or fraction thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 423. These three synonymous terms all mean "a value that shall not be exceeded" during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR § 122.2, where the two terms of "Maximum Daily Discharge" and "Average Daily Discharge" concentrations are specifically limited to the daily (24-hour duration) values.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of the CWA.

National Pollutant Discharge Elimination System means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under Sections 307, 402, 318, and 405 of the CWA. The term includes an "approved program".

New Discharger means any building, structure, facility, or installation:

(a) From which there is or may be a "discharge of pollutants";

(b) That did not commence the "discharge of pollutants" at a particular "site" prior to August 13, 1979;

(c) Which is not a "new source"; and

(d) Which has never received a finally effective NPDES permit for discharges at that "site".

This definition includes an "indirect discharger" which commences discharging into "waters of the United States" after August 13, 1979. It also includes any existing mobile point source (other than an offshore or coastal oil and gas exploratory drilling rig or a coastal oil and gas exploratory drilling rig or a coastal oil and gas developmental drilling rig) such as a seafood processing rig, seafood processing vessel, or aggregate plant, that begins discharging at a "site" for which it does not have a permit; and any offshore rig or coastal mobile oil and gas exploratory drilling rig or coastal mobile oil and gas developmental drilling rig that commences the discharge of pollutants after August 13, 1979, at a "site" under EPA's permitting jurisdiction for which it is not covered by an individual or general permit and which is located in an area determined by the Regional Administrator in the issuance of a final permit to be in an area of biological concern. In determining whether an area is an area of biological concern, the Regional Administrator shall consider the factors specified in 40 CFR §§125.122 (a) (1) through (10).

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

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.

NPDES means "National Pollutant Discharge Elimination System".

Owner or operator means the owner or operator of any "facility or activity" subject to regulation under the NPDES programs.

Pass through means a Discharge which exits the POTW into waters of the United States 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.

Person means an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof.

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, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 CFR §122.2).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. §§2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

(b) Water, gas, or other material which is injected into a well to facilitate production of oil or gas, or water derived in association with oil and gas production and disposed of in a well, if the well is used either to facilitate production or for disposal purposes is approved by the authority of the State in which the well is located, and if the State determines that the injection or disposal will not result in the degradation of ground or surface water resources.

Primary industry category means any industry category listed in the NRDC settlement agreement (Natural Resources Defense Council et al. v. Train, 8 E.R.C. 2120 (D.D.C. 1976), modified 12 E.R.C. 1833 (D. D.C. 1979)); also listed in Appendix A of 40 CFR Part 122.

Privately owned treatment works means any device or system which is (a) used to treat wastes from any facility whose operation is not the operator of the treatment works or (b) not a "POTW".

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 or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality".

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

Regional Administrator means the Regional Administrator, EPA, Region I, Boston, Massachusetts.

Secondary Industry Category means any industry which is not a "primary industry category".

Section 313 water priority chemical means a chemical or chemical category which:

(1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);

(2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and

(3) satisfies at least one of the following criteria:

(i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
(ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
(iii) are pollutants for which EPA has published acute or chronic water quality criteria.

Septage means the liquid and solid material pumped from a septic tank, cesspool, or similar domestic sewage treatment system, or a holding tank when the system is cleaned or maintained.

Sewage Sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

Sewage sludge use or disposal practice means the collection, storage, treatment, transportation, processing, monitoring, use, or disposal of sewage sludge.

Significant materials includes, but is not limited to: raw materials, fuels, materials such as solvents, detergents, and plastic pellets, raw materials used in food processing or production, hazardous substance designated under section 101(14) of CERCLA, any chemical the facility is required to report pursuant to EPCRA Section 313, fertilizers, pesticides, and waste products such as ashes, slag, and sludge that have the potential to be released with storm water discharges.

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR §110.10 and §117.21) or Section 102 of CERCLA (see 40 CFR § 302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm water discharge associated with industrial activity means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

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

Toxic pollutants means 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.

Treatment works treating domestic sewage means a POTW or any other sewage sludge or wastewater treatment devices or systems, regardless of ownership (including federal facilities), used in the storage, treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated for the disposal of sewage sludge. This definition does not include septic tanks or similar devices.

For purposes of this definition, "domestic sewage" includes waste and wastewater from humans or household operations that are discharged to or otherwise enter a treatment works. In States where there is no approved State sludge management program under Section 405(f) of the CWA, the Regional Administrator may designate any person subject to the standards for sewage sludge use and disposal in 40 CFR Part 503 as a "treatment works treating domestic sewage", where he or she finds that there is a potential for adverse effects on public health and the environment from poor sludge quality or poor sludge handling, use or disposal practices, or where he or she finds that such designation is necessary to ensure that such person is in compliance with 40 CFR Part 503.

Waste Pile means any non-containerized accumulation of solid, non-flowing waste that is used for treatment or storage.

Waters of the United States means:

(a) All waters which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of tide;

(b) All interstate waters, including interstate "wetlands";

(c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, "wetlands", sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

(1) Which are or could be used by interstate or foreign travelers for recreational or other purpose;

(2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(3) Which are used or could be used for industrial purposes by industries in interstate commerce;

(d) All impoundments of waters otherwise defined as waters of the United States under this definition;

(e) Tributaries of waters identified in Paragraphs (a) through (d) of this definition;

(f) The territorial sea; and

(g) "Wetlands" adjacent to waters (other than waters that are themselves wetlands) identified in Paragraphs (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

Wetlands means those areas that are inundated or saturated by surface or ground water at a frequency and duration 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 (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

2. Definitions for NPDES Permit Sludge Use and Disposal Requirements.

Active sewage sludge unit is a sewage sludge unit that has not closed.

Aerobic Digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural Land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate (dry weight basis) designed:

(1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and

(2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of the sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e. a flood with a magnitude equaled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 122.2,

classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved state programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environment adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e. essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to the strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all the measurements taken during an hour. At least two measurements must be taken during the hour.

Incineration is the combustion of organic matter and inorganic matter in sewage sludge by high temperatures in an enclosed device.

Industrial wastewater is wastewater generated in a commercial or industrial process.

Land application is the spraying or spreading of sewage sludge onto the land surface; the injection of sewage sludge below the land surface; or the incorporation of sewage sludge into the soil so that the sewage sludge can either condition the soil or fertilize crops or vegetation grown in the soil.

Land with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and reclamation site located in a populated area (e.g., a construction site located in a city).

Land with low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

Municipality means a city, town, borough, county, parish, district, association, or other public body (including an intermunicipal agency of two or more of the foregoing entities) created by or under State law; an Indian tribe or an authorized Indian tribal organization having jurisdiction over sewage sludge management; or a designated and approved management agency under section 208 of the CWA, as amended. The definition includes a special district created under state law, such as a water district, sewer district, sanitary district, utility district, drainage district, or similar entity, or an integrated waste management facility as defined in section 201 (e) of the CWA, as amended, that has as one of its principal responsibilities the treatment, transport, use or disposal of sewage sludge.

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

Pathogenic organisms are disease-causing organisms. These include, but are not limited to, certain bacteria, protozoa, viruses, and viable helminth ova.

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is an individual, association, partnership, corporation, municipality, State or Federal Agency, or an agent or employee thereof.

Person who prepares sewage sludge is either the person who generates sewage sludge during the treatment of domestic sewage in a treatment works or the person who derives a material from sewage sludge.

pH means the logarithm of the reciprocal of the hydrogen ion concentration; a measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, an inorganic substance, a combination or organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis on information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of a site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Seismic impact zone is an area that has 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to:, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

Sewage sludge incinerator is an enclosed device in which only sewage sludge and auxiliary fuel are fired.

Sewage sludge unit is land on which only sewage sludge is placed for final disposal. This does not include land on which sewage sludge is either stored or treated. Land does not include waters of the United States, as defined in 40 CFR §122.2.

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100 (ii).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

Store or storage of sewage sludge is the placement of sewage sludge on land on which the sewage sludge remains for two years or less. This does not include the placement of sewage sludge on land for treatment.

Surface disposal site is an area of land that contains one or more active sewage sludge units.

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

Vector attraction is the characteristic of sewage sludge that attracts rodents, flies, mosquitoes, or other organisms capable of transporting infectious agents.

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
ug/l	Microgram(s) per liter
WET	"Whole effluent toxicity" is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	"Chronic (Long-term Exposure Test) – No Observed Effect Concentration". The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.
A-NOEC	"Acute (Short-term Exposure Test) – No Observed Effect Concentration" (see C-NOEC definition).
LC_{50}	LC_{50} is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
5 POST OFFICE SQUARE, SUITE 100
BOSTON, MASSACHUSETTS 02109-3912

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT No.: MA0028801

PUBLIC NOTICE START AND END DATES: June 21, 2013 – July 20, 2013

NAME AND MAILING ADDRESS OF APPLICANT:

Alden Research Laboratory, Inc.
30 Shrewsbury Street
Holden, Massachusetts 01520

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Alden Research Laboratory, Inc.
30 Shrewsbury Street
Holden, Massachusetts 01520

RECEIVING WATER: Chaffins Brook, Nashua River Watershed (MA81-33)

RECEIVING WATER CLASSIFICATION: Class A

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ATTACHMENTS:

Attachment A: Alden Lab Topographic Map **Attachment B: Alden Lab Site Plan**
Attachment C: Alden Lab DMR Summary **Attachment D: Flow Diagrams**

1.0 Proposed Action, Type of Facility and Discharge Location

1.1. Proposed Action

The above applicant has applied to the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) for re-issuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge their effluent into the designated receiving water.

On September 30, 2008, Alden Research Laboratory, Inc. (Alden Lab) was issued a modification to the existing NPDES permit (Permit No. MA0028801) for this facility. The permit modification and the authorization to discharge expired at midnight, June 30, 2011. The applicant submitted a permit renewal application on February 17, 2011. EPA sent a Notice of Deficiency (NOD) to Alden Lab, dated May 14, 2012, requesting information needed to complete the permit application. Alden Lab responded to the NOD on July 19, 2012. EPA sent the applicant a letter on September 11, 2012, confirming that the application now contained the required information to begin the permit renewal process. The permit has been administratively continued pursuant to 40 CFR § 122.6 and 40 CFR § 122.21(d).

1.2 Type of Facility

Alden Lab is a testing and research facility that is engaged in flow meter calibration, laboratory-scale hydraulic flow modeling for various industries and the evaluation of fish passage and protection technologies using live fish. A site map of the facility is presented in Attachment A.

1.3 Discharge Location

A section of Chaffins Brook meanders through the Alden Lab complex of buildings. All four outfalls discharge to Chaffins Brook on the facility property. This area is approximately 1.5 miles south-east of Holden Center, Massachusetts. A detailed facility map, including outfall locations, is included in Attachment B.

2.0 Description of Discharge

The facility infrequently discharges water into Chaffins Brook containing Rhodamine WT dye at a concentration of 10 parts per billion (ppb) or less. In addition, 0.2 pounds of food coloring liquid could be used per day, also on an infrequent basis. The facility also discharges water containing organic waste generated by fish (nitrogen and phosphorus). Chlorine and copper may be present in the discharge because measurable levels of these constituents have been documented in the municipal water from the Town of Holden, which is used as source water in the fish testing facility discharge.

According to Discharge Monitoring Report (DMR) data and additional information submitted by the permittee, from 2007 through 2012 there have been a total of five (5) reported discharges under Alden Lab's current NPDES permit. However, one of these discharges was an unauthorized discharge (i.e. leak) from Outfall 003 and was not indicative of Alden Lab's normal operation. For this reason, the unregulated discharge was not included in the appropriate DMR

or in the summary data. This discharge was addressed by regulators outside of the DMR reporting system. The remaining four (4) discharges were reported during a period when the permittee was not certain what constituted a reportable discharge under the NPDES discharge permit. Since that time, the uncertainty has been addressed by EPA (e-mail from John Nagle, EPA, to Stuart Cain, Alden Lab, June 28, 2011). Based on communication between the regulators and the permittee, it was determined that the four remaining discharges actually were not required to be reported. For these reasons, the reportable maximum daily discharge flow value, the average daily discharge flow value and all reportable pollutant concentrations from each location of each of the four outfalls from 2007 through 2012 has been zero.

Attachment C summarizes the discharges reported on the DMRs from the time period 1997 through 2006 for Outfalls 001 and 002 since there have been no discharges from these outfalls since that time. Please note that while Outfalls 003 and 004 have been permitted since 2008, there has been no discharge from either outfall.

3.0 Receiving Water Description

Chaffins Brook, a tributary to Wachusett Reservoir located in Holden, MA, is designated as a Class A water body by the Massachusetts Surface Water Quality Standards (MA SWQS) at 314 CMR 4.05. Class A waters include waters designated as a source of public water supply and their tributaries, as well as habitat for fish and other aquatic life, including their reproduction, migration, growth, and other critical functions, and primary and secondary contact recreation, even if not allowed. These waters are protected as outstanding resource waters.

Alden Lab is the only authorized discharge, and no other withdrawals occur on this reach. According to MassDEP's 2003 Water Quality Assessment, Chaffins Brook supports primary and secondary contact uses. Chaffins Brook is included on MassDEP's Final Year 2012 Integrated List of Waters as a Category 2 Water. A Category 2 Water is a waterbody described as attaining some uses and other uses not assessed.

4.0 Limitations and Conditions

The permit effluent limitations and the monitoring requirements may be found in the Draft Permit.

5.0 Permit Basis: Statutory and Regulatory Authority

5.1 General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a NPDES permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. The draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. In this permit EPA considered (a) technology-based requirements, (b) water quality-based requirements, and (c) all limitations and requirements in the current/existing permit, when developing the permit limits.

5.2 Technology-Based Requirements

Subpart A of the 40 CFR §125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under Section 301(b) of the CWA, including the application of EPA promulgated effluent limitations and case-by-case determinations of effluent limitations under Section 402(a)(1) of the CWA.

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (see 40 CFR §125 Subpart A) to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically available (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines for non-POTW facilities must have been complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989 [See 40 CFR §125.3(a)(2)]. Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by a NPDES permit.

5.3 Water Quality-Based Requirements

Section 301(b)(1)(C) of the CWA requires that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when technology-based limitations would interfere with the attainment or maintenance of water quality in the receiving water.

Under Section 301(b)(1)(C) of the CWA and EPA regulations, NPDES permits must contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal water quality standards.

Water quality standards consist of three parts: (1) beneficial designated uses for a water-body or a segment of a water-body; (2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s); and (3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. The MA SWQS, found at 314 CMR 4.00, include these elements. The state will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless a site specific criteria is established.

The Draft Permit must limit any pollutant or pollutant parameter (conventional, non-conventional, and toxic) that is or may be discharged at a level that causes or has the "reasonable potential" to cause or contribute to an excursion above any water quality standard (40 CFR §122.44(d)). An excursion occurs if the projected or actual in-stream concentration exceeds an applicable water quality criterion. In determining "reasonable potential", EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from the permit's re-issuance application, monthly discharge monitoring reports (DMRs), and State and Federal Water Quality

Reports; (3) sensitivity of the indicator species used in toxicity testing; (4) known water quality impacts of processes on waste waters; and (5) where appropriate, dilution of the effluent in the receiving water.

5.4 Anti-backsliding

Anti-backsliding as defined in 40 CFR § 122.44(l)(1) requires reissued permits to contain limitations as stringent or more stringent than those of the previous permit unless the circumstances allow application of one of the defined exceptions to this regulation. As explained above, anti-backsliding applies to limits contained in the existing permit and, therefore, these limits are continued in the Draft Permit.

5.5 Anti-degradation

The Commonwealth of Massachusetts' anti-degradation provisions found in 314 CMR 4.04 ensure that provisions in 40 CFR Section 131.12 are met. These provisions ensure that all existing uses in the receiving water, along with the level of water quality necessary to protect those existing uses, are maintained and protected. The effluent limits in the Draft Permit should ensure that provisions in 314 CMR 4.04 are met. The State is also asked to certify that the anti-degradation provisions in State law are met.

6.0 Explanation of the Permit's Effluent Limitations

6.1 Facility Information

The Alden Lab facility is located on 32 acres of land in Holden, Massachusetts. The facility is made up of over 20 test and maintenance buildings. A section of Chaffins Brook meanders through the Alden Lab complex of buildings. Primary services conducted by Alden Lab include flow meter calibration, laboratory-scale hydraulic flow modeling and the evaluation of fish passage and protection technologies using live fish. Buildings 1 and 2 are used for flow meter calibration and Buildings 11, 12, 18, 23 and 25 are used for hydraulic modeling. Water needed for flow meter calibration and flow modeling is taken from municipal water supplies as well as on-site wells. Water used in Building 1 is reused within the facility and is typically discharged to Chaffins Brook once a year during the facility's annual maintenance shutdown.

Fish passage and protection technology testing (fish testing facilities) activities employ tanks and equipment that operate in a closed-loop system in which water is filtered and recirculated. Water quality in testing facilities is maintained with high capacity bag filters with a maximum 25 micron filtration element to remove particulates and a UV light filter to sterilize the water. This fish testing water system is discharged intermittently as part of facility modification and maintenance activities. Source water for the fish testing facilities is the Town of Holden municipal water supply. The receiving water for the fish testing outfalls (Outfalls 003 and 004) is also Chaffins Brook. Buildings 6 and 15 are used for fish testing activities.

The fish testing facilities use approximately 15,000 pounds (lbs) of fish per year to evaluate various large scale fish passage and protection technologies. Live fish are placed in the fish testing tanks for a short time (typically no longer than 6 hours) and removed. Feeding is not conducted in the testing facilities and no chemicals are added to testing water. Fish do not make up any of the discharge of the testing facility water to the permitted outfalls.

In addition to the fish testing facilities described above, Alden Lab has separate fish holding facilities on-site that house fish before and after they are introduced to various fish passage and protection technologies in the testing facilities. Small volumes of chemicals such as Salt-Instant Ocean Mix (to adjust salinity), sodium bicarbonate (a pH buffer), calcium chloride (to increase hardness), ammonia (to adjust pH and activate bio-filtration), clove oil (an anesthetic), and formaldehyde (for disinfection and as a preservative) may be used in the holding tanks. Wastewater, defined as all water from the fish holding facilities and backwash from closed-loop filtering systems in the fish testing facilities, is generated by facility maintenance, cleaning equipment, filter backwash, and water changes. This wastewater may contain solid wastes. Fish holding facility wastewater is circulated through a settling tank, after which it is filtered with high capacity bag filters (maximum 25 micron filtering capability) and sterilized with a UV light. A biological filtration system removes ammonia. Wastewater is transported to Upper Blackstone Water Pollution Abatement District (UBWPAD) for treatment and disposal. Settling tanks are cleaned with a vacuum pump and solid wastes are incinerated on the property.

6.2 Available Dilution

In order to determine whether discharge levels would contribute or cause source water quality violations, and to establish water quality-based limitations, EPA calculated available dilution of Chaffins Brook. 314 CMR 4.03(3)(a) requires that effluent dilution of a freshwater river be calculated based on the receiving water 7Q10. The 7Q10 is the lowest observed mean river flow for 7 consecutive days, recorded over a 10-year recurrence interval. The 7Q10 for Chaffins Brook was estimated with StreamStats, a web-based tool offered by United States Geological Survey (USGS) to obtain streamflow statistics, drainage basin characteristics, and other information for user-selected sites. For an ungaged site, such as Chaffins Brook (i.e., no USGS gage currently exists for the site), a GIS program estimates the boundary of the drainage basin above the site, measures the physical characteristics of the drainage basin, and solves the appropriate regression equations to determine streamflow statistics for the site. StreamStats estimated the 7Q10 flow for Chaffins Brook at the facility to be 0.18 cfs based on a drainage basin area of 5.05 square miles. Additionally, the facility design flow is used to calculate available effluent dilution. In this case, the design flow is considered the maximum daily flow allowed by the Draft Permit. That flow is 100,000 gallons per day (0.155 cfs). The dilution factor is calculated as follows:

$$\text{Dilution Factor} = \frac{(\text{7Q10 Flow}) + (\text{Design Flow})}{\text{Design Flow}}$$

$$\text{Dilution Factor} = \frac{(0.18\ \text{cfs}) + (0.155\ \text{cfs})}{(0.155\ \text{cfs})} = 2.2$$

A dilution factor of 2.2 was used to calculate water quality-based effluent limits in this Draft Permit.

6.3 Derivation of Effluent Limits under the Federal CWA and/or Commonwealth of Massachusetts Water Quality Standards

The Draft Permit retains the following effluent limitations and/or monitoring requirements from the existing permit: flow, pH, Rhodamine WT dye, food coloring, temperature, dissolved oxygen (DO), biochemical oxygen demand (BOD_5), total suspended solids (TSS), Total Nitrogen, Total Phosphorus, specific conductance, Total Residual Chlorine, and Total Copper. The discharge of these pollutants from the facility and the sensitive nature of the receiving water demands rigorous limits to ensure the water quality standards for Class A waters are met. In addition, Alden Lab is responsible for ensuring that concentrations of priority pollutants in its discharge meet State and National Water Quality Criteria, even if Alden Lab is not the source of the pollutants. This may be the case when Alden Lab discharges water from the Town of Holden municipal water supply, which may contain elevated levels of chlorine and copper. This is discussed in further detail in Sections 6.5.8 and 6.5.9 of the Fact Sheet. Effluent limits are based on BPJ of appropriate technology, state and national water quality standards, and antidegradation policy.

6.4 Permitted Outfalls – 001 and 002

This Draft Permit authorizes the discharge of water from buildings conducting flow calibration (Building 1 and 2) and hydraulic modeling (Buildings 11, 12, 18, 23 and 25) from Outfalls 001 and 002. Water is taken from two municipal water supplies, on-site wells or Chaffins Brook and is ultimately discharged to Chaffins Brook.

As part of the permit renewal process, EPA requested additional, detailed water use information. The permittee submitted the requested information on November 16, 2012. Based on this submittal, EPA determined that water used in Buildings 1, 2, 11, 12, 18, 23 and 25 is not obtained from Chaffins Brook, as reported in the Statement of Basis for the Draft Permit published in May of 2006. Instead, source water for flow calibration in Building 1 is obtained from various municipal water supply sources rather than from Chaffins Brook. Water is primarily trucked in from the Town of Fitchburg municipal water supply, with intermittent top off as required during the year using Holden municipal water. For Building 1, this water is reused within the facility and is typically discharged to Chaffins Brook once a year during the facility's annual maintenance shutdown. For Buildings 2, 11, 12, 18, 23 and 25, source water is supplied from municipal water from the Town of Holden as well as on-site wells. Because there are additional effluent characteristics associated with the use of municipal water, the effluent characteristics have been modified to support a change in the requirements of the Draft Permit as related to Outfall 001 and 002.

Only one of these two outfalls is in use at any one time. This discharge must not cause a violation of the water quality standards of the Class A receiving water. The following effluent characteristics shall be regulated and/or monitored at these outfalls:

6.4.1 Flow

Discharge flows at this facility vary depending on the research being conducted. Water that passes through the buildings from Chaffins Brook only and is discharged through Outfalls 001 or 002 without containing Rhodamine WT Dye and/or Food Coloring is not regulated by flow (unregulated discharge). In these cases, discharge flows from these buildings are not regulated

by the Draft Permit since pollutants are not being discharged. Discharge flows from Outfalls 001 and 002 are required to be reported and regulated only when the source water is derived from a location other than Chaffins Brook (municipal water supply or well water), or when Rhodamine WT Dye and/ or Food Coloring is discharged (regulated discharge). The Draft Permit has been changed from the current permit, in that the average monthly flow limit of 100,000 gallons per day (gpd) has been changed to a "monitor and report" requirement, while the maximum daily flow limit has been changed from a "monitor and report requirement" to a limit of 100,000 gpd, to be calculated from discharges from Outfalls 001 and 002, when combined with discharges from Outfalls 003 and 004 (See 6.5 Permitted Outfalls – 003 and 004). Establishing a maximum daily of 100,000 gpd better reflects the intention of the flow requirement, which is to ensure that the dilution factor is not reduced below 2.2 through the discharge of flows in excess of 100,000 on any given day. During a regulated discharge from the outfalls, Outfalls 001 and 002 flows will be estimated. No regulated discharges occurred at Outfalls 001 and 002 over the past five (5) years, so no flow data were collected.

6.4.2 pH

The Draft Permit requires maximum daily pH from Outfalls 001 and 002 within the range of 6.5 to 8.3 standard units based on state water quality standards. pH must be measured once per week during a regulated discharge event at Outfalls 001 and 002. No regulated discharges occurred at Outfalls 001 and 002 over the past five (5) years, so no pH data were collected.

6.4.3 Rhodamine WT Dye

A regulated discharge at Outfalls 001 and 002 occurs when Rhodamine WT dye is added to the water to perform the dye dilution technique of flow measurement. The estimated daily maximum flow is limited to 100,000 gpd, resulting in a concentration of Rhodamine WT of 10 parts per billion (ppb) or less (under low flow receiving water conditions). According to the Federal Register V63, No. 40, March 2, 1998, the National Sanitation Foundation (NSF) Standard 60 establishes a concentration limit of 10 ppb for Rhodamine WT entering a water treatment plant. The NSF Standard 60 also establishes a concentration limit of 0.1 ppb in drinking water. Based on these two standards, the maximum daily limit for Rhodamine WT dye has been established at 10 ppb, or 10 micrograms per liter (ug/l). The Material Safety Data Sheet for Rhodamine WT dye shows a LC50 for fish at >320 milligrams per liter (mg/l). This equates to an LC50 of >320,000 ug/l, which is far in excess of the maximum limit of 10 ug/l established for the discharge. According to the monthly Discharge Monitoring Reports (DMRs) submitted by the permittee, no Rhodamine WT dye has been discharged at the facility over the past five (5) years.

6.4.4 Food Coloring

A regulated discharge at Outfalls 001 and 002 occurs when food coloring is added to the water to perform flow visualization experiments. It is anticipated that a maximum of approximately 0.2 pounds of food coloring liquid could potentially be used per day for a maximum of approximately 20 days per year. The discharge of food coloring must meet the narrative standard of the Draft Permit that states "These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this inland water." listed at Part I.A.7. According to the monthly DMRs submitted

by the permittee, no food coloring liquid has been discharged at the facility over the past five (5) years.

6.4.5 Total Residual Chlorine

Information included in the current permit identified the source water for Outfalls 001 and 002 as Chaffins Brook. However, as detailed in Section 6.4, updated information from Alden Lab confirms that the water used in Buildings 1, 2, 11, 12, 18, 23 and 25, is supplied from municipal water as well as on-site wells, rather than from Chaffins Brook. Water used in Building 1 is primarily trucked in from the Town of Fitchburg municipal water supply, with intermittent "top off", or small additions of additional water as required during the year, obtained from the Town of Holden municipal water supply. For Buildings 2, 11, 12, 18, 23 and 25, source water is supplied from municipal water from the Town of Holden as well as on-site wells.

According to the 2011 Annual Drinking Water Report from the Town of Fitchburg, MA, this primary source water for Building 1 likely has a level of chlorine that exceed the freshwater acute water quality standard. Fitchburg reported maximum chlorine levels as high as 1.48 milligrams per liter (mg/L), with an average of 0.54 mg/L. According to the 2011 Annual Drinking Water Report from the Town of Holden, this source of intermittent "top off" water for Building 1 also has a level of chlorine that exceed the freshwater acute water quality standard. The Town of Holden has reported maximum chlorine levels as high as 0.39 mg/L, with an average of 0.27 mg/L. The Acute Nationally Recommended Water Quality Criterion for freshwater aquatic life is 0.019 mg/L. Effluent from Building 1 was not tested for chlorine, so a reasonable potential analysis for chlorine is based on the maximum recorded chlorine level from the municipal source water analysis for the Town of Fitchburg. Fitchburg municipal water was used because it is expected to make up the largest percentage of water used in Building 1.

Reasonable Potential Analysis:

$(C_s)(Q_s) + (C_e)(Q_e) = (C_{r)})(Q_r)$

(0)(0.18 cfs) + (1.48 mg/l)(0.155 cfs) = (calculated receiving water concentration)(0.335 cfs)

Calculated receiving water concentration of chlorine = 0.68 mg/l.

Where:
C_s = Chaffins Brook concentration of chlorine (background assumed to be zero)
Q_s = Chaffins Brook 7Q10 flow
C_e = expected effluent concentration
Q_e = maximum daily flow limit of discharge
C_r = expected receiving water concentration
Q_r = Chaffins Brook receiving water flow ($Q_s + Q_e$)

Since the calculated concentration of chlorine in the receiving water under low flow conditions (0.68 mg/l) is well above the Acute Nationally Recommended Water Quality Criterion for freshwater aquatic life (0.019 mg/l), there is reasonable potential that the effluent from Building 1 may violate water quality criteria for chlorine. Chlorine and chlorine compounds can be extremely toxic to aquatic life. EPA is concerned with the discharge of high concentrations of

chlorine into Chaffins Brook, particularly with evidence of elevated temperatures in the brook. In 7 out of 61 measurements, Chaffins Brook showed elevated water temperatures (K. Keohane, MassDEP). Thus, the Draft Permit proposes a limit for total chlorine based on acute freshwater aquatic life nationally recommended water quality criteria.

Total Residual Chlorine Limit:

$(C_s)(Q_s) + (C_e)(Q_e) = (C_r)(Q_r)$

(0)(0.18 cfs) + (maximum daily limit)(0.155 cfs) = (0.019 mg/l)(0.335 cfs)

The maximum daily limit for chlorine = 0.0411 mg/l = 41.1 ug/l

Where:
C_s = Chaffins Brook concentration of chlorine (background assumed to be zero)
Q_s = Chaffins Brook 7Q10 flow
C_e = maximum daily limit for chlorine
Q_e = maximum daily flow limit of discharge
C_r = receiving water concentration limit
Q_r = Chaffins Brook receiving water flow ($Q_s + Q_e$)

The maximum daily limit for total residual chlorine in the Draft Permit is 41.1 ug/l. This limit is proposed for any discharge from Building 1 via Outfall 001. Because the discharge is generally described as once per year, with a short duration, no monthly average limit (chronic freshwater criteria) was included.

For Buildings 2, 11, 12, 18, 23 and 25, source water is supplied from municipal water from the Town of Holden as well as on-site wells.

Effluent from Buildings 2, 11, 12, 18, 23 and 25 was not tested for chlorine, so a reasonable potential analysis for chlorine is based on the maximum recorded chlorine level from the municipal source water analysis for the Town of Holden.

Reasonable Potential Analysis:

$(C_s)(Q_s) + (C_e)(Q_e) = (C_r)(Q_r)$

(0.18 cfs)(0) + (0.39 mg/l)(0.155 cfs) = (calculated receiving water concentration)(0.335 cfs)
Calculated receiving water concentration of chlorine = 0.18 mg/l

Where:
C_s = Chaffins Brook concentration of chlorine (background assumed to be zero)
Q_s = Chaffins Brook 7Q10 flow
C_e = expected effluent concentration
Q_e = maximum daily flow limit of discharge

C_r = expected receiving water concentration
Q_r = Chaffins Brook receiving water flow ($Q_s + Q_e$)

Since the concentration of chlorine in the receiving water under low flow conditions (0.18 mg/l) is well above the Acute Nationally Recommended Water Quality Criterion for freshwater aquatic life (0.019 mg/l), there is reasonable potential that the effluent from Buildings 2, 11, 12, 18, 23 and 25 may violate water quality criteria for chlorine. Chlorine and chlorine compounds can be extremely toxic to aquatic life. EPA is concerned with the discharge of high concentrations of chlorine into Chaffins Brook, particularly because it currently does not fully support aquatic life uses. Thus, the Draft Permit proposes a limit for total chlorine based on acute freshwater aquatic life nationally recommended water quality criteria.

Total Residual Chlorine Limit:

$(C_s)(Q_s) + (C_e)(Q_e) = (C_r)(Q_r)$

(0)(0.18 cfs) + (maximum daily limit)(0.155 cfs) = (0.019 mg/l)(0.335 cfs)

The maximum daily limit for chlorine = 0.0411 mg/l = 41.1 ug/l

Where:
C_s = Chaffins Brook concentration of chlorine (background assumed to be zero)
Q_s = Chaffins Brook 7Q10 flow
C_e = maximum daily limit for chlorine
Q_e = maximum daily flow limit of discharge
C_r = receiving water concentration limit
Q_r = Chaffins Brook receiving water flow ($Q_s + Q_e$)

The maximum daily limit for total residual chlorine in the Draft Permit is 41.1 ug/l. This limit is proposed for any discharge from Buildings 2, 11, 12, 18, 23 and 25 via Outfall 002. Because the discharge is generally described as intermittent, with a short duration, no monthly average limit (chronic freshwater criteria) was included.

6.4.6 Copper

Outfall 001/Building 1:
As mentioned previously, the source water for Building 1 comes from the municipal water supply of Fitchburg and Holden. The 2011 Annual Drinking Water Reports from the Towns of Fitchburg and Holden show levels of copper that exceed the freshwater acute National Water Quality Criteria of 0.0034 mg/L calculated below. Fitchburg has reported 90th percentile copper levels of 0.27 mg/l (i.e., out of every 10 homes sampled, 9 were at or below this). The Town of Holden has reported 90th percentile copper levels of 0.92 mg/l. Effluent from Building 1 was not tested for copper, so a reasonable potential analysis for copper is based on the 90th percentile copper levels from the municipal source water analysis for the Town of Fitchburg. Fitchburg municipal water was used because it is expected to make up the largest percentage of water used in Building 1.

EPA is concerned about the high levels of copper in the effluent given the potentially lethal effects on aquatic life. Alden Lab is responsible for the discharge and any impacts it may have on designated uses in the receiving water due to high levels of copper in its discharge. The maximum daily limit for copper is based on the acute *National Recommended Water Quality Criteria* for freshwater aquatic life (including Appendix B: Parameters for Calculating Freshwater Dissolved Metals Criteria that are Hardness Dependent) and the 7Q10 dilution factor. EPA was unable to obtain hardness data for the receiving water, Chaffins Brook or for the City of Fitchburg water supply. The hardness value was estimated from the 2011 Annual Drinking Water Quality Report for the Town of Holden.

Reasonable Potential Analysis:

$(C_s)(Q_s) + (C_e)(Q_e) = (C_r)(Q_r)$

(0)(0.18 cfs) + (0.27 mg/l)(0.155 cfs) = (calculated receiving water concentration)(0.335 cfs)

Calculated receiving water concentration of copper = 0.12 mg/l

Where:
C_s = Chaffins Brook concentration of copper (background)
Q_s = Chaffins Brook 7Q10 flow
C_e = expected effluent concentration
Q_e = maximum daily flow limit of discharge
C_r = calculated receiving water concentration
Q_r = Chaffins Brook receiving water flow ($Q_s + Q_e$)

Water Quality Criteria for Copper:

The acute water quality criterion for copper, based on a downstream hardness value of 22.6, is 0.0034 mg/l as demonstrated in the following calculations:

Acute Criteria (Total Recoverable) = exp{ma [ln(h)] + ba} = 0.0034 mg/l

Where:

m_a	=	Pollutant-specific coefficient	= 0.9422
b_a	=	Pollutant-specific coefficient	= -1.700
ln	=	Natural logarithm	
h	=	hardness of the receiving water	= 22.6 mg/l

Since the concentration of copper in the receiving water under low flow conditions (0.12 mg/l) is projected to be well above the Acute Nationally Recommended Water Quality Criterion for freshwater aquatic life (0.0034 mg/l), there is reasonable potential that the effluent from Building 1 via Outfall 001 may violate water quality criteria for copper.

Using the mass balance equation:

$(C_s)(Q_s) + (C_e)(Q_e) = (C_r)(Q_r)$

(0)(0.18 cfs) + (maximum daily limit)(0.155 cfs) = (0.0034 mg/l)(0.335 cfs)

Where:
C_s = Chaffins Brook concentration of copper (background)
Q_s = Chaffins Brook 7Q10 flow
C_e = maximum daily limit for copper
Q_e = maximum daily flow limit of discharge
C_r = receiving water concentration limit
Q_r = Chaffins Brook receiving water flow ($Q_s + Q_e$)

The total recoverable maximum daily limit (acute) = 0.0073 mg/l = 7.3 ug/l

The maximum daily limit proposed for total copper for Outfall 001 in the Draft Permit is 7.3 ug/l. Because the discharge is intermittent and the duration is likely to be short, no monthly average limit (chronic freshwater criteria) was included.

Outfall 002/Buildings 2, 11, 12, 18, 23 and 25:

As mentioned previously, the source water for Buildings 2, 11, 12, 18, 23 and 25 comes from the Holden's municipal water supply. The 2011 Annual Drinking Water Report from the Town of Holden shows levels of copper that exceed the freshwater acute National Water Quality Criteria of 0.0034 mg/L. Holden has reported 90th percentile copper levels of 0.92 mg/l. Effluent from Buildings 2, 11, 12, 18, 23 and 25 was not tested for copper, so a reasonable potential analysis for copper is based on the 90th percentile copper levels from the municipal source water analysis for the Town of Holden.

EPA is concerned about the high levels of copper in the effluent given the potentially lethal effects on aquatic life. Alden Lab is responsible for the discharge and any impacts it may have on designated uses in the receiving water due to high levels of copper in its discharge. The maximum daily limit for copper is based on the acute *National Recommended Water Quality Criteria* for freshwater aquatic life (including Appendix B: Parameters for Calculating Freshwater Dissolved Metals Criteria that are Hardness Dependent) and the 7Q10 dilution factor. EPA was unable to obtain hardness data for the receiving water, Chaffins Brook. Hardness value was estimated from the 2011 Annual Drinking Water Quality Report for the Town of Holden.

Reasonable Potential Analysis:

$(C_s)(Q_s) + (C_e)(Q_e) = (C_r)(Q_r)$

(0)(0.18 cfs) + (0.92 mg/l)(0.155 cfs) = (expected receiving water concentration)(0.335)

Expected receiving water concentration of copper = 0.43 mg/l

Where:
C_s = Chaffins Brook concentration of copper (background)

Q_s = Chaffins Brook 7Q10 flow
C_e = expected effluent concentration
Q_e = maximum daily flow limit of discharge
C_r = calculated receiving water concentration
Q_r = Chaffins Brook receiving water flow ($Q_s + Q_e$)

Water Quality Criteria for Copper:

As previously calculated (See calculations for Outfall 001), the acute water quality criteria for copper, based on a downstream hardness value of 22.6, is 0.0034 mg/l.

Since the concentration of copper in the receiving water under low flow conditions (0.43 mg/l) is well above the Acute Nationally Recommended Water Quality Criterion for freshwater aquatic life (0.0034 mg/l), there is reasonable potential that the effluent from Buildings 2, 11, 12, 18, 23 and 25 may violate water quality criteria for copper.

Using the mass balance equation:

$(C_s)(Q_s) + (C_e)(Q_e) = (C_r)(Q_r)$

(0)(0.18 cfs) + (maximum daily limit)(0.155 cfs) = (0.0034 mg/l)(0.335 cfs)

Where:
C_s = Chaffins Brook concentration of copper (background)
Q_s = Chaffins Brook 7Q10 flow
C_e = maximum daily limit for copper
Q_e = maximum daily flow limit of discharge
C_r = receiving water concentration limit
Q_r = Chaffins Brook receiving water flow ($Q_s + Q_e$)

The total recoverable maximum daily limit (acute) = 0.0073 mg/l = 7.3 ug/l

The maximum daily limit proposed for total copper for Outfall 002 in the Draft Permit is 7.3 ug/l. Because the discharge is intermittent and the duration is likely to be short, no monthly average limit (chronic freshwater criteria) was included.

6.4.7 Temperature

The Draft Permit includes a reporting requirement for temperature at Outfalls 001 and 002. No heat is added or removed by conducting flow calibration (Building 1 and 2) and hydraulic modeling (Buildings 11, 12, 18, 23 and 25), so any increase or decrease in water temperature discharged from these buildings is a result of the effect of ambient air temperature conditions upon water that is recirculated in Building 1 or from a discharge that is made-up from municipal water or from on-site wells. Therefore, discharge from flow calibration and hydraulic modeling does not have a reasonable potential to contribute to a violation of state water quality standards.

No temperature limit is needed. Temperature will be measured once per discharge event downstream of the facility discharge and prior to mixing with any other stream. If this information indicates an increase in water temperature over ambient conditions, EPA may address this change through a permit modification.

6.5 Permitted Outfalls – 003 and 004

The Draft Permit also authorizes the discharge of filtered water from fish testing tanks housed in Buildings 6 and 15, through Outfalls 003 and 004, respectively, to Chaffins Brook on the Alden Lab property. The source of water for the fish testing facilities is municipal water from the Town of Holden. Effluent is discharged from a point following the closed-loop filtration system. This discharge shall not cause a violation of the water quality standards of the Class A receiving water. Chemicals, in any concentration, are prohibited from being discharged into the receiving water.

As noted above, the effluent from the fish testing operation is filtered prior to discharge. The closed loop system includes both particulate filtration with high capacity bag filters (maximum filtration of 25 microns) and ultraviolet (UV) light for sterilization. Discharge from Outfalls 003 and 004 are expected to occur periodically throughout the testing period from April to December. The permittee has estimated that the fish testing tanks will be filled and drained up to 5 times per year, and discharges will not exceed 29 days per year. The following effluent characteristics shall be regulated and/or monitored at these outfalls: Discharges through Outfalls 003 and 004 are limited to filtered water from fish testing tanks in Buildings 6 and 15 only.

6.5.1 Flow

The fish testing facility in Building 6 has a maximum discharge of 54,000 gallons per day (gpd) to Outfall 003. The fish testing facility in Building 15 has a maximum discharge of 450,000 gpd to Outfall 004. Discharge to each outfall is scheduled to operate on different days so as not to exceed the overall (all four outfalls) maximum daily limit of 100,000 gpd included in the current permit. When Outfalls 003 and 004 were added to Alden Lab's permitted discharges as a result of a permit modification issued in 2008, the Antidegredation Policy for Outstanding Resource Waters prohibited new or increased discharges to the receiving water. In order to comply with this policy, the average monthly discharge limit of 100,000 gpd was retained from the previous permit, but now applies to the cumulative discharge from all four outfalls (including the two additional outfalls).

Discharge flows at this facility vary depending on the research being conducted. Periodic discharge from Outfalls 003 and 004 will primarily occur between April and December from draining the fish testing tanks; the permittee expects to drain and fill the fish testing tanks two to five times per year. The Draft Permit applies the maximum daily flow limit of 100,000 gpd from the current permit to include discharges from Outfalls 003 and 004 as well as regulated discharges from Outfalls 001 and 002. During a discharge from Outfalls 003 and 004, flows will be measured continuously with a flowmeter and maximum daily flows reported. No discharges occurred at Outfalls 003 and 004 over the past five (5) years, so no flow data were collected.

6.5.2 pH

The Draft Permit requires maximum daily pH from Outfalls 003 and 004 within the range of 6.5 to 8.3 standard units based on state water quality standards. pH must be measured once per discharge event at Outfalls 003 and 004. No discharges occurred at Outfalls 003 and 004 over the past five (5) years, so no pH data were collected.

6.5.3 Temperature

The Draft Permit includes a reporting requirement for temperature at Outfalls 003 and 004. The temperature of the testing tanks ranges from a minimum of mid-30˚F in the winter to a few degrees below ambient temperatures in the summer. No heat is added or removed by the fish testing process, so any increase or decrease in water temperature in the fish testing tank is a result of the effect of ambient air temperature conditions upon water in the fish testing facilities. Therefore, discharge from the fish testing tanks does not have a reasonable potential to contribute to a violation of state water quality standards. No temperature limit is needed. Temperature will be measured once per discharge event downstream of the filtration unit and prior to mixing with any other stream. If this information indicates an increase in water temperature over ambient conditions, EPA may address this change through a permit modification. No discharges occurred at Outfalls 003 and 004 over the past five (5) years, so no temperature data were collected.

6.5.4 Dissolved Oxygen

A minimum concentration of DO is needed for fish and other aquatic life. According to MassDEP's 2003 Water Quality Assessment, the highest temperature in Chaffins Brook was 21.1°C, and 10 percent of measurements in June, July and August exceeded 20°C, which meets criteria for a cold water fishery defined by state water quality standards at 314 CMR 4.02 as "waters in which the maximum mean daily temperature over a seven day period generally does not exceed 20°C." In addition, Wachusett Reservoir offers suitable habitat for year-round populations of cold water stenothermal aquatic life such as Atlantic salmon and trout. As such, DO levels must not be less than 6.0 mg/l, as required by a cold water fishery in state water quality standards at 314 CMR 4.05(3)(a). DO will be monitored at Outfalls 003 and 004 once per discharge event downstream of the filtration unit and prior to mixing with any other stream. No discharges occurred at Outfalls 003 and 004 over the past five (5) years, so no DO data were collected.

6.5.5 BOD_5 and TSS

Given that Alden Lab filters the effluent with a microscreen prior to discharge, a monitoring-only requirement for BOD_5 and TSS is included in the Draft Permit for Outfall 003 and 004. A monitoring requirement for TSS and BOD_5 is included to ensure that the discharge will not impair the designated uses of Chaffins Brook. No discharges occurred at Outfalls 003 and 004 over the past five (5) years, so no BOD_5 and TSS data were collected.

6.5.6 Total Nitrogen and Total Phosphorus

According to state water quality standards at 314 CMR 4.05(5)(c), "all surface waters shall be free from nutrients in concentrations that would cause or contribute to impairment of existing or designated uses." Monitoring nutrient levels once per discharge event at Outfall 003 and 004 is required in order to observe the amount of nitrogen and phosphorus being added to the watershed

from the metabolic waste of fish placed in the testing tanks. This information, when combined with nutrient information from other sources, will help determine total nutrient loadings to the watershed and subsequent permit limits, if warranted. No discharges occurred at Outfalls 003 and 004 over the past five (5) years, so no total nitrogen and total phosphorus data were collected.

6.5.7 Specific Conductance

When marine species are tested, salt water is needed at a maximum concentration of 28 parts per trillion (ppt). The Draft Permit requires the facility to reduce any tank water to a specific conductance no more than 250 µmhos/cm (approximately 0.16 ppt) before discharge. Measurement of specific conductance must be performed prior to discharge. Specific conductance above 250 µmhos/cm is prohibited. This requirement is based on the recommendation of the Massachusetts Department of Conservation and Recreation in a letter to the facility dated April 4, 2007.

6.5.8 Total Residual Chlorine

Alden Lab has committed to using only UV light for disinfection in an effort to reduce toxins present on site. Tanks are manually scrubbed without the use of chemicals and UV light is used to kill pathogens. On the rare occasion that chlorine is used, water containing chlorine is filtered to waste tanks where it is circulated until chlorine levels are non-detectable prior to discharge. The BMP plan as described below must include the procedure for neutralizing and disposing of chlorinated water.

According to the 2011 Annual Drinking Water Report from the Town of Holden, the source water has levels of chlorine that exceed the freshwater acute water quality standard. The Town of Holden has reported maximum chlorine levels as high as 0.39 mg/L, with an average of 0.27 mg/l. The Acute Nationally Recommended Water Quality Criterion for freshwater aquatic life is 0.019 mg/L. Effluent from Outfalls 003 and 004 was not tested for chlorine, so a reasonable potential analysis for chlorine is based on the maximum recorded chlorine level from the municipal source water analysis for the Town of Holden.

Reasonable Potential Analysis:

$(C_s)(Q_s) + (C_e)(Q_e) = (C_r)(Q_r)$

(0.18 cfs)(0) + (0.39 mg/l)(0.155 cfs) = (calculated receiving water concentration)(0.335 cfs)

Calculated receiving water concentration of chlorine = 0.18 mg/l.

Where:
C_s = Chaffins Brook concentration of chlorine (background assumed to be zero)
Q_s = Chaffins Brook 7Q10 flow
C_e = expected effluent concentration
Q_e = maximum daily flow limit of discharge
C_r = calculated receiving water concentration
Q_r = Chaffins Brook receiving water flow ($Q_s + Q_e$)

Since the concentration of chlorine in the receiving water under low flow conditions (0.18 mg/l) is well above the Acute Nationally Recommended Water Quality Criterion for freshwater aquatic life (0.019 mg/l), there is reasonable potential that the effluent from Buildings 6 and 15 may violate water quality criteria for chlorine. Chlorine and chlorine compounds can be extremely toxic to aquatic life. EPA is concerned with the discharge of high concentrations of chlorine into Chaffins Brook, particularly because it currently does not fully support aquatic life uses. Thus, the Draft Permit proposes a limit for total chlorine based on acute freshwater aquatic life nationally recommended water quality criteria.

Total Residual Chlorine Limit:

$(C_s)(Q_s) + (C_e)(Q_e) = (C_r)(Q_r)$

(0)(0.18 cfs) + (maximum daily limit)(0.155 cfs) = (0.019 mg/l)(0.335 cfs)

The maximum daily limit for chlorine = 0.0411 mg/l = 41.1 ug/l

Where:
C_s = Chaffins Brook concentration of chlorine (background assumed to be zero)
Q_s = Chaffins Brook 7Q10 flow
C_e = maximum daily limit for chlorine
Q_e = maximum daily flow limit of discharge
C_r = receiving water concentration limit
Q_r = Chaffins Brook receiving water flow ($Q_s + Q_e$)

The maximum daily limit for total residual chlorine in the Draft Permit is 41.1 ug/l. This limit is proposed for any discharge via Outfall 003 or 004. Because the discharge is generally described as intermittent, with a short duration, no monthly average limit (chronic freshwater criteria) was included.

6.5.9 Copper

According to the 2011 Annual Drinking Water Report from the Town of Holden, the source water has high levels of copper, which exceed the freshwater acute National Water Quality Criteria of 0.0038 mg/L. The Town of Holden has reported 90th percentile copper levels of 0.92 mg/L (i.e., out of every 10 homes sampled, 9 were at or below this). Reported copper levels in samples of Alden Lab's effluent at both testing facilities were as high as 0.04 mg/L

EPA is concerned about the high levels of copper in the effluent given the potentially lethal effects on aquatic life. Alden Lab is responsible for the discharge and any impacts it may have on designated uses in the receiving water due to high levels of copper in its discharge. The maximum daily limit for copper is based on the acute *National Recommended Water Quality Criteria* for freshwater aquatic life (including Appendix B: Parameters for Calculating Freshwater Dissolved Metals Criteria that are Hardness Dependent), hardness estimated from the 2011 Annual Drinking Water Quality Report for the Town of Holden, and the 7Q10 dilution factor.

Reasonable Potential Analysis:

$(C_s)(Q_s) + (C_e)(Q_e) = (C_r)(Q_r)$

(0)(0.18 cfs) + (0.92 mg/l)(0.155 cfs) = (calculated receiving water concentration)(0.335)

Calculated receiving water concentration of copper = 0.43 mg/l

Where:

C_s = Chaffins Brook concentration of copper (background)
Q_s = Chaffins Brook 7Q10 flow
C_e = expected effluent concentration
Q_e = maximum daily flow limit of discharge
C_r = calculated receiving water concentration
Q_r = Chaffins Brook receiving water flow ($Q_s + Q_e$)

Water Quality Criteria for Copper:

As previously discussed, the acute water quality criteria for copper, based on a downstream hardness value of 22.6, is 0.0034 mg/l.

Since the concentration of copper in the receiving water under low flow conditions (0.43 mg/l) is well above the Acute Nationally Recommended Water Quality Criterion for freshwater aquatic life (0.0034 mg/l), there is reasonable potential that the effluent from Outfalls 003 and 004 may violate water quality criteria for copper.

Using the mass balance equation:

$(C_s)(Q_s) + (C_e)(Q_e) = (C_r)(Q_r)$

(0)(0.18 cfs) + (maximum daily limit)(0.155 cfs) = (0.0034 mg/l)(0.335 cfs)

Where:
C_s = Chaffins Brook concentration of copper (background)
Q_s = Chaffins Brook 7Q10 flow
C_e = maximum daily limit for copper
Q_e = maximum daily flow limit of discharge
Cr = receiving water concentration limit
Q_r = Chaffins Brook receiving water flow ($Q_s + Q_e$)

The total recoverable maximum daily limit (acute) = 0.0073 mg/l = 7.3 ug/l.

The maximum daily limit proposed for total copper for Outfalls 003 and 004 in the Draft Permit is 7.3 ug/l. Because the discharge is intermittent and the duration is likely to be short, no monthly average limit (chronic freshwater criteria) was included.

7.0 Other Permit Requirements

In addition to these specific effluent limitations, the Draft Permit contains general limitations to comply with state water quality standards on such things as color, oil sheen, foam, floating or settleable solids, and non-specific toxic chemicals. The Draft Permit includes provisions containing detailed requirements for reporting spills and structural damage and/or failure of testing or holding tanks, as well as preparing, submitting to EPA, and carrying out Best Management Practices (Part I.B. Narrative Requirements). These provisions are key components of the Draft Permit to ensure compliance with both technology and water quality requirements.

EPA is requiring a site-specific Best Management Practices (BMP) plan for the facility based on BPJ under § 402(a)(1)(B) of the CWA. BMPs require the permittee to develop and employ methods for feed management, removal of accumulated solids, storage of drugs and pesticides, spill prevention, management of the wastewater treatment system, maintaining accurate records, and ensuring that all personnel receive proper training. In addition to these practices the permittee is required to detail precautions taken to prevent aquatic organisms that are neither indigenous nor naturalized to Massachusetts waters from becoming established in local surface waters. Further, the discharge of aquaculture drugs, chemical additives, feed, or pesticides used at the facility is prohibited.

The Draft Permit primarily includes monitoring-only requirements except where numeric limits are set by state water quality standards. To supplement the monitoring-only requirements, Alden Lab's BMP plan must document procedures to prevent toxic discharge to the receiving water, including the proper use of chemicals, the proper disposal of solids, an acceptable wastewater protocol, and a detailed description of the initiation and termination of the discharge. EPA shall be notified if practices other than those prescribed in the BMP plan are implemented at the facility.

On rare occasions when medications are administered at the facility, a quarantine tank is used to isolate the fish needing treatment. Fish are transferred to the quarantine tank for the requisite period of time for treatment before being returned to the holding facility. The quarantine tank is discharged as wastewater to the waste tank and transferred to the Upper Blackstone Water Pollution Abatement District for treatment and disposal. Given these practices, no permit limit is established for chemicals; however, the BMP plan shall describe procedures related to chemical usage at the facility.

8.0 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's actions or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat (EFH), such as waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity (16 U.S.C. § 1802(10)). "Adversely impact" means any impact which reduces the quality and/or quantity of EFH (50 CFR §600.910(a)). Adverse effects may include direct (e.g., contamination or physical

disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Essential fish habitat is only designated for species for which federal fisheries management plans exist (16 U.S.C. §1855(b)(1)(A)) EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

EPA has determined that Chaffins Brook is not covered by the EFH designation for riverine systems as listed in the NMFS EFH website http://www.nero.noaa.gov/hcd/salmon.pdf. Therefore, consultation under EFH is not required for this permit action.

9.0 Endangered Species Act

Under Section 7(a) of the Endangered Species Act, every federal agency is required to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize federally listed endangered or threatened species of fish, wildlife, or plants, or result in the adverse modification of critical habitat of such species. EPA initiates consultation concerning listed species under their purviews with the United States Fish and Wildlife Service (USFWS) for freshwater species, and the National Marine Fisheries Service (NMFS) for marine species and anadromous fish.

EPA has reviewed the information regarding the location of federal endangered or threatened species of fish, wildlife, or plants to determine if any such listed species might potentially be impacted by the issuance of this NPDES permit. No federally listed threatened or endangered species have been identified for the Town of Holden or Chaffins Brook. See listings for Holden, MA in "Rare Species Occurrences by Town" at http://www.mass.gov/dfwele/dfw/nhesp/info_by_town.htm.
Based on this evaluation, EPA has determined that there are no protected species in the action area and that the discharge from Alden Lab will have no effect on protected species. Therefore, consultation under Section 7 of the ESA with NMFS or USFWS is not required.

10.0 Monitoring

The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308 (a) of the CWA in accordance with 40 CFR §§122.41 (j), 122.44 (l), and 122.48.

The Draft Permit includes new provisions related to Discharge Monitoring Report (DMR) submittals to EPA and the State. The Draft Permit requires that, no later than one year after the effective date of the permit, the Permittee submit all monitoring data and other reports required by the permit to EPA using NetDMR, unless the Permittee is able to demonstrate a reasonable basis, such as technical or administrative infeasibility, that precludes the use of NetDMR for submitting DMRs and reports ("opt-out request").

In the interim (until one year from the effective date of the permit), the Permittee may either submit monitoring data and other reports to EPA in hard copy form, or report electronically using NetDMR.

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit DMRs electronically via a secure Internet application to EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms

under 40 CFR § 122.41 and § 403.12. EPA currently conducts free training on the use of NetDMR, and anticipates that the availability of this training will continue to assist permittees with the transition to use of NetDMR. NetDMR can be accessed at http://www.epa.gov/netdmr. Further information about NetDMR, including contacts for EPA Region 1, information on upcoming trainings, and contact information for Massachusetts, is provided on this website.

The Draft Permit requires the Permittee to report monitoring results obtained during each calendar month using NetDMR, no later than the 15th day of the month following the completed reporting period. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR. Once a Permittee begins submitting reports using NetDMR, it will no longer be required to submit hard copies of DMRs or other reports to EPA and will no longer be required to submit hard copies of DMRs to MassDEP. However, permittees must continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP.

The Draft Permit also includes an "opt-out" requests process. Permittees who believe they cannot use NetDMR due to technical or administrative infeasibilities, or other logical reasons, must demonstrate the reasonable basis that precludes the use of NetDMR. These permittees must submit the justification, in writing, to EPA at least sixty (60) days prior to the date the facility would otherwise be required to begin using NetDMR. Opt-outs become effective upon the date of written approval by EPA and are valid for twelve (12) months from the date of EPA approval. The opt-outs expire at the end of this twelve (12) month period. Upon expiration, the Permittee must submit DMRs and reports to EPA using NetDMR, unless the Permittee submits a renewed opt-out request sixty (60) days prior to expiration of its opt-out, and such a request is approved by EPA.

Until electronic reporting using NetDMR begins, or for those permittees that receive written approval from EPA to continue to submit hard copies of DMRs, the Draft Permit requires that submittal of DMRs and other reports required by the permit continue in hard copy format.

11.0 State Certification Requirements

The staff of MassDEP has reviewed the Draft Permit. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

12.0 Comment Period, Hearing Requests, and Procedures For Final Decisions

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to John H. Nagle, U.S. EPA, Office of Ecosystem Protection**,** Industrial Permits Branch, 5 Post Office Square, Suite 100, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the

applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

13.0 EPA and MassDEP Contacts

Additional information concerning the Draft Permit may be obtained between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays from:

John H. Nagle
Office of Ecosystem Protection
U.S. EPA New England - Region 1
5 Post Office Square, Suite 100 (OEP06-1)
Boston MA 02109-3912
Tel: (617) 918-1054
email: nagle.john@epa.gov

Claire A. Golden
Mass Department of Environmental Protection
Division of Watershed Management,
Surface Water Discharge Permit Program
205 B Lowell Street
Wilmington, Massachusetts 01887
Telephone: (978) 694-3244
FAX: (978) 694-3498
email: claire.golden@state.ma.us

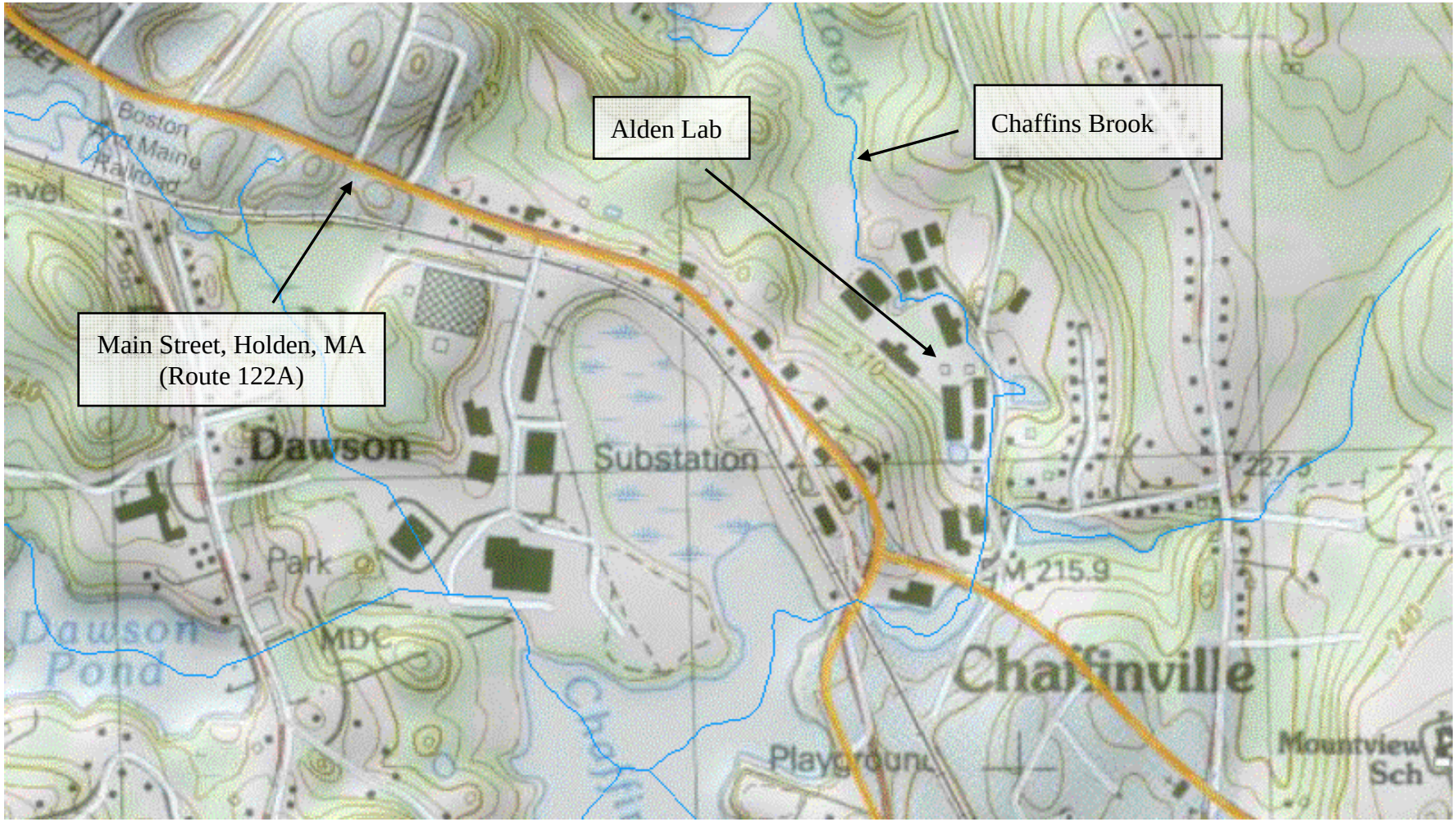
May 2013
Date

_____

Ken Moraff, Acting Director*
Office of Ecosystem Protection
U.S. Environmental Protection Agency
Boston, MA

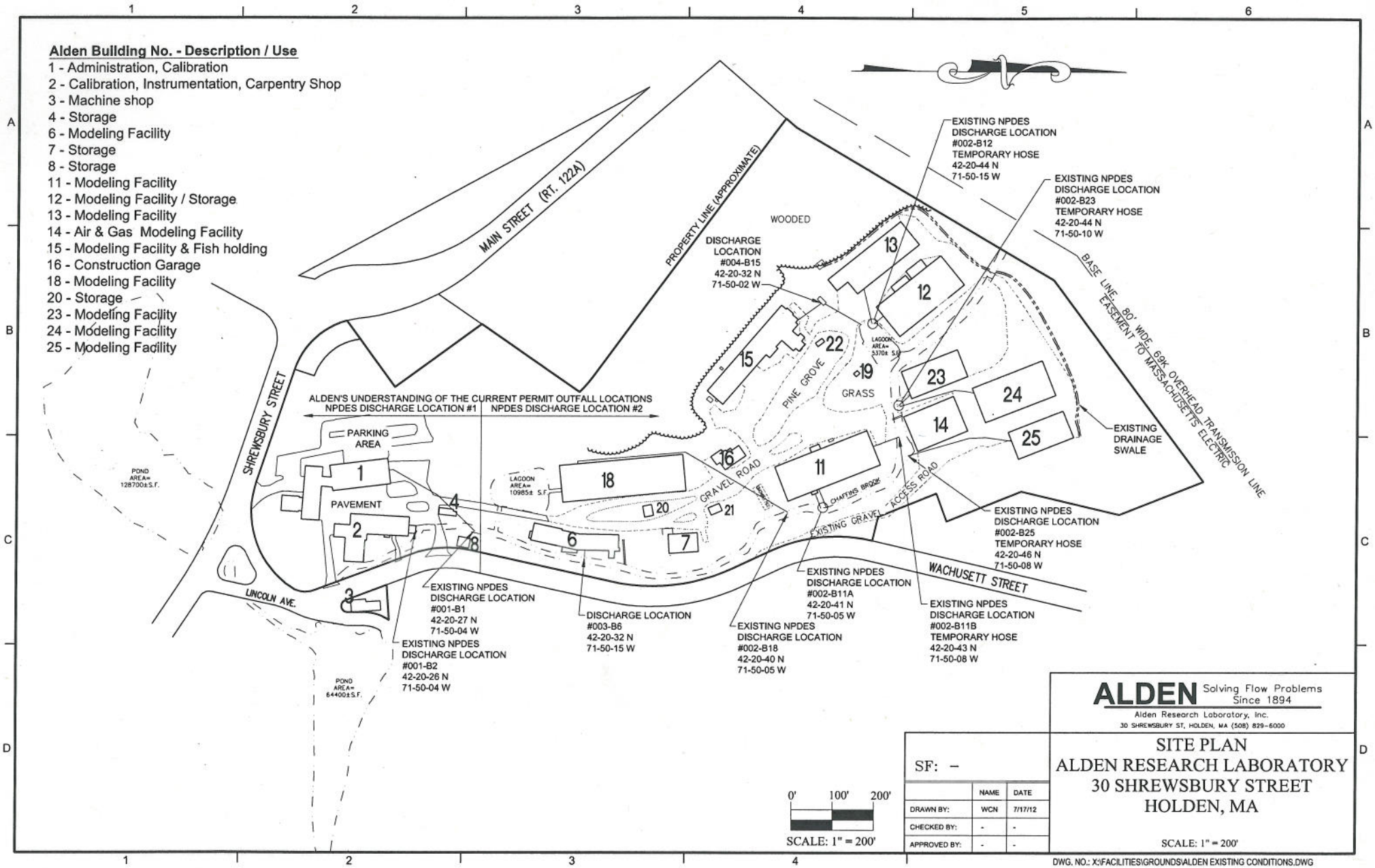
* Please address comments to both Mr. John Nagle and Ms. Claire Golden.

Attachment A: Alden Research Lab Topographic Map



Source: http://water.usgs.gov/osw/streamstats/massachusetts.html

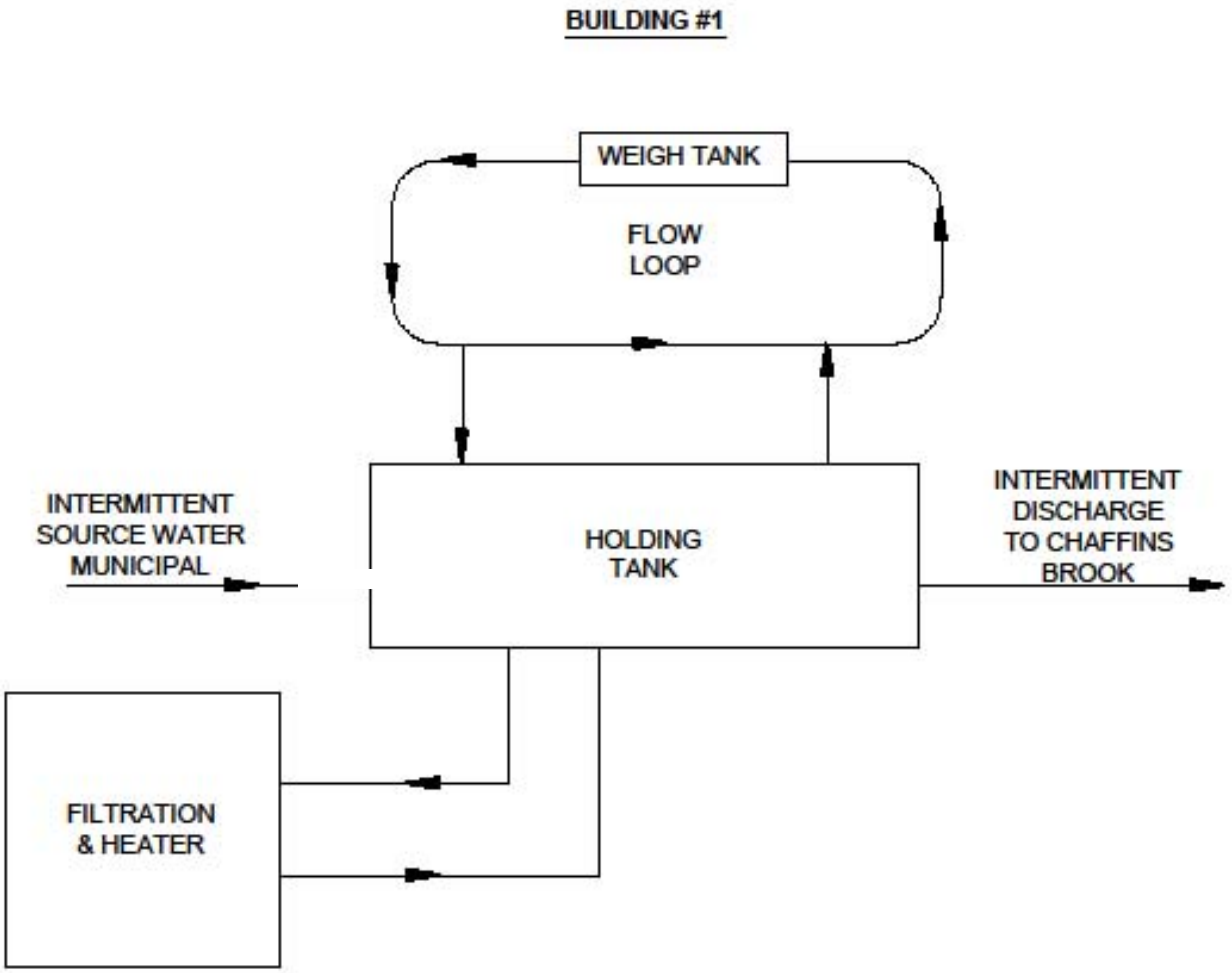
Attachment B: Alden Research Lab Site Plan



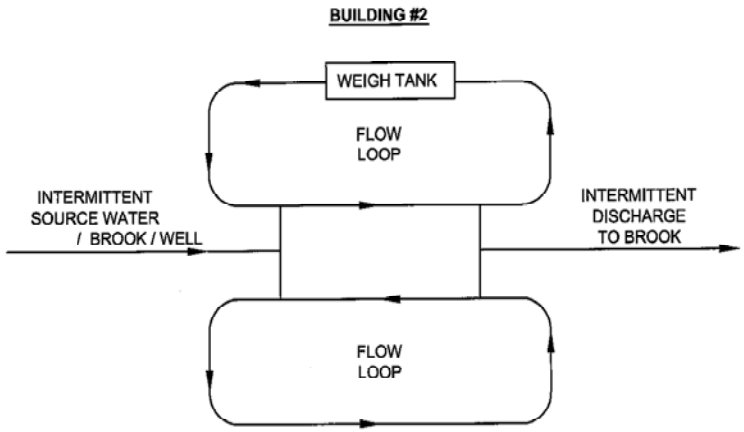
Attachment C: Alden Research Lab DMR Summary
Outfalls 001 and 002
(1997 – 2006)

Discharge Period	Flow (gallons) Maximum Daily Flow	Rhodamine WT Dye (ppb) Maximum Daily Concentration	pH (s.u.) Maximum Daily Value
February 1- 28, 2005	15,000	1.5	6.5
October 1- 31, 2003	25,243	10	6.5

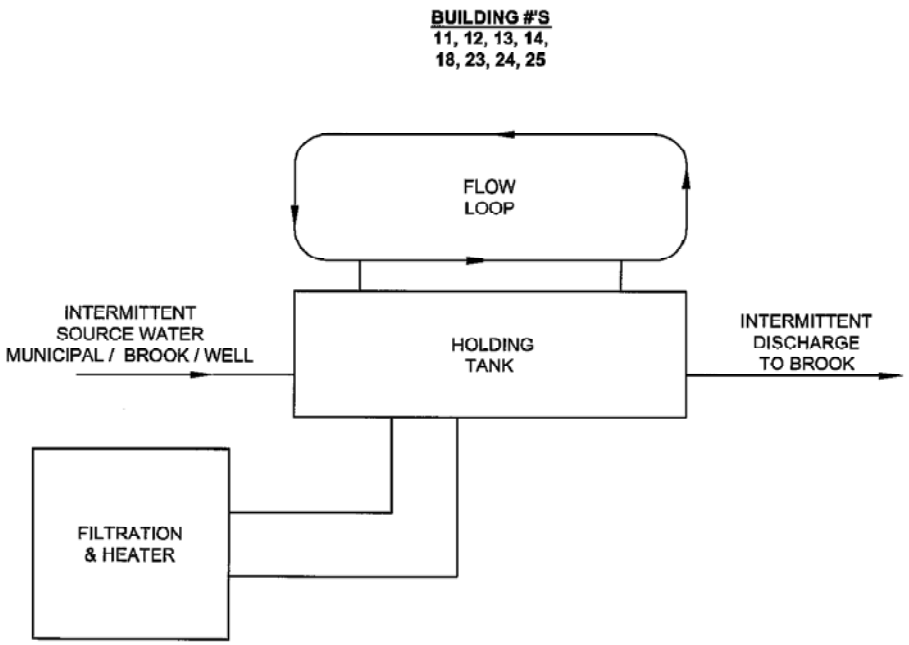
Attachment D: Flow Diagram (page 1 of 3)



Attachment D: Flow Diagram (page 2 of 3)



Attachment D: Flow Diagram (page 3 of 3)



MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
COMMONWEALTH OF MASSACHUSETTS
1 WINTER STREET
BOSTON, MASSACHUSETTS 02108

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ECOSYSTEM PROTECTION
REGION I
BOSTON, MASSACHUSETTS 02109

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO THE WATERS OF THE UNITED STATES UNDER SECTIONS 301 AND 402 OF THE CLEAN WATER ACT, AS AMENDED, AND UNDER SECTIONS 27 AND 43 OF THE MASSACHUSETTS CLEAN WATERS ACT, AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE CLEAN WATER ACT.

DATE OF NOTICE: June 21, 2013

PERMIT NUMBER: **MA0028801**

PUBLIC NOTICE NUMBER: MA-015-13

NAME AND MAILING ADDRESS OF APPLICANT:

David K. Anderson, Senior Vice President
Alden Research Laboratory
30 Shrewsbury Street
Holden, MA 01560-1843

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Alden Research Laboratory
30 Shrewsbury Street
Holden, MA 01560-1843

RECEIVING WATER: Chaffins Brook, Nashua River Watershed (MA81-33)

RECEIVING WATER CLASSIFICATION: Class A

PREPARATION OF THE DRAFT PERMIT:

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) have cooperated in the development of a permit for the above identified facility. The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., the Massachusetts Clean Waters Act, G.L. c. 21, §§ 26-53, 314 CMR 3.00 and State Surface Water Quality Standards at 314 CMR 4.00. EPA has formally requested that the State certify this draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMIT:

A fact sheet (describing the type of facility; type and quantities of wastes; a brief summary of the basis for the draft permit conditions; and significant factual, legal and policy questions considered in preparing this draft permit) and the draft permit may be obtained at no cost at http://www.epa.gov/region1/npdes/draft_permits_listing_ma.html or by writing or calling EPA's contact person named below:

John H. Nagle
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (OEP06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1054

The administrative record containing all documents relating to this draft permit is on file and may be inspected at the EPA Boston office mentioned above between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays.

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of this draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by **July 20, 2013** to the U.S. EPA, 5 Post Office Square, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing to EPA and the State Agency for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on this draft permit, the Regional Administrator will respond to all significant comments and make the responses available to the public at EPA's Boston office.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice.

DAVID FERRIS, DIRECTOR
MASSACHUSETTS WASTEWATER MANAGEMENT PROGRAM
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

KEN MORAFF, ACTING DIRECTOR
OFFICE OF ECOSYSTEM PROTECTION
ENVIRONMENTAL PROTECTION AGENCY – REGION 1