

MODIFICATION OF
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 (MA 81)

in accordance with effluent limitations, monitoring requirements and other conditions set forth in the permit issued July 15, 2006 except as set forth herein in italics and summarized as follows:

- Page 4** Addition of Part I.A.2 - effluent limitations and monitoring requirements for discharge from fish testing tanks in Buildings 6 and 15 (Outfalls 003 and 004). The table in Part I.A.2 includes effluent limits and monitoring requirements for pH, temperature, dissolved oxygen, biochemical oxygen demand, total suspended solids, total nitrogen, total phosphorus, specific conductance, total chlorine, and total dissolved copper.
- Page 6** Addition of Part I.A.3 - effluent limitations and monitoring requirements for discharge from hydraulic flow and fish testing tanks (Outfalls 001, 002, 003 and 004). The table in Part I.A.3 limits total flow from all outfalls.
- Page 7** Additional language to Part I.A.5 describes procedures for exceeding pH limit due to natural causes.
- Page 7** Addition of Part I.A.10 limits allowable discharge from fish testing tanks (Outfalls 003 and 004).
- Page 7** Addition of Part I.A.11 describes procedures for reporting substantial fish mortality events in fish testing tanks.
- Page 9** Addition of Part I.B - narrative effluent limitation requirements, describes reporting requirements and best management practices associated with fish testing tanks (Outfalls 003 and 004).

Page 11 Additional language in Part I.C includes unauthorized discharges from fish testing tanks (Outfalls 003 and 004).

This permit modification shall become effective on the first day of the calendar month following 60 days after signature.

This permit modification and the authorization to discharge expire at midnight, June 30, 2011.

This permit modification consists of 12 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 30th day of September, 2008

/s/ SIGNATURE ON FILE

Stephen S. Perkins, Director
Office of Ecosystem Protection
Environmental Protection Agency
Boston, MA

Glenn Haas, Director
Division of Watershed Management
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 outfalls serial number 001 and 002. Such discharges shall be limited and monitored by the permittee as specified below.

Effluent Characteristic	Units	Discharge Limitation		Monitoring Requirement	
		Average Monthly	Maximum Daily	Measurement Frequency	Sample Type
Flow ^a	gpd	100,000	Daily	Daily ^b	Estimated
Rhodamine WT Dye	µg/l	Report	10	1/week ^b	Grab
pH (See Part I.A.5)	S.U.	6.5 to 8.3		1/week ^b	Grab
Food Coloring	---	---	See Part I.A.7. Page 6		

Footnotes

- a. For flow, report total flow used for each operating date.
- b. Measurement is necessary only during operations.

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 serial number 003 and 004. Such discharges shall be limited by the permittee as specified below.

<i>Effluent Characteristic</i>	<i>Units</i>	<i>Discharge Limitation</i>		<i>Monitoring Requirements</i>	
		<i>Average Monthly</i>	<i>Maximum Daily</i>	<i>Measurement Frequency^a</i>	<i>Sample Type^b</i>
<i>pH^{c,d}</i>	<i>s.u.</i>	<i>Range of 6.5 to 8.3</i>		<i>1x/ event</i>	<i>Grab</i>
<i>Temperature^{c,e}</i>	<i>°F</i>	<i>--</i>	<i>Report</i>	<i>1x/ event</i>	<i>Grab</i>
<i>Dissolved Oxygen^{c,d}</i>	<i>mg/l</i>	<i>No less than 6.0</i>		<i>1x/ event</i>	<i>Grab</i>
<i>BOD₅^c</i>	<i>mg/l</i>	<i>--</i>	<i>Report</i>	<i>1x/ event</i>	<i>Grab</i>
<i>TSS^c</i>	<i>mg/l</i>	<i>--</i>	<i>Report</i>	<i>1x/ event</i>	<i>Grab</i>
<i>Total Nitrogen^{c,e}</i>	<i>mg/l</i>	<i>--</i>	<i>Report</i>	<i>1x/ event</i>	<i>Grab</i>
<i>Total Phosphorus^c</i>	<i>mg/l</i>	<i>--</i>	<i>Report</i>	<i>1x/ event</i>	<i>Grab</i>
<i>Specific conductance</i>	<i>µmhos/cm</i>	<i>--</i>	<i>250</i>	<i>1x prior to discharge</i>	<i>Grab</i>
<i>Total Chlorine</i>	<i>µg/l</i>	<i>--</i>	<i>42.0</i>	<i>1x/ event</i>	<i>Grab</i>
<i>Total Recoverable Copper</i>	<i>µg/l</i>	<i>--</i>	<i>8.1</i>	<i>1x/ event</i>	<i>Grab</i>

See page 5 for explanation of footnotes

Footnotes

- a. Measurement is only necessary during operations.*
- b. 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.*
- c. The pH, temperature, dissolved oxygen, BOD₅, TSS, Total Nitrogen, and Total Phosphorus samples shall be taken once during each discharge event when concentrations are expected to be at a maximum.*
- d. Requirement for State Certification.*
- e. 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 serial number 001, 002, 003, and 004. Such discharges shall be limited by the permittee as specified below.*

<i>Effluent Characteristic</i>	<i>Units</i>	<i>Discharge Limitation</i>		<i>Monitoring Requirements</i>	
		<i>Average Monthly</i>	<i>Maximum Daily</i>	<i>Measurement Frequency^a</i>	<i>Sample Type^b</i>
<i>Flow</i>	<i>gpd</i>	<i>100,000</i>	<i>Report</i>	<i>Continuous</i>	<i>Recorder</i>

Footnotes

- a. *Measurement is necessary only during operations.*
- b. *See footnote at Part I.A.1(b) for outfalls serial number 001 and 002. For outfalls serial number 003 or 004, report maximum daily flow for each operating date. Flow shall be measured continuously with a flow meter and 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. Attach this data to each DMR form.*

Part I.A. (Continued)

4. The discharge shall not cause a violation of the water quality standards of the receiving waters.
5. The pH shall not be less than 6.5 nor greater than 8.3 standard units (s.u.) at any time. There shall be no change from background conditions that would impair designated uses. *To demonstrate that pH values of the effluent are outside this pH range due to natural causes, the permittee must show that pH measurements of the source water and the effluent are the same. Documentation of such conditions must be submitted by the permittee with the discharge monitoring reports.*
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, bag filters, filter backwash, and associated equipment. There shall be no discharge of drugs, 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. Monitoring and Reporting.*

Part I.B.

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.

Part I.C.

13. Alden Research Laboratory, Inc. must provide adequate notice to the Director 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 of the change on the quantity or quality of effluent to be discharged from Alden Research Laboratory, Inc.

Part I.D. TOXICS CONTROL

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. NARRATIVE EFFLUENT LIMITATION REQUIREMENTS

1. Structural Failure and/or Damage to Fish Testing

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 within 24 hours of discovery of any “reportable failure” as defined in Part I.B.1.a or damage that results in a material 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.*
- 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.*

2. Best Management Practices Plan

The permittee shall develop a plan to identify Best Management Practices (BMPs) to be followed in operating the testing facility, using chemicals, cleaning the flume, screens, and other equipment, and disposing of any solid waste. BMPs include schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States.

The BMP plan shall be completed and signed within 90 days after the effective date of this permit modification. In accordance with 40 CFR § 122.22, the permittee shall certify that a plan to meet the requirements of this permit has been developed. A copy of the certification shall be sent to EPA and MassDEP within 120 days after the effective date of the permit. A current copy of the plan shall be maintained at the facility.

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

- a. Solids control*

(1) Identify and implement procedures for routine cleaning of testing tanks and bag filters, and procedures to minimize any discharge of accumulated solids during the inventorying 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.

b. Biological Pollution

(1) Describe, in detail, 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 the local surface waters.

(2) Describe procedures for storage and treatment of discharge from Outfalls 003 and 004 to prevent biological pollution (non-native organisms, fish parasites, and fish diseases) from entering the receiving water in the case of an untreated discharge bypass.

c. Materials storage

(1) Ensure proper storage of 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.

d. 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 closed-loop recirculating systems, testing tanks, and the wastewater treatment system in order to ensure that they are properly functioning.

e. Recordkeeping

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

f. 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.

g. Neutralization of Effluent

(1) Describe procedures for neutralizing and disposing of chlorinated water in fish testing tanks prior to discharge of effluent from 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 *and Part I.A.2* 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 II.D.1.e(1) of the Standard Conditions of this permit (twenty-four hour reporting).

D. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report Form(s) postmarked no later than the 15th day of the month following the effective date of the permit. Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, Massachusetts 02114

The State Agency address for all reports is:

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention
Central Regional Office
627 Main Street
Worcester, MA 01608

Signed and dated Discharge Monitoring Report Form(s) and all other reports required by this permit shall also be submitted to the State at:

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

E. STATE PERMIT CONDITIONS

1. This Discharge Permit is issued jointly by the U. S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) under Federal and State law, respectively. As such, all the terms and conditions of this Permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MassDEP pursuant to M.G.L. Chap.21 § 43.

2. 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.