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),

New England Aquarium Corporation

is authorized to discharge from a facility located at

Central Wharf
Boston, MA 02110

to the receiving water named Boston Inner Harbor, a Class SB (CSO) water, 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 sixty (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 expires at midnight, five (5) years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on July 31, 2007.

This permit consists of 8 pages in Part I including effluent limitations, monitoring requirements, and state permit conditions, Attachment A - Marine Acute Toxicity Test Protocol (September 1996), Table 1 – List of Medications and Chemicals, and 25 pages in Part II, Standard Conditions.

Signed this day of , 2013.

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

_____
David Ferris, Director
Massachusetts 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 the expiration date, the permittee is authorized to discharge disinfected tank and aquaria waters, steam condensate, and filter backwash from outfall serial number **001**. Such discharges shall be limited and monitored by the permittee as specified below:

EFFLUENT CHARACTERISTIC	EFFLUENT LIMITS		MONITORING REQUIREMENTS	
PARAMETER	**AVERAGE MONTHLY**	**MAXIMUM DAILY**	**MEASUREMENT FREQUENCY**	**SAMPLE [1] TYPE**
Flow	100,000 GPD	150,000 GPD	Continuous	Recorder [2]
pH Range[3]	6.5 – 8.5 standard units		1/Week	Grab
Total Suspended Solids	30 mg/l	60 mg/l	2/Month	24-Hour Composite [4]
Total Suspended Solids	25 lbs/day	75 lbs/day	2/Month	24-Hour Composite [4]
Total Residual Chlorine	1.0 mg/l	1.0 mg/l	1/Week	Grab
Enterococci bacteria [3, 5]	35 cfu/100 ml	276 cfu/100 ml	1/Month	Grab
Fecal Coliform bacteria [3, 5]	Report cfu/100 ml	Report cfu/100 ml	1/Month	Grab
Copper, Total	Report ug/l	Report ug/l	1/Month	24-Hour Composite [4]
Whole Effluent Toxicity [6,7,8,9]	Report LC_{50}, % and A-NOEC, %		1/Permit Term [6]	24-Hour Composite [4]

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

b. The pH of the effluent shall be in the range of 6.5 to 8.5 standard units and not more than 0.2 s.u. outside of the naturally occurring range.

c. The discharge shall not cause objectionable discoloration of the receiving waters.

d. The discharge shall contain neither a visible oil sheen, foam, nor floating solids at any time.

e. The permittee shall minimize the use of chlorine while maintaining adequate bacterial control.

f. The results of sampling for any parameter above its required frequency must also be reported.

(Footnotes are listed on Page 3)

Footnotes:

1. Sampling shall be conducted at a point prior to discharge to Outfall 001. Any change in sampling location must be reviewed and approved in writing by EPA and MassDEP. All samples shall be tested using the analytical methods found in 40 CFR §136, or alternative methods approved by EPA in accordance with the procedures in 40 CFR 136.

2. For flow, report maximum and minimum daily rates and total flow for each operating date. Attach these data to each DMR form.

3. Requirement for State Certification.

4. A 24-hour composite sample will be comprised of at least twenty four (24) grab samples taken during a consecutive 24 hour period (e.g. 7:00 A.M. Monday to 7:00 A.M Tuesday).

5. *Enterococci* and *fecal coliform* monitoring shall also be conducted year round. *Enterococci* shall not exceed a monthly geometric mean of 35 colony forming units (cfu) per 100 ml, nor shall it exceed 276 cfu per 100 ml as a daily maximum. Monitoring for *Enterococcus* and *fecal coliform* shall be conducted on the same day and concurrently with the total residual chlorine sample.

6. The permittee shall conduct one acute toxicity testing screening during the fourth full calendar year of this permit. The acute test may be used to calculate the acute LC50 at the 48 hour exposure interval. The permittee shall test the Mysid shrimp, *Mysidopsis bahia* and the Inland silverside, *Menidia beryllina*. Toxicity test samples shall be collected during the calendar quarter ending September 30. The test results shall be submitted no later than October 31 of the testing year. The test must be performed in accordance with test procedures and protocols specified in **Attachment A** of this permit and conducted during normal operating conditions.

7. The LC50 is the concentration of effluent which causes mortality to 50% of the test organisms.

8. The A-NOEC (acute-no observed effect concentration) is defined as the highest effluent concentration at which there is no statistically-significant adverse effect on the survival of the test organisms when compared with the diluent control survival at the time of observation.

9. If toxicity test(s) using receiving water as diluent show the receiving water to be toxic or unreliable, the permittee shall follow procedures outlined in **Attachment A, Section IV,** of this permit in order to obtain permission to use an alternate dilution water. In lieu of individual approvals for alternate dilution water required **in Attachment A**, the permittee may use the EPA New England guidance document entitled Self-Implementing Alternative Dilution Water Guidance ("Guidance Document") to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. If the Guidance Document is revoked, the permittee shall revert to obtaining approval as outlined in **Attachment A.** The Guidance Document is included as Attachment G of the DMR Instructions on the EPA website at http://www.epa.gov/region1/enforcementandassistance/dmr.html and is not intended as a direct attachment to this permit. Any modification or revocation to the Guidance Document will be transmitted to the permittees as part of the annual DMR instruction package. However, at any time, the permittee may choose to contact EPA New England directly using the approach outlined in **Attachment A.**

Part I.A.

2. 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.

3. Numerical Effluent Limitations for Toxicants

   EPA or MassDEP may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section 304(a)(1) of the Clean Water Act (CWA), state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including but not limited to those pollutants listed in Appendix D of 40 CFR Part 122.

4. Medications

   a. The permittee shall use only medications and disease control chemicals in dosages and combinations that are appropriate to control short term outbreaks of disease and non-native organisms. These medications and chemicals can be used and discharged only in accordance with the maximum dosage rates, application frequency, application duration, application method, and detoxification method identified in **Table 1**.

   b. Annually, upon the anniversary of the effective date of the permit, the permittee shall provide to EPA and MassDEP at the addresses in Part I.C.1.c, a listing of any new medications or chemicals that it has begun to use or expects to use in the coming year for any tank or aquarium. For each new medication or chemical, the permittee shall identify:

      1. The product name and chemical formulation of the medication or chemical.
      2. The purpose of the chemical or medication.
      3. The dosage rate, frequency of application (hourly, daily, etc.), and the duration of treatment.
      4. The method of application.
      5. The method or methods used to detoxify the wastewater prior to discharge, if necessary.
      6. Information on the persistence and toxicity of each medication or chemical such as may be found on a Material Safety Data Sheet (MSDS).
      7. Information on the U.S. Food and Drug Administration (FDA) approval for use of the medication or chemical for human consumption, if applicable.

   c. The permittee must ensure the proper storage of medications and disease control chemicals in a manner designed to prevent spills that may result in the discharges of

these substances to the receiving water. The permittee shall implement procedures for properly containing, cleaning, and disposing of any spilled material.

d. The permittee shall periodically evaluate the use of alternative chemicals and medications which are less toxic to the receiving water and to substitute these if feasible. A description of such evaluation and any findings shall be submitted with the annual listing of chemicals and medications used, which is due on the anniversary of the effective date of the permit.

5. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
   (1) One hundred micrograms per liter (100 ug/l);
   (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;
   (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. §122.21(g)(7); or
   (4) Any other notification level established by the Director in accordance with 40 C.F.R. §122.44(f).

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":

   (1) Five hundred micrograms per liter (500 ug/l);

   (2) One milligram per liter (1 mg/l) for antimony;

   (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. §122.21(g)(7); or

   (4) Any other notification level established by the Director in accordance with 40 C.F.R. §122.44(f).

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.

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

B. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from the outfall listed in Part I.A.1. of this permit. Discharges of wastewater from any other point sources are not authorized by this permit and shall be reported in accordance with Section D.1.e. (1) of the General Requirements (Part II) of this permit (Twenty-four hour reporting).

C. 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 as electronic attachments to the DMRs. 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 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 (OES04-1)
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. All reports required under this permit 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

Duplicate signed copies of all reports or notifications required above (including those in Part I.D) shall be submitted to the State at the following address:

Massachusetts Department of Environmental Protection
Bureau of Waste Prevention (Industrial)
Northeast Regional Office
205B Lowell Street
Wilmington, MA 01887

Duplicate signed copies of all reports or notifications required above, with the exception of DMRs, shall be submitted to the State at the following address:

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

Any verbal reports, if required in Parts I and/or II of this permit, shall be made to both EPA-New England and to MassDEP.

D. 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 an 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.

Table 1

Medication and Chemical Usage List
New England Aquarium – MA0003123

Chemical (See MSDS for formulation)	Purpose	Dosage Rate	Application Frequency	Duration	Application Method	Detoxification Method (if any)	MSDS Attached
CHLORINE	Disinfection	To maintain .10 ppm residual in discharge sump	Injects when discharge sump pumps discharge to outfall	Only when discharge sump pumps are discharging	Injector pump	None	yes
CHLOROQUINE	Anti-parasite anti-bacterial	10 ppm	daily	5 days/as needed	hand additions	To discharge sump	yes
COPPER SULFATE	Anti-parasite	.20 ppm target	daily until target ppm	21 days	hand or injector pump	Cuprisorb resin or Carbon prior to discharge sump	yes
CUPRAMINE	Anti-parasite	.60 ppm target	daily until target ppm	21 days	hand additions	Cuprisorb resin or Carbon prior to discharge sump	yes
DIFLUBENZURON	Antiparasitic	0.03ppm	once; once weekly	30 days	hand additions	To discharge sump	yes
DOXYCYCLINE	Antibiotic	2.69 ppm	once	24 hours	hand additions	To discharge sump	yes
ENROFLOXACIN	Antibiotic	5-20 ppm	daily	10-14 days	hand additions	To discharge sump	yes
FENBENDAZOLE	Antiparasitic	2 ppm	every two days	one week	hand additions	To discharge sump	yes
FORMALIN	Anti-parasite	1 ml/gallon	once	1 hour	hand additions	To discharge sump	yes
LEVAMISOLE	Antiparasitic	2 ppm	once weekly	3 weeks	hand additions	To discharge pump	yes
METHYLENE BLUE	Antifungal	.5 - 1.0 ppm target	daily until target ppm	10 - 14 days	hand additions	To discharge sump	yes
METRONIDAZOLE	Antiprotozoal/antibacterial	10-25 ppm	as needed	up to 14 days	hand addtions	To discharge sump	yes
MILBEMYCIN	Antiparasitic	0.016 ppm	twice weekly	3 weeks	hand additions	To discharge sump	yes
NITROFURAZONE	Antibiotic	20 ppm	once	10 - 14 days	hand additions	To discharge sump	yes
OXOLINIC ACID	Antibacterial	1-2 ppm	as needed	up to 14 days	hand additions	To discharge sump	yes
OXYTETRACYCLINE	Antibiotic	20 - 50 ppm	once	5 - 7 days	hand additions	To discharge sump	yes
PRAZIQUANTEL	Anti-parasite	3.5 ppm target	daily until target ppm	21 days	hand additions	To discharge sump	yes
SODA ASH	pH control	To maintain pH at 7.8 to 8.2 in some exhibits	daily	Continuous	hand or injector pump	To discharge sump	yes
TRICAINE METHANE-SULFONATE (MS222)	Anesthesia	90 ppm	as needed for effect	as needed for effect	hand addition	To discharge sump	yes
TRICHLORFON (DYLOX)	Anti-parasite	0.5 ppm	as needed	up to 21 days	hand additions	see comment	yes
TRIMETHOPRIM SULFA	Antibiotic	20-30ppm	daily	10-14 days	hand additions	To discharge sump	yes
VIRKON	Disinfectant baths for exhibits tools and footbaths	1% - 2%	as needed	as needed	hand additions	To discharge sump	yes

Once in discharge sump, product dilutes with discharge sump water volume, which is 30,000 gallons

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 NUMBER: MA0003123

PUBLIC NOTICE START AND END DATES: June 12, 2013 – July 11, 2013

NAME AND MAILING ADDRESS OF APPLICANT:

New England Aquarium Corporation
Central Wharf
Boston, MA 02110

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

New England Aquarium
Central Wharf
Boston, MA 02110

RECEIVING WATER(S): Boston Inner Harbor
{USGS Hydrologic Code #01090001 – Boston Harbor Watershed (70)}

RECEIVING WATER CLASSIFICATION(S): Class SB (CSO)

SIC CODES: 8422, 0279, 0921

Table of Contents

I. Proposed Action, Type of Facility and Discharge Location

The New England Aquarium (NEA) is a public aquarium that is owned and operated by the New England Aquarium Corporation (NEAC), the permittee. This reissued permit will authorize the discharge of tank and aquaria water, filter backwash, and steam condensate at a rate of up to 150,000 gallons per day (GPD) through Outfall 001 to Boston Inner Harbor. See **Figures 1 and 2** for the facility and outfall location.

II. Description of Treatment System and Discharges

Outfall 001

The permittee utilizes two (2) water intakes pipes which extend about 300 feet from the facility into Boston Inner Harbor. The intakes are about three feet above the harbor bottom and draw water for use in the aquarium's tanks and aquaria. These intakes are covered by a set of louvers that stay closed when water is not being withdrawn. This water is used in at least 14 separate areas, mainly exhibits and galleries which contain a variety of aquatic plants and animals for display.

Water from these tanks is periodically pumped to a 30,000 gallon sump which is located beneath the basement floor. This water contains low levels of medicines and other chemicals, including chlorine, as shown in **Table 1** of the draft permit. These chemicals and medications are required to maintain healthy animals, to prevent and control the spread of disease in these exhibits, and to control the presence of non-native organisms that could be pathogenic to the fishery resources of Inner Boston Harbor. Some exhibits pump out water continuously at low flow rates, while others, such as the main marine mammal exhibits, are periodically drained out to perform medical procedures. See **Figure 3** for a schematic of the water flow through the facility. Although not shown in **Figure 3**, all of the water that is used in the tanks and aquaria is withdrawn from Boston Inner Harbor, as previously discussed. The flow amounts shown on the right side of **Figure 3** and labeled "water to sump from trickles" represents the water that is continuously pumped out of these tanks.

Sodium hypochlorite (chlorine solution) is added at the sump pump for disinfection. There is no other treatment provided in this sump. There are two discharge pumps associated with the sump, only one of which typically operates at any given time. Each discharge pump has an injector pump which injects hypochlorite solution into the discharge pump's suction line when it is operating. The accumulated solids in the sump are periodically pumped out and disposed of off site. This sump discharges water through a pipe with a discharge point at about 300 feet out into Inner Boston Harbor and about three feet from the harbor bottom. The 2007 permit limited flow to a monthly average of 150,000 gallons per day (GPD) which is still appropriate and has been maintained as the flow limit in this permit.

There is a small amount of steam condensate from the facility's steam heat distribution system which also enters this sump, estimated to be up to 10 gallons per hour. The permittee also discharges filter backwash water to the sump. During the current permit term, the permittee has improved the filtration system for its tank water which has reduced the amount of solids and filter backwash water which is discharged to the sump.

A summary of recent Discharge Monitoring Reports (DMRs) data may be found in **Attachment A**. These data comprise the period between January 2009 and July 2012 which is referred to as the "monitoring period" in this fact sheet.

III. Receiving Water Description

The Massachusetts Surface Water Quality Standards (SWQS), found at 314 CMR 4.00, designate Boston Inner Harbor (Segment MA70-02) as a Class SB (CSO) water.

Class SB waters are described in the MA SWQS (314 CMR 4.05(4)(b)) and designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass. Where designated in the tables to 314 CMR 4.00 for shellfishing, these waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). These waters shall have consistently good aesthetic value. Waters with a SB (CSO) designation are occasionally subject to short-term impairment of swimming or other recreational uses due to untreated combined sewer overflows (CSO) discharges in a typical year [314 CMR 4.06(1)(d)11]. The SB (CSO) designation for this water was adopted by MassDEP and approved by EPA, based on information included in the Massachusetts Water Resource Authority's (MWRA) July 1997 Combined Sewer Overflow Plan and Environmental Impact Report.

Sections 305(b) and 303(d) of the CWA require that States complete a water quality inventory and develop a list of impaired waters. Specifically, Section 303(d) of the CWA requires States to identify those water bodies that are not expected to meet surface water quality standards after the implementation of technology-based controls, and as such, require the development of a Total Maximum Daily Load (TMDL) for each pollutant that is prohibiting a designated use(s) from being attained. In Massachusetts, these two evaluations have been combined into an Integrated List of Waters. The integrated list format provides the status of all assessed waters in a single, multi-part list.

Boston Inner Harbor is listed on the *Final Massachusetts Year 2012 Integrated List of Waters*[1] as a Category 5 waterbody, which are those classified as "Waters requiring a TMDL". The pollutants and conditions contributing to this impairment are as follows: fecal coliform, *Enterococcus*, dissolved oxygen, and Polychlorinated Biphenyls (PCBs) in fish tissue.

[1] http://www.mass.gov/eea/agencies/massdep/water/watersheds/total-maximum-daily-loads-tmdls.html

MassDEP is required under the CWA to develop a TMDL for waterbodies that are identified as impaired. A TMDL is essentially a pollution budget designed to restore the health of a water body. A TMDL first identifies the source(s) of the pollutant from direct and indirect discharges in order to next determine the maximum amount of pollutant (including a margin of safety) that can be discharged to a specific water body while maintaining water quality standards for designated uses. It then outlines a plan to meet the goal.

A draft pathogen TMDL has been prepared by MassDEP for the Boston Harbor Watershed, excluding the Neponset River sub-basin, which includes Boston Inner Harbor. The majority of pathogen impairments among the various segments in the watershed are due to dischargers from Combined Sewer Overflows (CSOs), municipal point sources, illicit sewer connections, and urban runoff/storm sewers, while for other impaired segments, the potential contamination sources are unknown. For Boston Inner Harbor, the potential source of bacteria is listed in this draft TMDL as unknown.

IV. Limitations and Conditions

The effluent limitations and all other requirements described in Part VI of this Fact Sheet may be found in the draft permit.

V. Permit Basis: Statutory and Regulatory Authority

General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (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. This draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and any applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136.

When developing permit limits, EPA must consider the most recent technology-based treatment and water quality-based requirements. Subpart A of 40 CFR Part 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. EPA is required to consider technology and water quality-based requirements as well as all limitations and requirements in the existing permit when developing permit limits.

Technology-Based Requirements

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 achievable (BAT) for toxic and non-conventional pollutants.

In general, the statutory deadline for non-POTW, technology-based effluent limitations must be 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.

In the absence of published technology-based effluent guidelines, the permit writer is authorized under Section 402(a)(1)(B) of the CWA to establish effluent limitations on a case-by-case basis using best professional judgment (BPJ).

The effluent monitoring requirements have been established to yield data representative of the discharges under the authority of Section 308(a) of the CWA, according to regulations set forth at 40 CFR § 122.41(j), 122.44(i) and 122.48. The monitoring program in the permit specifies routine sampling and analysis which will provide continuous information on the reliability and effectiveness of the installed pollution abatement equipment. The approved analytical procedures are to be found in 40 CFR 136 unless other procedures are explicitly required in the permit.

This aquarium is characterized as a Concentrated Aquatic Animal Production (CAAP) facility, as defined at 40 CFR §122.24 and Appendix C of 40 CFR Part 122, which reads in part:

A hatchery, fish farm, or other facility is a concentrated aquatic animal production facility for purposes of § 122.24 if it contains, grows, or holds aquatic animals in either of the following categories:

(a) Cold water fish species or other cold water aquatic animals in ponds, raceways, or other similar structures which discharge at least 30 days per year but does not include:

(1) Facilities which produce less than 9,090 harvest weight kilograms (approximately 20,000 pounds) of aquatic animals per year; and

(2) Facilities which feed less than 2,272 kilograms (approximately 5,000 pounds) of food during the calendar month of maximum feeding.

(b) Warm water fish species or other warm water aquatic animals in ponds, raceways, or other similar structures which discharge at least 30 days per year, but does not include:

(1) Closed ponds which discharge only during periods of excess runoff; or

(2) Facilities which produce less than 45,454 harvest weight kilograms (approximately 100,000 pounds) of aquatic animals per year.

NEA raises approximately 5380 pounds of a variety of cold water species annually and 9,150 pounds of a variety of warm water species annually and uses about 10,795 pounds of feed in the highest feeding month of the calendar year. Although neither weight threshold for fish production is reached, the permittee feeds more than 5,000 pounds of feed in the highest feed month and is therefore characterized as a CAAP and subject to NPDES permitting.

Even if NEA did not meet the definition of a CAAP facility strictly on these figures, EPA could still classify NEA as a CAAP facility on a case-by-case determination, as detailed in 40 CFR § 122.24(c). This Part allows for consideration of factors including the quantity and nature of the pollutants reaching the receiving water. The chemicals and medications used at the facility and discharged to Boston Inner Harbor would serve as a sufficient justification for EPA to classify NEA as a CAAP facility.

On August 23, 2004, the EPA promulgated new Effluent Limitation Guidelines (ELGs) and New Source Performance Standards (NSPS) for CAAP facilities at 40 CFR Part 451. Typically, ELGs express effluent limitations in the form of numeric standards for specific pollutants, but these ELGs express effluent limitations in the form of narrative standards in order to achieve reduced discharges of TSS and other materials that are associated with the raising of aquatic animals. These ELGs apply to the discharge of pollutants from facilities that produce 100,000 pounds or more per year of aquatic animals using flow-through, net pens or recirculating or submerged cage systems and became effective on September 22, 2004 [See Federal Register on August 23, 2004 (69FR 51892 – 51930)].

Since the NEA produces about 15,000 pounds of aquatic animals annually, far below the 100,000 pounds for which these ELGs apply, it will not be subject to such guidelines. However, there were chemical storage and spill control measures established in the 2007 permit and proposed to be continued in this permit in Part I.A.4.c. This condition is derived from these guidelines and continues to be based on BPJ due to the variety of chemicals and medications which are used at this site.

Water Quality-Based Requirements

Water quality-based limitations are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water quality standards (WQS). See Section 301(b)(1)(C) of the CWA.

Receiving water requirements are established according to numerical and narrative standards adopted under state law for each water quality classification. When using chemical-specific numeric criteria to develop permit limits, both the acute and chronic

aquatic-life criteria, expressed in terms of maximum allowable in-stream pollutant concentration, are used. Acute aquatic-life criteria are considered applicable to daily time periods (maximum daily limit) and chronic aquatic-life criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific limits are allowed under 40 CFR § 122.44(d)(1) and are implemented under 40 CFR § 122.45(d).

A facility's design flow is used when deriving constituent limits for daily and monthly time periods as well as weekly periods where appropriate. Also, the dilution provided by the receiving water is factored into this process where appropriate. Narrative criteria from the state's water quality standards are often used to limit toxicity in discharges where (a) a specific pollutant can be identified as causing or contributing to the toxicity but the state has no numeric standard; or (b) toxicity cannot be traced to a specific pollutant.

EPA regulations require NPDES permits to contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal WQS. The permit must address any pollutant or pollutant parameter (conventional, non-conventional, toxic and whole effluent toxicity) that is or may be discharged at a level that causes or has "reasonable potential" to cause or contribute to an excursion above any water quality criterion. See 40 CFR §122.44(d)(1). An excursion occurs if the projected or actual in-stream concentration exceeds the applicable criterion. In determining reasonable potential, EPA considers (a) existing controls on point and non-point sources of pollution; (b) pollutant concentration and variability in the effluent and receiving water as determined from the permit application, monthly Discharge Monitoring Reports (DMRs), and State and Federal Water Quality Reports; (c) sensitivity of the species to toxicity testing; (d) known water quality impacts of processes on wastewater; and, where appropriate, (e) dilution of the effluent in the receiving water.

WQS consist of three parts: (a) beneficial designated uses for a water body or a segment of a water body; (b) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s); and (c) antidegradation 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 criterion is established. The conditions of the permit reflect the goal of the CWA and EPA to achieve and then to maintain WQS.

Consistent with the MA SWQS promulgated at 314 CMR 4.03(2) and MassDEP guidance documents, MassDEP may set water quality based discharge limits based on a "mixing zone". Generally, mixing zones are areas in which exceedances of numeric WQS are allowed, provided that, among other things, these exceedances do not result in acute toxicity and that the mixing zone will still be protective of the narrative requirements of the WQS. In addition, mixing zones cannot be disproportionately large so as to interfere with the attainment of the designated uses assigned to the water body

segment. All applicable numeric water quality criteria must be met at the edge of the mixing zone, and the other requirements of the state mixing zone must also be satisfied.

Antibacksliding

A permit may not be renewed, reissued or modified with less stringent limitations or conditions than those contained in the previous permit unless in compliance with the antibacksliding requirements of the CWA [see Sections 402(o) and 303(d)(4) of the CWA and 40 CFR §122.44(l)(1 and 2)]. EPA's antibacksliding provisions prohibit the relaxation of permit limits, standards, and conditions except under certain circumstances. Effluent limits based on BPJ, water quality, and state certification requirements must also meet the antibacksliding provisions found at Section 402(o) and 303(d)(4) of the CWA.

The whole effluent toxicity (WET) testing requirement of the 2007 permit has been eliminated in this draft permit based on past monitoring results as discussed in Part VI. below. This change is consistent with the "new information" provision of the antibacksliding regulations. There has been a one time WET testing screening requirement established during the fourth year of the permit, in order to confirm that the discharge does not have a toxic effect on the receiving water.

The limits for *fecal coliform* bacteria have been replaced with a monitor only requirement. As discussed in Part VI below, most sampling for fecal coliform has been non-detect, but monitoring is still required as *fecal coliform* remains the appropriate bacterial indicator for shellfishing uses

All other proposed permit limitations are at least as stringent as those of the current permit, and antibacksliding is not applicable for all other parameters.

Antidegradation

Federal regulations found at 40 CFR §131.12 require states to develop and adopt a statewide antidegradation policy which maintains and protects existing instream water uses and the level of water quality necessary to protect the existing uses, and maintains the quality of waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water. The Massachusetts Antidegradation Regulations are found at 314 CMR 4.04. There are no new or increased discharges being proposed with this permit reissuance. Therefore, EPA does not believe that the MassDEP is required to conduct an antidegradation review regarding this permit reissuance.

State Certification

Under Section 401 of the CWA, EPA is required to obtain certification from the state in which the discharge is located that all water quality standards or other applicable requirements of state law, in accordance with Section 301(b)(1)(C) of the CWA, are satisfied. EPA permits are to include any conditions required in the state's certification

as being necessary to ensure compliance with state water quality standards or other applicable requirements of state law. See CWA Section 401(a) and 40 CFR §124.53(e). Regulations governing state certification are set out at 40 CFR §124.53 and §124.55. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

VI. Explanation of Permit's Effluent Limitations

Outfall 001 - Flow

The current flow limit is a monthly average of 150,000 GPD. For the period between January 2009 and July 2012, which is referred to as the "monitoring period" in this fact sheet, the average monthly effluent flow has averaged 33,479 GPD, with a high monthly average value of 49,989 GPD. The highest maximum daily value measured was 76,393 GPD. The permittee measures the flow continuously when the sump is discharging. In order to have the flow limits be reflective of the actual conditions at the facility, the monthly average flow limit has been changed to 100,000 GPD and a daily maximum flow limit of 150,000 GPD has been established in the draft permit.

pH

The pH range is limited to the Class SB range of 6.5 to 8.5 standard units which is the range required by state WQS and which can be found at 314 CMR 4.05. During the monitoring period, the effluent pH has ranged from 7.63 to 8.08 s.u., with no violations of the permitted range.

Total Suspended Solids (TSS)

Total suspended solids continue to be limited in this permit, due to solids originating in the tanks that accumulate in the sump. During the current permit term, the permittee has installed more efficient filtering equipment which produces less filter backwash effluent and lower amounts of solids being discharged to the sump. In the last few years, there has been a considerable decline in the effluent TSS levels. The permittee removes accumulated solids from the sump as necessary and disposes of them off-site.

The 2007 permit limited TSS to 30 mg/l as a monthly average and 60 mg/l as a daily maximum. Since 2009, effluent TSS values have ranged from 0.11 to 17.9 mg/l, with no violations of the permit limits. The 2007 permit also included mass limits for TSS to control the mass loading to Boston Harbor. These mass limits of 38 lbs/day and 75 lbs/day were based on the flow of 150,000 GPD, the monthly average permitted flow level. Since the monthly average flow limit for this draft permit has been changed to 100,000 GPD, the monthly average mass limit for TSS, which was previously based on the flow of 150,000 GPD, needs to be revised as follows, with the figure of 8.34 being a conversion factor:

(Concentration limit, mg/l) (flow, million gallons per day) (8.34) = mass limit (lbs/day)

30 mg/l (0.10 MGD) (8.34) = **25 lbs/day**

The daily maximum limit will remain 75 lbs/day, calculated as follows:

60 mg/l (0.15 MGD)(8.34) = **75 lbs/day**

EPA believes that these limits are appropriate and achievable by this treatment system and are consistent with State WQS which require that waters be free from floating, suspended or settleable solids in concentrations that would impair any use assigned to this Class SB water. The monitoring frequency for TSS has been maintained at twice per month to assure that these limits are met on a consistent basis and to more quickly detect sudden increases in TSS levels which may indicate a need to pump solids out of the sump or a malfunction of the facility's filtering system.

Bacteria

Since there is fecal matter in the tanks and aquaria that is discharged to the sump, the current permit included year round bacteria limits to assure that there is adequate disinfection of these bacteria. The 2007 permit limited *fecal coliform* bacteria, consistent with the Massachusetts SWQS for Class SB waters. The 2007 permit established a *fecal coliform* monthly average limit of 200 colony forming units (cfu)/100 ml and a maximum daily limit of 400 cfu/100 ml. There have been no violations of the *fecal coliform* limits during the monitoring period, with most samples being non-detect for this parameter.

Since the issuance of the 2007 permit, MassDEP has revised the criteria for bacteria in the Massachusetts SWQS for protecting recreational uses. The bacteriological criteria for the protection of recreational uses in salt water were revised from *fecal coliform* bacteria to *Enterococci*, while *fecal coliform* remains the criteria for protecting shellfishing use. The criteria for *Enterococci* for Class SB waters are a monthly geometric mean of 35 cfu/100 ml and single sample maximum (SSM) of 104 cfu/100 ml. MassDEP views the use of the 90% upper confidence level of 276 cfu/100 ml as appropriate for setting the maximum daily limit for *Enterococci* in the draft permit. Accordingly, these limitations have been included in the draft permit. Sampling for *Enterococci* shall be conducted monthly and applies year round.

Since *fecal coliform* is still the appropriate indicator for shellfishing uses, which are currently prohibited in the area of the discharge, monthly monitoring for this parameter has been maintained in the draft permit, replacing the limits in the 2007 permit. The last few years of data have shown that the *fecal coliform* levels are mostly not detected.

Copper

The 2007 permit included a monthly total copper monitoring requirement due to the permittee's use of a copper sulfate solution in one or more tanks to control for certain diseases. Since copper sulfate is still used at the aquarium, monitoring for copper has been maintained in this permit. The marine water quality criteria for total copper are 3.1 ug/l (chronic) and 4.8 ug/l (acute). During the monitoring period, total copper has ranged from 2.4 to 113.1 ug/l, with an average of 15.2 ug/l.

In order to determine whether the discharge levels of total copper would cause or contribute to surface water quality violations, an assessment of the dilution available in Boston Harbor was made in the 2007 permit. Modeling has been conducted on the tidal exchange experienced in Boston Harbor by Signell and Butman (1992)[2]. The authors used a box model, which is a hydrodynamic model to describe flushing dynamics between Massachusetts Bay and Boston Harbor. As described in Kelly (1998)[3], this modeling showed that the volume of water exchanged during tidal mixing represented an annual average of 3500 to 4300 m^3/sec. The lower figure is equivalent to about 123,500 cfs or 79,840 MGD. In comparison to tidal exchange, the average freshwater flow to the entire harbor was 37 m^3/sec, or about 1300 cfs. Thus, the available dilution is dominated by the tidal exchange. It is assumed that the Inner Harbor, where NEA's discharge is located, experiences a moderate amount of the estimated 79,840 MGD of tidal flushing that occurs in the main harbor. With the conservative assumption that the area of NEA's discharge receives only 1% of this tidal exchange, or about 800 MGD, NEA's maximum daily discharge amount of 150,000 GPD or 0.15 MGD, would still be diluted about 5333 times (800/0.15). With this magnitude of available dilution, there is not a reasonable potential that the discharge of copper will cause or contribute to a water quality violation.

The 2007 permit required the permittee to evaluate its use of copper containing compounds, including copper sulfate and Cupramine and to consider ways to reduce the discharge of copper to the receiving water. Copper sulfate remains the most consistently effective method and industry standard for elimination of protozoal parasites of fish, and it remains in use at NEA. The permittee evaluated the potential of hyposalinity treatment rather than copper treatment during a parasite outbreak in its Giant Ocean Tank in 2011, but found it to be ineffective and it resulted in significant fish mortality. The permittee has been using the antiprotozoal drug "Chloroquine" as an alternative to copper compounds during quarantine of fish, and is optimistic that this could be used as a substitute for copper during treatment of larger tank systems. The permittee expects to use Chloroquine if and when it experiences another parasite outbreak in a large system, and would at that time evaluate its practicality, safety, and efficacy. This evalution would be consistent with Part I.A.4.d of the permit that requires the permittee to periodically evaluate the use of less toxic chemicals in its operations.

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[2] Signell, R.P. Butman, B. (1992) Modeling tidal exchange and dispersion in Boston . Harbor. J. Geophysical Resources 97:15191-15606

[3] Kelly, J.R. (1988) Quantification and potential role of ocean nutrient loading to Boston Harbor, MA Marine Ecology Progress Series, Vol. 173: 53-65, 1998

Total Residual Chlorine (TRC)

Sodium hypochlorite is added to the outlet pipe of the sump to control bacteria and non-native organisms. The use of hypochlorite in individual tanks for disinfection purposes has been discontinued. The TRC limit was limited in the 2007 permit at a monthly average and daily maximum of 1.0 mg/l. The permittee injects the hypochlorite solution at the sump in order to maintain the target level of 1.0 mg/l at the discharge point of the sump, in order to sufficiently disinfect the discharge.

During the monitoring period, the effluent TRC has averaged 0.42 mg/l with a high reading of 10 mg/l. There were 5 effluent violations during this period. The permittee reported that the reading of 10 mg/l in June of 2012 was a result of a valve failure that resulted in an elevated TRC level in a secondary containment tank which was not effectively neutralized before being released into the main sump. Since that incident, the permittee has instituted a Standard Operating Procedure (SOP) in the event of a chlorine spill which will prevent the reoccurrence of such an event. This SOP explains steps that employees would need to take relative to containing the spill, dechlorinating when necessary, and confirming by on-site lab testing that the residual chlorine level in the secondary containment is below 1.0 mg/l.

The marine water quality criteria for TRC are 7.5 ug/l for the chronic and 13 ug/l for the acute. EPA has made a determination that the instream TRC criteria will be met based on the dilution available for this discharge, as noted in the copper discussion above. In addition, as the effluent travels the approximately 300 foot length of the discharge pipe, there would be some level of degradation expected in the TRC levels prior to discharging to Boston Inner Harbor. Therefore, the permit limit for TRC has been maintained at 1.0 mg/l, as a monthly average. The daily maximum limit for TRC of 1.0 mg/l has been maintained to assure that the monthly average level is consistently kept below at or below 1.0 mg/l.

Whole Effluent Toxicity

Whole effluent toxicity (WET) testing is conducted to assess whether certain effluents, often containing potentially toxic pollutants, are discharged in a combination which produces a toxic amount of pollutants in a receiving water. Therefore, toxicity testing may be used in conjunction with pollutant specific control procedures to control the discharge of toxic pollutants.

There are two specific sources of legal authority which explain how regulatory authorities have the legal basis for establishing toxicity testing requirements and toxicity-based permit limits in NPDES permits. Sections 402(a)(2) and 308(a) of the CWA provide EPA and States with the authority to require toxicity testing data. Section 308 specifically describes biological monitoring methods as techniques which may be used to carry out objectives of the Act. Under certain State narrative water quality standards, and

Sections 301, 303 and 402 of the CWA, EPA and the States may establish toxicity-based limits to implement the narrative "no toxics in toxic amounts".

The regulations at 40 CFR Part 122.44(d)(ii) state, "When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution...(including) the sensitivity of the species to toxicity testing..." In the previous permit, EPA and MassDEP had determined that the composition of this effluent was such that WET testing was required to evaluate and address any potential water quality impacts. MassDEP, in its "*Implementation Policy for the Control of Toxic Pollutants in Surface Waters*" (February 23, 1990), sets forth toxicity limits according to dilution factors based on perceived risk. Results of these toxicity tests may demonstrate compliance with the Massachusetts SWQS.

Based on regulations at 40 CFR 122.44(d)(1) and the MA SWQS [(314 CMR 4.05(5)(e)], NPDES permits must include limitations for WET when there is reasonable potential for discharges to cause or contribute pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife. The method recommended in the *Technical Support Document for Water Quality-based Toxics Control* (TSD) combines knowledge of effluent variability as estimated by a coefficient of variation (CV) with uncertainty due to the number of data (n) to project an estimated maximum concentration for the effluent using a reasonable potential multiplying factor. An evaluation of reasonable potential by the TSD method requires that the projected toxicity be compared to an applicable criterion using a toxic units (TU) approach. This approach uses an effect concentration (EC) in its analysis. One type of EC is the LC_{50}, which is the concentration of effluent which causes mortality to 50% of the test organisms. Toxicity involves an inverse relationship to the effect concentration (EC), in other words, the lower the EC, the higher the toxicity of the effluent. It is more understandable to translate concentration-based toxicity measurements into toxic units (TUs), overcoming the potential confusion involving the inverse relationship. The number of toxic units in an effluent is defined as 100 divided by the EC measured (i.e. $TU = 100/LC_{50}$). For example, an effluent with an LC_{50} of 50% effluent is an effluent containing 2 TUs (100/50 = 2).

The TSD recommends an acute criterion of 0.3 toxic units (TUs) and a chronic criterion of 1.0 TUs. Interpretation of the narrative criterion in *Implementation Policy for the Control of Toxic Pollutants in Surface Waters* recommends an acute criterion of 0.3 toxic units and a chronic criterion in which the no observed effect concentration is greater than or equal to the receiving water concentration. Depending on available dilution, the end of pipe limits range from 1.0 to 2.0 toxic units.

In its 2001 permit, the permittee was required to conduct acute toxicity tests twice per year using 2 species, the Mysid Shrimp, *Mysidopsis bahia* and the Inland Silverside, *Menidia beryllina*. This testing was required to assess whether the permittee's use of various chemicals and medications would result in the effluent exhibiting any toxic effects. There was an LC_{50} limit of 100% established in order to ensure that there were no effects to organisms in the vicinity of the discharge and a reporting requirement for

the acute no effect concentration level (A-NOEC) for both species. The LC_{50} is defined as the concentration of the effluent which causes mortality to 50% of the test organisms. When this permit was reissued in 2007, the WET testing requirement was reduced to once per year with 2 species based on the previous WET testing results. Since 2002, all WET testing has resulted in LC_{50} values of >100% for both species, with the exception of a 35% value in 2002 and a 6.25% value in 2003, both for the Mysid shrimp.

The permittee has requested that WET testing be eliminated from this permit. In consideration of this request, EPA has conducted a Reasonable Potential (RP) Analysis using the method recommended by the TSD and considering worst-case conditions. The results of this RP analysis are discussed below.

Although there is no specific dilution factor calculated for this discharge, the estimated dilution factor of 5333 was discussed above, which was based on previous hydrodynamic modeling results. To be conservative, a dilution factor of 100 was used in these calculations. For discharges with a dilution factor of 100 or less, the end-of-pipe effluent limit established in the Toxics Policy for acute effects in the mixing zone is 1.0 toxic unit (TU), or an LC_{50} of 100%. To evaluate whether the NEA discharge has reasonable potential to exceed this level of toxicity, EPA converted the WET test results for the facility based on the definition of a toxic unit, defined as 100 divided by the LC_{50} and the results are as follows.

Monitoring Period End Date	LC_{50} Static 48 Hr Acute Inland silverside	LC_{50} Static 48Hr Acute Mysid shrimp	Toxic Units Equivalent (Silverside/Shrimp)
	%	%	T.U.
Feb 2005	100	100	1.0 / 1.0
August 2005	100	100	1.0 / 1.0
May 2006	100	100	1.0 / 1.0
Sept 2006	100	100	1.0 / 1.0
March 2007	100	100	1.0 / 1.0
Sept 2007	100	100	1.0 / 1.0
Sept 2008	100	100	1.0 / 1.0
August 2009	100	100	1.0 / 1.0
Sept 2010	100	100	1.0 / 1.0
August 2011	100	100	1.0 / 1.0

Using the toxic unit equivalents calculated above and consistent with the approach used in the TSD, EPA determined the 95^{th} and 99^{th} percentile projected effluent concentrations to both be 0 (zero) TU.

Based on the lack of toxicity in the effluent and the projected effluent toxic units calculated above, EPA has determined that WET testing is no longer routinely required for this facility in order to fully characterize water quality impacts and to ensure that discharges from the facility do not exceed Massachusetts WQSs for toxic pollutants when

discharged in combination. For a facility with a dilution factor greater than 1,000:1, EPA's *Technical Support Document for Water Quality-based Toxics Control* (1991) recommends acute toxicity testing. Therefore, EPA has determined that a one time, acute WET screening for the same two species shall be required during the fourth year of the reissued permit in order to confirm that the discharge does not have a toxic effect on the receiving water.

VII. Essential Fish Habitat Determination (EFH)

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 Services (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, may adversely impact any 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 C.F.R. § 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.

As described in Section I of this Fact Sheet, NEAC has applied for reissuance of the NPDES Permit for the NEA on February 3, 2012. With limitations, the permit allows NEA to discharge chlorinated tank and aquaria water, filter backwash water, and steam condensate to Inner Boston Harbor. EPA intends to reissue the facility's NPDES permit for this discharge. Thus, NEA will continue to discharge these waters to Inner Boston Harbor through Outfall 001. This outfall's characteristics are described earlier in this Fact Sheet.

EFH 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. The following is a list of the EFH species and applicable lifestage(s) for Massachusetts Bay, which includes Inner Boston Harbor:

Species	Eggs	Larvae	Juveniles	Adults
Atlantic cod (*Gadus morhua*)	X	X	X	X
Haddock (*Melanogrammus aeglefinus*)	X	X		
pollock (*Pollachius virens*)	X	X	X	X
whiting (*Merluccius bilinearis*)	X	X	X	X
Red hake (*Urophycis chuss*)	X	X	X	X
white hake (*Urophycis tenuis*)	X	X	X	X

winter flounder (*Pseudopleuronectes americanus*)	X	X	X	X
yellowtail flounder (*Pleuronectes ferruginea*)	X	X	X	X
windowpane flounder (*Scopthalmus aquosus*)	X	X	X	X
American plaice (*Hippoglossoides platessoides*)	X	X	X	X
ocean pout (*Macrozoarces americanus*)	X	X	X	X
Atlantic halibut (*Hippoglossus hippoglossus*)	X	X	X	X
Atlantic sea scallop (*Placopecten magellanicus*)	X	X	X	X
Atlantic sea herring (*Clupea harengus*)		X	X	X
long finned squid (*Loligo pealei*)	n/a	n/a	X	X
short finned squid (*Illex illecebrosus*)	n/a	n/a	X	X
Atlantic butterfish (*Peprilus triacanthus*)	X	X	X	X
Atlantic mackerel (*Scomber scombrus*)	X	X	X	X
Summer flounder (*Paralicthys dentatus*)				X
scup (*Stenotomus chrysops*)	n/a	n/a	X	X
black sea bass (*Centropristus striata*)	n/a		X	X
surf clam (*Spisula solidissima*)	n/a	n/a	X	X
bluefin tuna (*Thunnus thynnus*)			X	X

A review of the relevant essential fish habitat information provided by NMFS indicates that EFH has been designated for 23 managed species within the NMFS boundaries encompassing Massachusetts Bay. It is possible that a number of these species utilize these receiving waters for spawning, while others are present seasonally.

Based on the relevant information examined, EPA finds that adoption of the draft permit will satisfy EFH requirements. The discharges from this facility are not expected to adversely impact the EFH directly or indirectly. As described in Section VI of this Fact Sheet, the dilution available to this discharge along with the effluent limits are expected to be protective of the aquatic species in Inner Boston Harbor and to result in compliance with applicable Federal and State water quality standards. During the public comment period, EPA has provided a copy of the Draft Permit and Fact Sheet to NMFS for consultation with NMFS under Section 305(b)(2) of the Magnuson-Stevens Act for EFH.

VIII. Endangered Species Act

Section 7(a) of the Endangered Species Act (ESA) of 1973, as amended grants authority to and imposes requirements upon Federal agencies regarding endangered or threatened species of fish, wildlife, or plants ("listed species") and habitat of such species that has been designated as critical (a "critical habitat"). The ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to insure that any action it authorizes, funds, or carries out, in the United States or upon the high seas, is not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of critical habitat. The U.S. Fish and Wildlife Service (USFWS) typically administers Section 7 consultations for bird, terrestrial, and freshwater aquatic species. The National Marine Fisheries Service (NMFS) typically administers Section 7 consultations for marine species and anadromous fish.

EPA has reviewed the federal endangered and threatened species of fish, wildlife, and plants to see if any such listed species might potentially be impacted by the reissuance of this NPDES permit. The review has focused primarily on marine mammals, sea turtles and anadromous fish since the discharge is into Inner Boston Harbor. Based on the normal distribution of these species, it is highly unlikely that they would be present in the vicinity of this discharge. Furthermore, effluent limitations and other permit conditions which are in place in this draft permit should preclude any adverse effects should there be any incidental contact with listed species either in Boston Harbor.

The proposed effluent limits in the draft permit are sufficiently stringent to assure that WQS will be met for aquatic life protection and for all species, including endangered and threatened species. During the public comment period, EPA has provided a copy of the Draft Permit and Fact Sheet to both NMFS and USFWS.

IX. Monitoring and Reporting

The permit's monitoring requirements have been established to yield data representative of the facility's pollutant discharges under the authority of Sections 308(a) and 402(a)(2) of the CWA and consistent with 40 C.F.R. §§ 122.41 (j), 122.43(a), 122.44(i) and 122.48. The monitoring program in the permit specifies routine sampling and analysis which will provide ongoing, representative information on the levels of regulated constituents in the wastewater discharge streams. The approved analytical procedures are found in 40 C.F.R. Part 136 unless other procedures are explicitly required in the permit.

The Permittee is obligated to monitor and report sampling results to EPA and the MassDEP within the time specified within the permit. Timely reporting is essential for the regulatory agencies to expeditiously assess compliance with permit conditions.

The Draft Permit includes new provisions related to 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 U.S. EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 C.F.R. § 122.41 and § 403.12. NetDMR is accessed from the following url: http://www.epa.gov/netdmr. Further information about NetDMR, including contacts for EPA Region 1, is provided on this website.

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. To participate in upcoming trainings, visit http://www.epa.gov/netdmr for contact information for Massachusetts.

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" request 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 have otherwise been required to begin using NetDMR. Opt-outs become effective upon the date of written approval by EPA and are valid for twelve (12) months. 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. Hard copies of DMRs must be postmarked no later than the 15th day of the month following the completed reporting period.

X. State Certification Requirements

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving waters certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of MassDEP have reviewed the draft permit and advised EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR 124.53 and expects that the draft permit will be certified.

XI. Public Comment Period, Public Hearing, and Procedures for Final Decision

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 the U.S. EPA, Massachusetts Office of Ecosystem Protection (CIP), 1 Congress Street, Suite 1100, Boston, Massachusetts 02114-2023. 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 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 the draft permit the Regional Administrator 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 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. Within 30 days following the notice of the final permit decision, any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of 40 CFR 124.74, 48 Fed. Reg. 14279-14280 (April 1, 1983).

XII. EPA & 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 the EPA and MassDEP contacts below:

George Papadopoulos, Industrial Permits Branch
5 Post Office Square - Suite 100 - Mailcode OEP 06-1
Boston, MA 02109-3912
Papadopoulos.george@epa.gov
Telephone: (617) 918-1579 FAX: (617) 918-1505

Cathy Vakalopoulos, Massachusetts Department of Environmental Protection

Surface Water Discharge Permit Program
1 Winter Street, Boston, Massachusetts 02108
catherine.vakalopoulos@state.ma.us
Telephone: (617) 348-4026; FAX: (617) 292-5696

May 23, 2013
Date

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

FIGURE 1 - FACILITY LOCATION INTAKE AND OUTFALL LOCATION

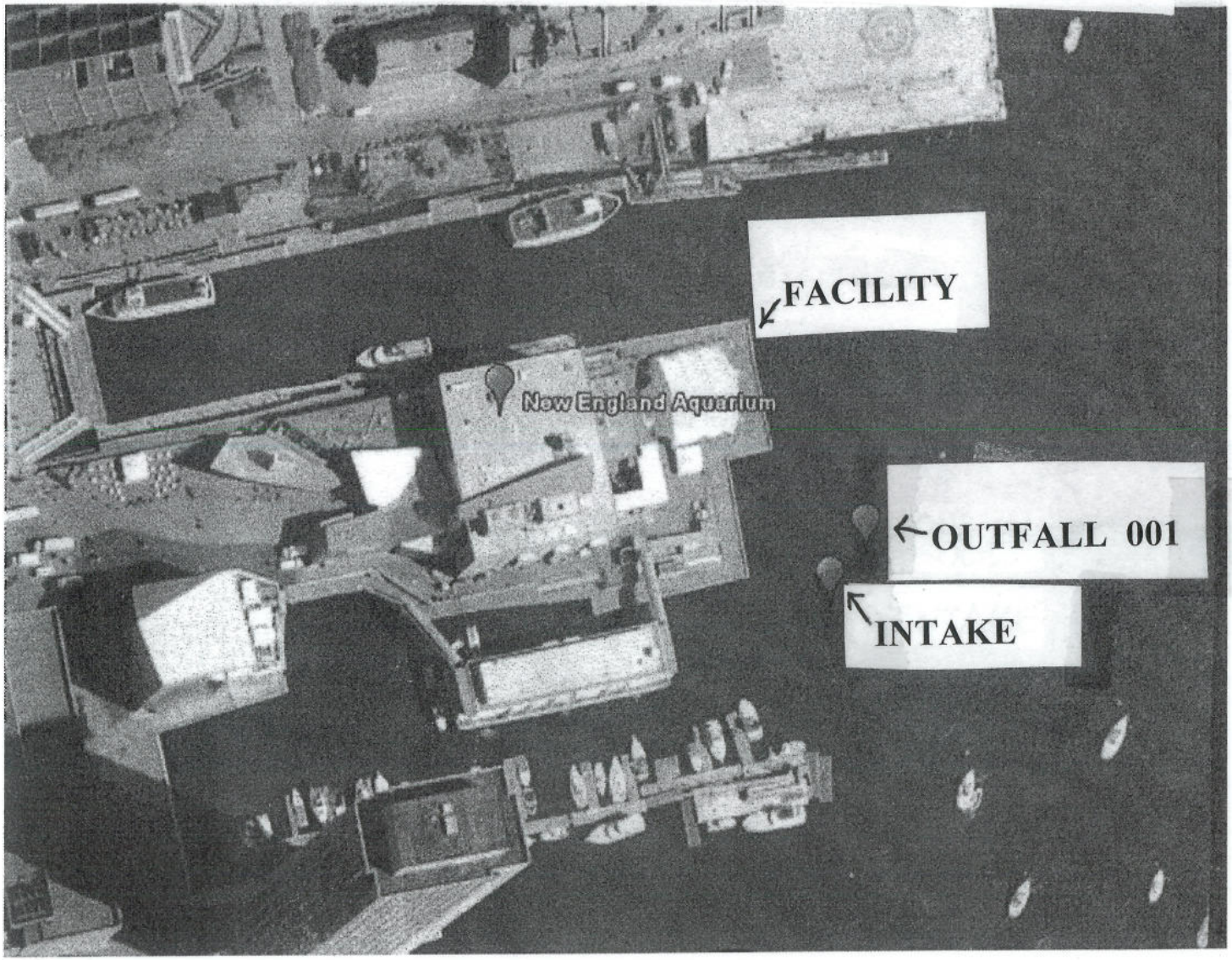


FIGURE 2

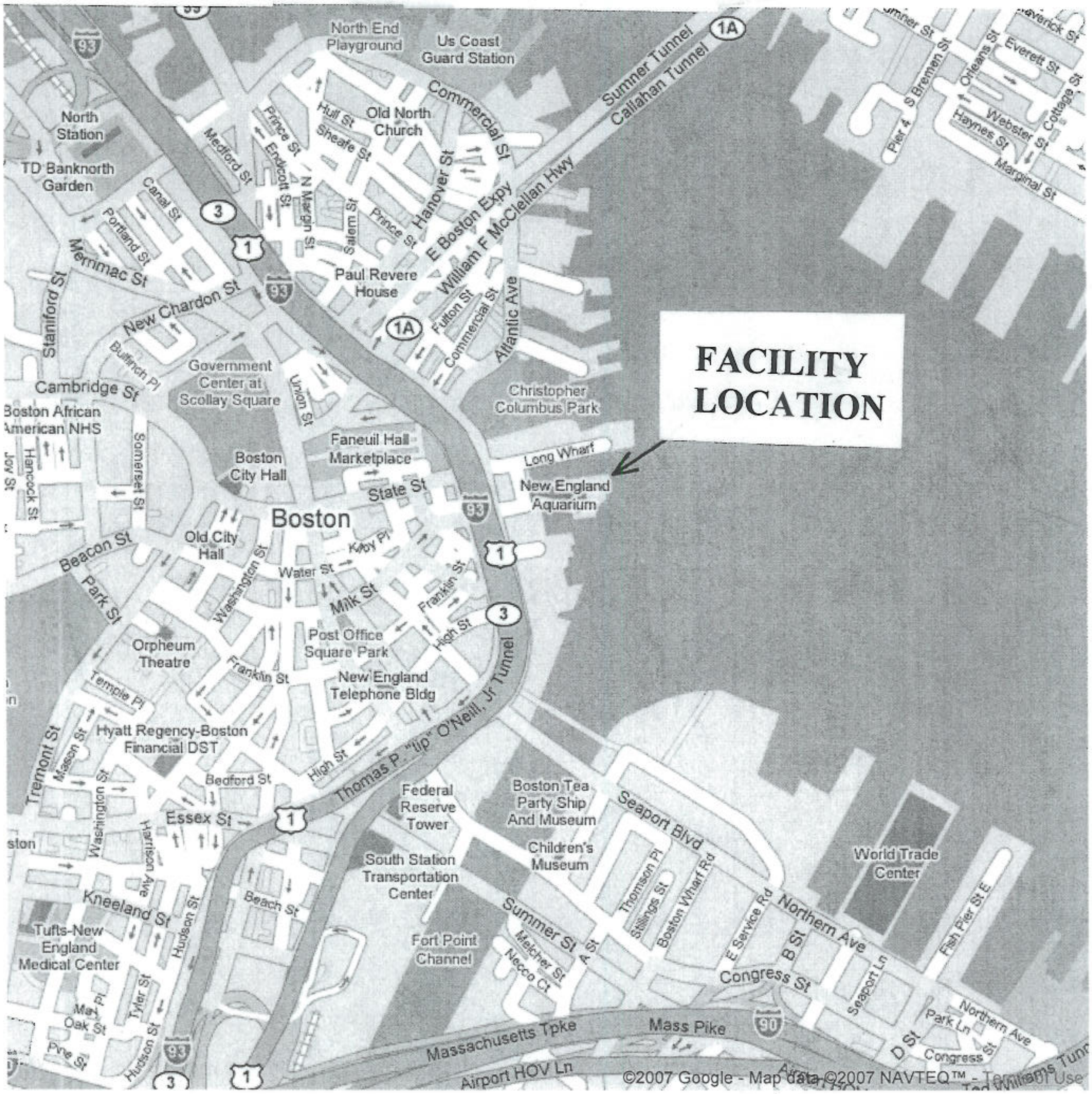
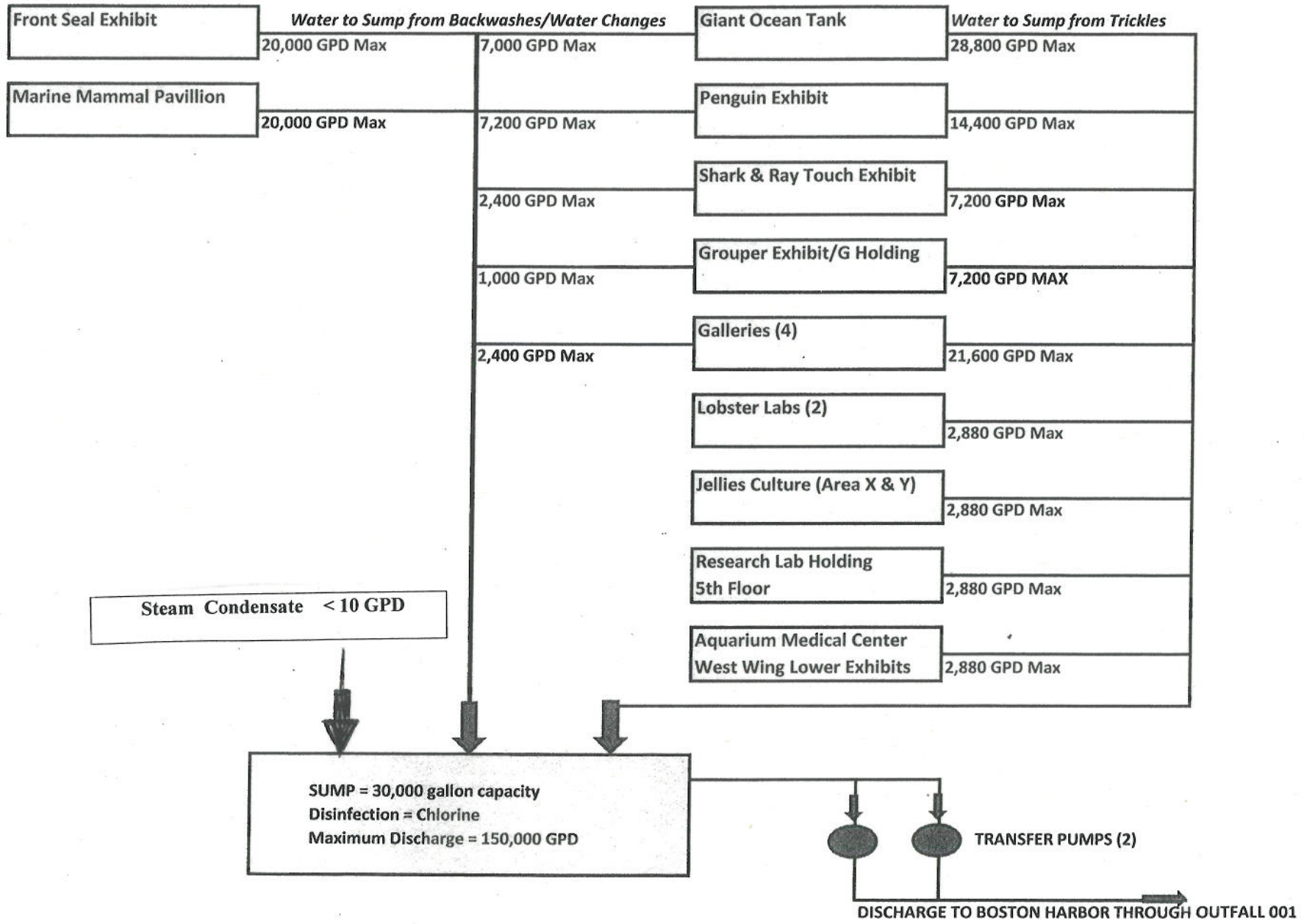

FACILITY
LOCATION
North End
Playground
Us Coast
Guard Station
Commercial St
Sumner Tunnel
Callahan Tunnel
1A
North
Station
TD Banknorth
Garden
Old North
Church
Hull St
Sheafe St
Prince St
Endicott St
Medford St
N Margin St
Salem St
Hanover St
E Boston Expy
William F McClellan Hwy
Canal St
Portland St
Merrimac St
Staniford St
New Chardon St
Paul Revere
House
Fulton St
Atlantic Ave
Bulfinch Pl
Government
Center at
Scollay Square
Union St
Cambridge St
Christopher
Columbus Park
Faneuil Hall
Marketplace
Long Wharf
New England
Aquarium
Boston
City Hall
State St
Somerset St
Hancock St
Joy St
Boston
Old City
Hall
Beacon St
Kilby Pl
Water St
Milk St
Franklin St
Washington St
Park St
High St
Post Office
Square Park
Orpheum
Theatre
Franklin St
New England
Telephone Bldg
Temple Pl
Thomas P. "Tip" O'Neill, Jr Tunnel
Hyatt Regency-Boston
Financial DST
Tremont St
Mason St
Bedford St
Essex St
Federal
Reserve
Tower
Boston Tea
Party Ship
And Museum
Seaport Blvd
Children's
Museum
South Station
Transportation
Center
Harrison Ave
Kneeland St
Hudson St
Beach St
Thomson Pl
Stillings St
Boston Wharf Rd
World Trade
Center
Tufts-New
England
Medical Center
Fort Point
Channel
Summer St
Melcher St
Necco Ct
A St
E Service Rd
Northern Ave
B St
Seaport Ln
Fish Pier St E
Congress St
Tyler St
Oak St
Pine St
Massachusetts Tpke
Mass Pike
Airport HOV Ln
D St
Park Ln
Northern Ave
Pier 4
S Bremen St
Orleans St
Everett St
Webster St
Haynes St
Cottage St
Marginal St
©2007 Google - Map data ©2007 NAVTEQ™

Figure 3 – Water Flow Schematic



Attachment A

Outfall 001 Discharge Monitoring Data

NEW ENGLAND AQUARIUM - MA0003123 Outfall Serial Number 001										
Monitoring Period End Date	Flow, total		Copper, Total		pH		TSS			
	gal/day	gal/day	mg/l	mg/l	SU	SU	mg/l	mg/l	lbs/ day	lbs/ day
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Min	Max	Monthly Avg	Daily Max	Monthly Avg	Daily Max
Jan-09	26998	35481	12	12	7.85	8.03	4.25	6.09	18.9	20.6
Feb-09	24752	30079	4.1	4.1	7.81	8.01	2.29	3.35	11.1	13.3
Mar-09	25380	36089	6.8	6.8	7.82	7.98	1.5	2.65	7.1	8.8
Apr-09	28155	36211	4.4	4.4	7.81	7.96	4.21	4.64	17.95	15.4
May-09	25579	51116	4.7	4.7	7.81	8.04	1.09	2.34	5.15	5.5
Jun-09	26575	33288	3.3	3.3	7.98	7.82	3.03	3.88	13.7	14
Jul-09	29832	42896	5.4	5.4	7.88	7.98	3.41	5.79	13.7	16.2
Aug-09	35675	55574	5.6	5.6	7.89	7.98	3.95	8.25	13.3	17.8
Sep-09	34492	51826	5.8	5.8	7.82	8	3.1	6.09	10.8	14.1
Oct-09	32286	43646	4.5	4.5	7.86	8.08	2.23	3.12	8.3	8.6
Nov-09	30049	43795	4.8	4.8	7.93	8.05	2.84	4.1	11.35	11.6
Dec-09	30515	35463	17.1	22.2	7.85	8.01	2.46	3.16	9.7	10.7
Jan-10	27661	35437	17.1	22.2	7.85	8.01	2.24	3.16	9.7	10.7
Feb-10	28109	42244	10.3	10.3	7.83	7.98	1.93	3.27	8.25	9.3
Mar-10	26538	35857	13.9	13.9	7.72	7.95	1.68	2.27	7.6	7.6
Apr-10	30770	38626	7.5	7.5	7.68	7.98	2.18	3.47	8.5	10.8
May-10	30260	41702	11.9	11.9	7.73	7.92	1.51	3.54	6.15	10.2
Jun-10	30842	64819	16.8	16.8	7.63	7.99	1.73	5.5	6.75	10.2
Jul-10	34913	49099	18.6	18.6	7.89	8.01	4.43	6.34	15.25	15.5
Aug-10	33325	49916	2.4	2.4	7.83	7.96	2.2	5.3	8.05	12.8
Sep-10	35965	54230	64.05	97	7.9	8.02	1.8	4.9	6.2	10.9
Oct-10	49989	76393	113.1	113.1	7.77	7.93	1.73	3.89	4.15	6.1
Nov-10	48213	54436	18	18	7.86	7.99	4.11	4.64	1	1
Dec-10	40950	53750	5.3	5.3	7.9	8	3.75	4.93	1.1	1.1
Jan-11	32681	52573	7.5	7.5	7.87	8.02	10.89	17.53	4	4
Feb-11	24946	31318	10.45	11.2	7.9	8.02	0.54	0.8	2.6	3.1
Mar-11	29848	43198	4.8	4.8	7.85	8.01	3.7	10.1	15.1	28
Apr-11	36033	46561	2.4	2.4	7.8	8	0.961	2.13	3.2	5.5
May-11	34406	55395	18.8	18.8	7.83	7.94	1.3	2.1	4.55	4.7
Jun-11	45548	70048	35.9	38	7.72	8.07	9.01	17.87	23.75	30.6
Jul-11	40023	57454	9.7	9.7	7.78	7.89	1.3	2.01	4.05	4.2
Aug-11	37634	46124	4.8	4.8	7.75	8.03	2.83	5.65	9.05	14.7
Sep-11	36017	43686	8	8	7.77	7.9	0.9	1.09	3	3

Oct-11	38348	42300	15.6	15.6	7.87	7.92	0.54	0.84	1.7	2.4
Nov-11	35566	40654	28.3	28.3	7.84	7.99	1.3	1.6	4.4	5
Dec-11	35744	53269	32	32	7.84	7.99	0.625	1.42	2.1	3.2
Jan-12	42199	50894	15.8	15.8	7.79	8	1.3	3.1	3.7	7.2
Feb-12	41585	50734	9	9	7.87	7.93	1.69	3.12	4.9	7.4
Mar-12	31048	35039	6.4	6.4	7.77	7.96	0.711	1.05	2.75	3.6
Apr-12	26780	29207	6.6	6.6	7.83	7.95	0.11	0.12	0.5	0.5
May-12	25948	37511	26.6	26.6	7.82	8.07	1.1	1.6	5.15	5.7
Jun-12	44298	52115	26.9	26.9	7.8	8.08	0.95	2.2	2.65	5.1
Jul-12	33143	41593	5.7	5.7	7.78	8.07	2.04	2.56	7.4	7.4
2007 Permit Limits	150,000 gal/day	Report gal/day	Report mg/l	Report mg/l	6.5 min	8.5 max	30 mg/l	60 mg/l	38 lbs/day	75 lbs/day
Minimum	24752	29207	2.4	2.4	7.63	7.82	0.11	0.12	0.5	0.5
Maximum	49989	76393	113.1	113.1	7.98	8.08	10.89	17.9	23.8	30.6
Average	33479	45852	15.2	16.2	7.82	7.99	2.45	4.22	7.63	9.49
Permit Violations	0	----	----	----	0	0	0	0	0	0
Measurements	43	43	43	43	43	43	43	43	43	43

NEW ENGLAND AQUARIUM - MA0003123

Outfall Serial Number 001

Monitoring Period End Date	Total Residual Chlorine		Fecal coliform		Enterococus		Whole Effluent Toxicity Testing	
	mg/l	mg/l	cfu/ 100 ml	cfu/ 100 ml	cfu/ 100 ml	cfu/ 100 ml	A-NOEC, %	LC50, %
	Monthly Average	Daily Maximum	Monthly Average	Daily Maximum	Minimum	Maximum		
							----	----
Jan-09	0.51	**1.15**	<4	<4	<10	<10	----	----
Feb-09	0.285	0.36	<4	<4	<10	<10	----	----
Mar-09	0.372	0.57	<4	<4	<10	<10	----	----
Apr-09	0.668	0.97	<4	<4	<10	<10	----	----
May-09	0.67	**1.54**	<4	<4	<10	<10	----	----
Jun-09	0.78	0.91	<4	<4	<10	<10	----	----
Jul-09	0.67	0.87	<4	<4	<10	<10	----	----
Aug-09	0.31	0.66	<4	<4	<10	<10	----	----
Sep-09	0.58	0.76	<4	<4	<10	<10	100	100
Oct-09	0.7	0.91	<4	<4	<10	<10	----	----
Nov-09	0.846	0.93	<4	<4	<10	<10	----	----
Dec-09	0.624	0.95	<4	<4	<10	<10	----	----
Jan-10	0.57	0.95	<4	<4	<10	<10	----	----
Feb-10	0.48	0.88	<4	<4	<10	<10	----	----
Mar-10	0.16	0.22	<4	<4	<10	<10	----	----
Apr-10	0.39	**1.05**	<4	<4	<10	<10	----	----
May-10	0.12	0.37	<4	<4	20	20	----	----
Jun-10	0.29	0.52	<4	<4	<10	<10	----	----
Jul-10	0.35	0.88	<4	<4	<10	<10	----	----
Aug-10	0.26	0.58	54	64	<10	<10	----	----
Sep-10	0.266	0.43	122	240	<10	41	100	100
Oct-10	0.26	0.37	6	8	<10	<10	----	----
Nov-10	0.146	0.4	<4	<4	<10	<10	----	----
Dec-10	0.42	0.98	<4	<4	<10	<10	----	----
Jan-11	0.32	0.6	<4	<4	<10	<10	----	----
Feb-11	0.414	0.85	8	8	<10	<10	----	----
Mar-11	0.18	0.35	8	8	<10	<10	----	----
Apr-11	0.317	0.51	<10	<10	<4	<4	----	----
May-11	0.24	0.55	<4	<4	<10	<10	----	----
Jun-11	0.19	0.52	<4	<4	<10	<10	----	----
Jul-11	0.23	0.44	<4	<4	<10	<10	----	----
Aug-11	0.35	0.65	<4	<4	<10	<10	----	----
Sep-11	0.175	0.28	<4	<4	<10	<10	100	100
Oct-11	0.33	0.5	<4	<4	<10	<10	----	----
Nov-11	0.28	0.6	<4	<4	<10	<10	----	----

Dec-11	0.27	0.62	<4	<4	<10	<10	----	----
Jan-12	0.38	0.72	<4	<4	<10	<10	----	----
Feb-12	0.5	**1.67**	<10	<10	<4	<4	----	----
Mar-12	0.36	0.89	<4	<4	<100	<100	----	----
Apr-12	0.335	0.52	<4	<4	<10	<10	----	----
May-12	0.145	0.56	4	4	<10	<10	----	----
Jun-12	**2.09**	**10.05**	<10	<10	<4	<4	----	----
Jul-12	0.12	0.44	<4	<4	<10	<10	----	----
							----	----
2007 Permit Limits	1.0 mg/l	1.0 mg/l	200 cfu/ 100 ml	400 cfu/ 100 ml	Report	Report	Report	100 %
Minimum	0.12	0.22	<4	<4	<4.	<4	100	100
Maximum	2.1	10.0	122	240	20	41	100	100
Average	0.42	0.92	4.7	7.7	0.47	1.42	100	100
Permit Violations	1	5	0	0	----	----	0	0
Measurements	43	43	43	43	43	43	3	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 SECTION 301 AND 402 OF THE CLEAN WATER ACT (THE "ACT"), AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE ACT.

DATE OF NOTICE: June 12, 2013

PERMIT NUMBER: **MA0003123**

PUBLIC NOTICE NUMBER: MA-014-13

NAME AND MAILING ADDRESS OF PERMITTEE:

New England Aquarium Corporation
Central Wharf
Boston, MA 02110

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

New England Aquarium
Central Wharf
Boston, MA 02110

RECEIVING WATER: **Boston Inner Harbor**
{USGS Hydrologic Code #01090001 – Boston Harbor Watershed (70)}

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 that State Water Quality Standards and provisions of the Clean Water Act will be met. 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 or a statement of basis (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:

George Papadopoulos, US EPA
5 Post Office Square
Suite 100 (OEP 06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1579

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 11, 2013** to the U.S. EPA, George Papadopoulos, 5 Post Office Square, Suite 100, Mailcode OEP 06-1, Boston, Massachusetts 02109-3912. Any person, prior to such date, may submit a request in writing to EPA and the MassDEP 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 forty five 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 AND APPEALS:

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. Within 30 days following the notice of the final permit decision any interested person may submit petition to the Environmental Appeals Board to reconsider or contest the final decision.

David Ferris, Director
MASACHUSETTS WASTE WATER PROGRAM
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

Ken Moraff, Acting Director
OFFICE OF ECOSYSTEM PROTECTION
ENVIRONMENTAL PROTECTION AGENCY