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"),

Massachusetts Maritime Academy
101 Academy Drive
Buzzards Bay, MA 02532

is authorized to discharge from the facility located at

Massachusetts Maritime Academy
101 Academy Drive
Buzzards Bay, MA 02532

to receiving water named

Cape Cod Canal
Buzzards Bay Watershed
USGS Hydrologic code: 01090002

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 immediately following 60 days after signature. [1]

This permit expires at midnight, five years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on February 25, 2011.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Marine Acute Toxicity Test Protocol, July 2012, 10 pages) and **Part II (**NPDES Part II Standard Conditions, April 2018, 21 pages).

Signed this day of , 2022.

KENNETH MORAFF Digitally signed by KENNETH MORAFF Date: 2022.05.04 17:05:04 -04'00'

Ken Moraff, Director
Water Division
Environmental Protection Agency
Region 1
Boston, MA

1 Procedures for appealing EPA's Final Permit decision may be found at 40 CFR § 124.19.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent and chiller water through Outfall Serial Number 001 to the Cape Cod Canal. The discharge shall be limited and monitored as specified below; the receiving water and the influent shall be monitored as specified below.

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Rolling Average Effluent Flow [5]	77,000 GPD	---	---	Continuous	Recorder
Effluent Flow [5]	Report GPD	---	Report GPD	Continuous	Recorder
BOD_5	30 mg/L	45 mg/L	Report mg/L	1/week	Composite
BOD_5 Removal	≥ 85 %	---	---	1/month	Calculation
TSS	30 mg/L	45 mg/L	Report mg/L	1/week	Composite
TSS Removal	≥ 85 %	---	---	1/month	Calculation
pH Range [6]	6.5 - 8.5 S.U.			1/day	Grab
Fecal Coliform [7]	14 cfu/100 mL	---	43 cfu/100 mL	1/week	Grab
Enterococcus [7]	35 cfu/100 mL	---	130 cfu/100 mL	1/week	Grab
Total Residual Chlorine[8]	---	---	1.0 mg/L	3/Day	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/quarter	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Total Kjeldahl Nitrogen[9]	---	---	Report mg/L	1/quarter	Composite
Nitrate + Nitrite[9]	---	---	Report mg/L	1/quarter	Composite
Total Nitrogen[9]	---	---	Report mg/L	1/quarter	Calculation
Perfluorohexanesulfonic acid (PFHxS)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[10]	---	---	Report ng/L	1/quarter	Composite
Whole Effluent Toxicity (WET) Testing[11,12]					
LC_{50}	---	---	≥ 50 %	1/year	Composite
Salinity	---	---	Report ppt	1/year	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/year	Composite
Total Cadmium	---	---	Report mg/L	1/year	Composite
Total Copper	---	---	Report mg/L	1/year	Composite
Total Nickel	---	---	Report mg/L	1/year	Composite
Total Lead	---	---	Report mg/L	1/year	Composite
Total Zinc	---	---	Report mg/L	1/year	Composite
Total Organic Carbon	---	---	Report mg/L	1/year	Composite

Ambient Characteristic[13]	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Salinity	---	---	Report ppt	1/year	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/year	Grab
Total Cadmium	---	---	Report mg/L	1/year	Grab
Total Copper	---	---	Report mg/L	1/year	Grab
Total Nickel	---	---	Report mg/L	1/year	Grab
Total Lead	---	---	Report mg/L	1/year	Grab
Total Zinc	---	---	Report mg/L	1/year	Grab
Total Organic Carbon	---	---	Report mg/L	1/year	Grab
pH[14]	---	---	Report S.U.	1/year	Grab
Temperature[14]	---	---	Report °C	1/year	Grab

Influent Characteristic	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
BOD_5	Report mg/L	---	---	1/week	Composite
TSS	Report mg/L	---	---	1/week	Composite
Perfluorohexanesulfonic acid (PFHxS)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[10]	---	---	Report ng/L	1/quarter	Composite

Sludge Characteristic	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Perfluorohexanesulfonic acid (PFHxS)[15]	---	---	Report ng/g	1/quarter	Composite[16]
Perfluorononanoic acid (PFNA)[15]	---	---	Report ng/g	1/quarter	Composite[16]
Perfluorooctanesulfonic acid (PFOS)[15]	---	---	Report ng/g	1/quarter	Composite[16]
Perfluorooctanoic acid (PFOA)[15]	---	---	Report ng/g	1/quarter	Composite[16]
Perfluoroheptanoic acid (PFHpA)[15]	---	---	Report ng/g	1/quarter	Composite[16]
Perfluorodecanoic acid (PFDA)[15]	---	---	Report ng/g	1/quarter	Composite[16]

2. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated swimming pool water through Outfall Serial Number 002 to the Cape Cod Canal. The discharge shall be limited and monitored as specified below.

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Effluent Flow [17]	---	---	10,000 GPD [17]	1/discharge	Estimate
pH Range [6]	6.5 - 8.5 S.U.			1/hour	Grab
Total Residual Chlorine[8]	---	---	1.0 mg/L	1/hour	Grab
Total Copper	---	---	0.5 mg/L	1/hour	Grab

Footnotes begin on Page 6

Footnotes:

1. All samples shall be collected in a manner to yield representative data. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month at the locations specified below:

Parameter	Sampling Location
BOD_5 and TSS	Influent; 24 hour composite samples shall be taken by the sampler line in the outlet pipe of the Screening Unit Effluent; 24 hour composite samples shall be taken from the line drawn from the bottom of outlet trough of the UV system
Fecal Coliform and *Enterococc*us	Grab samples shall be taken at the UV system overflow weir
TRC (when chlorinating)	Effluent TRC shall be taken as grab sample from the accessible downstream manhole (outside the plant).
Whole Effluent Toxicity	Effluent 24 hour composite samples shall be taken from the line drawn from the bottom of outlet trough of the UV system
Total Nitrogen as N, TKN Total Nitrate and Nitrite as N Total Ammonia as N	Effluent 24 hour composite samples shall be taken from the line drawn from the bottom of outlet trough of the UV system

Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented as an electronic attachment to the applicable discharge monitoring report (DMR). The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) of any additional testing above that required herein, if testing is in accordance with 40 CFR Part 136.

2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the

lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of "0" to all non-detects for that reporting period and report the average of all the results.

4. A "grab" sample is an individual sample collected in a period of less than 15 minutes.

   A "composite" sample is a composite of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.

5. Report the annual average, monthly average, and the maximum daily flow in gallons per day (GPD). The limit of 77,000 GPD is an annual average, which shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months.

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).

7. The monthly average limits for *Enterococcus* and Fecal coliform are expressed as geometric means.

8. For Outfall 001, TRC monitoring is required 3 times per day only for those days that the Permittee chlorinates its effluent in the event of the ultraviolet (UV) disinfection system being inoperable or inadequate to achieve bacterial control, or when any sand filters are being repaired. The permittee shall notify EPA and MassDEP within 24 hours of when emergency chlorination is initiated. Under such circumstances, the Permittee shall operate a flow pacing pump to feed chlorine solution to the sand filter inlet and dechlorinate the effluent prior to discharge, if necessary, to meet the TRC limit of 1.0 mg/l. For those months when there is no effluent chlorination, the Permittee must report a No Data Indicator (NODI) Code on the DMR. In Attachment E of *NPDES Permit Program Instructions for the DMRs*, a list of NODI codes is included at https://echo.epa.gov/tools/data-downloads/icis-npdes-dmr-summary.

For Outfall 002, TRC monitoring is required once per hour while discharging, including for the duration of any complete swimming pool discharge, after dechlorination. For those months that there is no discharge from this outfall, the Permittee must report a No Data Indicator (NODI) Code on the DMR.

Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time and that the reduced levels of chlorine or dechlorination chemicals occurred.

9. Total Kjeldahl nitrogen and nitrate + nitrite samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen, as follows.

   Total Nitrogen (mg/L) = Total Kjeldahl Nitrogen (mg/L) + Nitrate + Nitrite (mg/L)

   Total Nitrogen (lb/day) = [(average monthly Total Nitrogen (mg/L) * total monthly effluent flow (Millions of Gallons (MG)) / # of days in the month] * 8.34

   See Part I.F.1 for special conditions related to nitrogen.

10. Report in nanograms per liter (ng/L). This reporting requirement for the listed per- and polyfluoroalkyl substances (PFAS) parameters takes effect the first full calendar quarter following 6 months after EPA notifies the Permittee that an EPA multi-lab validated method for wastewater is available.

11. The Permittee shall conduct an annual acute toxicity test (LC50) in accordance with test procedures and protocols specified in Attachment A of this permit. LC50 is defined in Part II.E. of this permit. The Permittee shall test the Mysid Shrimp, *Americamysis bahia.* Toxicity test samples shall be collected and tests completed during the month of June. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.

12. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic or unreliable, the Permittee shall follow procedures outlined in **Attachment A**, Section IV, DILUTION WATER. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

13. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately outside of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A**. Minimum levels and test methods are specified in **Attachment A,** Part VI. CHEMICAL ANALYSIS.

14. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

15. Report in nanograms per gram (ng/g). This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following 6 months after EPA notifies the permittee that an EPA multi-lab validated method for sludge is available.

16. Sludge sampling shall be as representative as possible based on guidance found at https://www.epa.gov/sites/production/files/2018-11/documents/potw-sludge-sampling-guidance-document.pdf.

17. Periodic discharges of up to 10,000 gallons from the campus swimming pool are authorized to adjust pool water chemistry. The Permittee must notify EPA and MassDEP prior to the complete discharge of the swimming pool as specified in Part I.G.7 of this permit. The Permittee must sample once every hour for the parameters listed for both the periodic and complete pool discharges.

Part I.A., continued.

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

4. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

5. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom of the water course.

6. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.

7. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.

8. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall listed in Part I.A.1 and I.A.2, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit. The Permittee must provide notification to EPA within 24 hours of becoming aware of any unauthorized discharge, in accordance with Part II.D.1.e.(1) (24-hour reporting). See Part I.G below for reporting requirements.

2. The Permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge, except SSOs that do not impact a surface water or the public, on a publicly available website, and it shall remain on the website for a minimum of 12 months. Such notification shall include the location and description of the discharge; estimated volume; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue.

3. Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at https://www.mass.gov/how-to/sanitary-sewer-overflowbypassbackup-notification.

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance (O&M) of the sewer system shall be in compliance with the Standard Conditions of Part II and the following terms and conditions. The Permittee shall complete the following activities for the collection system which it owns:

1. Maintenance Staff

The Permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. Provisions to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

2. Preventive Maintenance Program

The Permittee shall maintain an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. Plans and programs to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

3. Infiltration/Inflow

The Permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

4. Collection System Mapping

Within 18 months of the effective date of this permit, the Permittee shall prepare a map of the sewer collection system that it owns. The map shall be on a street map of the campus, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by federal, state, or local agencies. Such map(s) shall include, but not be limited to the following:

a. All sanitary sewer lines and related manholes;

b. All combined sewer lines, related manholes, and catch basins;

c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);

d. All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;

e. All pump stations and force mains;

f. The wastewater treatment facility;

g. All surface waters (labeled);

h. Other major appurtenances such as inverted siphons and air release valves;

i. A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;

j. The scale and a north arrow; and

k. The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

5. Collection System O&M Plan

The Permittee shall develop and implement a Collection System O&M Plan.

a. Within six (6) months of the effective date of the permit, the Permittee shall submit to EPA and the State:

(1) A description of the collection system management goals, staffing, information management, and legal authorities;

(2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and

(3) A schedule for the development and implementation of the full Collection System O&M Plan including the elements in paragraphs b.1. through b.8. below.

b. The full Collection System O&M Plan shall be completed, implemented and submitted to EPA and the State within twenty-four (24) months from the effective date of this permit. The Plan shall include:

(1) The required submittal from paragraph 5.a. above, updated to reflect current information;

(2) A preventive maintenance and monitoring program for the collection system;

(3) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;

(4) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;

(5) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;

(6) A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof downspouts;

(7) An educational public outreach program for all aspects of I/I control, particularly private inflow; and

(8) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

6. Annual Reporting Requirement

The Permittee shall submit a summary report of activities related to the implementation of its Collection System O&M Plan during the previous calendar year. The report shall be submitted to EPA and the State annually by March 31. The summary report shall, at a minimum, include:

a. A description of the staffing levels maintained during the year;

b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;

c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;

d. A map with areas identified for investigation/action in the coming year;

e. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported

pursuant to the Unauthorized Discharges section of this permit; and

f. If the average annual flow in the previous calendar year exceeded 80 percent of the facility's 0.077 MGD design flow (0.0616 MGD), or there have been capacity related overflows, the report shall include:

(1) Plans for further potential flow increases describing how the Permittee will maintain compliance with the flow limit and all other effluent limitations and conditions; and

(2) A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.

D. ALTERNATE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the Permittee shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works it owns and operates, as defined in Part II.E.1 of this permit.

E. SLUDGE CONDITIONS

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 CFR § 503, which prescribe "Standards for the Use or Disposal of Sewage Sludge" pursuant to § 405(d) of the CWA, 33 U.S.C. § 1345(d).

2. If both state and federal requirements apply to the Permittee's sludge use and/or disposal practices, the Permittee shall comply with the more stringent of the applicable requirements.

3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge use or disposal practices:

   a. Land application - the use of sewage sludge to condition or fertilize the soil

   b. Surface disposal - the placement of sewage sludge in a sludge only landfill

   c. Sewage sludge incineration in a sludge only incinerator

4. The requirements of 40 CFR Part 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 CFR § 503.4. These requirements also do not apply to facilities which do not use or dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g., lagoons, reed beds), or are otherwise excluded under 40 CFR § 503.6.

5. The 40 CFR Part 503 requirements include the following elements:

   a. General requirements

   b. Pollutant limitations

   c. Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)

   d. Management practices

   e. Record keeping

   f. Monitoring

   g. Reporting

   Which of the 40 CFR Part 503 requirements apply to the Permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 guidance document, "EPA Region 1 - NPDES Permit Sludge Compliance Guidance" (November 4, 1999), may be used by the Permittee to assist it in determining the applicable requirements.

6. The sludge shall be monitored for pollutant concentrations (all Part 503 methods) and pathogen reduction and vector attraction reduction (land application and surface disposal) at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year, as follows:

less than 290	1/ year
290 to less than 1,500	1 /quarter
1,500 to less than 15,000	6 /year
15,000 +	1 /month

   Sampling of the sewage sludge shall use the procedures detailed in 40 CFR § 503.8.

7. Under 40 CFR § 503.9(r), the Permittee is a "person who prepares sewage sludge" because it "is … the person who generates sewage sludge during the treatment of domestic sewage in a treatment works …." If the Permittee contracts with another "person who prepares sewage sludge" under 40 CFR § 503.9(r) – i.e., with "a person who derives a material from sewage sludge" – for use or disposal of the sludge, then compliance with Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the Permittee does not engage a "person who prepares sewage sludge," as defined in 40 CFR § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR § 503.7. If the ultimate use or disposal method is land application, the Permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 CFR § 503 Subpart B.

F. SPECIAL CONDITIONS

1. Nitrogen Optimization

   a. The Permittee shall continue to optimize the treatment facility operations relative to total nitrogen ("TN") removal through measures such as continued ammonia removal, maximization of solids retention time while maintaining compliance with BOD_5 and TSS limits, and/or other operational changes designed to enhance the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen.

   b. The permittee shall submit an annual report to EPA and the MassDEP by **February 1st** of each year that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous calendar year. If, in any year, the treatment facility discharges of TN on an average annual basis have increased, the annual report shall include a detailed explanation of the reasons why TN discharges have increased, including any changes in influent flows/loads and any operational changes. The report shall also include all supporting data.

G. REPORTING REQUIREMENTS

Unless otherwise specified in this permit, the Permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

1. Submittal of DMRs Using NetDMR

   The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State electronically using NetDMR no later than the 15th day of the month. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

2. Submittal of Reports as NetDMR Attachments

   Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. See Part I.G.6 for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

3. Submittal of Biosolids/Sewage Sludge Reports

   By February 19 of each year, the Permittee must electronically report their annual Biosolids/Sewage Sludge Report for the previous calendar year using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

4. Submittal of Requests and Reports to EPA Water Division (WD)

   a. The following requests, reports, and information described in this permit shall be submitted to the NPDES Applications Coordinator in EPA Water Division (WD):

      (1) Transfer of permit notice;

      (2) Request for changes in sampling location;

      (3) Request for reduction in testing frequency;

      (4) Report on unacceptable dilution water / request for alternative dilution water for WET testing.

   b. These reports, information, and requests shall be submitted to EPA WD electronically at R1NPDESReporting@epa.gov.

5. Submittal of Reports to EPA Enforcement and Compliance Assurance Division (ECAD) in Hard Copy Form

   a. The following notifications and reports shall be signed and dated originals, submitted as hard copy, with a cover letter describing the submission:

      (1) Written notifications required under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows (SSOs). Starting on 21 December 2025, such notifications must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

   b. This information shall be submitted to EPA ECAD at the following address:

U.S. Environmental Protection Agency
Enforcement and Compliance Assurance Division
Water Compliance Section
5 Post Office Square, Suite 100 (04-SMR)
Boston, MA 02109-3912
Fax: 617-918-0598

6. State Reporting

   Duplicate signed copies of all WET test reports shall be submitted to the Massachusetts Department of Environmental Protection, Division of Watershed Management, at the following address:

   Massachusetts Department of Environmental Protection
   Bureau of Water Resources
   Division of Watershed Management
   8 New Bond Street
   Worcester, Massachusetts 01606

7. Verbal Reports and Verbal Notifications

   a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part II.B.4.c.(2), Part II.B.5.c.(3), and Part II.D.1.e).

   b. Verbal reports and verbal notifications shall be made to:

   EPA ECAD at 617-918-1510

   MassDEP Emergency Response at 888-304-1133

   and

   Town of Bourne Board of Health at 508-759-0600 ext. 1513

H. STATE 401 CERTIFICATION CONDITIONS

This Permit has received state water quality certification issued by the State under § 401(a) of the CWA and 40 CFR § 124.53. EPA incorporates the following state water quality certification requirements into the Final Permit:

1. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(e) to maintain surface waters free from pollutants in concentrations or combinations that are toxic to humans, aquatic life, or wildlife, beginning six (6) months after the permittee has been notified by EPA of a multi-lab validated method for wastewater, or two (2) years after the effective date of the 2022 Federal NPDES permit, whichever is earlier, the permittee shall conduct monitoring of the influent, effluent, and sludge for PFAS compounds as detailed in the tables below. If EPA's multi-lab validated method is not available by twenty (20) months after the effective date of the 2022 Federal NPDES permit,

the permittee shall contact MassDEP (massdep.npdes@mass.gov) for guidance on an appropriate analytical method. Notwithstanding any other provision of the 2022 Federal NPDES Permit to the contrary, monitoring results shall be reported to MassDEP electronically, at massdep.npdes@mass.gov, or as otherwise specified, within 30 days after they are received.

Influent and Effluent (Outfall 001)

Parameter	Units	Measurement Frequency	Sample Type
Perfluorohexanesulfonic acid (PFHxS)	ng/L	Quarterly[2]	24-hour Composite
Perfluoroheptanoic acid (PFHpA)	ng/L	Quarterly	24-hour Composite
Perfluorononanoic acid (PFNA)	ng/L	Quarterly	24-hour Composite
Perfluorooctanesulfonic acid (PFOS)	ng/L	Quarterly	24-hour Composite
Perfluorooctanoic acid (PFOA)	ng/L	Quarterly	24-hour Composite
Perfluorodecanoic acid (PFDA)	ng/L	Quarterly	24-hour Composite

Sludge

Parameter	Units	Measurement Frequency	Sample Type
Perfluorohexanesulfonic acid (PFHxS)	ng/g	Quarterly	Composite[3]
Perfluoroheptanoic acid (PFHpA)	ng/g	Quarterly	Composite
Perfluorononanoic acid (PFNA)	ng/g	Quarterly	Composite
Perfluorooctanesulfonic acid (PFOS)	ng/g	Quarterly	Composite
Perfluorooctanoic acid (PFOA)	ng/g	Quarterly	Composite
Perfluorodecanoic acid (PFDA)	ng/g	Quarterly	Composite

2. Pursuant to 314 CMR 3.11 (2)(a)6., and in accordance with MassDEP's obligation under 314 CMR 4.05(5)(f)2., the permittee's effluent limitations for *Enterococcus* shall reflect the revised criteria for *Enterococcus* in MassDEP's revised Surface Water Quality Standards (314 CMR 4.00) promulgated on November 12, 2021 and corrected on December 10, 2021 and January 7, 2022. Accordingly, the permittee shall meet *Enterococcus* effluent limitations of 35 cfu/100 mL as a monthly average and 130 cfu/100 mL as a maximum daily.

2 Quarters are defined as January to March, April to June, July to September, and October to December. Samples shall be taken during the same month each quarter and shall be taken 3 months apart (e.g., an example sampling schedule could be February, May, August, and November).

3 Sludge sampling shall be as representative as possible based on guidance found at https://www.epa.gov/sites/production/files/2018-11/documents/potw-sludge-sampling-guidance-document.pdf.

MARINE ACUTE

TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **2007.0 - Mysid Shrimp (Americamysis bahia) definitive 48 hour test.**
- **2006.0 - Inland Silverside (Menidia beryllina) definitive 48 hour test.**

Acute toxicity data shall be reported as outlined in Section VIII.

II. METHODS

The permittee shall use the most recent 40 CFR Part 136 methods. Whole Effluent Toxicity (WET) Test Methods and guidance may be found at:

http://water.epa.gov/scitech/methods/cwa/wet/index.cfm#methods

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

III. SAMPLE COLLECTION

A discharge and receiving water sample shall be collected. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any holding time extension. Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine[1] (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate

[1] For this protocol, total residual chlorine is synonymous with total residual oxidants.

prior to sample use for toxicity testing. If performed on site the results should be included on the chain of custody (COC) presented to WET laboratory.

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1 mg/L chlorine. If dechlorination is necessary, a thiosulfate control consisting of the maximum concentration of thiosulfate used to dechlorinate the sample in the toxicity test control water must also be run in the WET test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6^{o} C.

IV. DILUTION WATER

Samples of receiving water must be collected from a reasonably accessible location in the receiving water body immediately upstream of the permitted discharge's zone of influence. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2,Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water is found to be, or suspected to be toxic or unreliable, ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is

species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first case is when repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use by the permittee and toxicity testing laboratory. The second is when two of the most recent documented incidents of unacceptable site dilution water toxicity require ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use **and** written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW must be mailed with supporting documentation to the following addresses:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency, Region 1
Five Post Office Square, Suite 100
Mail Code OEP06-5
Boston, MA 02109-3912

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
Five Post Office Square, Suite 100
Mail Code OES04-4
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

See the most current annual DMR instructions which can be found on the EPA Region 1 website at http://www.epa.gov/region1/enforcementandassistance/dmr.html for further important details on alternate dilution water substitution requests.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA Region 1 requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Americamysis and Menidia toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE MYSID, AMERICAMYSIS BAHIA 48 HOUR TEST[1]

1. Test type	48hr Static, non-renewal
2. Salinity	25ppt ± 10 percent for all dilutions by adding dry ocean salts
3. Temperature (^{o}C)	20^{o}C ± 1^{o}C or 25^{o}C ± 1^{o}C, temperature must not deviate by more than 3^{o}C during test
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml (minimum)
7. Test solution volume	200 ml/replicate (minimum)
8. Age of test organisms	1-5 days, < 24 hours age range
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated Artemia naupli while holding prior to initiating the test
13. Aeration [2]	None
14. Dilution water	5-30 ppt, +/- 10%; Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	≥ 0.5
16. Number of dilutions [3]	5 plus a control. An additional dilution at the permitted effluent concentration (%

	effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality - no movement of body appendages on gentle prodding
18. Test acceptability	90% or greater survival of test organisms in control solution
19. Sampling requirements	For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters

Footnotes:

[1] Adapted from EPA 821-R-02-012.

[2] If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.

[3] When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

EPA NEW ENGLAND TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST[1]

1. Test Type	48 hr Static, non-renewal
2. Salinity	25 ppt ± 10 % by adding dry ocean salts
3. Temperature	20°C ± 1°C or 25°C ± 1°C, temperature must not deviate by more than 3°C during test
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. Total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated Artemia nauplii while holding prior to initiating the test
13. Aeration[2]	None
14. Dilution water	5-32 ppt, +/- 10% ; Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	≥ 0.5
16. Number of dilutions[3]	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

Footnotes:

[1] Adapted from EPA 821-R-02-012.

[2] If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.

[3] When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

V.1. Test Acceptability Criteria

If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

V.2. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

In general, if reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary as prescribed below.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

V.2.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. ≥3 standard deviations for IC25s and LC50 values and ≥ two concentration intervals for NOECs or NOAECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

VI. CHEMICAL ANALYSIS

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

Parameter	Effluent	Diluent	Minimum Level for effluent[*1] (mg/L)
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine [*2]	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005

Superscript:

[*1] These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

[*2] Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

-Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
-Method 4500-CL G DPD Photometric Method.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See flow chart in Figure 6 on page 73 of EPA 821-R-02-012 for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See flow chart in Figure 13 on page 87 of EPA 821-R-02-012.

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) which includes:
    - Facility name
    - NPDES permit number
    - Outfall number
    - Sample type
    - Sampling method
    - Effluent TRC concentration
    - Dilution water used
    - Receiving water name and sampling location
    - Test type and species
    - Test start date
    - Effluent concentrations tested (%) and permit limit concentration
    - Applicable reference toxicity test date and whether acceptable or not
    - Age, age range and source of test organisms used for testing
    - Results of TAC review for all applicable controls
    - Permit limit and toxicity test results
    - Summary of any test sensitivity and concentration response evaluation that was conducted

Please note: The NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) are available on EPA's website at http://www.epa.gov/NE/enforcementandassistance/dmr.html

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures;
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s);
- Reference toxicity test control charts;
- All sample chemical/physical data generated, including minimum levels (MLs) and analytical methods used;
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis;
- A discussion of any deviations from test conditions; and
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint.

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)

TABLE OF CONTENTS

A. GENERAL REQUIREMENTS

1. Duty to Comply

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

a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L.114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

(a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than 2 years, or both.

(b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

(c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing

endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

(d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(2) *Civil Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(3) *Administrative Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:

(a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

2. Permit Actions

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

condition.

3. Duty to Provide Information

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

4. Oil and Hazardous Substance Liability

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

5. Property Rights

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

6. Confidentiality of Information

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

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

(1) The name and address of any permit applicant or Permittee;
(2) Permit applications, permits, and effluent data.

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

7. Duty to Reapply

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

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity

covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

9. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

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

c. Notice

(1) *Anticipated bypass*. If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass. As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.

(2) *Unanticipated bypass*. The Permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (24-hour notice). As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or required to do so by law.

d. *Prohibition of bypass.*

(1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and

(c) The Permittee submitted notices as required under paragraph 4.c of this Section.

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 4.d of this Section.

5. Upset

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

improper operation.

b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

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

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated; and
(3) The permittee submitted notice of the upset as required in paragraph D.12.b.e (24-hour notice).
(4) The permittee complied with any remedial measures required under B.3. above.

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

C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

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

d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.

e. The Clean Water Act provides that any person who falsifies, tampers with, or

knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The Permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).

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

b. *Anticipated noncompliance*. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.

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

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this section must be submitted electronically by the permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.

(2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

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

e. *Twenty-four hour reporting.*

(1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section.

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

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
(b) Any upset which exceeds any effluent limitation in the permit.
(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).

(3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.

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

g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.

h. *Other information.* Where the Permittee becomes aware that it failed to submit any

relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

i. *Identification of the initial recipient for NPDES electronic reporting data*. The owner, operator, or the duly authorized representative of an NPDES-regulated entity is required to electronically submit the required NPDES information (as specified in Appendix A to 40 C.F.R. Part 127) to the appropriate initial recipient, as determined by EPA, and as defined in 40 C.F.R. § 127.2(b). EPA will identify and publish the list of initial recipients on its Web site and in the FEDERAL REGISTER, by state and by NPDES data group (see 40 C.F.R. § 127.2(c) of this Chapter). EPA will update and maintain this listing.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §122.22.

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. Availability of Reports.

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

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

For more definitions related to sludge use and disposal requirements, see EPA Region 1's NPDES Permit Sludge Compliance Guidance document (4 November 1999, modified to add regulatory definitions, April 2018).

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

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

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

"approved States," including any approved modifications or revisions.

Approved program or *approved State* means a State or interstate program which has been approved or authorized by EPA under Part 123.

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

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

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

Bypass see B.4.a.1 above.

C-NOEC or *"Chronic (Long-term Exposure Test) – No Observed Effect Concentration" means* the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 C.F.R. § 501.2, required to have an approved pretreatment program under 40 C.F.R. § 403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 C.F.R. § 403.10 (e)) and any treatment works treating domestic sewage, as defined in 40 C.F.R. § 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.
Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

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

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483and Public Law 97-117, 33 U.S.C. 1251 *et seq*.

CWA and regulations means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. In the case of an approved State program, it includes State program requirements.

Daily Discharge means the "discharge of a pollutant" measured during a calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For

pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Direct Discharge means the "discharge of a pollutant."

Director means the Regional Administrator or an authorized representative. In the case of a permit also issued under Massachusetts' authority, it also refers to the Director of the Division of Watershed Management, Department of Environmental Protection, Commonwealth of Massachusetts.

Discharge

(a) When used without qualification, *discharge* means the "discharge of a pollutant."

(b) As used in the definitions for "interference" and "pass through," *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

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

Discharge of a pollutant means:

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

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

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger."

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

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

Environmental Protection Agency ("EPA") means the United States Environmental Protection Agency.

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

Hazardous substance means any substance designated under 40 C.F.R. Part 116 pursuant to Section 311 of CWA.

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

Indirect discharger means a nondomestic discharger introducing "pollutants" to a "publicly owned treatment works."

Interference means a discharge (see definition above) which, alone or in conjunction with a discharge or discharges from other sources, both:

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

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

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

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

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

LC_{50} means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.

Maximum daily discharge limitation means the highest allowable "daily discharge."

Municipal solid waste landfill (MSWLF) unit means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF

unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

(a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.

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

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

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

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

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

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

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

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

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling

rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

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

(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

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

NPDES means "National Pollutant Discharge Elimination System."

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

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

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

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved State" to implement the requirements of Parts 122, 123, and 124. "Permit" includes an NPDES "general permit" (40 C.F.R § 122.28). Permit does not include any permit which has not yet been the subject of final agency action, such as a "draft permit" or "proposed permit."

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

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

pH means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 C.F.R. § 122.3).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq*.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal,

and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

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

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

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

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

Publicly owned treatment works (POTW) means a treatment works as defined by Section 212 of the Act, which is owned by a State or municipality (as defined by Section 504(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.

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

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

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

Sewage Sludge means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

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

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

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

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

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 C.F.R. §§ 110.10 and 117.21) or Section 102 of CERCLA (*see* 40 C.F.R. § 302.4).
Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to section 405(d) of the CWA, and is required to obtain a permit under 40 C.F.R. § 122.1(b)(2).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an Indian Tribe as defined in the regulations which meets the requirements of 40 C.F.R. § 123.31.

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

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

Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

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

Toxic pollutant means any pollutant listed as toxic under Section 307(a)(1) or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing Section 405(d) of the CWA.

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

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

such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

Upset see B.5.a. above.

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

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

Waters of the United States or waters of the U.S. means:

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

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

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

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

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

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

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

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

(f) The territorial sea; and

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

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

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

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test.

*Zone of Initial Dilution (*ZID) means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards.

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day

mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	"Whole effluent toxicity"
ZID	Zone of Initial Dilution

RESPONSE TO COMMENTS
NPDES PERMIT NO. MA0024368
MASSACHUSETTS MARITIME ACADEMY
BUZZARDS BAY, MASSACHUSETTS

The U.S. Environmental Protection Agency's New England Region (EPA) is issuing a Final National Pollutant Discharge Elimination System (NPDES) Permit for the Massachusetts Maritime Academy's (MMA) Wastewater Treatment Facility located in Buzzards Bay, Massachusetts. This permit is being issued under the Federal Clean Water Act (CWA), 33 U.S.C., §§ 1251 *et seq.*

In accordance with the provisions of 40 Code of Federal Regulations (CFR) §124.17, this document presents EPA's responses to comments received on the Draft NPDES Permit # MA0024368 ("Draft Permit"). The Response to Comments explains and supports EPA's determinations that form the basis of the Final Permit. From January 10, 2022 through February 8, 2022 EPA solicited public comments on the Draft Permit.

EPA received comments from 63 individual commenters listed in Attachment A. The majority of comments centered around water quality impacts of the discharge and many of these commenters asked EPA to deny this permit. As noted in Response to Comment C below, there is no basis to deny or terminate this permit. These comments provided no evidence that this facility was a main or contributing cause of any water quality impacts.

Many commenters cited their attendance at a special town meeting in Bourne held on November 15, 2021. One topic of this meeting was the proposal to expand a wastewater treatment plant in Wareham Massachusetts. This "Upper Bay Project" proposes to expand and improve treatment at the Wareham WWTP and include wastewater flows from the communities of Bourne, Marion, and Plymouth as well as from MMA. Although the current discharge from Wareham is to the Agawam River, the proposal is to discharge to the Cape Cod Canal at the location of MMA's current outfall in the range of 3-4 MGD. The main goal of this regional WWTF is to reduce the overall loading of nitrogen to the Upper Buzzards Bay watershed. At this meeting, Bourne residents overwhelmingly voted to oppose any discharge of treated or untreated wastewater into Cape Cod Canal. Although the hydrodynamic modeling associated with this proposed regional treatment plant was cited in the Fact Sheet, this Draft Permit did not include any further discussion or consideration of this proposal. In addition, one set of comments was a petition signed by 935 individuals stating opposition to an increase of the sewer discharge at MMA from 77,000 GPD of secondary treatment discharge to over 3 MGD of tertiary (advanced treatment) discharge at MMA into the Cape Cod Canal. Since this permit is maintaining the permitted MMA flow at 77,000 GPD and does not authorize wastewater from any other sources, with the exception of occasional, permitted swimming pool discharges, this petition has no bearing on this permit and does not require a response.

Although there were 63 separate comments submitted during the comment period, only a subset of these are shown below, as many comments repeated the same themes or otherwise made the same points. The subset of comments below and their responses are believed to capture all unique comments submitted during the comment period.

Although EPA's knowledge of the facility and receiving water has benefited from the various comments and additional information submitted, the information and arguments presented did not raise any substantial new questions concerning the permit that warranted a reopening of the public comment period. EPA does, however, make certain clarifications and changes in response to comments. These are explained in this document and reflected in the Final Permit. Below EPA provides a summary of the changes made in the Final Permit. The analyses underlying these changes are contained in the responses to individual comments that follow.

A copy of the Final Permit and this response to comments document will be posted on the EPA Region 1 web site: http://www.epa.gov/region1/npdes/permits_listing_ma.html.

A copy of the Final Permit may be also obtained by writing or calling George Papadopoulos, U.S. EPA, 5 Post Office Square, Suite 100 (Mail Code: 06-1), Boston, MA 02109-3912; Telephone: (617) 918-1579; Email Papadopoulos.George@epa.gov.

Table of Contents

I. Summary of Changes to the Final Permit

1. The Final Permit has been revised to include a requirement for the Permittee to provide the Town of Bourne's Board of Health with the same verbal reports and verbal notifications that are required to be made to EPA and MassDEP pursuant to Part I.G.7 of the Final Permit. See Response Q15.

2. The Final Permit has been revised to include a revised maximum daily limit of 130 cfu/100 mL for *Enterococci* to be consistent with the revised State Water Quality standards as referenced in the Final State Certification dated March 11, 2022. Also see Part H.2 of the Final Permit.

II. Responses to Comments

Comments are reproduced below as received; they have not been edited.

A. Dan Moerman- Bourne, MA resident

I am writing you today to request a rigorous review on Mass Maritime's Permit Modification to discharge wastewater into the Cape Cod Canal. As you are probably aware, MA Maritime has entered dialogue with surrounding communities regarding a future Wastewater Treatment plant in Wareham that would discharge through the canal. They admittedly are entering this dialogue because they understand that their current discharge is harmful and they are only able to do so via a "grandfather clause" that does not limit the nitrogen levels in their current discharge. *(Paul B. O'Keefe, vice president of operations for Mass Maritime, concurred that the academy's wastewater has a higher nitrogen content than what comes out of Wareham. That, he said, is because the college's discharge permit has no restriction on the amount of nitrogen that can be present in its wastewater. "At this time, we're not under any EPA requirement to meet any nitrogen levels," Mr. O'Keefe said. He added that any future permitting could carry such a restriction, which is part of MMA's rationale for being involved in the multi-group partnership.*

I understand this permit application is different from the ongoing dialogue regarding a future discharge of 3 to 10 Million gallons of effluent a day via a Wareham Wastewater Treatment plant. However, I would encourage you not to rubber stamp this current permit application, but rather, ask the Maritime why they, as stewards of the community and surrounding waters, are not actively engaged in reducing the current nitrogen discharge they are dumping into the canal. What investments are they making in their current sewage treatment beyond waiting on a Hail Mary pass of a regional plant that they would gain access to as a result of their canal access, a plan that is in all likelihood 10+ years away?

Clearly, MA Maritime has adequate resources, as evidenced by their land acquisitions in Bourne over the last several years along with admirable initiatives aimed at the future of energy and shipping, among other sectors. However, it seems plain to me that they are shirking their responsibility to their community by allowing poorly treated effluent to be released into our waters just because they can, and should be asked to devote adequate resources toward improving this situation that they themselves acknowledge as harmful.

Response to Comment A

This permitting action is for a NPDES permit reissuance rather than a permit modification. As discussed in the introduction to this response, the issue of the proposed "Upper Bay Project" is not the subject of this permit reissuance. The commenter contends that the permittee, MMA, "understands that their current discharge is harmful, and they are only able to do so via a "grandfather clause" that does not limit the nitrogen levels in their current discharge." As noted in the Fact Sheet (FS), MMA was in compliance with its permit limits for the vast majority of time during the 5 year review period with only one violation of a Total Suspended Solids (TSS) limit. The permit limits in the current and reissued permit are consistent with State and Federal water quality standards (WQS). Regarding nitrogen, MMA will continue to be required to sample its effluent for total nitrogen on a quarterly basis and continue to optimize the treatment plant for nitrogen removal. The facility is a secondary wastewater treatment plant which has been meeting its permit limits and would not be considered as "allowing poorly treated effluent to be released" into the receiving water.

As noted in the FS, the receiving water of Cape Cod Canal is not impaired for nutrients. In addition, the 2011 Fact Sheet noted that the MMA nitrogen loading is a very small percentage (0.000017%) of the overall nitrogen

loading to the watershed. The main sources of nitrogen to the Buzzards Bay watershed continue to be private septic systems and WWTPs, including Combined Sewer Overflows (CSOs), but other sources include animal waste, atmospheric deposition, and chemical fertilizer.[1]

B. Steven Rice and Janine Aversing– Bourne, MA residents

We are opposed to the renewal of the permit for the Massachusetts Maritime Academy to discharge treated effluent and any proposed outfall discharge by the Wareham WWTP into the Cape Cod canal. The impact to natural resources, including fisheries, shellfish, and crustacean shellfish is not measured. (See DMF/FDA dye study on classification of shellfish growing areas in Plymouth, Kingston and Duxbury waters relative to the Plymouth WWTP).

https://www.mass.gov/news/dmf-reclassifies-the-three-bays-2018-dye-study-results-in-shellfish-area-classification-change

Fresh water, in the quantities discharged by MMA and/or any future projects proposed by the Wareham Wastewater Treatment Plant, dumped into a saltwater environment can only have a negative impact, and no positive impacts, on the natural environments and ecosystem. Our area has seen a depletion of eel grass, the disappearance of soft shell clams and bay scallops, and a hypoxic environment is stressing the lobster viability in Cape Cod Bay and the natural canal hatchery.

The impact to neighboring beaches where many people swim is not measured.

The economic impact on tourism and property valuations is not measured; it only takes a single adverse event or an accumulative effect introducing more effluent into the canal to impact the valuable resources and tax revenues to our community.

Noone should have to swim, fish, shellfish, nor live where effluent/sewage is discharged, treated at any level, into the Cape Cod canal. The town meeting held in fall of 2021 produced an overwhelming majority opposing selectboard approval of any wastewater discharge into the Cape Cod canal. The people prefer other alternatives which are currently being studied. Please accept the direction of those voters who represent the community that we are; do not approve the MMA permit renewal or any additional proposed effluent discharge into the Cape Cod canal.

Response to Comment B

The commenter notes that the impact to neighboring beaches where many people swim is not measured. As noted in the Fact Sheet, according to the *Buzzards Bay Watershed 2000 Water Quality Assessment Report*, for those portions of Cape Cod Canal that have been assessed, this water body segment is attaining uses designated for primary and secondary contact recreation. Each year, the Massachusetts Department of Public Health, (DPH), Bureau of Environmental Health's Environmental Toxicology Program collects beach water quality data and publishes annual reports providing a description and summary of that information. See

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[1] Assessing the Impact of Local and Regional Influences on Nitrogen Loads to Buzzards Bay, MA; Williamson, Rheuban, et.al.; Frontiers in Marine Science; January 6, 2017.

https://www.mass.gov/beach-water-quality. Looking back at the period of 2016 through 2020 for Gray Gables Beach, also known as Gilder Road Beach, there were 70 water samples taken and analyzed for Enterococcus bacteria. Of those 70, there were 3 samples that exceeded the water quality standard of 104 Enterococci colonies/100 mL. During that period, there were no postings at this beach warning swimmers not to swim due to elevated bacteria levels.

For Class SB waters that are designated for shellfishing with depuration, which include receiving waters downstream of Cape Cod Canal, the indicator bacteria is fecal coliform. The wasteload allocation (WLA) established in the 2009 Pathogen Total Maximum Daily Load (TMDL) for Buzzards Bay requires fecal coliform levels for point source discharges to be limited to a geometric mean or median of 88 organisms per 100 mL and that no more than 10% of the samples exceed 260 organisms per 100 mL. However, the Final Permit carries forward more stringent limits of a monthly geometric mean of 14 colony forming units (cfu) and a maximum daily limit of 43 cfu/100 ml, which are based on the more stringent WQS for Class SA waterbodies.

Although the commenter notes that the MMA effluent is a discharge of fresh water into a saltwater environment, an estimated dilution factor of 500:1 around the outfall, as discussed in the Fact Sheet, is believed to represent a worst-case condition such as which occurs during slack tide. Therefore, this freshwater discharge would be quickly dissipated in the saltwater environment of Cape Cod Canal and no effects would be expected.

Regarding the possibility of adverse events, the permit requires MMA to notify EPA of any such adverse events, such as plant bypasses within 24 hours of becoming aware of such events. The compliance response to such notification would consider the circumstances and depend on the impact of any such events to human health and the environment.

Although eelgrass beds have seen declines statewide over many years, eelgrass coverage in the vicinity of MMA and through Buzzards Bay is the most extensive in Massachusetts. The Massachusetts Devision of Marine Fisheries (MADMF) conducted eelgrass surveys in 2018 and 2019 in the vicinity of the MMA outfall as described in the link below. This survey found that the eelgrass bed delineations for the area southwest of the MMA facility were broadly comparable to the DEP delineations in 2013 and 2017, suggesting limited change in the overall areal extent of this eelgrass meadow between 2013 and 2019. There is no evidence of large-scale eelgrass decline in proximity to this discharge.

https://secure2.convio.net/bbay/site/DocServer/MADMF_Eelgrass_Survey_Annual_Report_2018-2019.pdf

Any eelgrass depletion in downstream portions of Buzzards Bay cannot be reasonably attributed to this discharge, as there are a host of stressors that could affect eelgrass. In addition to elevated nutrient levels, these stressors include climate change, coastal development, dredging, the proliferation of docks, piers and moorings and increased boat traffic.

Bay scallops are dependent on eelgrass, so to the extent that eelgrass abundance/coverage declines, so do bay scallop populations. Bay scallops have not only declined in Buzzards Bay, but also on Martha's Vineyard and Nantucket. There are many reasons for declines in soft shell clams, including a leukemia condition and predation by green crabs. The lobster populations in southern New England have been severely depleted, but that is believed to be related mainly to increasing water temperature due to climate change. Also see the link below.

https://blogs.umass.edu/natsci397a-eross/impacts-of-climate-change-on-southern-new-england-lobster-fisheries/

Shellfishing in the entirety of Cape Cod Canal is prohibited, as classified by the Massachusetts Division of Marine Fisheries (MADMF). This was due to the fact that a shellfishing exclusion zone had to be established around the

MMA outfall, as is typically required for wastewater discharges. In addition, as commercial fishing is not allowed in the canal, it was determined to classify the entire canal as prohibited for shellfishing (Email communication of 3/11/22 between Jeff Kennedy, MADMF and George Papadopoulos, USEPA). The majority of adjacent shellfishing areas of Onset Bay, Fisherman's Cove, and Phinney's Harbor are either approved or conditionally approved for shellfishing, as are many other areas of Buzzards Bay. See https://www.mass.gov/service-details/shellfish-classification-areas .

The dye study referenced in the comment was in the vicinity of the Plymouth WWTP, which resulted in some shellfish areas being reclassified, or downgraded by MADMF as a result. The permitted flow of the Plymouth WWTP NPDES Permit is 1.75 MGD, which is about 23 times the permitted flow of the MMA discharge. Therefore, it is reasonable to assume that a greater impact to shellfish classifications would be experienced in Plymouth Harbor from the Plymouth WWTP discharge as compared to the shellfish harvesting areas downstream of the MMA discharge.

MADMF routinely monitors shellfish beds for bacteria. When monitoring in designated shellfish areas indicates elevated bacteria levels, MADMF announces short-term closure of such beds. The causes of high bacteria levels are outlined in the Final Pathogen TMDL for the Buzzards Bay Watershed (2009):

> *the primary sources of bacteria to the watershed appear to be; (1) illicit connections, leaking sewer pipes, and sanitary sewer overflows in sewered areas; (2) failing septic systems around embayment's in non-sewered areas; and (3) stormwater runoff. Illicit connections, leaking sewer pipes, and sanitary sewer overflows must be detected (sources) and eliminated. The majority of these sources can be found through the implementation of an effective illicit detection and elimination program and by monitoring dry weather discharges in suspected areas. A comprehensive program needs to be conducted to find sources to bacteria hotspots in the stormwater systems of many communities. The Phase II Stormwater program, required in at least parts of all the communities, is an excellent conduit to do this work.*

If the Upper Bay Project is proposed for implementation, the Wareham WWTF and any other affected entities would have to apply for NPDES permit coverage or modifications of their existing NPDES permits. As this proposal could represent new and increased discharges at one or more outfalls, the proposal would also be subject to an antidegradation review by the MassDEP to assure that all WQS would be met.

C. Jim Buckley – Bourne, MA resident

Bourne now has a sewer system. Mass Maritime should tie into this system. There is no need of discharging effluents into the canal. There is no good outcome with discharging into canal. Please deny this permit.

Response to Comment C

The permit for MMA to continue discharging to the Cape Cod Canal is being reissued and the facility continues to be in compliance with its permit requirements. EPA cannot require a facility to redirect its discharge to another location, especially when permit limits are being met and the facility discharges are not believed to be causing or contributing to any water quality impairments. If future negotiations between MMA and the Town of Bourne (or other entity) result in a decision to relocate MMA's discharge, MMA and the Town of Bourne would need to discuss such proposals with EPA and MassDEP. If warranted, this discharge could be relocated with appropriate modifications of existing discharge permits. EPA cannot terminate or otherwise deny this permit reissuance absent one or more of the factors listed below.

Pursuant to 40 CFR §122.64, the following are causes for terminating a permit during its term, or for denying a permit renewal application:

(1) Noncompliance by the permittee with any condition of the permit;

(2) The permittee's failure in the application or during the permit issuance process to disclose fully all relevant facts, or the permittee's misrepresentation of any relevant facts at any time;

(3) A determination that the permitted activity endangers human health or the environment and can only be regulated to acceptable levels by permit modification or termination; or

(4) A change in any condition that requires either a temporary or permanent reduction or elimination of any discharge or sludge use or disposal practice controlled by the permit (for example, plant closure or termination of discharge by connection to a POTW).

In addition, the Permittee may request a termination of its permit. As noted earlier, the facility has been in compliance with its 2011 Permit with the exception of one TSS violation during the 5 year review period. The Permittee submitted a timely NPDES reapplication in 2016 and provided EPA with additional information that was requested during the development of the Draft Permit. In addition, there has been no finding that the facility's discharges endanger human health or the environment and that can only be regulated to acceptable levels by permit modification or termination. Therefore, there is no basis for not renewing or terminating this permit.

D. Timothy and Laura Petracca, Bourne, MA residents

My wife and I are opposed to the renewal of the permit for the MMA to discharge treated effluent and proposed outfall discharge into the Cape Cod Canal. We live on the Canal. We fish for scup, black sea bass, tautog, bluefish and striper, and we lobster trap 9 months of the year. We enjoy shell fishing for quahogs, clams, and oysters in the Bourne waters. We eat what is legal and return the rest. We swim at Gray Gables beach regularly. All of these recreational activities will be negatively affected by this discharge. I can attest that lobster yields are declining already. I can attest that the state now prohibits us from harvesting mussels in the canal. Why? We don't know, but we pretty much can safely predict the water in the canal will only degrade further. Can you imagine eating "fresh fish" from the canal that has been infected by millions of gallons of effluent? We cannot!

As we experienced just this summer, bigger and more frequent storms are also happening. Please refer to the New Bedford plant release of millions of gallons of raw sewage closing shell fishing beds and affecting the entire bay. We cannot take this risk with our valuable natural resource here in Bourne.

We attended the Bourne town meeting in November 2021 and voted along with hundreds of others to oppose ANY wastewater discharge in the canal. We all believe that other better and more technically advanced alternatives are available. We urge you NOT to support the passage of the MMA permit renewal or any further proposed effluent discharge into the canal.

Response to Comment D

As MMA holds a lawful permit to discharge, any decision or declaration by the Town of Bourne to oppose any wastewater discharge into the Cape Cod Canal cannot in and of itself result in termination of this permit. As noted in the response to Comment C, NPDES permits can be denied or terminated by EPA or the Permittee under certain instances, but none of these are present.

The commenter has not presented any evidence that all noted recreational activities will be negatively affected by this discharge. Regarding shellfishing and mussel harvesting, see the response to Comment B. Any prohibitions are likely due to historically high bacteria levels in the area, due to sources described in the TMDL. Regarding declining lobster yields, the commenter does not propose reasons for this, but they are likely a combination of factors, primarily warming temperatures as discussed in the response to Comment B.

MMA's permit contains permit limits to assure that WQS in the receiving water are met, whereas other pollution sources to the watershed, such as from non-point sources, septic systems, and illicit connections are discharged untreated. The Buzzards Bay Pathogen TMDL requires the communities that discharge to the watershed to prioritize the identification and control of such sources.

The commenter did not specify the date of the sewage release from New Bedford. There was a release from New Bedford's CSO#004 as a result of about 8 inches of rainfall that occurred on September 1, 2021 that resulted in shellfish bed closures on September 2nd. This is one of 27 permitted CSOs that are designed to discharge untreated or partially treated sewerage to receiving waters as a result of storm events of certain size, duration, or intensity.[2]

E. John and Wandra Harmsen, Bourne, MA residents

I am a resident in Bourne for the past 35 years and lived on Taylor's Point for the first four of those years. The beach at Taylor's Point is our "go-to" beach which our family enjoys. Over the past few decades we have seen many changes - additional structures added on the Point, clearing for roadways and pavement practically on the beach, the wind turbine, parking lots everywhere, etc.

Thirty-five years ago, there was eel grass and now there is none and as a result many species have all but disappeared from the waters around Taylor's Point/Mass Maritime. There used to be many horseshoe crabs and spider crabs and those are rarely found these days. There was a time you could swim out and see lobsters on the ocean floor.

There have also been times when the shellfishing beds were closed due to contaminated run-off after rain and I also remember a summer not long ago when the water had an eery rust-colored hue in mid summer.

This list of factors which have led to the deterioration of this area goes on and on and yet, we still pay for our beach stickers and pay our taxes even as beach options become scarce and it is difficult to find decent and clean public beaches on this side of the canal.

Please do not add more fuel to the fire by discharging waste into the area around Taylor's Point. There has got to be another way. Mass Maritime Academy has won awards for its sustainable, environmentally sound landscaping, and energy-saving measures taken on the campus. Discharge of wastewater into the canal flies in the face of all that.

Let's work together to find another way. We should investigate environmentally sound ways to deal with human waste without detriment to our dwindling natural resources. No one wants to swim in treated wastewater, would you?

Response to Comment E

[2] https://www3.epa.gov/region1/npdes/permits/2008/finalma0100781permit.pdf

As noted in prior responses and as the commenter points out, impacts to the receiving water come from many sources. As noted in the response to Comment B above, for those portions of Cape Cod Canal that have been assessed, this water body segment is attaining designated uses for primary and secondary contact recreation. Also see response to Comment B for beach monitoring data. The commenter notes that there have been many factors that could be resulting in a deterioration of this area in addition to development noted. As discussed above, the Final Pathogen TMDL also identifies several bacteria sources that have resulted in past non-attainment determinations for Buzzards Bay, as discussed in the response to Comments B and D.

F. Kathy Fox Alfano, President, Gray Gables Association (Bourne, MA)

We live directly on the Cape Cod Canal in Gray Gables Bourne, across from the outfall at MMA. Literally you can throw a baseball and hit it from our yard. We had no idea of the outfall's existence when we moved here in 2013. I'm a NIMBY, but I'm a NIMBY for everyone.

Just since 2013 we have seen the elimination of eel grass, of green crabs, of clams and quahogs and especially lobsters! Only a few years ago we would get a couple of lobsters every time we put out a trap, now nothing. We are treated to brown foam and suspicious slicks floating past the house. Also the canal is in the middle of the waterway, but on the sides its not 50 feet deep and does not run with a swift current, its just part of the original Manomet River. It does not move anywhere near as quickly, and the effluent could sit and stay here.
If MMA were to start today, they would never pass the Oceans Act.

The idea of expanding the outfall to include wastewater from the Wareham plant is terrifying. The volume of the expansion does not equal the reduction in nitrogen and the additional PFASs and other chemicals being added to our saltwater ways far outweighs any benefits for Wareham. With all we know about our environment today, the idea of adding pollution or even fresh water into salt water defies imagination.

Thankfully there are alternatives. MMA can hook up to the Bourne Sewer system and eliminate the outfall. Its a better alternative for MMA, for Bourne, for the Cape Cod Canal and our environment. The Academy should stop this practice of discharging into the Canal, and hook into the Bourne sewer system. This would help the environment and reduce the cost to current sewer rate payers. Fresh water, in the quantities discharged by MMA and / or any future projects proposed by the Wareham Wastewater Treatment Plant, dumped into a salt water environment can only have a negative impact, and no positive impacts, on the natural environments and ecosystem. Our area has seen a depletion of eel grass, the disappearance of soft shell clams and bay scallops, and a hypoxic environment is stressing the lobster viability in Cape Cod bay and the natural canal hatchery.
The impact to neighboring beaches where many people swim is not measured.

The economic impact on tourism and property valuations is not measured; it only takes a single adverse event or an accumulative effect introducing more effluent into the canal to impact the valuable resources and tax revenues to our community.

No one wants to swim, fish, shellfish, nor live where effluent/sewage is discharged, treated at any level, into the Cape Cod canal. The canal runs through our town.

As President of the Gray Gables Association I implore you to not renew the MMA permit to discharge wastewater into the Canal. Our Beaches are directly across from the outfall, where our children swim and play. We love our gem of a neighborhood, but the outfall could destroy us. Just look at how COVID is measured by testing wastewater... that means its in our waters here.... no one knows the impact on people, marine life and the

environment. And who knows what's next... we didn't know about PFASs until recently. Please DO NOT RENEW MMA's permit to discharge into the Cape Cod Canal.

Response to Comment F

Regarding the Upper Bay Project, refer to the introduction and response to Comment A.

Regarding the comments on beaches, eelgrass, lobsters, and shellfish, and the discharge of freshwater into a saltwater environment, see response to Comment B above.

Regarding the comments to deny this permit and to tie the MMA discharge into Bourne's sewer system, see response to Comment C.

Regarding PFAS constituents, this permit has included a quarterly monitoring requirement for 6 different PFAS compounds. The purpose of this monitoring is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits.

G. Bill Russell, Bourne, MA resident

As Town of Bourne and Gray Gables resident and homeowner, I'm strongly against renewing MMA's Permit No. MA 0024368. Mass Maritime Academy is seeking the renewal of its permit (NPDES Permit No. MA0024368) to discharge 77,000 gallons daily of only partially treated wastewater into the Cape Cod Canal. We encourage the Academy to correct this practice of dumping into the canal and hook into our sewer system. This would increase the health of our local waters and reduce the burden on current sewer ratepayers.

Also, the Buzzards Bay Coalition along with Wareham proposes to expand the Wareham Wastewater Treatment Plant into a multi-town treatment plant (for Wareham, South Plymouth, Marion, Bourne, and the Mass Maritime Academy) and pump all of the treated wastewater 3.5 up to 10 million gallons per day directly into the canal using the Mass Maritime outfall pipe location. The Cape Cod Canal runs through the middle of Bourne. The outfall pipe at Mass Maritime Academy is just off our Main Street and Buzzards Bay Park which is used for civic and commercial events. Our fishing, shellfishing, and surrounding waters and beaches for recreation are what attract people to live here, or visit Bourne.

- Gray Gable Beaches are only 1000 feet from the Mass Maritime Academy outfall pipe but were not deemed to be of particular importance in the Buzzards Bay Coalition's study.

- We support Bourne's Comprehensive Wastewater Management Plan to reduce pollution, but using the canal, which runs through the middle of the town of Bourne, as a dumping ground will negatively impact our local waters.

- At November 15, 2021, Open Town Meeting, Bourne residents overwhelmingly voted to oppose any discharge of treated or untreated wastewater into the Canal.

- The cost of building this treatment plant is immense. Expanding the physical plant, and miles of piping and pump stations will be needed, plus the cost of hooking homes into a sewer system is unaffordable for residents.

· Only 4 inches of rain from a storm can cause treatment plants to overload and discharge their wastewater untreated!

· Storms are increasing in frequency and strength. During our recent storm, New Bedford released 40 million gallons of raw sewage into Buzzards Bay. Imagine that happening adjacent to homes and beaches in Bourne.

· Breakage and errors – recently, Plymouth experienced massive force main breaks in their wastewater pipes that led to $48 million in repairs & millions of gallons of untreated wastewater discharged from the plant.

· Only nitrogen concentration was considered in BBC testing, not bacteria, viruses, bleach, heavy metals, PFAS, Salinity, pH, or dissolved oxygen levels.

· Imagine our fishing and shellfishing decimated.

· Destruction of our area waters destroys our tourist economy currently enjoyed by millions a year. According to the Army Corps of Engineers over three million people, a year come to visit and enjoy the canal.

· Property values and tax revenue for the town decline.

· No study of long-term effects from reduced salinity, and increased PFAS and other chemicals have been done.

· Alternatives abound – in just the five years that the Buzzards Bay Coalition has been developing this proposal huge advances have been made in nitrogen reducing systems that can be added to homes in a cost-effective and safe way.

Response to Comment G

Regarding the comments to deny this permit and to tie the MMA discharge into Bourne's sewer system, see response to Comment C. All comments related to the proposed Upper Bay Project are not relevant to this permit reissuance and no response is provided, as explained in the introduction. Although improved septic system design could reduce nitrogen loading from current septic systems to the watershed, this topic is outside the scope of this permit reissuance and would be better addressed in each community's Comprehensive Wastewater Management Plan (CWMP).

The facility provides secondary treatment to its wastewater and is currently discharging below its permitted monthly average flow of 77,000 gallons per day (GPD).

Regarding the comments on Gray Gables Beach, fishing, and shellfishing, see response to Comment B above.

Regarding the comment about the discharge of raw sewage in New Bedford, see response to Comment D.

The commenter noted that the BBC only sampled for nitrogen and not bacteria, viruses, bleach, heavy metals, PFAS, Salinity, pH, or dissolved oxygen levels. This permit limits bacteria, total residual chlorine, and pH. See the response to Comment F for PFAS compounds. For the metals cadmium, copper, lead, nickel and zinc, a

reasonable potential (RP) analysis was conducted as explained in the Fact Sheet and it was determined that there was no RP to cause or contribute to WQS violations for these metals. For Outfall 002, which occasionally discharges swimming pool water, copper is still being detected, likely due to the use of potable water. Therefore, the copper limit of 0.5 mg/L was maintained for this outfall. Salinity monitoring is required for the effluent and the receiving water as part of the whole effluent toxicity (WET) testing. Since there are no dissolved oxygen (DO) impairments in the receiving water and dilution is significant, this permit does not require DO monitoring.

The commenter does not provide a basis for the comment that 4 inches of rain from a storm can cause treatment plants to overload and discharge their wastewater untreated. Every WWTP is different, and most are designed to handle excessive stormwater flows, although in some cases some treatment steps may be bypassed or not completely utilized under significant storm conditions. Some communities also have permitted CSOs which discharge under varying scenarios of rainfall and intensity. The MMA WWTP typically operates at well below its permitted flow level of 77,000 GPD and EPA is not aware of any storm related bypasses or other conditions that would have resulted in untreated or insufficiently treated wastewater to be discharged.

H. Molly O'Connor, Bourne, MA resident

I am writing with deep concern about the renewal of the MMA outfall pipe. It is important to us as residents of Gray Gables across the canal from the MMA outfall pipe to share our strong concerns. We are so very unhappy with the effects of the pipe today and even more concerned about the potential increase by the Wareham Wastewater Treatment Plant. As a resident of Gray Gables, Bourne, MA across the canal from the outfall pipe Why this is of concern:

- This outfall pipe has already had an effect on our beaches which are right across the canal from this pipe.
- This is already impacting the marine life - shell fishing, fishing in our areas is already at risk and will be more so if this increases
- Increase in Nitrogen levels
- We need to stop any pollution into the Canal, or any waters
- Is there a potential switch for MMA to hook up with the Bourne Sewer system and eliminate outfall
- The beach, shore and waters have been negatively impacted over the last 20 years, I have watched as I have raised my children here
- Canal does not have the swift currents on our side, its only in the middle

Response to Comment H

Regarding the comments on beaches and shellfish, see response to Comment B above.

Regarding nitrogen levels, see response to Comment A and the introduction above.

Regarding the comment to tie the MMA discharge into Bourne's sewer system, see response to Comment C.

I. William Prodouz and Kristina Prodouz, Bourne, MA residents

My wife Kristina Prodouz and I are residents of the Village of Pocasset in Bourne Massachusetts and are writing to oppose the renewal of the Mass Maritime Academy (MMA) discharge permit which allows 77,000 gallons per

day into the Cape Cod Canal. This discharge is right in the center of the town of Bourne. Among other things it fouls and reduces the desirability of the beaches in the Village of Gray Gables and other parts of Bourne. It poses a threat to shellfish beds at Taylor Point in Bourne among other locations. Warming waters due to climate change only increase the potential for environmental degradation from this discharge.

The current in the canal only flows west toward Buzzards Bay at maximum strength for 2 hours 2 times per day. At other times the discharged effluent motion is stagnant at slack current or reverses course and spreads east into the main portion of the Cape Cod Canal. As someone who fishes along the canal over 100 times a year, by observation I see that the flows are only maximum westbound a small percentage of the day, the rest of the time the water (with effluent) barely moves back and forth within the canal. This reduces the mixing and dispersion of the effluent discharge.

The 77,000 gallon discharge also "opens the door" and leads to the potential disaster of 3 to 10 million gallons of daily discharge being routed from Wareham to the MMA discharge site as local towns and developers look for a quick and cheap fix to an ongoing nitrogen pollution problem we all face. The Federal and Massachusetts EPA must be put on notice and put others on notice that the use of this discharge must be phased out and ended. Even if the extension of the permit is granted it must be phased out and it must be made clear that any future expansion in discharge into the Cape Cod Canal will not be allowed. We can no longer "kick the can down the road" but must look to end discharges into the Cape Cod Canal.

For years our eel grasses have been dying, our recruitment of canal lobsters has been dwindling and the overall quality of water at Gray Gables and other local beaches has been deteriorating. Many say it is increased nitrogen that is a culprit and that issue needs to be solved but not by continued pumping of 77,000 gallons of wastewater into the Cape Cod Canal or paving the way for 3 million to 10 million gallons of discharge into the canal.

Please stop the renewal as we work to find a better long term solution to water quality issues in Buzzards Bay and Cape Cod in general.

Response to Comment I

Regarding the proposed Upper Bay Project and nitrogen loading, see introduction and response to Comment A.

Regarding the comments on beaches, eelgrasses, lobsters, and shellfish, see response to Comment B.

Regarding the comment opposing this permit renewal, see response to Comment C.

Regarding the comment about mixing and dispersion of the effluent discharge, refer to the Fact Sheet, which cited a hydrodynamic modeling study that estimated a dilution factor of 500:1 around the MMA outfall.

J. Becca Britt, Wareham, MA resident

I am surprised to learn that MMA pumps our only PARTIALLY treated sewerage I thought this experimental program was better than that, along with the prototype tide driven electric generator. It needs to be fully treated, or sent to a treatment plant for final treatment PFAs are a huge problem, the 'forever' chemical that is found in much of the drinking water, especially near military bases and airports. It seems that a state college would be a place first in line to provide systems & new ideas that promote public safety as well as renewable & clean.

Response to Comment J

The facility provides secondary treatment to its wastewater and is currently discharging below its permitted monthly average flow of 77,000 GPD. Regarding PFAS compounds, see response to Comment F.

K. Tom Egan, Buzzards Bay, MA resident

Please do not renew the permit MMA has applied to renew to continue to discharge wastewater into the Cape Cod Canal. Any discharge of any wastewater will continue to cause adverse effects to the water quality of the canal. MMA does not have any modern equipment using the latest technology to provide a primary treatment of the discharge water. MMA also continues to expand its facilities and student population which has increased the discharge amounts since the last permitted quantity.

Response to Comment K

Regarding the comment to not renew this permit, see response to Comment C. The facility provides secondary treatment to its wastewater and has averaged a monthly average flow ranging from 3000 GPD to 42,000 GPD with a median of 25,000 GPD over the past 5 years. The facility has not exceeded the monthly average flow limit of 77,000 GPD during that period.

L. Michael LaRaia, Mashpee, MA resident

The U.S. Army Corp of Engineers website notes, *"Each year, more than 3 million* visitors *enjoy activities such* as *hiking, fishing, biking, picnicking and ship watching."* These numbers reflect the incredible natural resource that the canal has become, as well as its importance to tourism and recreational use. Any loss or further degradation to such an important resource would be a travesty. As a frequent user and supporter of the natural resources within, and around the canal, I would like to personally express my strong opposition to any discharge of effluent into the canal from the Wareham Wastewater Treatment plant in Wareham, MA. I feel it important to consider that Bourne residents voted overwhelmingly to oppose any discharge from the vote at the Bourne Open Town meeting on November 15, 2022.

Response to Comment L

See introduction to these comments and response to Comment A.

M. Richard G. Gurnon, Buzzards Bay, MA resident

I write to you today to support the renewal of the permit that allows the Massachusetts Maritime Academy (MMA) to discharge treated wastewater into the Cape Cod Canal. I worked at the Academy for 38 years in a variety of management positions and was familiar with the operations of the MMA wastewater plant and all of the environmental issues associated with a college campus in a small town. I can attest to the fact that MMA has been an important environmental steward, recognized by the EPA and has received awards for Regional Wastewater Treatment Plant Excellence, Regional Wastewater Treatment Plant Operator Excellence and Environmental Merit. MMA takes its role protecting the waters around the campus seriously which is indicated in its compliance record.

In addition to being a former employee of MMA (now retired), for the last 44 years I and my family have lived in the village of Buzzards Bay, a block from the Cape Cod Canal and 1.5 miles from MMA. I take twice daily walks

on the canal and I have never been worried about the wastewater issues associated with MMA because I know of the professionalism of the faculty and staff - especially the team that manages the wastewater systems there.

Some may argue that MMA should not be approved for a discharge of wastewater into the Cape Cod Canal. I believe those people have failed to appreciate the significant role the MMA plays in endeavoring to ensure the water quality surrounding the campus is maintained by partnering with local organizations and the Town of Bourne to monitor the bay and understand the ecological risks of the various activities in the estuary. MMA's work is also supported by grants through the Municipal Stormwater Permitting program to purchase monitoring equipment to advance this research.

MMA strives to be a good neighbor of Taylor's Point by including members of the community in project updates, construction activities and by providing listening sessions to let residents know about projects, construction, campus events and how the campus plans to mitigate environmental concerns.

Conservation of the water and the environment is important to MMA. Recent improvements on the campus help to prevent runoff from getting into the bay that would negatively impact shellfish beds. The installation of retention ponds, rain garden, and erosion control all work together to mitigate storm water and road runoff and promote groundwater recharge.

The MMA has always been transparent with its operations of the campus' wastewater treatment plant to the public and it has worked very hard to be a good environmental steward, preserving the water resources that serve as the beautiful backdrop to the campus. I urge you to approve the permit.

Response to Comment M

EPA acknowledges these comments.

N. Monique L. Ward, Bourne, MA resident

I write in reference to the existing outfall pipe from MMA, that has been - much to my surprise, upon learning this in recent months - in place for a number of years, and now requires a renewal for its permit to continue to discharge treated effluent into the Cape Cod Canal from the MMA campus shore. I am very much opposed to any renewal of this permit, and any additional plan to increase the amount of effluent as has been proposed by MMA and the Buzzards Bay Coalition, from sewage treatment plants in Wareham, Marion and South Plymouth.

As a mindful steward of our beautiful Cape Cod Canal, and the waters of Buzzards Bay, I am fully aware that the nitrogen produced by non-modern septic systems is harmful to our waters, and that efforts must be made to stop the release of nitrogen. I strongly believe that efforts to reduce nitrogen with scientifically improved septic systems, is a far more environmentally friendly approach to nitrogen reduction. The proposal on the table for Bourne residents to tie-in to the Wareham treatment center offers septic system respite to some 1200 homes on the northern side of the Canal in the village of Buzzards Bay. No respite is offered, or even mentioned, to Bourne residents on the south side of the Canal. Any preliminary testing by the Buzzards Bay Coalition was severely lacking, as there was no testing done on the waters, inlets and beaches on the south side of the Canal, only on the north.

I am also aware that the treated effluent currently being discharged into the Canal contains numerous other harmful materials and chemicals, that without any question, has negatively impacted both recreational and commercial fishing. I have personally witnessed the deterioration in the amount of eel grass, crab life and natural marine life in my forty years living along the shores of the Cape Cod Canal in Gray Gables. This deterioration

would only multiply with the amounts of increased effluent being discussed. Accidents happen on a regular basis when weather conditions and excessive rain prohibit proper functioning of these treatment plants, as happened in New Bedford recently, when millions of gallons of raw sewage - not treated effluent - had to be released into the waters off of New Bedford. What a horrible thing to have happened! We cannot let something like this take place in our Canal.

It is very clear that the MMA outfall pipe is a cost-saving measure that benefits MMA, and supporters of growth and development in Wareham and points west and south. The cost of a connection from the Wareham treatment plant to Taylors Point is far less expensive than a disposal pipe out into Buzzards Bay beyond Cleveland Ledge, or a connection to in-ground dilution north of Wareham. The City of Boston chose to send their sewage outfall pipe 9.9 miles off-shore - not an inexpensive project, but obviously considered by the powers to be, a necessary one. But, truly, that is where this effluent should go - **miles offshore** - and **not directly** into the waters of our beautiful natural resource, the Cape Cod Canal.

Response to Comment N

Regarding the comment on the discharge of harmful materials and chemicals, as well as nitrogen, see the response to Comments A and G.

Regarding the comments on recreational and commercial fishing, and the deterioration in the amount of eel grass and natural marine life, see response to Comment B.

Regarding the comment to not renew this permit, EPA has determined that there is no basis to do so. See response to Comment C.

Regarding the comment on the proposed Upper Bay Project, see the introduction. Although improved septic system design could reduce nitrogen loading from current septic systems to the watershed, this topic is outside the scope of this permit reissuance and is better addressed in each community's Comprehensive Wastewater Management Plan (CWMP).

Regarding the discharge of raw sewage in New Bedford, see response to Comment D.

O. Melissa (Harding) Ferretti, Chairwoman, Herring Pond Wampanoag Tribe

Indigenous people and tribal communities throughout North America remain on the frontlines of effortsto oppose projects that will be destructive to the natural world – our Mother Earth.

Today our Tribal community continues the work of our ancestors: protecting land and water for our youth, and for future generations. Bourne is the original homeland of the Herring Pond Wampanoag Tribe, and our Tribal citizens still live here amongst you today. We call this place home and have hunted,fished, and gathered for thousands of years on these lands, and we rely heavily on the land and water inand around Buzzards Bay for sustenance, survival and to preserve our rights to food sovereignty.

I am the current Chairwoman of the Herring Pond Wampanoag Tribe of Plymouth Massachusetts - - and I write to you today on behalf my Tribal Council and the citizens of the Herring Pond Wampanoag Tribe to express our opposition to the renewal of the NPDES Permit No. MA0024368 allowing Massachusetts Maritime Academy to discharge treated effluent and other proposed outfall discharge by the Wareham Waste Water Treatment Plant WWTP into the Cape Cod Canal.

The dumping of waste into the waters that sustain us could have a grave impact on not only our lifeways, but all of yours. This waste could harm our shellfish and travel for miles on the backs of our finned fish. We consume these gifts from the sea and feed them to our children. To us there is no levelof waste released, referenced via scientific means that can be considered safe and protective of the environment and people.

The impact to our natural resources, including fisheries, shellfish, and crustacean shellfish is not measured. (See DMF/FDA dye study on classification of shellfish growing areas in Plymouth, Kingston, and Duxbury waters relative to the Plymouth WWTP) Fresh water, in the quantities discharged by MMA and / or any future projects proposed by the WWTP, dumped into a saltwater environment can only have a negative impact, and no positive impacts on the natural environments and our fragile ecosystem. Our area has seen a depletion of eel grass, the disappearance of soft-shell clams and bay scallops, and a hypoxic environment is stressing the lobster viability in Cape Cod Bay and the natural canal hatchery and the impact to neighboring beaches where our Tribal citizens fish for sustenance is not certain. In the November of 2021, on behalf of my Tribal community, and as a 34-year resident of the Town of Bourne, I spoke at the Fall Town Meeting. This meeting produced an overwhelming majority opposing selectboard approval of any wastewater discharge into the Cape Cod canal. The citizens of the Herring Pond Wampanoag and the residents of Bourne prefer other alternatives, which are currently being studied. Please listen to the voices and accept the direction of those voters who represent the community that we are; do not approve the MMA permit renewal or any additional proposed effluent discharge into the Cape Cod canal.

As we have stated repeatedly, we know the homeland of tribal nations in the US are among those communities that are most likely to be targeted for projects that are disastrous for the environment, and that have multiple destructive impacts on Indigenous people's lives. The Herring Pond WampanoagTribe knows this because we have been at the ground zero of colonial resource extraction and have witnessed repeated assaults on our environment for over 400 years. Yet, laws and policies give us as Indigenous people the right to be consulted and to speak out when human activities harm our ancestrallands, our culture and heritage. Under these state and federal laws, Indigenous peoples have rights. Something very often ignored.

We call upon you to acknowledge the United Nations Declaration on the Rights of Indigenous Peoples, which was endorsed by the U.S. State Department in 2010. As Indigenous people have an inherent human right – (Article 32 #2) which states Indigenous people have a right to good faith **consultation** and**cooperation** prior to the approval of any project affecting their lands, territories, and other resources, particularly in connection with the development, utilization or exploitation of mineral, water, or other resources. This is just one example of one of forty-six articles in the document. As a distinct and continual Tribal community - - and one of the few remaining historic Tribes in the Commonwealth of Massachusetts today, we ask you to educate yourselves on these laws and policies.

To us, land, water, and wildlife that we co-exist with are our relatives and are alive and sacred. Most importantly, we know that we have a primary responsibility to our tribal youth to ensure that they, andtheir children, inherit a planet that has been nurtured by us. We need to heal the earth and end environmental exploitation and destruction, not support it. Please don't poison our bay!

Response to Comment O

For the comments regarding the proposed Upper Bay Project and denial of this permit, see the introduction and responses to Comments A and C.

For the comments regarding shellfish, lobster, bay scallops, and eelgrass, the effects of discharging fresh water into a saltwater environment, and the dye study in the vicinity of the Plymouth WWTF, see Response to Comment B.

Under EPA's 2011 Policy on Consultation and Coordination with Indian Tribes, which implements Executive Order 13175, EPA consults with federally recognized tribal governments when Agency actions and decisions may affect tribal interests. EPA recognizes the need to be responsive to the environmental justice concerns of non-federally recognized Tribes, individual tribal members, tribal community-based/grassroots organizations and other indigenous stakeholders. The EPA also recognizes the importance of the United Nations Declaration on the Rights of Indigenous Peoples and the principles that are consistent with the mission and authorities of the Agency.

As a non-federally recognized Tribe, EPA recognizes and appreciates the unique knowledge and concerns that inform the comments of the Herring Pond Wampanoag Tribe. EPA views this permit, which contains limits to assure that WQS in the receiving water are met, to be consistent with the aforementioned policies and documents.

P. Sheree Koppel, Sandwich, MA resident

I understand the Massachusetts Maritime Academy proposes renewal of its permit to dump partially treated wastewater into the Cape Cod Canal. I am writing to express my opposition to a renewal of the permit approving this practice. I am opposed, as well, to the proposed expansion of the Wareham Wastewater Treatment Plant that would include use of the Mass Maritime Academy outfall pipe and radically increase the amount of wastewater released into the canal.

I understand that the outfall pipe currently releases as much as 77,000 gallons of partially treated wastewater into the canal each day. The Wareham Wastewater Treatment plant, as proposed by the Buzzard's Bay Coalition, could potentially add as much as 10 million gallons of untreated or partially treated wastewater each day to the outfall pipe, released directly into the canal. I am appalled that this practice is on the table for a renewed permit, but the proposed expansion is truly outrageous.

Human waste is toxic. Human waste contains bacteria and viruses; it is culpable and causal with relation to a number of diseases and illnesses in humans. Pumping human waste into a water body such as the canal is not a sustainable practice. Pumping it into a water body close to beaches and recreation areas is criminal and environmentally unethical. I cannot fathom such a practice championed by an organization devoted to the sea such as the Mass Maritime Academy.

The ocean is a limited ecosystem. It cannot forever renew itself when challenged environmentally by the careless practices of humans. This kind of thoughtless use of the ocean as a dump cannot continue indefinitely. Such practices jeopardize our fishing industry, shellfish production and the health of our seabirds. I was young when Boston decided to use outfall pipes to dispose of garbage in Cape Cod Bay. I lived in Barnstable close to the harbor and Mill Way Beach. I remember when the garbage began to wash up on my beautiful beach. I have had my share of summer rashes caused by chemicals in the salt water that looked so pristine and inviting. I believe the Mass Maritime Outfall Pipe will dump large amounts of bleach, metal and PFAs into the canal along with the wastewater and along with bacteria and viruses.

We all want our waters to remain clean, healthy and inviting. We want our actions to contribute positively to the healthy sustainability of local habitants where fish, shellfish, birds and sea mammals thrive. We want our children and grandchildren to enjoy this part of the world in safety and health. The dumping of large quantities of only partially treated wastewater into the Cape Cod Canal does not further our goals as I stated them herein. There are

more sustainable ways to deal with waste disposal. Both the academy and the coalition should be required to research and implement more sustainable strategies for handling wastewater. I believe that the Maritime Academy should not be granted a new permit and that the outfall pipe should be sealed. I believe that the Buzzard's Bay Coalition should not be granted a permit to flood the canal with wastewater produced by the Wareham Wastewater Treatment Plant. Please do not reissue the permit for the Maritime Academy and do not issue a permit for the Buzzard's Bay Coalition to dispose of wastewater by dumping it into the Cape Cod Canal. Thank you.

Response to Comment P

Regarding the comment to not renew this permit, EPA has determined that there is no basis to do so. See response to Comment C. The facility provides secondary treatment to its wastewater and is currently discharging below its permitted monthly average flow of 77,000 gallons per day (GPD).

Comments related to the proposed Upper Bay Project are not the subject to this permit reissuance and no response is provided, as explained in the introduction.

Regarding the comments on beaches, fishing industry, and shellfish production, see response to Comment B.

The commenter states that the dumping of large amounts of bleach, metal and PFAs into the canal along with the wastewater and along with bacteria and viruses is associated with is discharge, although the commenter may be attributing these discharges to a possible, future expanded outfall from a regional treatment plant which has already been addressed in the introduction. With current operations at MMA that are the subject of this reissuance, MMA treats its wastewater for bacteria with ultraviolet (UV) light, not with sodium hypochlorite (bleach). The Facility maintains a chlorine disinfection and dechlorination system for use in the event of failure of the UV system and an effluent limit for total residual chlorine (TRC) that would apply under such circumstances. This treatment is necessary to meet the bacteria limits which have been established to meet WQS. As discussed in the Fact Sheet, there is a once per month discharge from the facility swimming pool through a separate discharge point, Outfall #002. Since this swimming pool water is typically chlorinated, the discharge of TRC is limited at Outfall 002 and the facility treats the swimming pool water with calcium thiosulfate prior to discharge to meet this limit.

This permit assessed the discharge of metals and found that that there was no reasonable potential to cause or contribute to any WQS violation for these metals. However, sampling for certain metals will continue on an annual basis associated with the sampling required by the Whole Effluent Toxicity (WET) testing. Also see response to Comment G. See response to Comment F regarding PFAS compounds.

Q. Keith Barber, President – Pocasset Water Quality Coalition

The Pocasset Water Quality Coalition Inc. (PWQC) is pleased for the opportunity to provide the following Comments on the draft renewal permit for the NPDES discharge for the Massachusetts Military Academy (MMA) – NPDES permit number MA002-4368.

The Pocasset Water Quality Coalition Inc. was established in December 2019 and granted nonprofit status (501(c)3) in January 2020. Our Motto is: "Healthy Harbors for Families and Nature." Our mission is "to restore the water quality of the Red Brook Harbor/Pocasset Harbor watershed, including Hen Cove, Barlow's Landing harbor, and the inlet of Wings Neck to healthy environmental levels. We are working toward the day when we have clean, pure saltwater for our families and community to enjoy, as well as healthy natural marshes and wetlands for our birds and marine wildlife."

The PWQC has over 250 dues-paying members and a mailing list that encompasses a wider audience across Bourne and Cape Cod. Our immediate areas of concern are Red Brook Harbor, Hen Cove and Pocasset Harbor. All of these are connected to Buzzards Bay. As such it is our responsibility to comment on water quality issues affecting Bourne waters including the Cape Cod Canal, Buzzards Bay and adjacent waters of Cape Cod Bay. This NPDES permit renewal falls within this purview.

We, the Board of Directors of the PWQC, on behalf of our members and the broader Pocasset community of theTown of Bourne, hereby present our General Comments, covering the Draft Permit, the Fact Sheet and relevant portions of the Massachusetts State Water Quality Standards (314 CMR 4.00, December 10, 2021), in this letter,below. We present our Specific Comments on individual items as Appendix A.

General Comments

Q.1: Based on our knowledge and experience, the Draft Permit and Fact Sheet appear to be in compliance, in a very strict sense, with the requirements of the Clean Water Act, applicable Massachusetts law, and federal and state regulations. However, the water quality in the waters in Buzzards Bay near this discharge is extremely degraded, to the point where the waters do not meet the Designated Use of fishable and swimmable quality. We will elaborate on this later in Specific Comments. The limitations on the Applicant specified in this draft permit do nothing to improve or even maintain the water quality of nearby waters. Much of the responsibility for this egregious omission lies with the EPA Region 1 and with the Commonwealth of Massachusetts. This needs to be remedied,starting with the improvements we identify below.

Response to Comment Q.1:

Although the water quality in the waters in Buzzards Bay near this discharge may not be meeting all of their designated uses, this permit assesses only the designated uses of the receiving water quality. A summary of designated uses and their status is noted in the Fact Sheet. (***Tie in to Q16 response*** ??)

Q.2: The major cause for this ongoing degradation of water quality, and failure to achieve Designated Uses, is the discharge of excess nitrogen that fertilizes noxious algal growth, coming from permitted point-source discharges, septic system loading to groundwater, and surface nonpoint-source discharges from the watersheds of streams and sub-estuaries feeding the Canal and Buzzards Bay. The MMA wastewater discharge, with its nitrogen loading, is a contributor, albeit a minor one, to this ongoing watershed-wide loading and continued degradation. The Draft Permit appears to minimize the intensityof monitoring of nitrogen, and presents only perfunctory requirements for current or future management of nitrogen, or even requirements for updated compliance studies for evaluating options for future reductions of nitrogen loading, e.g., during the 5-year term of this permit.

Response to Comment Q.2:

See the response to Comment A regarding a discussion of nitrogen sources to this watershed. EPA determined that a continuation of optimization of the treatment plant for the removal of nitrogen in Part I.F.1 was warranted for this permit, which includes the submittal of an annual report to track the measures that the facility undertakes to meet this requirement.

Q.3: We did note that this draft estimated initial dilution of the discharge based on slack tide as the critical condition – an improvement overestimates in previous studies. However, this initial physical dilution of nitrogen species is largely irrelevant to protecting and improving the water quality of nearby Buzzards Bay. Within a day

or two of discharge of nitrogen-laden effluent, biogeochemical (not physical) processes dominate,so that inorganic nitrogen species are taken up by growing algae. Crucially, these processes that are causing theongoing Bay-wide degradation of water quality must be quantified (see 7 below).

Response to Comment Q.3:

EPA agrees with the commenter. The dilution factor that was estimated for this discharge location was used to determine whether there was a reasonable potential to violate WQS for metals and ammonia, but not nitrogen.

Q.4: The inference that the PWQC draws from this avoidance of considering nitrogen in the Draft Permit is that the Applicant and the Permit Writer optimistically expect that the sole "viable" corrective option proposed to date – pumping the MMA waste flow to the Wareham WWTP, and return pumping of the treated effluent for discharge to MMA Outfall 001 – will be approved and meet any regulatory obligations of the Applicant (we infer that the 2012 study that looked at the option of on-site nitrogen removal appeared to have been dismissed out of hand). However, we note that the Citizens' Petition to prohibit the Bourne Select Board from approving an expanded discharge to the Canal was overwhelmingly approved by the Bourne Town Meeting in November 2021. Given that vote, we expect that continued development of this alternative, involving a Permit Modification to MMA's Permit, would be the subject of future litigation (though we have no knowledge of any specific plans for any litigation).

Response to Comment Q.4:

EPA disagrees with the comment. Consideration was given to limiting nitrogen in the Draft Permit but it was determined that only the continued optimization requirement and effluent monitoring noted earlier were warranted and would be carried forward in the Final Permit. This decision was made with no preconceived determination of whether the Upper Bay Project would be implemented and is analogous to the nitrogen limiting strategy being employed by EPA for the facilities discharging to tributaries to Long Island Sound in Massachusetts and New Hampshire. EPA's approach with those permits is to limit medium to large WWTF discharges to an annual average nitrogen loading based on an effluent concentration of 5, 8, or 10 mg/l, depending on the size of the facility. However, for facilities in Massachusetts with flows of less than 1.0 MGD, it was determined that effluent loading limits were not warranted. Because the smaller sized facilities collectively accounted for a relatively small amount of the total nitrogen load to the watershed, EPA determined that optimization and continued effluent nitrogen monitoring was a reasonable point of departure for these facilities, given their comparatively small loads and user bases. See Appendix A of the Response to Comments document for the Gardner WWTF NPDES Permit[3]**.**

Q.5: The major reason for EPA's and Mass. DEP's failure to vigilantly monitor nitrogen and plan for its removal from this waste stream is their narrow focus on the Cape Cod Canal (aside from perfunctory reference to impairment in "certain coves") as the receiving water, and failure to recognize, monitor, and document the decades-long nitrogen-caused decline in the water quality of Buzzards Bay and the associated widespread declines of its ecological and recreational resources, both near the outfall and down the main body of the Bay. Had these water quality regulatory authorities properly monitored the decline, this would have triggered a listing of Buzzards Bay proper on the biennial Massachusetts (303(d)) Impaired Waters List and would have resulted in implementation of a full TMDL process for nitrogen, and perhaps suspended solids. We note that TMDLs have been and are being conducted by the Mass. Estuaries Program for some of the tributary estuaries where water quality degradation conditions are particularly egregious due to residential septic loading, NPS discharges, combined with increased siltation and reduced water exchange with the main stem of the Bay. (We note that the PWQC was formed to advocate for funding for an urgent study of options for increasing flushing

[3] https://www3.epa.gov/region1/npdes/permits/2021/finalma0100994permit.pdf

for the Red Brook Harbors complex in Pocasset).

Response to Comment Q.5:

The Final Permit requires the continuation of quarterly monitoring for nitrogen and continued optimization. As already noted, the discharge of nitrogen from this facility is a small fraction of the overall nitrogen loading to the watershed. The Fact Sheet recognized that there are nitrogen related impairments in certain portion of the Buzzards Bay watershed and the causes of these impairments have been extensively studied and documented, including in the 2009 Buzzards Bay Pathogen TMDL. As noted in response to Comment B, impacts to lobsters, shellfishing, beaches, eelgrass and other resources are caused by multiple factors, including residential septic systems as noted in the comment.

Q.6: The PWQC believes it is EPA's and the State's legal obligation to document and recognize the decline in Buzzards Bay water quality, implement a Bay-wide TMDL that documents the loadings from each of its tributaries and establish, e.g., through water quality modeling, the Assimilative Capacity for nitrogen for the main stem of Buzzards Bay. It will then be the responsibility of these agencies to establish loading limits for each sub-watershed, which the individual municipalities must then incorporate into their Comprehensive Wastewater Management Plans (CWMPs) as enforceable limits. EPA has an established track record for funding, undertaking and managing such nitrogen TMDLs for estuaries around the country; the most prominent example is the TMDL for nitrogen, phosphorus and suspended solids for the Chesapeake Bay and its 36 tributaries, and the ongoing multi-state restoration program.

Response to Comment Q.6:

EPA agrees with the comment as the Agencies have recognized the decline in Buzzards Bay water quality, as reflected in the listed nitrogen impairments in various water segments in the State's 303(d) listing. As already discussed, the proposed "Upper Bay Project" is specifically designed to significantly reduce the overall nitrogen loading to the Buzzards Bay watershed. The U.S. EPA has provided nearly $1 million in grants for the development of this project in recognition of its significant pollution reduction potential.

Q.7: We note that there are several other aspects of the Draft Permit and Fact Sheet that need correction and improvement, including State Standards and monitoring requirements for metals that are outdated relative to current scientific knowledge, and will soon be updated in EPA's Recommended Water Quality Criteria. We are pleased that the Draft Permit includes monitoring requirements for PFAS substances, but note that this large residential facility likely generates wastewater with many other unregulated and incompletely treated Chemicals of Emerging Concern (CECs), such as from pharmaceuticals, personal care products and other home product additives. These chemicals may need to be added to future renewals of this permit. These will be addressed in our Specific Comments, below.

Response to Comment Q.7:

This permit reflects the current Federal and State WQS. As WQS are revised and adopted by EPA and/or the State, they will be reflected in future permits. Regarding unregulated and other emerging chemicals of concern, EPA continues to assess the prevalence and water quality impacts of these chemicals and may regulate some of these in future permitting actions. This process has started for PFAS compounds, as EPA is requiring sampling in this round of permits while EPA and the States are working on the development of WQS. In the next round of permits, EPA will determine whether limits or other controls would be required for these compounds.

Appendix A - Detailed Comments

Draft Permit –

Q.8: Ammonia Nitrogen, TKN, and nitrite/nitrate sampling - Quarterly sampling is grossly insufficient; the previous Permit required monthly sampling. PWQC requests the restoration of monthly monitoring of all forms of nitrogen, instead of the proposed reduction to quarterly monitoring. There is no required effluent limitation. The permit should require the Applicant to update their 2012 study of options for reducing nitrogen (Fact Sheet 5.1.10.1). This study is different from the Nitrogen Optimization Special Condition (I.F.1). PWQC requests the establishment of a five-year compliance period that includes a study of other options for nitrogen reduction, instead of the apparent reliance on the contentious option of treatment and return from theWareham WWTP.

Response to Comment Q.8:

The commenter is incorrect. The prior permit required quarterly monitoring for Ammonia Nitrogen, TKN, and nitrite/nitrate sampling and this monitoring frequency has been carried over to the Final Permit. See responses to comments Q.4 and Q.5 for comments regarding the permit's optimization requirement. EPA determined that the requirement in the previous (2011) Permit to conduct an evaluation of alternative methods of treatment at the WWTP to optimize nitrogen removal did not need to be repeated in this permit. Rather, EPA determined that it was warranted for MMA to continue optimizing its treatment plant for the removal of nitrogen and this decision did not rely on the option of treatment and return from theWareham WWTP as speculated by the commenter.

Q.9: Metals as Effluent Characteristic - Total Recoverable and Dissolved Metals in the Outfall 001 Effluent should be monitored and reported quarterly. EPA's own studies have shown that the 1996 Metals Translator is inadequate for predicting toxicity from metals. EPA's most recent guidance is to estimate the Bioavailable fraction of metals based on a model like the Biotic Ligand Model, applied to measured dissolved metal, with Dissolved Organic Carbon, hardness and pH as additional required inputs. Simultaneous measurement of Total recoverable would fulfill the requirement to report Total metal. PWQC requests an update the metals monitoring to focus on the metals species (dissolved metals) and ambient water quality constituents (dissolved organic carbon, hardness, pH) that EPA is recommending for estimating metals bioavailability to aquatic organisms, and possible toxicity (as estimated by EPA's Biotic Ligand Model, or similar multiple regression estimator).

Response to Comment Q.9:

As explained in the Fact Sheet, there was no reasonable potential (RP) determined for any metals in the discharge to violate WQS. EPA used the effluent metals data associated with the whole effluent toxicity testing and the RP analysis factored in the metals criteria that are expressed as the dissolved metals. The Biotic Ligand Model (BLM) may be used in some cases to determine alternative metals criteria for specific discharges or waterbodies, but this method is usually requested by permittees in order to determine whether less stringent metals criteria are warranted. In the case of this permit, since there was no RP determined for the metals considered, there was no rationale to consider establishing alternative metal criteria via the BLM process.

Q.10: Metals forWhole Effluent Toxicity - Total concentrations are not relevant for aquatic toxicity, so dissolved metal should be measured and used. For this freshwater effluent, Dissolved Organic Carbon, hardness and pH should be measured and reported. In marine ambient water or dilution water, DOC should be measured and reported. These constituents will then allow the use of new metal Bioavailability estimators (the Biotic Ligand Model, or EPA's new multiple regression estimators of the metal species potentially contributing to toxicity. EPA will propose new metals bioavailability estimators for fresh waters within a few months, and will develop and promulgate similar bioavailability estimators for marine waters within the 5-year term of this permit. We

note that EPA Office of Water proposed new marine (saltwater) copper criteria based on a marine BLM in 2016, which could result in CM Criteria as low as 0.5 micrograms/L. However, this proposal was withdrawn early in the Trump Administration; OW is likely to propose new Bioavailability-based criteria for copper and other metals during the term of this Permit, so the "Reasonable Potential to Exceed…" analysis (Fact Sheet 5.1.11.2) will need to be redone using recent effluent data.

Response to Comment Q.10:

Although EPA had proposed EPA new marine (saltwater) copper criteria based on a marine BLM in 2016, these criteria were not finalized and therefore could not be considered for this permit reissuance. Since this discharge is made to a marine water, this permit requires the use of marine water test protocol which requires the test water to be adjusted to within a specific salinity range. This protocol specifies that total, rather than dissolved, organic carbon, be sampled for the effluent and the dilution water used. In addition, the permit requires concurrent ambient sampling for this parameter. Also see the response to Q.9.

Q.11: 6 PFAS Chemicals - We are glad to see this new monitoring, in compliance with EPA's national requirement, and look forward to initiation of monitoring once EPA approves its new methods for wastewater and sludge. We note that these persistent chemicals may bioaccumulate in tissues of aquatic organisms, particularly the nearby oysters in aquaculture grants across from the Academy along Mashnee Dike, in the recreational shellfish beds adjacent to the Academy at Taylors Point,and for shellfish in aquaculture grants and beds in nearby Buttermilk Bay, so monitoring data are urgently needed for a human health risk assessment of risks to humans ingesting these shellfish.

Response to Comment Q.11:

See the response to Comment F.

Q.12: Part I.A.4 - "The discharge shall be free from pollutants…" We maintain that this Condition has been too narrowly interpreted, such that the enormous far-field and secondary effects of nitrogen, which is the root cause that induces virtually ALL of the adverse effects listed in this Condition.

Response to Comment Q.12:

The language cited by the commenter is one of the narrative standards from the State WQS and is noted in all NPDES permits. NPDES permits contain narrative standards as well as specific effluent limits and conditions. Regarding the nitrogen comment, it has been discussed in the introduction and response to Comment A that impairments in Buzzards Bay due to nitrogen loading are from known and multiple sources and this discharge represents a very small fraction of that loading.

Q.13: Part I.A.5 - " … adversely affect the physical, chemical, or biological nature of the bottom of the water course." Again, this Condition has been interpreted too narrowly. Excess nitrogen is generating organic matter that is settling all over the main stem and side estuaries of the Bay. Large areas of the bay benthos have been converted from oxygenated sandy habitat with eel grass and other abundant biota, to fine muckwith anoxic black sediment a few centimeters below the surface, smothering local benthic diversity.

Response to Comment Q.13:

This language is directly from the MA WQS. It has been noted that there are impairments of several coves of Buzzards Bay but no such impairments are listed for Cape Cod Canal. As mentioned in the response to Comment A, there are several sources of nitrogen to Buzzards Bay and the contribution from MMA is a small fraction of that total.

Q.14: Part I.B.2 - "…except SSOs that do not impact a surface water or the public,…" What is the threshold for determination of no impact? Who makes this determination, and with what authority?

Response to Comment Q.14:

This language was added to reflect the public notification requirement for SSOs required by the State of Massachusetts. Specifically, backups of wastewater into a property which are not caused by conditions in the system owned and operated by the sewer system are not required to be reported.[4] These incidents normally occur due to blockages in service connections to a property or blockages in the internal plumbing system. However, as required by Part I.B.1 of the Permit, all unauthorized discharges, including any SSOs, must be reported to EPA and MassDEP within 24 hours of the permittee becoming aware of any such discharge.

Q.15: Part I.G.7 - Any verbal reports should also be made to the Town of Bourne Board of Health. The Permittee should be required to also notify the Bourne Board of Health about any permit violations, system upsets, SSOs, or other incidents that may endanger human health or the environment.

Response to Comment Q.15:

Part I.G.7 of the Final Permit has been revised to require the Permittee to provide the Town of Bourne's Board of Health of any verbal reports or notifications that are also provided to EPA and MassDEP. These notifications would include plant upsets, SSOs, and any noncompliance which may endanger health or the environment.

Specific discharge information and record of compliance for this and other NPDES facilities can be accessed from EPA's ECHO database at https://echo.epa.gov/.

Fact Sheet -

Q.16: Page 6 – Section 2.2.3 **–** Impaired Waters List reporting: We maintain that the State has failed to identify the worsening impairments of the main body of Buzzards Bay due to excess nitrogen, in violation of the requirements of the Clean Water Act. Water transparency continues to degrade due to algal densities. Benthic habitat in main stem areas (e.g., Mashnee Flats) continue to lose eel grass beds. PWQC members can point out many more areas where water quality impairment is growing.

Response to Comment Q.16:

As more data become available for aquatic life use assessment of the Cape Cod Canal and nearby waters, data which indicate impairment including waters considered impaired due to excess nitrogen (based on biological indicators, such as eelgrass bed loss and chlorophyll) will be placed in Category 5 requiring the development of a TMDL. The nearby Phinneys Harbor Embayment System TMDL is one such example of a restoration plan aimed at nutrient control to improve aquatic life in Buzzards Bay. Several other embayments in Buzzards Bay are

[4] https://www.mass.gov/how-to/sanitary-sewer-overflowbypassbackup-notification

currently impaired for nitrogen-related causes and require TMDLs, including Mattapoisett Harbor, Megansett Harbor, Wareham River, Onset Bay, and Buttermilk Bay.

Regarding the loss of eelgrass beds, see response to Comment B.

Q.17: Page 14 – Section 4.1 - Receiving Water: The 2016 Listing of the Cape Cod Canal/Buzzards Bay as Category 4A ("TMDLCompleted") is misleading and incorrect. The 2009 TMDL was only for pathogens, while Designated Uses of Aquatic Life, Aesthetics, and Fish Consumption were "Not Assessed". This omission needs to be corrected in the next biennial Impaired Waters List, based on a systematic survey of the condition of the Designated Uses in the main body of Buzzards Bay.

Response to Comment Q.17:

The Integrated Report is developed by MassDEP to meet the requirements of Clean Water Act (CWA) sections 305(b) and 303(d), and presents the use-attainment status of all assessed waters in a single, multi-part list. MassDEP places each Assessment Unit (AU) in only one of five categories, using the national ATTAINS database. Waters that have an approved TMDL for some pollutant impairments but not others remain in Category 5 until TMDLs are approved for all of the pollutants. If an assessed use is subject to an approved TMDL and other uses are unassessed, then the appropriate overall category for the AU is 4A, except if the AU is also assessed and impaired for other pollutants cause(s) requiring the development of a TMDL where the one required ATTAINS category for the AU would be Category 5. Waters that have one or more approved TMDLs, but also continue to be impaired by non-pollutants (and/or unassessed for other uses) are listed in Category 4a.

For the 2018/2020 Integrated Report, MassDEP did not assess the Cape Cod Canal AU for the Aquatic Life Use due to insufficient information. MassDEP welcomes water quality data and related information from external groups, which can help inform CWA decisions. Guidance on submittal of quality-controlled data and information to the Watershed Planning Program for use in water quality assessments can be found here: https://www.mass.gov/guides/external-data-submittals-to-the-watershed-planning-program.

Q.18: Page 31 – Section 5.7 - Essential Fish habitat: EFH extends throughout the Bay, not just within the Cape Cod Canal proper. This artificial restriction of the limits of the "Receiving Waters" of the Permit ignores the degradation of "all aquatic life', including Essential Fish Habitat. This needs to be remedied with a proper survey, likely resulting in listing the whole of Buzzards Bay as Impaired: Category 5 on the 303(d) List.

Response to Comment Q.18:

The analysis of EFH species included consideration all EFH species and applicable life stage(s) for the Cape Cod Canal including waters in Buzzards Bay. For the Draft Permit, EPA considered all of these species and determined that the operation of this Facility may adversely affect the EFH in the Cape Cod Canal and areas of Buzzards Bay near the MMA discharge. Section 5.7.1 of the Fact Sheet listed all of the potential impacts to EFH species. EPA concluded that the conditions and limitations contained in the Draft Permit adequately protect all aquatic life, including the EFH in Cape Cod Canal and that no further mitigation was warranted.

By email of March 2, 2022, Sabrina Pereira of NOAA/ National Marine Fisheries Service wrote to John Nagle of EPA and agreed with EPA that the reissuance of this NPDES Permit may adversely affect EFH. However, the conclusion of this correspondence was that the permit conditions were determined to be adequate to minimize adverse effects and there were no conservation recommendations provided.

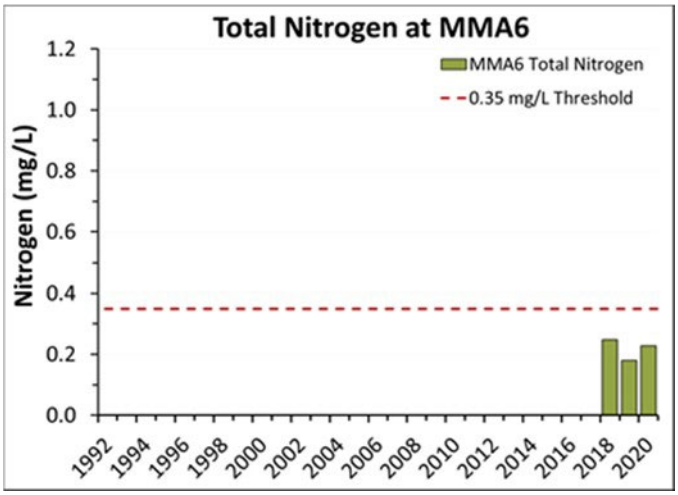
The 303(d) listing is prepared by the MassDEP every 2 years and is not related to EFH designation, which is a Federal process. In its 303(d) listing, the State lists the impairment status of any assessed designated uses for each waterbody.

The latest 2018/2020 MassDEP Integrated List of Waters is available at https://www.mass.gov/lists/integrated-lists-of-waters-related-reports and in the MassMapper (https://maps.massgis.digital.mass.gov/MassMapper/MassMapper.html) application (under "Regulated Areas").

R. Korrin Petersen, Esq. Vice President, Clean Water Advocacy Buzzards Bay Coalition

The Buzzards Bay Coalition (Coalition) has reviewed the draft National Pollution Discharge Elimination System Permit for the Massachusetts Maritime Academy (Draft Permit) and supports its reissuance as drafted.

The Coalition is a membership-supported related water quality sampling program focused in the Cape Cod Canal. Nitrogen measurements taken from a boat near the MMA wastewater treatment plant outfall (station MMA6) show low nitrogen concentrations indicating no adverse impact from the MMA permitted discharge. The horizontal red dotted line indicates a total nitrogen concentration that supports healthy habitat and water quality. All water quality data collected by the Coalition in the Cape Cod Canal and surrounding coastal waters can be found at https://www.savebuzzardsbay.org/bay-health/waterway/buzzards-bay/upper-buzzards-bay/.



The Coalition supports the current total nitrogen monitoring requirements in the Draft Permit. Regionalization Potential. In 2016, MMA partnered with the towns of Wareham, Marion, Bourne and Plymouth and the Coalition to evaluate the feasibility of treating the region's wastewater at an expanded wastewater treatment facility in the town of Wareham and discharging the highly treatedeffluent at the Cape Cod Canal. Extensive work was completed to evaluate whether an increased discharge of highly treated wastewater at the location of MMA's discharge would have an adverse impact on water quality and habitat in the Canal and surrounding waters. Scientists at the Woods Hole Oceanographic Institute (WHOI) concluded that an increased discharge of 3.5 million gallons per day at 3 mg/L total nitrogen would not have an adverse impact on water quality in the Cape Cod Canal and surrounding estuaries. It is clear that regionalization could reduce nitrogen loading to surrounding sensitive coastal waters by and estimated 100,000 lbs resulting in an overall decline in nitrogen to the upper part of Buzzards Bay. A full list of science reports completed as part of the Upper Bay Feasibility Study can be found at https://www.savebuzzardsbay.org/upper-bay-project.

Conclusion: We encourage MMA to continue to lead the discussions with Wareham and other towns on the possibility of regionalization. The Coalition appreciates the opportunity to comment on the Draft Permit. We are available at anytime to discuss these comments and clarify any issues you may have.

Response to Comment R

EPA acknowledges these comments. The recent nitrogen monitoring data noted from this nearby monitoring station resulted in levels below the threshold considered supportive of healthy coastal ecosystems, as determined by the Massachusetts Estuaries Project[5]. It was noted in the Fact Sheet that the Cape Cod Canal is not impaired for nutrients. The U.S. EPA has provided nearly $1 million in grants for the development of this project in recognition of its significant pollution reduction potential.

S. John Gallagher – Bourne, MA resident

In a world where the environment, social and corporate governance (ESG) has become so important and sought after, I find it difficult to understand how the U.S. Environmental **Protection** Agency could justify approving a permit or consider discharging effluent into the Cape Cod Canal while the rest of the world is fighting to keep our oceans clean and restoration projects are the norm!

A better path for the EPA to consider, would be to eliminate any "grandfather" provisions, bring the MMA's sewerage plant up to the latest EPA standards for 2022, and connect the discharge to the Wareham sewage plant. Enrolment at MMA is certainly not what it was when the original permit was issued nor was the level of environmental awareness where it is today. Keep in mind that the residents of Bourne voted overwhelmingly to oppose any discharge at the Town meeting 15 November 2022.

Response to Comment S

There is no concept of "grandfathered" provisions regarding this permit reissuance. See the response to Comment A. During the permit drafting process, EPA reviewed the monitoring history of the discharge and assessed the discharge against all applicable and current State and Federal WQS. The Final Permit is consistent with these WQS and has appropriate permit limits and monitoring requirements to assure that these standards continue to be achieved. As noted in the introduction to this response, the vote taken at the Bourne Town meeting has no bearing on the discharge from this existing permit.

The option of tying in the MMA discharge is being considered as part of the "Upper Bay Project" noted in the introduction to this response. Any future decision to tie the MMA discharge into another facility will be required to undergo appropriate State and Federal review, including the renewal or modification of any existing permits as needed.

T. Patricia Nemeth – Sagamore Beach, MA resident

I am writing to oppose the renewal of NPDES Permit No. MA20024368. I live in Cape Cod; and I am very concerned about the on-going deterioration of the quality of the water in the canal. The fact the out-fall pipe discharges into the canal and not further out at sea is I believe antiquated science. I think a longer outfall pipe should be required. The Mass Maritime plant is 20 years old. I don't believe it would be permitted today with a discharge pipe into the canal. As we all know, dilution is not pollution control.

[5] Massachusetts Estuaries Project Site-Specific Nitrogen Thresholds for Southeastern Massachusetts Embayments: Critical Indicators Interim Report; Brian L. Howes, Roland Samimy, Brian Dudley, July 21, 2003; Revised: September 16, 2003 and December 22, 2003

I am a retired architect and urban planner. During my career, I led a two-year study on water quality in the Santa Monica Bay, CA. That resulted in the sewage treatment's plant's out-fall pipe being extended from 2 miles offshore to 4 miles off-shore. That study was back in the late 80's. I then spent the 90's in air pollution control, where I served as the Chief of Operations for the Southcoast Air Quality Management District. I provide this history to you to illustrate that I have some historic knowledge in this field. I would like to know how I can review the plant's compliance record. Please advise.

Response to Comment T

As noted in the response to Comment A, MMA is in compliance with its NPDES Permit and there is no reason to not renew or otherwise deny this permit reissuance. As explained in the response to Comment C, there is no basis for EPA or MassDEP to require that MMA redirect this discharge to another location or extend the outfall pipe, which in itself would require extensive permitting and environmental review.

The plant's recent 5 year compliance record and DMR information is presented in Attachment A of the Fact Sheet. Discharge information and record of compliance can also be accessed from EPA's ECHO database at https://echo.epa.gov/ or requested through a Freedom of Information Act (FOIA) request as described at https://www.epa.gov/foia/foia-request-process.

ATTACHMENT A - LIST OF COMMENTERS

1- Bill Held
2- Clarence and Beatrice Boucher
3- Dan Moerman
4- Steven Rice and Janine Aversing
5- Jim Buckley
6- Timothy and Laura Petracca
7- Ed Thumith & Janet Thumith
8- Mary Zunino
9- John and Wandra Harmsen
10- Kathy Fox Alfano, President, Gray Gables Association (Bourne)
11- Karen Brendli
12- Sue Page
13- Bill Russell
14- Beth Russell
15- Richard & Judith Conron
16- Save The Cape Cod Canal Committee
17- Nancy Buckley
18- Molly O'Connor
19- Ronald J. and Diane E. Costa
20- William Prodouz and Kristina Prodouz
21- Edith Aucoin
22- Laura Spencer
23- Hank Sudol, Wash - a -Shore on the Cape
24- Becca Britt
25- Patricia Nemeth
26- Frank Gasson
27- Margaret A. Lowe

28- Jacquelyn Chandler
29- Connie Spilhaus
30- E. Sally Girts
31- Tom Egan
32- Maria H. Pires
33- Kathleen Coyle
34- Beth Bumpus
35- Karen Fleming
36- Patrick Jenkins
37- Michael LaRaia
38- Walter S. Wightman, M.D.
39- Douglas Mish
40- Tim Scully
41- Paul and Marilyn Tarallo
42- Richard G Gurnon
43- Monique L. Ward
44- Sheree Koppel
45- Debra Coleman
46- Frank and Barbara Lingard
47- David and Patricia Carter
48- Judith and Joseph Sheehy
49- William Curt Duane
50- Robert Wheeler
51- Mary Ann Mitchell
52- Sean Scannell
53- Joseph Prigioniero
54- Paul and Kathy Alfano
55- Charles Coleman
56- Melissa (Harding) Ferretti, Chairwoman, Herring Pond Wampanoag Tribe
57- John Gallagher
58- Gary Coe
59- Donald F. Ward
60- Keith Barber, President – Pocasset Water Quality Coalition
61- Miguel Prieto, MD
62- Judy Gaseidnes
63- Korrin N. Petersen, Esq. Vice President of Clean Water, Buzzards Bay Coalition

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"),

Massachusetts Maritime Academy
101 Academy Drive
Buzzards Bay, MA 02532

is authorized to discharge from the facility located at

Massachusetts Maritime Academy
101 Academy Drive
Buzzards Bay, MA 02532

to receiving water named

Cape Cod Canal
Buzzards Bay Watershed
USGS Hydrologic code: 01090002

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 immediately following 60 days after signature. [1]

This permit expires at midnight, five years from the last day of the month preceding the effective date.

This permit supersedes the permit issued on February 25, 2011.

This permit consists of **Part I** including the cover page(s), **Attachment A** (Marine Acute Toxicity Test Protocol, July 2012, 10 pages) and **Part II (**NPDES Part II Standard Conditions, April 2018, 21 pages).

Signed this day of

_____
Ken Moraff, Director
Water Division
Environmental Protection Agency
Region 1
Boston, MA

[1] Pursuant to 40 Code of Federal Regulations (C.F.R.) § 124.15(b)(3), if no comments requesting a change to the Draft Permit are received, the permit will become effective upon the date of signature. Procedures for appealing EPA's Final Permit decision may be found at 40 C.F.R. § 124.19.

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated effluent and chiller water through Outfall Serial Number 001 to the Cape Cod Canal. The discharge shall be limited and monitored as specified below; the receiving water and the influent shall be monitored as specified below.

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Rolling Average Effluent Flow [5]	77,000 GPD	---	---	Continuous	Recorder
Effluent Flow [5]	Report GPD	---	Report GPD	Continuous	Recorder
BOD_5	30 mg/L	45 mg/L	Report mg/L	1/week	Composite
BOD_5 Removal	≥ 85 %	---	---	1/month	Calculation
TSS	30 mg/L	45 mg/L	Report mg/L	1/week	Composite
TSS Removal	≥ 85 %	---	---	1/month	Calculation
pH Range [6]	6.5 - 8.5 S.U.			1/day	Grab
Fecal Coliform [7]	14 cfu/100 mL	---	43 cfu/100 mL	1/week	Grab
Enterococcus [7]	35 cfu/100 mL	---	276 cfu/100 mL	1/week	Grab
Total Residual Chlorine[8]	---	---	1.0 mg/L	3/Day	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/quarter	Composite

Effluent Characteristic	Effluent Limitation			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Total Kjeldahl Nitrogen[9]	---	---	Report mg/L	1/quarter	Composite
Nitrate + Nitrite[9]	---	---	Report mg/L	1/quarter	Composite
Total Nitrogen[9]	---	---	Report mg/L	1/quarter	Calculation
Perfluorohexanesulfonic acid (PFHxS)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[10]	---	---	Report ng/L	1/quarter	Composite
Whole Effluent Toxicity (WET) Testing[11,12]					
LC_{50}	---	---	≥ 50 %	1/year	Composite
Salinity	---	---	Report ppt	1/year	Composite
Ammonia Nitrogen	---	---	Report mg/L	1/year	Composite
Total Cadmium	---	---	Report mg/L	1/year	Composite
Total Copper	---	---	Report mg/L	1/year	Composite
Total Nickel	---	---	Report mg/L	1/year	Composite
Total Lead	---	---	Report mg/L	1/year	Composite
Total Zinc	---	---	Report mg/L	1/year	Composite
Total Organic Carbon	---	---	Report mg/L	1/year	Composite

Ambient Characteristic[13]	Reporting Requirements			Monitoring Requirements[1,2,3]	
	Average Monthly	Average Weekly	Maximum Daily	Measurement Frequency	Sample Type[4]
Salinity	---	---	Report ppt	1/year	Grab
Ammonia Nitrogen	---	---	Report mg/L	1/year	Grab
Total Cadmium	---	---	Report mg/L	1/year	Grab

Total Copper	---	---	Report mg/L	1/year	Grab
Total Nickel	---	---	Report mg/L	1/year	Grab
Total Lead	---	---	Report mg/L	1/year	Grab
Total Zinc	---	---	Report mg/L	1/year	Grab
Total Organic Carbon	---	---	Report mg/L	1/year	Grab
pH[14]	---	---	Report S.U.	1/year	Grab
Temperature[14]	---	---	Report °C	1/year	Grab

Influent Characteristic	**Reporting Requirements**			**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
BOD_5	Report mg/L	---	---	1/week	Composite
TSS	Report mg/L	---	---	1/week	Composite
Perfluorohexanesulfonic acid (PFHxS)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorononanoic acid (PFNA)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanesulfonic acid (PFOS)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorooctanoic acid (PFOA)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluoroheptanoic acid (PFHpA)[10]	---	---	Report ng/L	1/quarter	Composite
Perfluorodecanoic acid (PFDA)[10]	---	---	Report ng/L	1/quarter	Composite

Sludge Characteristic	**Reporting Requirements**			**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
Perfluorohexanesulfonic acid (PFHxS)[15]	---	---	Report ng/g	1/quarter	Composite[16]
Perfluorononanoic acid (PFNA)[15]	---	---	Report ng/g	1/quarter	Composite[16]
Perfluorooctanesulfonic acid (PFOS)[15]	---	---	Report ng/g	1/quarter	Composite[16]
Perfluorooctanoic acid (PFOA)[15]	---	---	Report ng/g	1/quarter	Composite[16]
Perfluoroheptanoic acid (PFHpA)[15]	---	---	Report ng/g	1/quarter	Composite[16]
Perfluorodecanoic acid (PFDA)[15]	---	---	Report ng/g	1/quarter	Composite[16]

2. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated swimming pool water through Outfall Serial Number 002 to the Cape Cod Canal. The discharge shall be limited and monitored as specified below.

Effluent Characteristic	**Effluent Limitation**			**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Average Weekly**	**Maximum Daily**	**Measurement Frequency**	**Sample Type[4]**
Effluent Flow [17]	---	---	10,000 GPD [17]	1/discharge	Estimate
pH Range [6]	6.5 - 8.5 S.U.			1/hour	Grab
Total Residual Chlorine[8]	---	---	1.0 mg/L	1/hour	Grab
Total Copper	---	---	0.5 mg/L	1/hour	Grab

Footnotes begin on Page 6

Footnotes:

1. All samples shall be collected in a manner to yield representative data. A routine sampling program shall be developed in which samples are taken at the same location, same time and same days of the week each month at the locations specified below:

Parameter	Sampling Location
BOD_5 and TSS	Influent; 24 hour composite samples shall be taken by the sampler line in the outlet pipe of the Screening Unit Effluent; 24 hour composite samples shall be taken from the line drawn from the bottom of outlet trough of the UV system
Fecal Coliform and *Enterococc*us	Grab samples shall be taken at the UV system overflow weir
TRC (when chlorinating)	Effluent TRC shall be taken as grab sample from the accessible downstream manhole (outside the plant).
Whole Effluent Toxicity	Effluent 24 hour composite samples shall be taken from the line drawn from the bottom of outlet trough of the UV system
Total Nitrogen as N, TKN Total Nitrate and Nitrite as N Total Ammonia as N	Effluent 24 hour composite samples shall be taken from the line drawn from the bottom of outlet trough of the UV system

Occasional deviations from the routine sampling program are allowed, but the reason for the deviation shall be documented as an electronic attachment to the applicable discharge monitoring report (DMR). The Permittee shall report the results to the Environmental Protection Agency Region 1 (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) of any additional testing above that required herein, if testing is in accordance with 40 CFR Part 136.

2. In accordance with 40 CFR § 122.44(i)(1)(iv), the Permittee shall monitor according to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O, for the analysis of pollutants or pollutant parameters (except WET). A method is "sufficiently sensitive" when: 1) The

method minimum level (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or 2) The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter. The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL), whichever is higher. Minimum levels may be obtained in several ways: They may be published in a method; they may be based on the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a laboratory, by a factor.

3. When a parameter is not detected above the ML, the Permittee must report the data qualifier signifying less than the ML for that parameter (e.g., < 50 µg/L, if the ML for a parameter is 50 µg/L). For reporting an average based on a mix of values detected and not detected, assign a value of "0" to all non-detects for that reporting period and report the average of all the results.

4. A "grab" sample is an individual sample collected in a period of less than 15 minutes.

   A "composite" sample is a composite of at least twenty-four (24) grab samples taken during one consecutive 24-hour period, either collected at equal intervals and combined proportional to flow or continuously collected proportional to flow.

5. Report the annual average, monthly average, and the maximum daily flow in gallons per day (GPD). The limit of 77,000 GPD is an annual average, which shall be reported as a rolling average. The value will be calculated as the arithmetic mean of the monthly average flow for the reporting month and the monthly average flows of the previous eleven months.

6. The pH shall be within the specified range at all times. The minimum and maximum pH sample measurement values for the month shall be reported in standard units (S.U.).

7. The monthly average limits for *Enterococcus* and Fecal coliform are expressed as geometric means.

8. For Outfall 001, TRC monitoring is required 3 times per day only for those days that the Permittee chlorinates its effluent in the event of the ultraviolet (UV) disinfection system being inoperable or inadequate to achieve bacterial control, or when any sand filters are being repaired. The permittee shall notify EPA and MassDEP within 24 hours of when emergency chlorination is initiated. Under such circumstances, the Permittee shall operate a flow pacing pump to feed chlorine solution to the sand filter inlet and dechlorinate the effluent prior to discharge, if necessary, to meet the TRC limit of 1.0 mg/l. For those months when there is no effluent chlorination, the Permittee must report a

No Data Indicator (NODI) Code on the DMR. In Attachment E of *NPDES Permit Program Instructions for the DMRs*, a list of NODI codes is included at https://echo.epa.gov/tools/data-downloads/icis-npdes-dmr-summary.

For Outfall 002, TRC monitoring is required once per hour while discharging, including for the duration of any complete swimming pool discharge, after dechlorination. For those months that there is no discharge from this outfall, the Permittee must report a No Data Indicator (NODI) Code on the DMR.

Chlorination and dechlorination systems shall include an alarm system for indicating system interruptions or malfunctions. Any interruption or malfunction of the chlorine dosing system that may have resulted in levels of chlorine that were inadequate for achieving effective disinfection, or interruptions or malfunctions of the dechlorination system that may have resulted in excessive levels of chlorine in the final effluent shall be reported with the monthly DMRs. The report shall include the date and time of the interruption or malfunction, the nature of the problem, and the estimated amount of time and that the reduced levels of chlorine or dechlorination chemicals occurred.

9. Total Kjeldahl nitrogen and nitrate + nitrite samples shall be collected concurrently. The results of these analyses shall be used to calculate both the concentration and mass loadings of total nitrogen, as follows.

   Total Nitrogen (mg/L) = Total Kjeldahl Nitrogen (mg/L) + Nitrate + Nitrite (mg/L)

   Total Nitrogen (lb/day) = [(average monthly Total Nitrogen (mg/L) * total monthly effluent flow (Millions of Gallons (MG)) / # of days in the month] * 8.34

   See Part I.F.1 for special conditions related to nitrogen.

10. Report in nanograms per liter (ng/L). This reporting requirement for the listed per- and polyfluoroalkyl substances (PFAS) parameters takes effect the first full calendar quarter following 6 months after EPA notifies the Permittee that an EPA multi-lab validated method for wastewater is available.

11. The Permittee shall conduct an annual acute toxicity test (LC50) in accordance with test procedures and protocols specified in Attachment A of this permit. LC50 is defined in Part II.E. of this permit. The Permittee shall test the Mysid Shrimp, *Americamysis bahia.* Toxicity test samples shall be collected and tests completed during the month of June. The complete report for each toxicity test shall be submitted as an attachment to the DMR submittal which includes the results for that toxicity test.

12. For Part I.A.1., Whole Effluent Toxicity Testing, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for the effluent sample. If toxicity test(s) using the receiving water as diluent show the receiving water to be toxic

or unreliable, the Permittee shall follow procedures outlined in **Attachment A**, Section IV, DILUTION WATER. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

13. For Part I.A.1., Ambient Characteristic, the Permittee shall conduct the analyses specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS for the receiving water sample collected as part of the WET testing requirements. Such samples shall be taken from the receiving water at a point immediately outside of the permitted discharge's zone of influence at a reasonably accessible location, as specified in **Attachment A**. Minimum levels and test methods are specified in **Attachment A,** Part VI. CHEMICAL ANALYSIS.

14. A pH and temperature measurement shall be taken of each receiving water sample at the time of collection and the results reported on the appropriate DMR. These pH and temperature measurements are independent from any pH and temperature measurements required by the WET testing protocols.

15. Report in nanograms per gram (ng/g). This reporting requirement for the listed PFAS parameters takes effect the first full calendar quarter following 6 months after EPA notifies the permittee that an EPA multi-lab validated method for sludge is available.

16. Sludge sampling shall be as representative as possible based on guidance found at https://www.epa.gov/sites/production/files/2018-11/documents/potw-sludge-sampling-guidance-document.pdf.

17. Periodic discharges of up to 10,000 gallons from the campus swimming pool are authorized to adjust pool water chemistry. The Permittee must notify EPA and MassDEP prior to the complete discharge of the swimming pool as specified in Part I.G.7 of this permit. The Permittee must sample once every hour for the parameters listed for both the periodic and complete pool discharges.

Part I.A., continued.

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

4. The discharge shall be free from pollutants in concentrations or combinations that, in the receiving water, settle to form objectionable deposits; float as debris, scum or other matter to form nuisances; produce objectionable odor, color, taste or turbidity; or produce undesirable or nuisance species of aquatic life.

5. The discharge shall be free from pollutants in concentrations or combinations that adversely affect the physical, chemical, or biological nature of the bottom of the water course.

6. The discharge shall not result in pollutants in concentrations or combinations in the receiving water that are toxic to humans, aquatic life or wildlife.

7. The discharge shall be free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to the receiving water.

8. The discharge shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes discharges only from the outfall listed in Part I.A.1 and I.A.2, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources, including sanitary sewer overflows (SSOs), are not authorized by this permit. The Permittee must provide notification to EPA within 24 hours of becoming aware of any unauthorized discharge, in accordance with Part II.D.1.e.(1) (24-hour reporting). See Part I.G below for reporting requirements.

2. The Permittee must provide notification to the public within 24 hours of becoming aware of any unauthorized discharge, except SSOs that do not impact a surface water or the public, on a publicly available website, and it shall remain on the website for a minimum of 12 months. Such notification shall include the location and description of the discharge; estimated volume; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue.

3. Notification of SSOs to MassDEP shall be made on its SSO Reporting Form (which includes MassDEP Regional Office telephone numbers). The reporting form and instruction for its completion may be found on-line at https://www.mass.gov/how-to/sanitary-sewer-overflowbypassbackup-notification.

C. OPERATION AND MAINTENANCE OF THE SEWER SYSTEM

Operation and maintenance (O&M) of the sewer system shall be in compliance with the Standard Conditions of Part II and the following terms and conditions. The Permittee shall complete the following activities for the collection system which it owns:

1. Maintenance Staff

The Permittee shall provide an adequate staff to carry out the operation, maintenance, repair, and testing functions required to ensure compliance with the terms and conditions of this permit. Provisions to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

2. Preventive Maintenance Program

The Permittee shall maintain an ongoing preventive maintenance program to prevent overflows and bypasses caused by malfunctions or failures of the sewer system infrastructure. The program shall include an inspection program designed to identify all potential and actual unauthorized discharges. Plans and programs to meet this requirement shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

3. Infiltration/Inflow

The Permittee shall control infiltration and inflow (I/I) into the sewer system as necessary to prevent high flow related unauthorized discharges from their collection systems and high flow related violations of the wastewater treatment plant's effluent limitations. Plans and programs to control I/I shall be described in the Collection System O&M Plan required pursuant to Section C.5. below.

4. Collection System Mapping

Within 18 months of the effective date of this permit, the Permittee shall prepare a map of the sewer collection system that it owns. The map shall be on a street map of the campus, with sufficient detail and at a scale to allow easy interpretation. The collection system information shown on the map shall be based on current conditions and shall be kept up-to-date and available for review by federal, state, or local agencies. Such map(s) shall include, but not be limited to the following:

a. All sanitary sewer lines and related manholes;

b. All combined sewer lines, related manholes, and catch basins;

c. All combined sewer regulators and any known or suspected connections between the sanitary sewer and storm drain systems (e.g. combination manholes);

d. All outfalls, including the treatment plant outfall(s), CSOs, and any known or suspected SSOs, including stormwater outfalls that are connected to combination manholes;

e. All pump stations and force mains;

f. The wastewater treatment facility;

g. All surface waters (labeled);

h. Other major appurtenances such as inverted siphons and air release valves;

i. A numbering system which uniquely identifies manholes, catch basins, overflow points, regulators and outfalls;

j. The scale and a north arrow; and

k. The pipe diameter, date of installation, type of material, distance between manholes, and the direction of flow.

5. Collection System O&M Plan

The Permittee shall develop and implement a Collection System O&M Plan.

a. Within six (6) months of the effective date of the permit, the Permittee shall submit to EPA and the State:

(1) A description of the collection system management goals, staffing, information management, and legal authorities;

(2) A description of the collection system and the overall condition of the collection system including a list of all pump stations and a description of recent studies and construction activities; and

(3) A schedule for the development and implementation of the full Collection System O&M Plan including the elements in paragraphs b.1. through b.8. below.

b. The full Collection System O&M Plan shall be completed, implemented and submitted to EPA and the State within twenty-four (24) months from the effective date of this permit. The Plan shall include:

(1) The required submittal from paragraph 5.a. above, updated to reflect current information;

(2) A preventive maintenance and monitoring program for the collection system;

(3) Description of sufficient staffing necessary to properly operate and maintain the sanitary sewer collection system and how the operation and maintenance program is staffed;

(4) Description of funding, the source(s) of funding and provisions for funding sufficient for implementing the plan;

(5) Identification of known and suspected overflows and back-ups, including manholes. A description of the cause of the identified overflows and back-ups, corrective actions taken, and a plan for addressing the overflows and back-ups consistent with the requirements of this permit;

(6) A description of the Permittee's programs for preventing I/I related effluent violations and all unauthorized discharges of wastewater, including overflows and by-passes and the ongoing program to identify and remove sources of I/I. The program shall include an inflow identification and control program that focuses on the disconnection and redirection of illegal sump pumps and roof downspouts;

(7) An educational public outreach program for all aspects of I/I control, particularly private inflow; and

(8) An Overflow Emergency Response Plan to protect public health from overflows and unanticipated bypasses or upsets that exceed any effluent limitation in the permit.

6. Annual Reporting Requirement

The Permittee shall submit a summary report of activities related to the implementation of its Collection System O&M Plan during the previous calendar year. The report shall be submitted to EPA and the State annually by March 31. The summary report shall, at a minimum, include:

a. A description of the staffing levels maintained during the year;

b. A map and a description of inspection and maintenance activities conducted and corrective actions taken during the previous year;

c. Expenditures for any collection system maintenance activities and corrective actions taken during the previous year;

d. A map with areas identified for investigation/action in the coming year;

e. A summary of unauthorized discharges during the past year and their causes and a report of any corrective actions taken as a result of the unauthorized discharges reported

pursuant to the Unauthorized Discharges section of this permit; and

f. If the average annual flow in the previous calendar year exceeded 80 percent of the facility's 0.077 MGD design flow (0.0616 MGD), or there have been capacity related overflows, the report shall include:

(1) Plans for further potential flow increases describing how the Permittee will maintain compliance with the flow limit and all other effluent limitations and conditions; and

(2) A calculation of the maximum daily, weekly, and monthly infiltration and the maximum daily, weekly, and monthly inflow for the reporting year.

D. ALTERNATE POWER SOURCE

In order to maintain compliance with the terms and conditions of this permit, the Permittee shall provide an alternative power source(s) sufficient to operate the portion of the publicly owned treatment works it owns and operates, as defined in Part II.E.1 of this permit.

E. SLUDGE CONDITIONS

1. The Permittee shall comply with all existing federal and state laws and regulations that apply to sewage sludge use and disposal practices, including EPA regulations promulgated at 40 CFR § 503, which prescribe "Standards for the Use or Disposal of Sewage Sludge" pursuant to § 405(d) of the CWA, 33 U.S.C. § 1345(d).

2. If both state and federal requirements apply to the Permittee's sludge use and/or disposal practices, the Permittee shall comply with the more stringent of the applicable requirements.

3. The requirements and technical standards of 40 CFR Part 503 apply to the following sludge use or disposal practices:

   a. Land application - the use of sewage sludge to condition or fertilize the soil

   b. Surface disposal - the placement of sewage sludge in a sludge only landfill

   c. Sewage sludge incineration in a sludge only incinerator

4. The requirements of 40 CFR Part 503 do not apply to facilities which dispose of sludge in a municipal solid waste landfill. 40 CFR § 503.4. These requirements also do not apply to facilities which do not use or dispose of sewage sludge during the life of the permit but rather treat the sludge (e.g., lagoons, reed beds), or are otherwise excluded under 40 CFR § 503.6.

5. The 40 CFR Part 503 requirements include the following elements:

   a. General requirements

   b. Pollutant limitations

   c. Operational Standards (pathogen reduction requirements and vector attraction reduction requirements)

   d. Management practices

   e. Record keeping

   f. Monitoring

   g. Reporting

   Which of the 40 CFR Part 503 requirements apply to the Permittee will depend upon the use or disposal practice followed and upon the quality of material produced by a facility. The EPA Region 1 guidance document, "EPA Region 1 - NPDES Permit Sludge Compliance Guidance" (November 4, 1999), may be used by the Permittee to assist it in determining the applicable requirements.

6. The sludge shall be monitored for pollutant concentrations (all Part 503 methods) and pathogen reduction and vector attraction reduction (land application and surface disposal) at the following frequency. This frequency is based upon the volume of sewage sludge generated at the facility in dry metric tons per year, as follows:

less than 290	1/ year
290 to less than 1,500	1 /quarter
1,500 to less than 15,000	6 /year
15,000 +	1 /month

   Sampling of the sewage sludge shall use the procedures detailed in 40 CFR § 503.8.

7. Under 40 CFR § 503.9(r), the Permittee is a "person who prepares sewage sludge" because it "is … the person who generates sewage sludge during the treatment of domestic sewage in a treatment works …." If the Permittee contracts with another "person who prepares sewage sludge" under 40 CFR § 503.9(r) – i.e., with "a person who derives a material from sewage sludge" – for use or disposal of the sludge, then compliance with Part 503 requirements is the responsibility of the contractor engaged for that purpose. If the Permittee does not engage a "person who prepares sewage sludge," as defined in 40 CFR § 503.9(r), for use or disposal, then the Permittee remains responsible to ensure that the applicable requirements in Part 503 are met. 40 CFR § 503.7. If the ultimate use or disposal method is land application, the Permittee is responsible for providing the person receiving the sludge with notice and necessary information to comply with the requirements of 40 CFR § 503 Subpart B.

F. SPECIAL CONDITIONS

1. Nitrogen Optimization

   a. The Permittee shall continue to optimize the treatment facility operations relative to total nitrogen ("TN") removal through measures such as continued ammonia removal, maximization of solids retention time while maintaining compliance with BOD_5 and TSS limits, and/or other operational changes designed to enhance the removal of nitrogen in order to minimize the annual average mass discharge of total nitrogen.

   b. The permittee shall submit an annual report to EPA and the MassDEP by **February 1st** of each year that summarizes activities related to optimizing nitrogen removal efficiencies, documents the annual nitrogen discharge load from the facility, and tracks trends relative to the previous calendar year. If, in any year, the treatment facility discharges of TN on an average annual basis have increased, the annual report shall include a detailed explanation of the reasons why TN discharges have increased, including any changes in influent flows/loads and any operational changes. The report shall also include all supporting data.

G. REPORTING REQUIREMENTS

Unless otherwise specified in this permit, the Permittee shall submit reports, requests, and information and provide notices in the manner described in this section.

1. Submittal of DMRs Using NetDMR

   The Permittee shall continue to submit its monthly monitoring data in discharge monitoring reports (DMRs) to EPA and the State electronically using NetDMR no later than the 15th day of the month. When the Permittee submits DMRs using NetDMR, it is not required to submit hard copies of DMRs to EPA or the State. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

2. Submittal of Reports as NetDMR Attachments

   Unless otherwise specified in this permit, the Permittee shall electronically submit all reports to EPA as NetDMR attachments rather than as hard copies. See Part I.G.6 for more information on State reporting. Because the due dates for reports described in this permit may not coincide with the due date for submitting DMRs (which is no later than the 15th day of the month), a report submitted electronically as a NetDMR attachment shall be considered timely if it is electronically submitted to EPA using NetDMR with the next DMR due following the report due date specified in this permit.

3. Submittal of Biosolids/Sewage Sludge Reports

   By February 19 of each year, the Permittee must electronically report their annual Biosolids/Sewage Sludge Report for the previous calendar year using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

4. Submittal of Requests and Reports to EPA Water Division (WD)

   a. The following requests, reports, and information described in this permit shall be submitted to the NPDES Applications Coordinator in EPA Water Division (WD):

      (1) Transfer of permit notice;

      (2) Request for changes in sampling location;

      (3) Request for reduction in testing frequency;

      (4) Report on unacceptable dilution water / request for alternative dilution water for WET testing.

   b. These reports, information, and requests shall be submitted to EPA WD electronically at R1NPDESReporting@epa.gov.

5. Submittal of Reports to EPA Enforcement and Compliance Assurance Division (ECAD) in Hard Copy Form

   a. The following notifications and reports shall be signed and dated originals, submitted as hard copy, with a cover letter describing the submission:

      (1) Written notifications required under Part II.B.4.c, for bypasses, and Part II.D.1.e, for sanitary sewer overflows (SSOs). Starting on 21 December 2025, such notifications must be done electronically using EPA's NPDES Electronic Reporting Tool ("NeT"), or another approved EPA system, which will be accessible through EPA's Central Data Exchange at https://cdx.epa.gov/.

   b. This information shall be submitted to EPA ECAD at the following address:

U.S. Environmental Protection Agency
Enforcement and Compliance Assurance Division
Water Compliance Section
5 Post Office Square, Suite 100 (04-SMR)
Boston, MA 02109-3912
Fax: 617-918-0598

6. State Reporting

   Duplicate signed copies of all WET test reports shall be submitted to the Massachusetts Department of Environmental Protection, Division of Watershed Management, at the following address:

   Massachusetts Department of Environmental Protection
   Bureau of Water Resources
   Division of Watershed Management
   8 New Bond Street
   Worcester, Massachusetts 01606

7. Verbal Reports and Verbal Notifications

   a. Any verbal reports or verbal notifications, if required in Parts I and/or II of this permit, shall be made to both EPA and to the State. This includes verbal reports and notifications which require reporting within 24 hours (e.g., Part II.B.4.c.(2), Part II.B.5.c.(3), and Part II.D.1.e).

   b. Verbal reports and verbal notifications shall be made to:

   EPA ECAD at 617-918-1510
   and
   MassDEP Emergency Response at 888-304-1133

H. STATE 401 CERTIFICATION CONDITIONS

1. This Permit is in the process of receiving state water quality certification issued by the State under § 401(a) of the CWA and 40 CFR § 124.53. EPA will incorporate appropriate state water quality certification requirements (if any) into the Final Permit.

MARINE ACUTE

TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

The permittee shall conduct acceptable acute toxicity tests in accordance with the appropriate test protocols described below:

- **2007.0 - Mysid Shrimp (Americamysis bahia) definitive 48 hour test.**
- **2006.0 - Inland Silverside (Menidia beryllina) definitive 48 hour test.**

Acute toxicity data shall be reported as outlined in Section VIII.

II. METHODS

The permittee shall use the most recent 40 CFR Part 136 methods. Whole Effluent Toxicity (WET) Test Methods and guidance may be found at:

http://water.epa.gov/scitech/methods/cwa/wet/index.cfm#methods

The permittee shall also meet the sampling, analysis and reporting requirements included in this protocol. This protocol defines more specific requirements while still being consistent with the Part 136 methods. If, due to modifications of Part 136, there are conflicting requirements between the Part 136 method and this protocol, the permittee shall comply with the requirements of the Part 136 method.

III. SAMPLE COLLECTION

A discharge and receiving water sample shall be collected. The receiving water control sample must be collected immediately upstream of the permitted discharge's zone of influence. The acceptable holding times until initial use of a sample are 24 and 36 hours for on-site and off-site testing, respectively. A written waiver is required from the regulating authority for any holding time extension. Sampling guidance dictates that, where appropriate, aliquots for the analysis required in this protocol shall be split from the samples, containerized and immediately preserved, or analyzed as per 40 CFR Part 136. EPA approved test methods require that samples collected for metals analyses be preserved immediately after collection. Testing for the presence of total residual chlorine[1] (TRC) must be analyzed immediately or as soon as possible, for all effluent samples, prior to WET testing. TRC analysis may be performed on-site or by the toxicity testing laboratory and the samples must be dechlorinated, as necessary, using sodium thiosulfate

[1] For this protocol, total residual chlorine is synonymous with total residual oxidants.

prior to sample use for toxicity testing. If performed on site the results should be included on the chain of custody (COC) presented to WET laboratory.

Standard Methods for the Examination of Water and Wastewater describes dechlorination of samples (APHA, 1992). Dechlorination can be achieved using a ratio of 6.7 mg/L anhydrous sodium thiosulfate to reduce 1 mg/L chlorine. If dechlorination is necessary, a thiosulfate control consisting of the maximum concentration of thiosulfate used to dechlorinate the sample in the toxicity test control water must also be run in the WET test.

All samples submitted for chemical and physical analyses will be analyzed according to Section VI of this protocol. Grab samples must be used for pH, temperature, and total residual chlorine (as per 40 CFR Part 122.21).

All samples held for use beyond the day of sampling shall be refrigerated and maintained at a temperature range of 0-6^{o} C.

IV. DILUTION WATER

Samples of receiving water must be collected from a reasonably accessible location in the receiving water body immediately upstream of the permitted discharge's zone of influence. Avoid collection near areas of obvious road or agricultural runoff, storm sewers or other point source discharges and areas where stagnant conditions exist. EPA strongly urges that screening for toxicity be performed prior to the set up of a full, definitive toxicity test any time there is a question about the test dilution water's ability to achieve test acceptability criteria (TAC) as indicated in Section V of this protocol. The test dilution water control response will be used in the statistical analysis of the toxicity test data. All other control(s) required to be run in the test will be reported as specified in the Discharge Monitoring Report (DMR) Instructions, Attachment F, page 2,Test Results & Permit Limits.

The test dilution water must be used to determine whether the test met the applicable TAC. When receiving water is used for test dilution, an additional control made up of standard laboratory water (0% effluent) is required. This control will be used to verify the health of the test organisms and evaluate to what extent, if any, the receiving water itself is responsible for any toxic response observed.

If dechlorination of a sample by the toxicity testing laboratory is necessary a "sodium thiosulfate" control, representing the concentration of sodium thiosulfate used to adequately dechlorinate the sample prior to toxicity testing, must be included in the test.

If the use of alternate dilution water (ADW) is authorized, in addition to the ADW test control, the testing laboratory must, for the purpose of monitoring the receiving water, also run a receiving water control.

If the receiving water is found to be, or suspected to be toxic or unreliable, ADW of known quality with hardness similar to that of the receiving water may be substituted. Substitution is

species specific meaning that the decision to use ADW is made for each species and is based on the toxic response of that particular species. Substitution to an ADW is authorized in two cases. The first case is when repeating a test due to toxicity in the site dilution water requires an **immediate decision** for ADW use by the permittee and toxicity testing laboratory. The second is when two of the most recent documented incidents of unacceptable site dilution water toxicity require ADW use in future WET testing.

For the second case, written notification from the permittee requesting ADW use **and** written authorization from the permit issuing agency(s) is required **prior to** switching to a long-term use of ADW for the duration of the permit.

Written requests for use of ADW must be mailed with supporting documentation to the following addresses:

Director
Office of Ecosystem Protection (CAA)
U.S. Environmental Protection Agency, Region 1
Five Post Office Square, Suite 100
Mail Code OEP06-5
Boston, MA 02109-3912

and

Manager
Water Technical Unit (SEW)
U.S. Environmental Protection Agency
Five Post Office Square, Suite 100
Mail Code OES04-4
Boston, MA 02109-3912

Note: USEPA Region 1 retains the right to modify any part of the alternate dilution water policy stated in this protocol at any time. Any changes to this policy will be documented in the annual DMR posting.

See the most current annual DMR instructions which can be found on the EPA Region 1 website at http://www.epa.gov/region1/enforcementandassistance/dmr.html for further important details on alternate dilution water substitution requests.

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

EPA Region 1 requires tests be performed using four replicates of each control and effluent concentration because the non-parametric statistical tests cannot be used with data from fewer replicates. The following tables summarize the accepted Americamysis and Menidia toxicity test conditions and test acceptability criteria:

EPA NEW ENGLAND EFFLUENT TOXICITY TEST CONDITIONS FOR THE MYSID, AMERICAMYSIS BAHIA 48 HOUR TEST[1]

1. Test type	48hr Static, non-renewal
2. Salinity	25ppt ± 10 percent for all dilutions by adding dry ocean salts
3. Temperature (^{o}C)	20^{o}C ± 1^{o}C or 25^{o}C ± 1^{o}C, temperature must not deviate by more than 3^{o}C during test
4. Light quality	Ambient laboratory illumination
5. Photoperiod	16 hour light, 8 hour dark
6. Test chamber size	250 ml (minimum)
7. Test solution volume	200 ml/replicate (minimum)
8. Age of test organisms	1-5 days, < 24 hours age range
9. No. Mysids per test chamber	10
10. No. of replicate test chambers per treatment	4
11. Total no. Mysids per test concentration	40
12. Feeding regime	Light feeding using concentrated Artemia naupli while holding prior to initiating the test
13. Aeration [2]	None
14. Dilution water	5-30 ppt, +/- 10%; Natural seawater, or deionized water mixed with artificial sea salts
15. Dilution factor	≥ 0.5
16. Number of dilutions [3]	5 plus a control. An additional dilution at the permitted effluent concentration (%

	effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality - no movement of body appendages on gentle prodding
18. Test acceptability	90% or greater survival of test organisms in control solution
19. Sampling requirements	For on-site tests, samples are used within 24 hours of the time that they are removed from the sampling device. For off-site tests, samples must be first used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters

Footnotes:

[1] Adapted from EPA 821-R-02-012.

[2] If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks are recommended.

[3] When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

EPA NEW ENGLAND TOXICITY TEST CONDITIONS FOR THE INLAND SILVERSIDE, MENIDIA BERYLLINA 48 HOUR TEST[1]

1. Test Type	48 hr Static, non-renewal
2. Salinity	25 ppt ± 10 % by adding dry ocean salts
3. Temperature	20°C ± 1°C or 25°C ± 1°C, temperature must not deviate by more than 3°C during test
4. Light Quality	Ambient laboratory illumination
5. Photoperiod	16 hr light, 8 hr dark
6. Size of test vessel	250 mL (minimum)
7. Volume of test solution	200 mL/replicate (minimum)
8. Age of fish	9-14 days; 24 hr age range
9. No. fish per chamber	10 (not to exceed loading limits)
10. No. of replicate test vessels per treatment	4
11. Total no. organisms per concentration	40
12. Feeding regime	Light feeding using concentrated Artemia nauplii while holding prior to initiating the test
13. Aeration[2]	None
14. Dilution water	5-32 ppt, +/- 10% ; Natural seawater, or deionized water mixed with artificial sea salts.
15. Dilution factor	≥ 0.5
16. Number of dilutions[3]	5 plus a control. An additional dilution at the permitted concentration (% effluent) is required if it is not included in the dilution series.
17. Effect measured	Mortality-no movement on gentle prodding.

18. Test acceptability	90% or greater survival of test organisms in control solution.
19. Sampling requirements	For on-site tests, samples must be used within 24 hours of the time they are removed from the sampling device. Off-site test samples must be used within 36 hours of collection.
20. Sample volume required	Minimum 1 liter for effluents and 2 liters for receiving waters.

Footnotes:

[1] Adapted from EPA 821-R-02-012.

[2] If dissolved oxygen falls below 4.0 mg/L, aerate at rate of less than 100 bubbles/min. Routine D.O. checks recommended.

[3] When receiving water is used for dilution, an additional control made up of standard laboratory dilution water (0% effluent) is required.

V.1. Test Acceptability Criteria

If a test does not meet TAC the test must be repeated with fresh samples within 30 days of the initial test completion date.

V.2. Use of Reference Toxicity Testing

Reference toxicity test results and applicable control charts must be included in the toxicity testing report.

In general, if reference toxicity test results fall outside the control limits established by the laboratory for a specific test endpoint, a reason or reasons for this excursion must be evaluated, correction made and reference toxicity tests rerun as necessary as prescribed below.

If a test endpoint value exceeds the control limits at a frequency of more than one out of twenty then causes for the reference toxicity test failure must be examined and if problems are identified corrective action taken. The reference toxicity test must be repeated during the same month in which the exceedance occurred.

If two consecutive reference toxicity tests fall outside control limits, the possible cause(s) for the exceedance must be examined, corrective actions taken and a repeat of the reference toxicity test must take place immediately. Actions taken to resolve the problem must be reported.

V.2.a. Use of Concurrent Reference Toxicity Testing

In the case where concurrent reference toxicity testing is required due to a low frequency of testing with a particular method, if the reference toxicity test results fall slightly outside of laboratory established control limits, but the primary test met the TAC, the results of the primary test will be considered acceptable. However, if the results of the concurrent test fall well outside the established **upper** control limits i.e. ≥3 standard deviations for IC25s and LC50 values and ≥ two concentration intervals for NOECs or NOAECs, and even though the primary test meets TAC, the primary test will be considered unacceptable and must be repeated.

VI. CHEMICAL ANALYSIS

At the beginning of the static acute test, pH, salinity, and temperature must be measured at the beginning and end of each 24 hour period in each dilution and in the controls. The following chemical analyses shall be performed for each sampling event.

Parameter	Effluent	Diluent	Minimum Level for effluent[*1] (mg/L)
pH	x	x	---
Salinity	x	x	ppt(o/oo)
Total Residual Chlorine [*2]	x	x	0.02
Total Solids and Suspended Solids	x	x	---
Ammonia	x	x	0.1
Total Organic Carbon	x	x	0.5
Total Metals			
Cd	x	x	0.0005
Pb	x	x	0.0005
Cu	x	x	0.003
Zn	x	x	0.005
Ni	x	x	0.005

Superscript:

[*1] These are the minimum levels for effluent (fresh water) samples. Tests on diluents (marine waters) shall be conducted using the Part 136 methods that yield the lowest MLs.

[*2] Either of the following methods from the 18th Edition of the APHA Standard Methods for the Examination of Water and Wastewater must be used for these analyses:

-Method 4500-Cl E Low Level Amperometric Titration (the preferred method);
-Method 4500-CL G DPD Photometric Method.

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration

An estimate of the concentration of effluent or toxicant that is lethal to 50% of the test organisms during the time prescribed by the test method.

Methods of Estimation:

- Probit Method
- Spearman-Karber
- Trimmed Spearman-Karber
- Graphical

See flow chart in Figure 6 on page 73 of EPA 821-R-02-012 for appropriate method to use on a given data set.

No Observed Acute Effect Level (NOAEL)

See flow chart in Figure 13 on page 87 of EPA 821-R-02-012.

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

- Toxicity Test summary sheet(s) (Attachment F to the DMR Instructions) which includes:
    - Facility name
    - NPDES permit number
    - Outfall number
    - Sample type
    - Sampling method
    - Effluent TRC concentration
    - Dilution water used
    - Receiving water name and sampling location
    - Test type and species
    - Test start date
    - Effluent concentrations tested (%) and permit limit concentration
    - Applicable reference toxicity test date and whether acceptable or not
    - Age, age range and source of test organisms used for testing
    - Results of TAC review for all applicable controls
    - Permit limit and toxicity test results
    - Summary of any test sensitivity and concentration response evaluation that was conducted

Please note: The NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs) are available on EPA's website at http://www.epa.gov/NE/enforcementandassistance/dmr.html

In addition to the summary sheets the report must include:

- A brief description of sample collection procedures;
- Chain of custody documentation including names of individuals collecting samples, times and dates of sample collection, sample locations, requested analysis and lab receipt with time and date received, lab receipt personnel and condition of samples upon receipt at the lab(s);
- Reference toxicity test control charts;
- All sample chemical/physical data generated, including minimum levels (MLs) and analytical methods used;
- All toxicity test raw data including daily ambient test conditions, toxicity test chemistry, sample dechlorination details as necessary, bench sheets and statistical analysis;
- A discussion of any deviations from test conditions; and
- Any further discussion of reported test results, statistical analysis and concentration-response relationship and test sensitivity review per species per endpoint.

NPDES PART II STANDARD CONDITIONS
(April 26, 2018)

TABLE OF CONTENTS

A. GENERAL REQUIREMENTS

1. Duty to Comply

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

a. The Permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the Clean Water Act for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement.

b. Penalties for Violations of Permit Conditions: The Director will adjust the civil and administrative penalties listed below in accordance with the Civil Monetary Penalty Inflation Adjustment Rule (83 Fed. Reg. 1190-1194 (January 10, 2018) and the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note. See Pub. L.114-74, Section 701 (Nov. 2, 2015)). These requirements help ensure that EPA penalties keep pace with inflation. Under the above-cited 2015 amendments to inflationary adjustment law, EPA must review its statutory civil penalties each year and adjust them as necessary.

(1) Criminal Penalties

(a) *Negligent Violations.* The CWA provides that any person who negligently violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to criminal penalties of not less than $2,500 nor more than $25,000 per day of violation, or imprisonment of not more than 1 year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation or by imprisonment of not more than 2 years, or both.

(b) *Knowing Violations.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than 6 years, or both.

(c) *Knowing Endangerment.* The CWA provides that any person who knowingly violates permit conditions implementing Sections 301, 302, 303, 306, 307, 308, 318, or 405 of the Act and who knows at that time that he or she is placing another person in imminent danger of death or serious bodily injury shall upon conviction be subject to a fine of not more than $250,000 or by imprisonment of not more than 15 years, or both. In the case of a second or subsequent conviction for a knowing

endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than 30 years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the Act, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions.

(d) *False Statement.* The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both. The Act further provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

(2) *Civil Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to a civil penalty not to exceed the maximum amounts authorized by Section 309(d) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(3) *Administrative Penalties*. The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Act is subject to an administrative penalty as follows:

(a) *Class I Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(A) of the Act, the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

(b) *Class II Penalty.* Not to exceed the maximum amounts authorized by Section 309(g)(2)(B) of the Act the 2015 amendments to the Federal Civil Penalties Inflation Adjustment Act of 1990, 28 U.S.C. § 2461 note, and 40 C.F.R. Part 19. *See* Pub. L.114-74, Section 701 (Nov. 2, 2015); 83 Fed. Reg. 1190 (January 10, 2018).

2. Permit Actions

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

condition.

3. Duty to Provide Information

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

4. Oil and Hazardous Substance Liability

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

5. Property Rights

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

6. Confidentiality of Information

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

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

(1) The name and address of any permit applicant or Permittee;
(2) Permit applications, permits, and effluent data.

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

7. Duty to Reapply

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

8. State Authorities

Nothing in Parts 122, 123, or 124 precludes more stringent State regulation of any activity

covered by the regulations in 40 C.F.R. Parts 122, 123, and 124, whether or not under an approved State program.

9. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, or any infringement of State or local law or regulations.

B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems which are installed by a permittee only when the operation is necessary to achieve compliance with the conditions of the permit.

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

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

c. Notice

(1) *Anticipated bypass*. If the Permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass. As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or if required to do so by state law.

(2) *Unanticipated bypass*. The Permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (24-hour notice). As of December 21, 2020 all notices submitted in compliance with this Section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to report electronically if specified by a particular permit or required to do so by law.

d. *Prohibition of bypass.*

(1) Bypass is prohibited, and the Director may take enforcement action against a Permittee for bypass, unless:

(a) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;

(b) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and

(c) The Permittee submitted notices as required under paragraph 4.c of this Section.

(2) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph 4.d of this Section.

5. Upset

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

improper operation.

b. *Effect of an upset.* An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

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

(1) An upset occurred and that the permittee can identify the cause(s) of the upset;
(2) The permitted facility was at the time being properly operated; and
(3) The permittee submitted notice of the upset as required in paragraph D.12.b.e (24-hour notice).
(4) The permittee complied with any remedial measures required under B.3. above.

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

C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least 5 years (or longer as required by 40 C.F.R. § 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.

c. Records of monitoring information shall include:

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

d. Monitoring must be conducted according to test procedures approved under 40 C.F.R. § 136 unless another method is required under 40 C.F.R. Subchapters N or O.

e. The Clean Water Act provides that any person who falsifies, tampers with, or

knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

The Permittee shall allow the Director, or an authorized representative (including an authorized contractor acting as a representative of the Administrator), upon presentation of credentials and other documents as may be required by law, to:

a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;

b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this permit;

c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

d. Sample or monitor at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the Clean Water Act, any substances or parameters at any location.

D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 C.F.R. § 122.29(b); or

(2) The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements at 40 C.F.R. § 122.42(a)(1).

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

b. *Anticipated noncompliance*. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

c. *Transfers.* This permit is not transferable to any person except after notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under the Clean Water Act. *See* 40 C.F.R. § 122.61; in some cases, modification or revocation and reissuance is mandatory.

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

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices. As of December 21, 2016 all reports and forms submitted in compliance with this section must be submitted electronically by the permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, permittees may be required to report electronically if specified by a particular permit or if required to do so by State law.

(2) If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 C.F.R. § 136, or another method required for an industry-specific waste stream under 40 C.F.R. Subchapters N or O, the results of such monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

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

e. *Twenty-four hour reporting.*

(1) The Permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the Permittee becomes aware of the circumstances. A written report shall also be provided within 5 days of the time the Permittee becomes aware of the circumstances. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports must include the data described above (with the exception of time of discovery) as well as the type of event (combined sewer overflows, sanitary sewer overflows, or bypass events), type of sewer overflow structure (e.g., manhole, combined sewer overflow outfall), discharge volumes untreated by the treatment works treating domestic sewage, types of human health and environmental impacts of the sewer overflow event, and whether the noncompliance was related to wet weather. As of December 21, 2020 all

reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases Subpart D to Part 3), § 122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section.

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

(a) Any unanticipated bypass which exceeds any effluent limitation in the permit. *See* 40 C.F.R. § 122.41(g).
(b) Any upset which exceeds any effluent limitation in the permit.
(c) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Director in the permit to be reported within 24 hours. *See* 40 C.F.R. § 122.44(g).

(3) The Director may waive the written report on a case-by-case basis for reports under paragraph D.1.e. of this Section if the oral report has been received within 24 hours.

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

g. *Other noncompliance.* The Permittee shall report all instances of noncompliance not reported under paragraphs D.1.d., D.1.e., and D.1.f. of this Section, at the time monitoring reports are submitted. The reports shall contain the information listed in paragraph D.1.e. of this Section. For noncompliance events related to combined sewer overflows, sanitary sewer overflows, or bypass events, these reports shall contain the information described in paragraph D.1.e. and the applicable required data in Appendix A to 40 C.F.R. Part 127. As of December 21, 2020 all reports related to combined sewer overflows, sanitary sewer overflows, or bypass events submitted in compliance with this section must be submitted electronically by the Permittee to the Director or initial recipient, as defined in 40 C.F.R. § 127.2(b), in compliance with this Section and 40 C.F.R. Part 3 (including, in all cases, Subpart D to Part 3), §122.22, and 40 C.F.R. Part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of Part 127, Permittees may be required to electronically submit reports related to combined sewer overflows, sanitary sewer overflows, or bypass events under this section by a particular permit or if required to do so by state law. The Director may also require Permittees to electronically submit reports not related to combined sewer overflows, sanitary sewer overflows, or bypass events under this Section.

h. *Other information.* Where the Permittee becomes aware that it failed to submit any

relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information.

i. *Identification of the initial recipient for NPDES electronic reporting data*. The owner, operator, or the duly authorized representative of an NPDES-regulated entity is required to electronically submit the required NPDES information (as specified in Appendix A to 40 C.F.R. Part 127) to the appropriate initial recipient, as determined by EPA, and as defined in 40 C.F.R. § 127.2(b). EPA will identify and publish the list of initial recipients on its Web site and in the FEDERAL REGISTER, by state and by NPDES data group (see 40 C.F.R. § 127.2(c) of this Chapter). EPA will update and maintain this listing.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Director shall be signed and certified. *See* 40 C.F.R. §122.22.

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 6 months per violation, or by both.

3. Availability of Reports.

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

E. DEFINITIONS AND ABBREVIATIONS

1. General Definitions

For more definitions related to sludge use and disposal requirements, see EPA Region 1's NPDES Permit Sludge Compliance Guidance document (4 November 1999, modified to add regulatory definitions, April 2018).

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

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

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

"approved States," including any approved modifications or revisions.

Approved program or *approved State* means a State or interstate program which has been approved or authorized by EPA under Part 123.

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

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

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

Bypass see B.4.a.1 above.

C-NOEC or *"Chronic (Long-term Exposure Test) – No Observed Effect Concentration" means* the highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 C.F.R. § 501.2, required to have an approved pretreatment program under 40 C.F.R. § 403.8 (a) (including any POTW located in a State that has elected to assume local program responsibilities pursuant to 40 C.F.R. § 403.10 (e)) and any treatment works treating domestic sewage, as defined in 40 C.F.R. § 122.2, classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved State programs, the Regional Administrator in conjunction with the State Director, because of the potential for its sewage sludge use or disposal practice to affect public health and the environment adversely.
Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

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

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Public Law 92-500, as amended by Public Law 95-217, Public Law 95-576, Public Law 96-483and Public Law 97-117, 33 U.S.C. 1251 *et seq*.

CWA and regulations means the Clean Water Act (CWA) and applicable regulations promulgated thereunder. In the case of an approved State program, it includes State program requirements.

Daily Discharge means the "discharge of a pollutant" measured during a calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For

pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Direct Discharge means the "discharge of a pollutant."

Director means the Regional Administrator or an authorized representative. In the case of a permit also issued under Massachusetts' authority, it also refers to the Director of the Division of Watershed Management, Department of Environmental Protection, Commonwealth of Massachusetts.

Discharge

(a) When used without qualification, *discharge* means the "discharge of a pollutant."

(b) As used in the definitions for "interference" and "pass through," *discharge* means the introduction of pollutants into a POTW from any non-domestic source regulated under Section 307(b), (c) or (d) of the Act.

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

Discharge of a pollutant means:

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

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

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works. This term does not include an addition of pollutants by any "indirect discharger."

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

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

Environmental Protection Agency ("EPA") means the United States Environmental Protection Agency.

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

Hazardous substance means any substance designated under 40 C.F.R. Part 116 pursuant to Section 311 of CWA.

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

Indirect discharger means a nondomestic discharger introducing "pollutants" to a "publicly owned treatment works."

Interference means a discharge (see definition above) which, alone or in conjunction with a discharge or discharges from other sources, both:

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

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

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

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

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

LC_{50} means the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.

Maximum daily discharge limitation means the highest allowable "daily discharge."

Municipal solid waste landfill (MSWLF) unit means a discrete area of land or an excavation that receives household waste, and that is not a land application unit, surface impoundment, injection well, or waste pile, as those terms are defined under 40 C.F.R. § 257.2. A MSWLF unit also may receive other types of RCRA Subtitle D wastes, such as commercial solid waste, nonhazardous sludge, very small quantity generator waste and industrial solid waste. Such a landfill may be publicly or privately owned. A MSWLF unit may be a new MSWLF unit, an existing MSWLF

unit or a lateral expansion. A construction and demolition landfill that receives residential lead-based paint waste and does not receive any other household waste is not a MSWLF unit.

Municipality

(a) When used without qualification *municipality* means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under Section 208 of CWA.

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

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

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

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

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

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

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

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

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling

rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

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

(a) After promulgation of standards of performance under Section 306 of CWA which are applicable to such source, or

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

NPDES means "National Pollutant Discharge Elimination System."

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

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

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

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved State" to implement the requirements of Parts 122, 123, and 124. "Permit" includes an NPDES "general permit" (40 C.F.R § 122.28). Permit does not include any permit which has not yet been the subject of final agency action, such as a "draft permit" or "proposed permit."

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

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

pH means the logarithm of the reciprocal of the hydrogen ion concentration measured at 25° Centigrade or measured at another temperature and then converted to an equivalent value at 25° Centigrade.

Point Source means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 C.F.R. § 122.3).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. 2011 *et seq*.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal,

and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

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

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

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

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

Publicly owned treatment works (POTW) means a treatment works as defined by Section 212 of the Act, which is owned by a State or municipality (as defined by Section 504(4) of the Act). This definition includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. It also includes sewers, pipes and other conveyances only if they convey wastewater to a POTW Treatment Plant. The term also means the municipality as defined in Section 502(4) of the Act, which has jurisdiction over the Indirect Discharges to and the discharges from such a treatment works.

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

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

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

Sewage Sludge means any solid, semi-solid, or liquid residue removed during the treatment of municipal waste water or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced waste water treatment, scum, septage, portable toilet pumpings, type III marine sanitation device pumpings (33 C.F.R. Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

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

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

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

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

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 C.F.R. §§ 110.10 and 117.21) or Section 102 of CERCLA (*see* 40 C.F.R. § 302.4).
Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to section 405(d) of the CWA, and is required to obtain a permit under 40 C.F.R. § 122.1(b)(2).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, or an Indian Tribe as defined in the regulations which meets the requirements of 40 C.F.R. § 123.31.

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

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

Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant.

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

Toxic pollutant means any pollutant listed as toxic under Section 307(a)(1) or, in the case of "sludge use or disposal practices," any pollutant identified in regulations implementing Section 405(d) of the CWA.

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

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

such designation is necessary to ensure that such person is in compliance with 40 C.F.R. Part 503.

Upset see B.5.a. above.

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

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

Waters of the United States or waters of the U.S. means:

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

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

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

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

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

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

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

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

(f) The territorial sea; and

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

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 C.F.R. § 423.11(m) which also meet the criteria of this definition) are not waters of the United States. This exclusion applies only to manmade bodies of water which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

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

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test.

*Zone of Initial Dilution (*ZID) means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports, provided that the ZID may not be larger than allowed by mixing zone restrictions in applicable water quality standards.

2. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)
TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont.	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day

mg/L	Milligram(s) per liter
mL/L	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
Surfactant	Surface-active agent
Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
µg/L	Microgram(s) per liter
WET	"Whole effluent toxicity"
ZID	Zone of Initial Dilution

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION 1
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: MA0024368

PUBLIC NOTICE START AND END DATES: January 10, 2022 - February 8, 2022

NAME AND MAILING ADDRESS OF APPLICANT:

Massachusetts Maritime Academy
101 Academy Drive
Buzzards Bay, MA 02532

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Massachusetts Maritime Academy
101 Academy Drive
Buzzards Bay, MA 02532

RECEIVING WATER AND CLASSIFICATION:

Cape Cod Canal (MA 95-14)
Buzzards Bay Watershed
Class SB – restricted shellfishing

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1.0 Proposed Action

The above-named applicant (the Permittee) has applied to the U.S. Environmental Protection Agency (EPA) for reissuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge from the Massachusetts Maritime Academy (MMA) Wastewater Treatment Plant (the Facility) into Cape Cod Canal, in close proximity to Buzzards Bay.

The permit currently in effect was issued on February 25, 2011 with an effective date of May 1, 2011 and expired on April 30, 2016 (the 2011 Permit). The Permittee filed an application for permit reissuance with EPA dated January 15, 2016, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on September 23, 2016, the Facility's 2011 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA conducted a site visit on June 15, 2021.

2.0 Statutory and Regulatory Authority

Congress enacted the Federal Water Pollution Control Act, codified at 33 U.S.C. § 1251-1387 and commonly known as the Clean Water Act (CWA), "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." CWA § 101(a). To achieve this objective, the CWA makes it unlawful for any person to discharge any pollutant into the waters of the United States from any point source, except as authorized by specific permitting sections of the CWA, one of which is § 402. *See* CWA §§ 301(a), 402(a). Section 402(a) established one of the CWA's principal permitting programs, the NPDES Permit Program. Under this section, EPA may "issue a permit for the discharge of any pollutant or combination of pollutants" in accordance with certain conditions. CWA § 402(a). NPDES permits generally contain discharge limitations and establish related monitoring and reporting requirements. *See* CWA § 402(a)(1) and (2). The regulations governing EPA's NPDES permit program are generally found in 40 CFR §§ 122, 124, 125, and 136.

"Congress has vested in the Administrator [of EPA] broad discretion to establish conditions for NPDES permits" in order to achieve the statutory mandates of Section 301 and 402. *Arkansas v. Oklahoma,* 503 U.S. 91, 105 (1992). *See also* 40 CFR §§ 122.4(d), 122.44(d)(1), and 122.44(d)(5). CWA §§ 301 and 306 provide for two types of effluent limitations to be included in NPDES permits: "technology-based" effluent limitations (TBELs) and "water quality-based" effluent limitations (WQBELs). *See* CWA §§ 301, and 304(d); 40 CFR Parts 122, 125, 131.

2.1 Technology-Based Requirements

Technology-based limitations, generally developed on an industry-by-industry basis, reflect a specified level of pollutant reducing technology available and economically achievable for the type of facility being permitted. *See* CWA § 301(b). As a class, publicly owned treatment works (POTWs) must meet performance-based requirements based on available wastewater treatment technology. *See* CWA § 301(b)(1)(B). The performance level for POTWs is referred to as "secondary treatment." Secondary treatment is comprised of technology-based requirements expressed in terms of biochemical oxygen demand (BOD_5), total suspended solids (TSS) and pH. *See* 40 CFR Part 133.

Under CWA § 301(b)(1), POTWs must have achieved effluent limits based upon secondary treatment technology by July 1, 1977. Since all statutory deadlines for meeting various treatment technology-based effluent limitations established pursuant to the CWA have expired, when technology-based effluent limits are included in a permit, compliance with those limitations is from the date the issued permit becomes effective. *See* 40 CFR § 125.3(a)(1).

2.2 Water Quality-Based Requirements

The CWA and federal regulations also require that permit effluent limits based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water. *See* CWA § 301(b)(1)(C) and 40 CFR §§ 122.44(d)(1), 122.44(d)(5).

2.2.1 Water Quality Standards

The CWA requires that each state develop water quality standards (WQSs) for all water bodies within the State. *See* CWA § 303 and 40 CFR § 131.10-12. Generally, WQSs consist of three parts: 1) the designated use or uses assigned for a water body or a segment of a water body; 2) numeric or narrative water quality criteria sufficient to protect the assigned designated use(s); and 3) antidegradation requirements to ensure that once a use is attained it will not be degraded and to protect high quality and National Resource Waters. *See* CWA § 303(c)(2)(A) and 40 CFR § 131.12. The applicable State WQSs can be found in 314 of the Code of Massachusetts Regulations, Chapter 4 (314 CMR 4.00).

As a matter of state law, state WQSs specify different water body classifications, each of which is associated with certain designated uses and numeric and narrative water quality criteria. When using chemical-specific numeric criteria to develop permit limitations, acute and chronic aquatic life criteria and human health criteria are used and expressed in terms of maximum allowable in-stream pollutant concentrations. In general, aquatic-life acute criteria are considered applicable to daily time periods (maximum daily limit) and aquatic-life chronic criteria are considered applicable to monthly time periods (average monthly limit). Chemical-specific human health criteria are typically based on lifetime chronic exposure and, therefore, are typically applicable to average monthly limits.

When permit effluent limitation(s) are necessary to ensure that the receiving water meets narrative water quality criteria, the permitting authority must establish effluent limits in one of the following three ways: 1) based on a "calculated numeric criterion for the pollutant which the permitting authority demonstrates will attain and maintain applicable narrative water quality criteria and fully protect the designated use," 2) based on a "case-by-case basis" using CWA § 304(a) recommended water quality criteria, supplemented as necessary by other relevant information; or, 3) in certain circumstances, based on use of an indicator parameter. *See* 40 CFR § 122.44(d)(1)(vi)(A-C).

2.2.2 Antidegradation

Federal regulations found at 40 CFR § 131.12 require states to develop and adopt a statewide antidegradation policy that maintains and protects existing in-stream water uses and the level of water quality necessary to protect these existing uses. In addition, the antidegradation policy ensures maintenance of high quality waters which exceed levels necessary to support propagation of fish, shellfish, and wildlife and to support recreation in and on the water, unless the State finds that allowing degradation is necessary to accommodate important economic or social development in the area in which the waters are located.

Massachusetts' statewide antidegradation policy, entitled "Antidegradation Provisions" is found in the State's WQSs at 314 CMR 4.04. Massachusetts guidance for the implementation of this policy is in an associated document entitled "Implementation Procedure for the Anti-Degradation Provisions of the State Water Quality Standards," dated October 21, 2009. According to the policy, no lowering of water quality is allowed, except in accordance with the antidegradation policy, and all existing in-stream uses, and the level of water quality necessary to protect the existing uses of a receiving water body must be maintained and protected.

This permit is being reissued with effluent limitations sufficiently stringent to satisfy the State's antidegradation requirements, including the protection of the existing uses of the receiving water.

2.2.3 Assessment and Listing of Waters and Total Maximum Daily Loads.

The objective of the CWA is to restore and maintain the chemical, physical and biological integrity of the Nation's waters. To meet this goal, the CWA requires states to develop information on the quality of their water resources and report this information to EPA, the U.S. Congress, and the public. To this end, EPA released guidance on November 19, 2001, for the preparation of an integrated "List of Waters" that could combine reporting elements of both § 305(b) and § 303(d) of the CWA. The integrated list format allows states to provide the status of all their assessed waters in one list. States choosing this option must list each water body or segment in one of the following five categories: 1) unimpaired and not threatened for all designated uses; 2) unimpaired waters for some uses and not assessed for others; 3) insufficient information to make assessments for any uses; 4) impaired or threatened for one or more uses but not requiring the calculation of a Total Maximum Daily Load (TMDL); and 5) impaired or threatened for one or more uses and requiring a TMDL.

A TMDL is a planning tool and potential starting point for restoration activities with the ultimate goal of attaining water quality standards. A TMDL essentially provides a pollution budget designed to restore the health of an impaired water body. A TMDL typically identifies the source(s) of the pollutant from point sources and non-point sources, determines the maximum load of the pollutant that the water body can tolerate while still attaining WQSs for the designated uses, and allocates that load among to the various sources, including point source discharges, subject to NPDES permits. *See* 40 CFR § 130.7.

For impaired waters where a TMDL has been developed for a particular pollutant and the TMDL includes a waste load allocation (WLA) for a NPDES permitted discharge, the effluent limitation in the permit must be "consistent with the assumptions and requirements of any available WLA". 40 CFR § 122.44(d)(1)(vii)(B).

2.2.4 Reasonable Potential

Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs that are necessary to achieve water quality standards established under § 303 of the CWA. *See also* 33 U.S.C. § 1311(b)(1)(C). In addition, limitations "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality." 40 CFR § 122.44(d)(1)(i). To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. *See* 40 CFR § 122.44(d)(1)(ii).

If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQSs, the permit must contain WQBELs for that pollutant. *See* 40 CFR § 122.44(d)(1)(i).

For any pollutants with an existing WQBEL, EPA notes that the analysis described in 40 CFR § 122.44(d)(1)(i) has already been conducted in a previous permitting action demonstrating reasonable potential to cause or contribute to an excursion above WQSs. Therefore, those limits will be carried forward unless it is determined that a more stringent WQBEL is necessary to continue to protect WQS.

From a technical standpoint, when a pollutant is already being controlled as a result of a previously established WQBEL, EPA has determined that it is not appropriate to use new effluent data to reevaluate the need for the existing limit because the reasonable potential to cause or contribute to an excursion of WQS for the uncontrolled discharge was already established in the previous permit. If EPA were to conduct such an evaluation and find no reasonable potential for the controlled discharge to cause or contribute to an excursion of WQS, that finding could be interpreted to suggest that the effluent limit should be removed. However, the new permit without the effluent limit would imply that existing controls are unnecessary, that controls could be removed and then the pollutant concentration would rise to a level where there is, once again, reasonable potential for the discharge to cause or contribute to an excursion of WQS. This could result in an illogical cycle of applying and removing pollutant controls with each permit reissuance. EPA's technical approach on this issue is in keeping with the Act generally and the NPDES regulations specifically, which reflect a precautionary approach to controlling pollutant discharges.

2.2.5 State Certification

EPA may not issue a permit unless the State Water Pollution Control Agency with jurisdiction over the receiving water(s) either 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 the State WQSs, the State waives, or is deemed to have waived, its right to certify. *See* 33 U.S.C. § 1341(a)(1). Regulations governing state certification are set forth in 40 CFR § 124.53 and § 124.55. EPA has requested permit certification by the State pursuant to 40 CFR § 124.53 and expects that the Draft Permit will be certified.

If the State believes that conditions more stringent than those contained in the Draft Permit are necessary to meet the requirements of either CWA §§ 208(e), 301, 302, 303, 306 and 307, or applicable requirements of State law, the State should include such conditions in its certification and, in each case, cite the CWA or State law provisions upon which that condition is based. Failure to provide such a citation waives the right to certify as to that condition. EPA includes properly supported State certification conditions in the NPDES permit. The only exception to this is that the permit conditions/requirements regulating sewage sludge management and implementing CWA § 405(d) are not subject to the State certification requirements. Reviews and appeals of limitations and conditions attributable to State certification shall be made through the applicable procedures of the State and may not be made through EPA's permit appeal procedures of 40 CFR Part 124.

In addition, the State should provide a statement of the extent to which any condition of the Draft Permit can be made less stringent without violating the requirements of State law. Since the State's certification is provided prior to final permit issuance, any failure by the State to provide this statement waives the State's right to certify or object to any less stringent condition.

It should be noted that under CWA § 401, EPA's duty to defer to considerations of State law is intended to prevent EPA from relaxing any requirements, limitations or conditions imposed by State law. Therefore, "[a] State may not condition or deny a certification on the grounds that State law allows a less stringent permit condition." 40 CFR § 124.55(c). In such an instance, the regulation provides that, "The Regional Administrator shall disregard any such certification conditions or denials as waivers of certification." *Id.* EPA regulations pertaining to permit limitations based upon WQSs and State requirements are contained in 40 CFR §§ 122.4(d) and 122.44(d).

2.3 Effluent Flow Requirements

Sewage treatment plant discharge is encompassed within the definition of "pollutant" and is subject to regulation under the CWA. The CWA defines "pollutant" to mean, *inter alia*, "municipal...waste" and "sewage…discharged into water." 33 U.S.C. § 1362(6).

Generally, EPA uses effluent flow both to determine whether an NPDES permit needs certain effluent limitations and to calculate the limitations themselves. EPA practice is to use effluent flow as a reasonable and important worst-case condition in EPA's reasonable potential and WQBEL calculations to ensure compliance with WQSs under § 301(b)(1)(C). Should the

effluent flow exceed the flow assumed in these calculations, the in-stream dilution would be reduced, and the calculated effluent limitations may not be sufficiently protective (i.e. might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at the lower discharge flow may have reasonable potential at a higher flow due to the decreased dilution. In order to ensure that the assumptions underlying EPA's reasonable potential analyses and permit effluent limitation derivations remain sound for the duration of the permit, EPA may ensure the validity of its "worst-case" wastewater effluent flow assumptions through imposition of permit conditions for effluent flow.[1] In this regard, the effluent flow limitation is a component of WQBELs because the WQBELs are premised on a maximum level flow. The effluent flow limit is also necessary to ensure that other pollutants remain at levels that do not have a reasonable potential to exceed WQSs.

The limitation on wastewater effluent flow is within EPA's authority to condition a permit to carry out the objectives of the Act. *See* CWA §§ 402(a)(2) and 301(b)(1)(C); 40 CFR §§ 122.4(a) and (d), 122.43 and 122.44(d). A condition on the discharge designed to ensure the WQBEL and reasonable potential calculations account for "worst case" conditions is encompassed by the references to "condition" and "limitations" in CWA §§ 402 and 301 and implementing regulations, as they are designed to assure compliance with applicable water quality regulations, including antidegradation. Regulating the quantity of pollutants in the discharge through a restriction on the quantity of wastewater effluent is consistent with the overall structure and purposes of the CWA.

In addition, as provided in Part II.B.1 of this permit and 40 CFR § 122.41(e), the Permittee is required to properly operate and maintain all facilities and systems of treatment and control. Operating the facilities wastewater treatment systems as designed includes operating within the facility's design wastewater effluent flow.

EPA has also included the effluent flow limit in the permit to minimize or prevent infiltration and inflow (I/I) that may result in unauthorized discharges and compromise proper operation and maintenance of the facility. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Infiltration is groundwater that enters the collection system through physical defects such as cracked pipes or deteriorated joints. Inflow is extraneous flow added to the collection system that enters the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow, reducing the capacity available for treatment and the operating efficiency of the treatment works and to properly operate and maintain the treatment works.

Furthermore, the extraneous flow due to significant I/I greatly increases the potential for sanitary sewer overflows (SSOs) in separate and in combined systems. Consequently, the effluent flow

[1] EPA's regulations regarding "reasonable potential" require EPA to consider "where appropriate, the dilution of the effluent in the receiving water," *id* 40 CFR §122.44(d)(1)(ii). *Both* the effluent flow and receiving water flow may be considered when assessing reasonable potential. *In re Upper Blackstone Water Pollution Abatement Dist.,* 14 E.A.D. 577. 599 (EAB 2010). EPA guidance directs that this "reasonable potential: analysis be based on "worst-case" conditions. *See In re Washington Aquaduct Water Supply Sys. 11 E.A.D. 565, 584 (EAB 2004)*

limit is a permit condition that relates to the permittee's duty to mitigate (*i.e.*, minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment) and to properly operate and maintain the treatment works. *See* 40 CFR §§ 122.41(d), (e).

2.4 Monitoring and Reporting Requirements

2.4.1 Monitoring Requirements

Sections 308(a) and 402(a)(2) of the CWA and the implementing regulations at 40 CFR Parts 122, 124, 125, and 136 authorize EPA to include monitoring and reporting requirements in NPDES permits.

The monitoring requirements included in this permit have been established to yield data representative of the Facility's discharges in accordance with CWA §§ 308(a) and 402(a)(2), and consistent with 40 CFR §§ 122.41(j), 122.43(a), 122.44(i) and 122.48. The Draft Permit specifies routine sampling and analysis requirements to provide ongoing, representative information on the levels of regulated constituents in the discharges. The monitoring program is needed to enable EPA and the State to assess the characteristics of the Facility's effluent, whether Facility discharges are complying with permit limits, and whether different permit conditions may be necessary in the future to ensure compliance with technology-based and water quality-based standards under the CWA. EPA and/or the State may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to CWA § 304(a)(1), 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.

NPDES permits require that the approved analytical procedures found in 40 CFR Part 136 be used for sampling and analysis unless other procedures are explicitly specified. Permits also include requirements necessary to comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*.[2] This Rule requires that where EPA-approved methods exist, NPDES applicants must use sufficiently sensitive EPA-approved analytical methods when quantifying the presence of pollutants in a discharge. Further, the permitting authority must prescribe that only sufficiently sensitive EPA-approved methods be used for analyses of pollutants or pollutant parameters under the permit. The NPDES regulations at 40 CFR § 122.21(e)(3) (completeness), 40 CFR § 122.44(i)(1)(iv) (monitoring requirements) and/or as cross referenced at 40 CFR § 136.1(c) (applicability) indicate that an EPA-approved method is sufficiently sensitive where:

- In the case of permit applications, the ML is above the applicable water quality criterion, but the amount of the pollutant or pollutant parameter in a facility's discharge is high enough that the method detects and quantifies the level of the pollutant or parameter in the discharge; or

[2] Fed. Reg. 49,001 (Aug 19, 2014).

- The method minimum level[3] (ML) is at or below the level of the effluent limitation established in the permit for the measured pollutant or pollutant parameter; or

- The method has the lowest ML of the analytical methods approved under 40 CFR Part 136 or required under 40 CFR chapter I, subchapter N or O for the measured pollutant or pollutant parameter.

2.4.2 Reporting Requirements

The Draft Permit requires the Permittee to report monitoring results obtained during each calendar month to EPA and the Massachusetts Department of Environmental Protection (MassDEP) electronically using NetDMR. The Permittee must submit a Discharge Monitoring Report (DMR) for each calendar month no later than the 15th day of the month following the completed reporting period.

NetDMR is a national web-based tool enabling regulated CWA permittees to submit DMRs electronically via a secure internet application to EPA through the Environmental Information Exchange Network. NetDMR has eliminated the need for participants to mail in paper forms to EPA under 40 CFR §§ 122.41 and 403.12. NetDMR is accessible through EPA's Central Data Exchange at https://cdx.epa.gov/. Further information about NetDMR can be found on EPA's NetDMR support portal webpage.[4]

With the use of NetDMR, the Permittee is no longer required to submit hard copies of DMRs and reports to EPA and the MassDEP unless otherwise specified in the Draft Permit. In most cases, reports required under the permit shall be submitted to EPA as an electronic attachment through NetDMR. Certain exceptions are provided in the permit, such as for providing written notifications required under the Part II Standard Conditions.

2.5 Standard Conditions

The standard conditions, included as Part II of the Draft Permit, are based on applicable regulations found in the Code of Federal Regulations. *See generally* 40 CFR Part 122.

2.6 Anti-backsliding

The CWA's anti-backsliding requirements prohibit a permit from being renewed, reissued or modified to include with less stringent limitations or conditions than those contained in a

[3] The term "minimum level" refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL). Minimum levels may be obtained in several ways: They may be published in a method; they may be sample concentrations equivalent to the lowest acceptable calibration point used by a laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a lab, by a factor. EPA is considering the following terms related to analytical method sensitivity to be synonymous: "quantitation limit," "reporting limit," "level of quantitation," and "minimum level." *See* Fed. Reg. 49,001 (Aug. 19, 2014).

[4] https://netdmr.zendesk.com/hc/en-us/articles/209616266-EPA-Region-1-NetDMR-Information

previous permit except in compliance with one of the specified exceptions to those requirements. *See* CWA §§ 402(o) and 303(d)(4) and 40 CFR § 122.44(l). Anti-backsliding provisions apply to effluent limits based on technology, water quality and/or state certification requirements.

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2011 Permit unless specific conditions exist to justify relaxation in accordance with CWA § 402(o) or § 303(d)(4). Discussion of any less stringent limitations and corresponding exceptions to anti-backsliding provisions is provided in the sections that follow.

3.0 Description of Facility and Discharge

3.1 Location and Type of Facility

The locations of the treatment plant and Outfalls 001 and 002 to Cape Cod Canal are shown in Figure 1. The latitude and longitude of both outfalls is Latitude 41° 44' 23" and Longitude -70 °37'18". Outfall 001, which discharges treated sanitary wastewater, consists of an eight inch diameter pipe with the invert at discharge, located approximately 12 feet below Mean Low Water. The Cape Cod Canal contains a federal navigation channel which is currently maintained at a depth of approximately 25 to 32 feet. Outfall 002 discharges onto the riprap of the Cape Cod Canal. Swimming pool discharges at Outfall 002 are conducted at an accessible manhole prior to the outfall since the outfall is often submerged.

Massachusetts Maritime Academy (MMA) is a public, state university that offers degree programs in the maritime industry. The campus serves about 1700 students during the academic year which runs from September to June, except for January and February when most of the students are out at sea. During the summer months, MMA provides programs for up to 500 students who reside on campus. The MMA Wastewater Treatment Facility (WWTF) is an advanced wastewater treatment facility that is engaged in the collection and treatment of sanitary wastewater from the MMA campus and associated buildings and is similar to a municipal wastewater treatment plant.

The Facility has a design flow of 77,000 gallons per day (GPD) and the median flow for the last 5 years has been 25,000 GPD. The system is a separate system with no combined sewers. Wastewater is comprised of domestic (sanitary) sewage from campus facilities and a once per year discharge of chiller water (condensate) from the facility HVAC system. In addition to the sanitary wastewater discharge, the 2011 Permit also authorized the discharge of boiler blowdown to Outfall 001. However, the Permittee notified EPA by email of April 28, 2021 that it no longer discharges any boiler blowdown to the receiving water. Therefore, the Draft Permit does not authorize the discharge of boiler blowdown to the receiving water.

In addition, MMA has a swimming pool on campus from which a once per month discharge of about 10,000 gallons is necessary to adjust for proper water chemistry. These discharges are treated with chlorine and are dechlorinated and pH adjusted as necessary to stay within the permitted pH range as they are discharged to Outfall 002. On occasion, typically less than annually, the Permittee needs to discharge the swimming pool completely, which is a total of about 200,000 gallons.

The permittee does not have any major industries contributing industrial wastewater to the WWTP, and thus is not required to have a pretreatment program.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the permittee from May 2016 through March 2021 is provided in Appendix A of this Fact Sheet.

3.1.1 Treatment Process Description

The MMA WWTF is an activated sludge wastewater treatment facility providing secondary wastewater treatment using a sequencing batch reactor. A schematic of the MMA WWTF is shown in Figure 2.

The MMA WWTF receives sanitary wastewater from dormitories, classrooms, labs, laundry, gymnasium, and kitchen. The facility also receives sanitary wastewater from the training ship *Enterprise* when it is docked at the campus that is pumped from a lift station at the pier. In addition, there is about 400 gallons of chiller water from the HVAC system that is discharged to the WWTF once during the summer. The collection system includes 2 lift stations. At the treatment facility, wastewater is either pumped to a 15,000 gallon equalization tank and subsequently pumped to the treatment plant building, or pumped directly to the treatment plant building. In the treatment plant building, wastewater first flows through screening and grit removal facilities. Magnesium hydroxide is then added to increase alkalinity by a metering pump, followed by activated sludge treatment and clarification in sequencing batch reactors. Treated effluent is then discharged to a post equalization tank and pumped to rapid sand filters and a recently installed disk filter, followed by disinfection with ultraviolet (UV) light. The Facility has maintained a chlorine disinfection and dechlorination system for use in the event of failure of the UV system. Finally, effluent is discharged to the Cape Cod Canal through Outfall 001. Sludge is decanted to an aerated storage/digester tank. About 300,000 gallons of thickened sludge is removed each year and hauled away by Wind River Environmental for disposal at the Plymouth, MA Wastewater Treatment Plant.

MMA's swimming pool has a capacity of 200,000 gallons. Approximately once per month, up to 10,000 gallons of pool water is discharged to Outfall 002 for chemical balancing, with the discharge duration of an hour or two. The concentration of total residual chlorine (TRC) is tested prior to release of pool water through Outfall 002. The pool water is treated with calcium thiosulfate and when the residual chlorine is not detected, the pool water is discharged.

There may be rare occasions when the pool will need to be completely emptied for maintenance. The Draft Permit requires the permittee to notify both EPA and MassDEP in advance of any full swimming pool discharges and to adequately dechlorinate these discharges for their duration. The complete discharge of the pool takes place over approximately a full calendar day and testing of the pool water is conducted throughout the discharge.

3.1.2 Collection System Description

The MMA WWTF is served by a separate sewer system. A separate sanitary sewer conveys domestic, industrial, and commercial sewage, but not stormwater. It is part of a "two pipe system" consisting of separate sanitary sewers and storm sewers. The two systems have no interconnections; the sanitary sewer leads to the wastewater treatment plant and the storm sewers discharge to the Cape Cod Canal.

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Permittee discharges through Outfalls 001 and 002 into the Cape Cod Canal, within Segment MA95-14. This segment is 11.3 miles in length and encompasses the connection between Cape Cod Bay and Buzzards Bay in Sandwich and Bourne, respectively. The discharges are in close proximity to the end of Cape Cod Canal that empties into Buzzards Bay.

Cape Cod Canal is classified as a Class SB water. The Massachusetts Surface Water Quality Standards (MAWQSs) at 314 CMR 4.05(4)(b) describes Class SB waters as follows: *"These waters are 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…These waters shall have consistently good aesthetic value."*

Cape Cod Canal/Buzzards Bay is listed in the final *Massachusetts Year 2016 Integrated List of Waters* ("303(d) List") as a Category 4A "TMDL is completed."[5] The Final Pathogen TMDL for the Buzzards Bay Watershed was published by MassDEP in March 2009.[6] According to the *Buzzards Bay Watershed 2000 Water Quality Assessment Report*[7], for those portions that have been assessed, this water body segment is attaining uses designated for shellfish harvesting and primary and secondary contact recreation, while designated uses for aquatic life, aesthetics, and fish consumption have not been assessed. The status of each designated use is shown in Table 1.

Table 1 – Summary of Designated Uses and Listing Status

Designated Use	Status
Aquatic Life	Not Assessed
Aesthetics	Not Assessed
Primary Contact Recreation	0.67 mi^2 – support; 0.46 mi^2 - Not Assessed
Secondary Contact Recreation	0.67 mi^2 – support; 0.46 mi^2 - Not Assessed
Shellfish Harvesting	0.67 mi^2 – support; 0.46 mi^2 - Not Assessed Fecal coliform – unknown source
Fish Consumption	Not Assessed

[5] *Massachusetts Year 2016 Integrated List of Waters,* MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts, December 2019.
[6] https://www.mass.gov/doc/final-pathogen-tmdl-for-the-buzzards-bay-watershed-0/download
[7] https://www.mass.gov/doc/buzzards-bay-2000-water-quality-assessment-report-s-i/download

The 2009 Pathogen TMDL specifies wasteload allocations (WLA) for indicator bacteria depending on the waterbody classification. For Class SB waters that are designated for shellfishing with depuration, the indicator bacteria is fecal coliform and the WLA required for point source discharges are a geometric mean or median of 88 organisms per 100 mL nor shall 10% of the samples exceed 260 organisms per 100 mL. As noted in 5.1.7, below, more stringent limitations from the 2011 Permit will be maintained due to anti-backsliding requirements.

4.2 Ambient Data

A summary of the ambient data collected in the receiving water in the vicinity of the outfall that is referenced in this Fact Sheet can be found in Appendix A of this Fact Sheet.

4.3 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQS under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water[8]. The critical flow in rivers and streams is some measure of the low flow of that river or stream. State WQSs require that for rivers and streams, the lowest condition is the lowest mean flow for seven consecutive days, recorded once in 10 years, or 7-day 10-year low flow (7Q10). *See* 314 CMR 4.03(3)(a).

The 2011 permit relied on a dilution study conducted as part of a Draft Environmental Impact Report for a project at Otis Air National Guard Base (1989), citing a dilution of 6400:1. In 2016, Woods Hole Oceanographic Institute (WHOI) conducted hydrodynamic modeling in the vicinity of MMA for the purpose of considering the redirection of the Town of Wareham's WWTF discharge to the Cape Cod Canal.[9] This modeling determined that a 1000:1 dilution contour around the vicinity of MMA Outfall 001 was roughly 45 meters by 300 meters and encompassed an area of approximately 0.13 square kilometers. A more conservative dilution contour of 500:1 around a smaller area of the outfall was also graphed and could be used for the purposes of this permit to represent a worst case condition such as occurs during slack tide. Therefore, the dilution ratio of 500:1, representing a small area around Outfalls 001 and 002, will be used for reasonable potential analyses, as applicable, in this Draft Permit.

5.0 Proposed Effluent Limitations and Conditions

The proposed effluent limitations and conditions derived under the CWA and State WQSs are described below. These proposed effluent limitations and conditions, the basis of which are discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit.

[8] EPA Permit Writer's Manual, Section 6.
[9] Assessing the Impact of Increased Effluent Discharge into Cape Cod Canal, Churchill, J, Cowles,G., Rheuban, J. WHOI, 2016

5.1 Effluent Limitations and Monitoring Requirements

In addition to the State and Federal regulations described in Section 2, data submitted by the Permittee in its permit application, in monthly discharge monitoring reports (DMRs) and in WET test reports from May 2016 to March 2021 (the "review period") were used to identify the pollutants of concern and to evaluate the discharge during the effluent limitations development process (*See* **Appendix A)**.The reasonable potential analysis is included in Appendix B and results are discussed in the sections below.

5.1.1 Effluent Flow

Outfall 001

The effluent flow limit in the 2011 Permit is 77,000 GPD, as a rolling annual average flow, based on the Facility's design flow. The DMR data during the review period shows that there have been no violations of the flow limit. During the review period, the monthly average effluent flow ranged from 3000 GPD to 42,000 GPD with a median of 25,000 GPD.

The Draft Permit continues the 77,000 GPD flow limit from the 2011 Permit. The Draft Permit requires that flow be measured continuously and that the rolling annual average flow, as well as the average monthly and maximum daily flow for each month be reported. The rolling annual average flow is calculated as the average of the flow for the reporting month and 11 previous months.

Outfall 002

The 2011 Permit authorized the discharge of a daily maximum of 10,000 GPD from the facility swimming pool. This discharge occurs about once per month to adjust pool water chemistry. This daily maximum flow limit is maintained in the Draft Permit and the Permittee is required to dechlorinate this water prior to discharge. This discharge has occurred monthly and has ranged from 6,500 to 10,000 gallons. Once every several years, the Permittee empties its swimming pool entirely, which is a discharge of about 200,000 gallons. During the review period, the Permittee discharged the pool entirely one time, in September 2016, with a reported discharge of 187,000 gallons. The Permittee is required to notify EPA and MassDEP prior to any complete discharge of the pool. Although the 2011 Permit did not require sampling of an entire pool discharge, the Draft Permit requires sampling every hour for the same parameters and with the same limits as the monthly swimming pool discharge.

5.1.2 Biochemical Oxygen Demand (BOD_5)

5.1.2.1 BOD_5 Concentration Limits

The BOD_5 limits in the 2011 Permit were established at an average monthly value of 30 mg/L and a weekly average weekly value of 45 mg/L. The daily maximum concentration was required to be monitored only. These limits are based on the secondary treatment standards in 40 CFR

§ 133.102. The DMR data during the review period shows that there have been no exceedances of BOD_5 concentration limits with a median value of 6.85 mg/L and a high value of 10.1 mg/L.

The Draft Permit proposes the same BOD_5 concentration limits as in the 2011 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains once per week.

5.1.3 Total Suspended Solids (TSS)

5.1.3.1 TSS Concentration Limits

The TSS limits in the 2011 Permit were established at an average monthly value of 30 mg/L and a weekly average weekly value of 45 mg/L. The daily maximum concentration was required to be monitored only. These limits were based on the secondary treatment standards in 40 CFR § 133.102. The DMR data during the review period shows that there was one exceedance of the 30 mg/ monthly average limit, a value of 34 mg/L, with a median value of 8.3 mg/L.

The Draft Permit proposes the same TSS concentration limits as in the 2011 Permit as no new WLAs have been established and there have been no changes to the secondary treatment standards. The monitoring frequency remains once per week.

5.1.4 Eighty-Five Percent (85%) BOD_5 and TSS Removal Requirement

In accordance with the provisions of 40 CFR § 133.102(a)(3) and (b)(3), the 2011 Permit requires that the 30-day average percent removal for BOD_5 and TSS greater than or equal to 85%. The DMR data during the review period shows that the median BOD_5 and TSS removal percentages were 95% and 96%, respectively. There were no exceedances of the 85% removal requirement for BOD_5 or TSS during that period.

The requirement to achieve a minimum of 85% BOD_5 and TSS removal has been carried forward into the Draft Permit.

5.1.5 Settleable Solids (SS)

Daily monitoring for SS was required in the 2011 Permit. During the review period, SS was not detected. Since solids are adequately controlled by the permit's TSS limits and SS is not specifically required by the regulations at 40 CFR § 133.102, the SS monitoring requirement has been eliminated from the permit. This change is allowed as an exception to the anti-backsliding regulations at 40 CFR §122.44(l)(2)(i)(B)(1) regarding new information.

5.1.6 pH

Consistent with the requirements of MA WQS at 314 CMR 4.05(3)(b)(3), the Permit requires that the pH of the effluent is not less than 6.5 or greater than 8.5 standard units at any time. The monitoring frequency is once per day for Outfall 001 and once per hour for any swimming pool

discharge through Outfall 002. The DMR data during the review period show that there have been no violations of the pH limitations for either outfall.

The pH requirements in the 2011 Permit are carried forward into the Draft Permit as there has been no change in the WQSs with regards to pH. The limitations are based on CWA 301(b)(1)(C) and 40 CFR § 122.44(d).

5.1.7 Bacteria

The 2011 Permit includes effluent limitations for fecal coliform bacteria as the indicator bacteria to protect shellfishing uses in the receiving water. In accordance with the MAWQS at 314 CMR 4.05(4)(b) 4.a., a monthly geometric mean of 14 colony forming units (cfu) and a maximum daily limit of 43 cfu/100 ml were established. Although the receiving water is classified as Class SB, the 2011 Permit carried over more stringent fecal coliform limits that were based on the Class SA water criteria. These limits will be maintained due to anti-backsliding requirements. During the review period, there were no exceedances of these limits and all the samples were non-detect.

The 2011 Permit also includes effluent limits for bacteria using *Enterococci* bacteria as the indicator bacteria to protect recreational uses. The MA WQS at 314 CMR 4.05(4)(b) 4.b., require a monthly geometric mean of 35 cfu/100 ml and a maximum daily limit of 104 cfu/100 ml. The daily maximum limit of 276 cfu/100 ml in the 2011 Permit represents the 90% confidence level (distribution) of the geometric mean of 104 cfu/100 ml. The MassDEP has determined that the 90% confidence level is appropriate for setting the maximum daily bacteria limit. The DMR data during the review period shows very few detections of this parameter with no exceedances of the permit limits.

5.1.8 Total Residual Chlorine

Chlorine compounds produced by the chlorination of wastewater can be extremely toxic to aquatic life. For Outfall 001, the Permittee uses a UV disinfection system for bacteria and the 2011 Permit did not include effluent limitations for total residual chlorine (TRC). For Outfall 002, a daily maximum TRC limit of 1.0 mg/L was established in the 2011 Permit, due to the presence of residual chlorine in the swimming pool.

Effluent limits for TRC are based on the instream chlorine criteria defined in *National Recommended Water Quality Criteria: 2002*, EPA 822R-02-047 (November 2002), as adopted by the MassDEP into the state water quality standards at 314 CMR 4.05(5)(e). The marine saltwater criteria for chlorine are 7.5 ug/L (chronic) and 13 ug/L (acute). Given an estimated dilution factor of 500, the water quality based total residual chlorine limitations would be calculated as follows:

Chronic criteria * dilution factor = Chronic limit
7.5 ug/L * 500 = 3750 ug/L = 3.75 mg/L (average monthly)

Acute criteria * dilution factor = Acute limit
13 ug/L * 500 = 6500 ug/L = 6.5 mg/L (maximum daily)

However, the MassDEP *Implementation Policy for the Control of Toxic Pollutants in Surface Waters (February 23, 1990)* requires that to protect waters from unnecessary discharge of chlorine, effluent limits for discharges with dilution factors greater 100 shall not exceed 1 mg/l. Therefore, the 2011 Permit included a maximum daily total residual chlorine limitation of 1 mg/l for Outfall 002, based on the MassDEP policy. This Draft Permit carries over this limit for Outfall 002 for all discharges of swimming pool water, including those less frequent and complete discharge events of approximately 200,000 gallons. The sampling frequency has been increased to once per hour to assure that adequate dechlorination is occuring throughout the discharge.

For Outfall 001, the limit of 1.0 mg/L is established and would apply only during periods that the Permittee uses a backup chlorination system for disinfection, such as when the facility's UV system is inoperable or any sand filters are being repaired. During such periods, TRC is required to be monitored three times per day whenever chlorination is occuring.

5.1.9 Ammonia

The 2011 Permit does not include ammonia limits, but the Permittee was required to monitor and report effluent ammonia concentrations on a quarterly basis and annually as part of the Whole Effluent Toxicity (WET) testing. Ambient data, taken upstream of the MMA outfall in the Cape Cod Canal, is presented in Appendix A and shows all results for the warm weather period (April 1 through October 31) were non-detect, or zero. Since annual WET tests were conducted only during June, there are no cold weather period data for ammonia.

The ammonia criteria in EPA's *National Recommended Water Quality Criteria,* 2002 (EPA 822-R-02-047) document are included by reference in the Massachusetts WQS (*See* 314 CMR 4.05(5)(e)). The marine water quality criteria are dependent on pH and temperature.
In determining whether the discharge has the reasonable potential to cause or contribute to excursions above the instream water quality criteria for ammonia, EPA used the mass balance equation presented in Appendix B for both warm and cold weather conditions to project the ammonia concentration downstream of the discharge. If there is reasonable potential, this mass balance equation is also used to determine the limit that is required in the permit.

To determine the applicable ammonia criteria, EPA assumes a warm weather temperature of 25° C and a cold weather temperature of 5° C. EPA used the ambient pH monitoring shown in Appendix A, which indicates that the median pH is 7.82 S.U.

Based on the information and assumptions described above, Appendix B presents the applicable ammonia criteria, the details of the mass balance equation, the reasonable potential determination, and, if necessary, the limits required in the Draft Permit. As shown, there is no reasonable potential to cause or contribute to an excursion of WQS, so the Draft Permit does not propose ammonia limits.

Effluent and ambient monitoring for ammonia will continue to be required in the quarterly WET tests.

5.1.10 Nutrients

Nutrients are compounds containing nitrogen and phosphorus. Although nitrogen and phosphorus are essential for plant growth, high concentrations of these nutrients can cause eutrophication, a condition in which aquatic plant and algal growth is excessive. Plant and algae respiration and decomposition reduces dissolved oxygen in the water, creating poor habitat for fish and other aquatic animals. Recent studies provide evidence that both phosphorus and nitrogen can play a role in the eutrophication of certain ecosystems. However, typically phosphorus is the limiting nutrient triggering eutrophication in freshwater ecosystems and nitrogen in marine or estuarine ecosystems. Thus, for this receiving water and this permit, nitrogen is the nutrient of concern evaluated for effluent limitations in the discussion below.

5.1.10.1 Total Nitrogen

Nitrogen is an essential nutrient for plant growth. However, elevated concentrations of nitrogen can result in eutrophication, where nutrient concentrations lead to excessive plant and algal growth. Respiration and decomposition of plants and algae under eutrophic conditions reduce dissolved oxygen in the water and can create poor habitat for aquatic organisms. Total Nitrogen is the sum of Total Kjeldahl Nitrogen (TKN) (ammonium, organic and reduced nitrogen) and nitrate-nitrite. It is derived by individually monitoring for organic nitrogen compounds, ammonia, nitrate, and nitrite and adding the components together.

The MMA WWTP discharges to the Cape Cod Canal in the Buzzards Bay Watershed. The 2011 Permit required quarterly monitoring for total Kjeldahl nitrogen, nitrate and nitrite, the sum of which provides the total nitrogen (TN) concentration. Using the TN concentration data and average monthly flow data, the calculated annual average total nitrogen loading from the MMA facility ranged from 0 lb/day to 110 lb/day and averaged 69 lb/day during the review period.

The Facility discharges to the Cape Cod Canal which empties to the Buzzards Bay watershed. The 2011 permit noted that MMA loading is a very small percentage (0.000017%) of the overall nitrogen loading to the watershed. The 2011 Permit required the Permittee to evaluate alternatives for operating the treatment plant to optimize the removal of nitrogen. In a report dated April 20, 2012, the Permittee determined that a third treatment train with increased detention times and aeration with chemical addition in the equalization tank would be required to meet a target effluent nitrogen concentration of 10 mg/L.

Although there are no impairments associated with nitrogen in Cape Cod Canal, there are some impairments in certain coves of Buzzards Bay. Therefore, EPA has determined that the facility must continue to optimize its treatment plant for the removal of total nitrogen.

Specifically, the Draft Permit requires the continued evaluation of treatment facility operations to minimize nitrogen discharges, along with annual reports to summarize progress and activities related to optimizing nitrogen removal efficiencies and track trends relative to previous years. In

addition to the optimization requirements, the Draft Permit continues monthly monitoring for total nitrogen (TN). For compliance reporting on monthly DMRs, the Draft Permit requires the reporting of monthly average TN load and concentration along with its components: total kjeldahl nitrogen, nitrite and nitrate.

5.1.11 Metals

5.1.11.1 Applicable Metals Criteria

State water quality criteria for cadmium, copper, lead, nickel and zinc are established in terms of dissolved metals. However, many inorganic components of domestic wastewater, including metals, are in particulate form, and differences in the chemical composition between the effluent and the receiving water affects the partitioning of metals between the particulate and dissolved fractions as the effluent mixes with the receiving water, often resulting in a transition from the particulate to dissolved form (*The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion* (USEPA 1996 [EPA-823-B96-007]). Consequently, quantifying only the dissolved fraction of metals in the effluent prior to discharge may not accurately reflect the biologically available portion of metals in the receiving water. Regulations at 40 CFR § 122.45(c) require, with limited exceptions, that effluent limits for metals in NPDES permits be expressed as total recoverable metals.

The criteria for cadmium, copper, lead, nickel and zinc are presented in Appendix B, based on EPA's National Recommended Water Quality Criteria: 2002, which are incorporated into the Massachusetts WQS by reference.

5.1.11.2 Reasonable Potential Analysis and Limit Derivation

To determine whether the effluent has the reasonable potential to cause or contribute to an exceedance above the in-stream water quality criteria for each metal, EPA uses the mass balance equation presented in Appendix B to project the concentration downstream of the discharge and, if applicable, to determine the limit required in the permit.

For any metal with an existing limit in the 2011 Permit, the same mass balance equation is used to determine if a more stringent limit would be required to continue to meet WQS under current conditions. The limit is determined to be the more stringent of either (1) the existing limit or (2) the calculated effluent concentration (C_d) allowable to meet WQS based on current conditions.

Based on the information described above, the results of this analysis for each metal are presented in Appendix B. As shown, there is no reasonable potential determined for any of the metals considered. For Outfall 002, the 2011 Permit carried over a daily maximum limit of 0.5 mg/L for total copper. The Permittee has discontinued the use of a copper/silver ionization process in the swimming pool to reduce the formation of chlorination byproducts. (phone conversation between Kathy Driscoll of MMA and G. Papadopoulos of EPA on 8/4/21). However, since potable water is used for the swimming pool and copper is still being detected at low levels in the Outfall 002 effluent, the copper limit will remain due to anti-backsliding.

Effluent and ambient monitoring for each of these metals will continue to be required in the WET tests.

5.1.12 Whole Effluent Toxicity

CWA §§ 402(a)(2) and 308(a) provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Whole effluent toxicity (WET) testing is conducted to ensure that the additivity, antagonism, synergism and persistence of the pollutants in the discharge do not cause toxicity, even when the pollutants are present at low concentrations in the effluent. The inclusion of WET requirements in the Draft Permit will assure that the Facility does not discharge combinations of pollutants into the receiving water in amounts that would be toxic to aquatic life or human health.

In addition, under CWA § 301(b)(1)(C), discharges are subject to effluent limitations based on WQSs. Under CWA §§ 301, 303 and 402, EPA and the States may establish toxicity-based limitations to implement the narrative water quality criteria calling for "no toxics in toxic amounts". *See also* 40 CFR § 122.44(d)(1). The Massachusetts WQSs at 314 CMR 4.05(5)(e) state, "All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife."

National studies conducted by EPA have demonstrated that domestic sources, as well as industrial sources, contribute toxic constituents to POTWs. These constituents include metals, chlorinated solvents, aromatic hydrocarbons and others. Some of these constituents may cause synergistic effects, even if they are present in low concentrations. Because of the source variability and contribution of toxic constituents in domestic and industrial sources, reasonable potential may exist for this discharge to cause or contribute to an exceedance of the "no toxics in toxic amounts" narrative water quality standard.

In accordance with current EPA guidance and State policy[10], whole effluent chronic effects are regulated by limiting the highest measured continuous concentration of an effluent that causes no observed chronic effect on a representative standard test organism, known as the chronic No Observed Effect Concentration (C-NOEC). Whole effluent acute effects are regulated by limiting the concentration that is lethal to 50% of the test organisms, known as the $LC_{50.}$ This policy recommends that permits for discharges having a dilution factor less than 10 require acute and chronic toxicity testing four times per year for two species. Additionally, for discharges with dilution factors less than 10, the C-NOEC effluent limit should be greater than or equal to the receiving water concentration and the LC_{50} limit should be greater than or equal to 100%.

Due to the high dilution available to this discharge at Outfall 001, the acute WET limit in the 2011 Permit is an LC_{50} greater than or equal to 50%, using Mysid shrimp *(Mysidopsis bahia)* as

[10] *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters.* February 23, 1990.

the test species. The Facility has consistently met this limit with results of 100% for each of the last 5 years (Appendix A).

Based on the potential for toxicity from domestic contributions, the state narrative water quality criterion, an estimated dilution factor of 500:1 and in accordance with EPA national and regional policy and 40 CFR § 122.44(d), the Draft Permit continues the effluent limit from the 2011 Permit including the test organism and the annual testing frequency. Toxicity testing must be performed in accordance with the updated EPA Region 1 WET test procedure and protocol specified in Attachment A, *Marine Acute Toxicity Test Procedure and Protocol* (July 2012) of the Draft Permit.

5.1.13 Per- and polyfluoroalkyl substances (PFAS)

As explained at https://www.epa.gov/pfas, PFAS are a group of synthetic chemicals that have been in use since the 1940s. PFAS are found in a wide array of consumer and industrial products. PFAS manufacturing and processing facilities, facilities using PFAS in production of other products, airports, and military installations can be contributors of PFAS releases into the air, soil, and water. Due to their widespread use and persistence in the environment, most people in the United States have been exposed to PFAS. Exposure to some PFAS above certain levels may increase risk of adverse health effects.[11] EPA is collecting information to evaluate the potential impacts that discharges of PFAS from wastewater treatment plants may have on downstream drinking water, recreational and aquatic life uses.

Background Information for Massachusetts

On October 20, 2020, MassDEP published final regulations establishing a drinking water standard, or a Maximum Contaminant Level (MCL) of 20 parts per trillion (ppt) for the sum of the following six PFAS: [*See* 310 CMR 22.00]

- Perfluorohexanesulfonic acid (PFHxS)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorononanoic acid (PFNA)
- Perfluorooctanesulfonic acid (PFOS)
- Perfluorooctanoic acid (PFOA)
- Perfluorodecanoic acid (PFDA)

Although the Massachusetts water quality standards do not include numeric criteria for PFAS, the Massachusetts narrative criterion for toxic substances at 314 CMR 4.05(5)(e) states:

> All surface waters shall be free from pollutants in concentrations or combinations that are toxic to humans, aquatic life or wildlife.

[11] EPA, *EPA's Per- and Polyfluoroalkyl Substances (PFAS) Action Plan,* EPA 823R18004, February 2019. Available at: https://www.epa.gov/sites/production/files/2019-02/documents/pfas_action_plan_021319_508compliant_1.pdf

The narrative criterion is further elaborated at 314 CMR 4.05(5)(e)2 which states:

> Human Health Risk Levels. Where EPA has not set human health risk levels for a toxic pollutant, the human health-based regulation of the toxic pollutant shall be in accordance with guidance issued by the Department of Environmental Protection's Office of Research and Standards. The Department's goal is to prevent all adverse health effects which may result from the ingestion, inhalation or dermal absorption of toxins attributable to waters during their reasonable use as designated in 314 CMR 4.00.

Since PFAS chemicals are persistent in the environment and may lead to adverse human health and environmental effects, the Draft Permit requires that the Facility conduct quarterly influent, effluent and sludge sampling for PFAS chemicals and annual sampling of certain industrial users, the first full calendar quarter beginning six months after EPA has notified the Permittee that appropriate, multi-lab validated test methods are made available by EPA to the public.

The purpose of this monitoring and reporting requirement is to better understand potential discharges of PFAS from this facility and to inform future permitting decisions, including the potential development of water quality-based effluent limits on a facility specific basis. EPA is authorized to require this monitoring and reporting by CWA § 308(a), which states:

> "SEC. 308. (a) Whenever required to carry out the objective of this Act, including but not limited to (1) developing or assisting in the development of any effluent limitation, or other limitation, prohibition, or effluent standard, pretreatment standard, or standard of performance under this Act; (2) determining whether any person is in violation of any such effluent limitation, or other limitation, prohibition or effluent standard, pretreatment standard, or standard of performance; (3) any requirement established under this section; or (4) carrying out sections 305, 311, 402, 404 (relating to State permit programs), 405, and 504 of this Act—
>
> (A) the Administrator shall require the owner or operator of any point source to (i) establish and maintain such records, (ii) make such reports, (iii) install, use, and maintain such monitoring equipment or methods (including where appropriate, biological monitoring methods), (iv) sample such effluents (in accordance with such methods, at such locations, at such intervals, and in such manner as the Administrator shall prescribe), and (v) provide such other information as he may reasonably require;".

Since an EPA method for sampling and analyzing PFAS in wastewater and sludge is not currently available, the PFAS sampling requirement in the Draft Permit includes a compliance schedule which delays the effective date of this requirement until the first full calendar quarter beginning 6 months after EPA has notified the Permittee that a multi-lab validated method for wastewater and biosolids is made available to the public on EPA's CWA methods program websites. For wastewater see https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods. For biosolids, see https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-biosolids. EPA expects these methods will be available by the end of 2022. This approach is consistent with 40 CFR §

122.44(i)(1)(iv)(B) which states that in the case of pollutants or pollutant parameters for which there are no approved methods under 40 CFR Part 136 or methods are not otherwise required under 40 CFR chapter I, subchapter N or O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants or pollutant parameters.

5.2 Sludge Conditions

Section 405(d) of the Clean Water Act requires that EPA develop technical standards regarding the use and disposal of sewage sludge. On February 19, 1993, EPA promulgated technical standards. These standards are required to be implemented through permits. The conditions in the permit satisfy this requirement.

5.3 Infiltration/Inflow (I/I)

Infiltration is groundwater that enters the collection system though physical defects such as cracked pipes, or deteriorated joints. Inflow is extraneous flow entering the collection system through point sources such as roof leaders, yard and area drains, sump pumps, manhole covers, tide gates, and cross connections from storm water systems. Significant I/I in a collection system may displace sanitary flow, reducing the capacity and the efficiency of the treatment works and may cause bypasses to secondary treatment. It greatly increases the potential for sanitary sewer overflows (SSOs) in separate systems, and combined sewer overflows (CSOs) in combined systems.

The Draft Permit includes a requirement for the permittee to control infiltration and inflow (I/I) within the sewer collection system it owns and operates. The permittee shall continue to implement an I/I removal program commensurate with the severity of I/I in the collection system. This program may be scaled down in sections of the collection system that have minimal I/I.

5.4 Operation and Maintenance of the Sewer System

The standard permit conditions for 'Proper Operation and Maintenance', found at 40 CFR § 122.41(e), require the proper operation and maintenance of permitted wastewater systems and related facilities to achieve compliance with permit conditions. The requirements at 40 CFR § 122.41(d) impose a 'duty to mitigate,' which requires the permittee to "take all reasonable steps to minimize or prevent any discharge in violation of the permit that has a reasonable likelihood of adversely affecting human health or the environment. EPA maintains that an I/I removal program is an integral component of ensuring permit compliance with the requirements of the permit under the provisions at 40 CFR § 122.41(d) and (e).

General requirements for proper operation and maintenance, and mitigation have been included in Part II of the permit. Specific permit conditions have also been included in Part I.C. and I.D. of the Draft Permit. These requirements include mapping of the wastewater collection system, preparing and implementing a collection system operation and maintenance plan, reporting of

unauthorized discharges including SSOs, maintaining an adequate maintenance staff[12], performing preventative maintenance, controlling inflow and infiltration to separate sewer collection systems (combined systems are not subject to I/I requirements) to the extent necessary to prevent SSOs and I/I related effluent violations at the Facility, and maintaining alternate power where necessary. These requirements are included to minimize the occurrence of permit violations that have a reasonable likelihood of adversely affecting human health or the environment.

Several of the requirements in the Draft Permit are not included in the 2011 Permit, including collection system mapping, and preparation of a collection system operation and maintenance plan. EPA has determined that these additional requirements are necessary to ensure the proper operation and maintenance of the collection system and has included schedules in the Draft Permit for completing these requirements.

5.5 Standard Conditions

The standard conditions of the permit are based on 40 CFR §122, Subparts A, C, and D and 40 CFR § 124, Subparts A, D, E, and F and are consistent with management requirements common to other permits.

Federal Permitting Requirements

5.6 Endangered Species Act

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority and imposes requirements on 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").

Section 7(a)(2) of the ESA requires every Federal agency, in consultation with and with the assistance of the Secretary of Interior, to ensure 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 United States Fish and Wildlife Service (USFWS) administers Section 7 consultations for freshwater species. The National Oceanic and Atmospheric Administration Fisheries Service (NOAA Fisheries) administers Section 7 consultations for marine and anadromous species.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Massachusetts Maritime Academy. The Draft Permit is intended to replace the 2011 Permit in governing the Facility. As the federal agency charged with authorizing the discharge from this Facility, EPA determines potential impacts to federally listed species, and initiates consultation, when required under Section 7(a)(2) of the ESA.

[12] See 314 CMR 12.04(3) and (4) for guidance on proper staffing to assure proper operation and maintenance of wastewater treatment facilities

EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in the expected action area of the outfall to determine if EPA's proposed NPDES permit could potentially impact any such listed species in this section of the Cape Cod Canal within Segment MA95-14.

Regarding protected species under the jurisdiction of NOAA Fisheries, a number of anadromous and marine species and life stages are present in Massachusetts waters. Various life stages of protected fish, sea turtles and whales have been documented in Massachusetts coastal and inland waters, either seasonally or year-round. In general, adult and subadult life stages of Atlantic sturgeon (Acipenser *oxyrinchus*) and adult shortnose sturgeon (Acipenser *brevirostrom*) are present in coastal waters. These sturgeon life stages are also found in some river systems in Massachusetts, along with early life stages of protected sturgeon and juvenile shortnose sturgeon. Protected marine species, including adult and juvenile life stages of leatherback sea turtles (Dermochelys coriacea), loggerhead sea turtles (Caretta caretta), Kemp's ridley sea turtles (*Lepidochelys* kempii) and green sea turtles (Chelonia mydas) are found in coastal waters and bays. Adult and juvenile life stages of North Atlantic right whales (*Eubalaena* glacialis) and fin whales (Balaenoptera physalus) have also been documented in coastal waters and bays. Those coastal areas have been designated as critical habitat for North Atlantic right whale feeding.

In this case, the Facility's outfall and action area overlap with coastal waters where protected marine species are found. The Facility's discharges are directly into the Cape Cod Canal, which is a portion of the larger Buzzard's Bay, which drains into the Atlantic Ocean. Two species of anadromous fish, the shortnose sturgeon (*Acipenser brevirostrom*) and the Atlantic sturgeon (*Acipenser oxyrhynchus*), are potentially present in the vicinity of the discharge. In general, adult shortnose sturgeon (SNS) and adult Atlantic sturgeon (ATS) are present in coastal waters. The Cape Cod Canal is possibly home for multiple lifestages, including adult and juvenile sturgeon that are expected to migrate, forage and overwinter in the area, young of year sturgeon that are expected to migrate and forage in the area and post yolk-sac larvae sturgeon that are expected to migrate and forage in the area. Also present in the action area are four species of sea turtle, including: the leatherback sea turtle (*Dermochelys coriacea*), green sea turtle (*Chelonia mydas*), kemp's ridley sea turtle (*Lepidochelys kempii*), and the loggerhead sea turtle (*Caretta caretta*). This section of Buzzards Bay is known to be active migrating and foraging habitat for both adult and juvenile sea turtles, likely passing through the area as part of their larger annual migration route. The action area also overlaps with habitat for two Atlantic large whale species, the North Atlantic right whale (*Eubalaena glacialis*) and the fin whale (*Balaenoptera physalus*). Adult and juvenile whales are known to migrate, forage, and overwinter in and around the action area of the discharge.

Because these species may be affected by the discharges authorized by the proposed permit, EPA has thoroughly evaluated the potential impacts of the permit action on these protected species through the preparation of a Biological Assessment (BA). EPA is in the process of finalizing the BA. On the basis of the evaluation, EPA's preliminary determination is that this action may affect, but is not likely to adversely affect, the life stages of the protected species which are expected to inhabit the Cape Cod Canal in the vicinity of the action area of the discharge. Therefore, EPA has judged that a formal consultation pursuant to section 7 of the ESA is not required. EPA is seeking concurrence from NOAA Fisheries regarding this determination

through the information in the Draft Permit, this Fact Sheet, as well as the detailed BA that will be sent to NOAA Fisheries Protected Resources Division during the Draft Permit's public comment period.

For protected species under the jurisdiction of the USFWS, three listed species, the northern long-eared bat (*Myotis septentrionalis*), the roseate tern (*Sterna dougallii dougallii*), and the Plymouth redbelly turtle (*Pseudemys rubriventris bangsi*) were identified as potentially occurring in the action area of the Facility's discharge.

According to the USFWS, the threatened northern long-eared bat is found in the following habitats based on seasons, "winter – mines and caves; summer – wide variety of forested habitats." This species is not considered aquatic. However, because the Facility's projected action area in the Cape Cod Canal near Buzzards Bay, MA overlaps with the general statewide range of the northern long-eared bat, EPA prepared an Effects Determination Letter for the Massachusetts Maritime Academy NPDES Permit Reissuance and submitted it to USFWS. Based on the information submitted by EPA, the USFWS notified EPA by letter, dated December 7, 2021, that the permit reissuance is consistent with activities analyzed in the USFWS January 5, 2016, Programmatic Biological Opinion (PBO).[13] The PBO outlines activities that are excepted from "take" prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.). The USFWS consistency letter concluded EPA's consultation responsibilities for the Massachusetts Maritime Academy NPDES permitting action under ESA section 7(a)(2) with respect to the northern long-eared bat. No further ESA section 7 consultation is required with USFWS.

The roseate tern has a historical range down the Atlantic Coast ranging from Maine to North Carolina, with additional habitat in Florida, Puerto Rico, and the U.S. Virgin Islands. The roseate tern is classified as endangered throughout the Northeast and Mid-Atlantic and classified as threatened in Florida, Puerto Rico, and the U.S. Virgin Islands. While not an aquatic species, the tern relies on the consumption of small fish and engages in a plunge-dive behavior where it is completely submerged to retrieve fish. Because the near shore canal action area of the Facility is not expected to overlap with the feeding behavior and habitat of the roseate tern, no ESA consultation with USFWS for this federal action is necessary regarding this species.

The Plymouth redbelly turtle is an endangered reptile whose range stretches from the Western bank of the Cape Cod Bay to the Eastern edge of the city of Providence, Rhode Island. The range extends as far north as Brockton, MA, and as far south as New Bedford, MA. Critical habitat for the Plymouth redbelly turtle has been established by the USFWS but is not yet available for analysis. The turtle is an aquatic freshwater species commonly occuring in lakes, ponds, rivers, streams, and marshes. The permitted facility has an outfall directly discharging into the Cape Cod Canal and does not directly interact with freshwater bodies in or around the Facility. Subsequently, the permitted Facility's action does not overlap with the Plymouth redbelly turtle or its habitat. No ESA consultation with USFWS for this federal action is necessary regarding this species.

[13] USFWS Event Code: 05E1NE00-2021-E-14173, September 2, 2021.

At the beginning of the public comment period, EPA notified NOAA Fisheries Protected Resources Division and USFWS that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents.

ESA consultation with NOAA Fisheries is required as a result of this permitting action. Once completed, re-initiation of consultation is required and shall be requested by the EPA or by USFWS/NOAA Fisheries where discretionary Federal involvement or control over the action has been retained or is authorized by law and: (a) If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered in the analysis; (b) If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in this analysis; or (c) If a new species is listed or critical habitat designated that may be affected by the identified action. No take is anticipated or exempted. If there is any incidental take of a listed species, initiation of consultation would be required.

5.7 Essential Fish Habitat

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (*see* 16 U.S.C. § 1801 *et seq*., 1998), EPA is required to consult with the NOAA Fisheries if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat". *See* 16 U.S.C. § 1855(b).

The Amendments broadly define "essential fish habitat" (EFH) as: "waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity". *See* 16 U.S.C. § 1802(10). "Adverse impact" means any impact that reduces the quality and/or quantity of EFH. 50 CFR § 600.910(a). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

EFH is only designated for fish species for which federal Fisheries Management Plans exist. *See* 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. A New England Fishery Management Council's Omnibus Essential Fish Habitat Amendment in 2017 updated the descriptions.

The Federal action being considered in this case is EPA's proposed NPDES permit for the Massachusetts Maritime Academy, which discharges through Outfall 001 and Outfall 002, to the Cape Cod Canal segment MA 95-14, in Buzzards Bay, MA. The Cape Cod Canal is covered by EFH designation for ocean systems at Latitude 41º 44' 23" N, and Longitude 71º 22' 42" W, as determined by the NOAA EFH Mapper.[14] EPA's review of available EFH information indicated that this water body is designated EFH for 21 fish species and two habitat areas of particular concern. Therefore, consultation with NOAA Fisheries under the Magnuson-Stevens Fishery Conservation and Management Act is required. The following is a list of the EFH species and applicable life stage(s) for the Cape Cod Canal including waters in Buzzards Bay, MA:

[14] NOAA EFH Mapper available at https://www.habitat.noaa.gov/apps/efhmapper/

Species/Management Unit	Lifestage(s) Found at Location
Atlantic Wolffish	ALL
Winter Flounder	ALL
Little Skate	Juvenile, Adult
Atlantic Herring	Juvenile, Adult
Atlantic Cod	ALL
Red Hake	ALL
Yellowtail Flounder	Juvenile, Adult
Windowpane Flounder	Juvenile, Adult
Winter Skate	Juvenile, Adult
Ocean Pout	Eggs
White Shark	Larvae
Black Sea Bass	ALL
Scup	ALL
Northern Shortfin Squid	Adult
Longfin Inshore Squid	Eggs, Juvenile, Adult
Atlantic Mackerel	Eggs, Juvenile, Adult
Bluefish	Juvenile, Adult
Atlantic Butterfish	Eggs, Juvenile, Adult
Spiny Dogfish	Juvenile, Adult
Atlantic Surfclam	Juvenile, Adult
Summer Flounder	Larvae, Juvenile, Adult
HAPC Name	
Inshore 20m Juvenile Cod	
Summer Flounder	

EPA has determined that the operation of this Facility, as governed by this permit action, may adversely affect the EFH in the Cape Cod Canal. The Draft Permit has been conditioned in the following way to minimize any impacts that reduce the quality and/or quantity of EFH:

5.7.1 EPA's Finding of all Potential Impacts to EFH Species

- This Draft Permit action does not constitute a new source of pollutants. It is the reissuance of an existing NPDES permit;
- The Facility withdraws no water from the Cape Cod Canal, so the EFH will not be reduced in quality and/or quantity through impingement or entrainment of EFH designated species or their prey;
- Acute toxicity tests will be conducted once a year to ensure that the discharge does not exhibit toxicity;

- Total suspended solids, biochemical oxygen demand, pH, *Enterococcus*, fecal coliform, total residual chlorine and acute toxicity are regulated by the Draft Permit to meet water quality standards;
- The Draft Permit prohibits the discharge of pollutants or combination of pollutants in toxic amounts;
- The effluent limitations and conditions in the Draft Permit were developed to be protective of all aquatic life;
- The Draft Permit prohibits violations of the state water quality standards; and
- The proposed Draft Permit requirements minimize any reduction in quality and/or quantity of EFH, either directly or indirectly.

EPA believes that the conditions and limitations contained in the Draft Permit adequately protect all aquatic life, as well as the essential fish habitat in the Cape Cod Canal. Further mitigation is not warranted. Should adverse impacts to EFH be detected as a result of this permit action, or if new information is received that changes the basis for EPA's conclusions, NOAA Fisheries Habitat and Ecosystem Services Division will be contacted and an EFH consultation will be re-initiated.

At the beginning of the public comment period, EPA notified NOAA Fisheries Habitat and Ecosystem Services Division that the Draft Permit and Fact Sheet were available for review and provided a link to the EPA NPDES Permit website to allow direct access to the documents. In addition to this Fact Sheet and the Draft Permit, information to support EPA's finding was included in a letter under separate cover that will be sent to the NOAA Fisheries Habitat and Ecosystem Services Division during the public comment period.

5.8 Coastal Zone Management (CZM) Consistency Review

The regulation at 40 CFR § 122.49(d) states "The Coastal Zone Management Act, 16 U.S.C. 1451 et seq. section 307(c) of the Act and implementing regulations (15 CFR part 930) prohibit EPA from issuing a permit for an activity affecting land or water in the coastal zone until the applicant certifies that the proposed activity complies with the State Coastal Zone Management program, and the State or its designated agency concurs with the certification (or the Secretary of Commerce) overrides the State's nonconcurrence.

The discharge is within the defined CZM boundaries. The Permittee submitted a letter dated November 8, 2021 to the Massachusetts CZM Program stating their intention to abide by the CZM water quality and habitat policies. EPA expects that CZM will find the discharge consistent with its policies.

6.0 Public Comments, Hearing Requests and Permit Appeals

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:

George Papadopoulos
EPA Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912; Telephone: (617) 918-1579
Email: papadopoulos,george@epa.gov

Prior to the close of the public comment period, any person, may submit a written request to EPA for a public hearing to consider the Draft Permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held if the criteria stated in 40 CFR § 124.12 are satisfied. In reaching a final decision on the Draft Permit, EPA will respond to all significant comments in a Response to Comments document attached to the Final Permit and make these responses available to the public at EPA's Boston office and on EPA's website.

Following the close of the comment period, and after any public hearings, if such hearings are held, EPA will issue a Final Permit decision, forward a copy of the final decision to the applicant, and provide a copy or notice of availability of the final decision to each person who submitted written comments or requested notice. Within 30 days after EPA serves notice of the issuance of the Final Permit decision, an appeal of the federal NPDES permit may be commenced by filing a petition for review of the permit with the Clerk of EPA's Environmental Appeals Board in accordance with the procedures at 40 CFR § 124.19.

7.0 Administrative Record

Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at EPA's Boston office. However, any documents relating to this draft can be requested from the individual listed above.

The administrative record on which this Draft Permit is based may be accessed at EPA's Boston office by appointment, Monday through Friday, excluding holidays from George Papadopoulos, EPA Region 1, 5 Post Office Square, Suite 100 (06-1), Boston, MA 02109-3912 or via email to papadopoulos.george@epa.gov.

January 2022

Date

Ken Moraff, Director
Water Division
U.S. Environmental Protection Agency

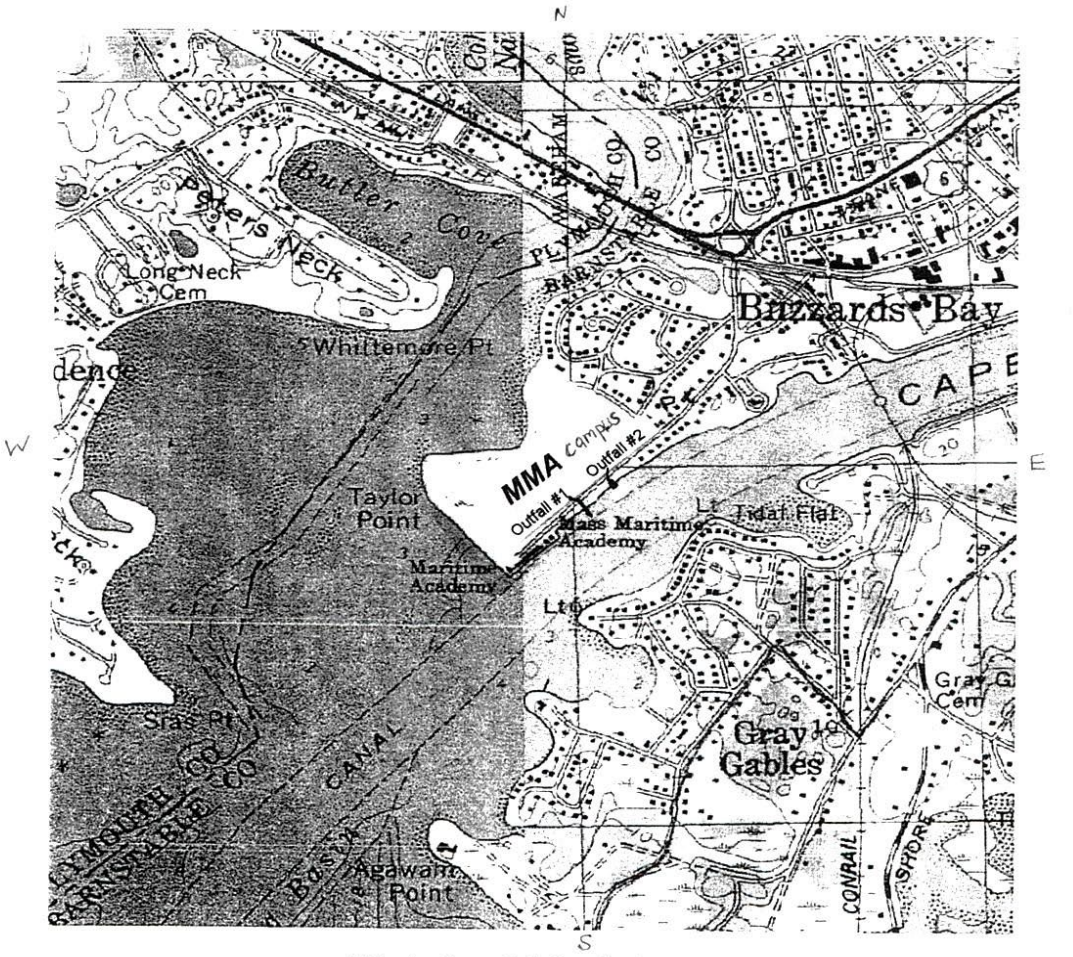
Figure 1: Location Map - Mass Maritime Academy WWTF

Permit No. MA0024368

OUTFALL #1- Latitude 41° - 44min W
Longitde 70° 37min W
#2 - same

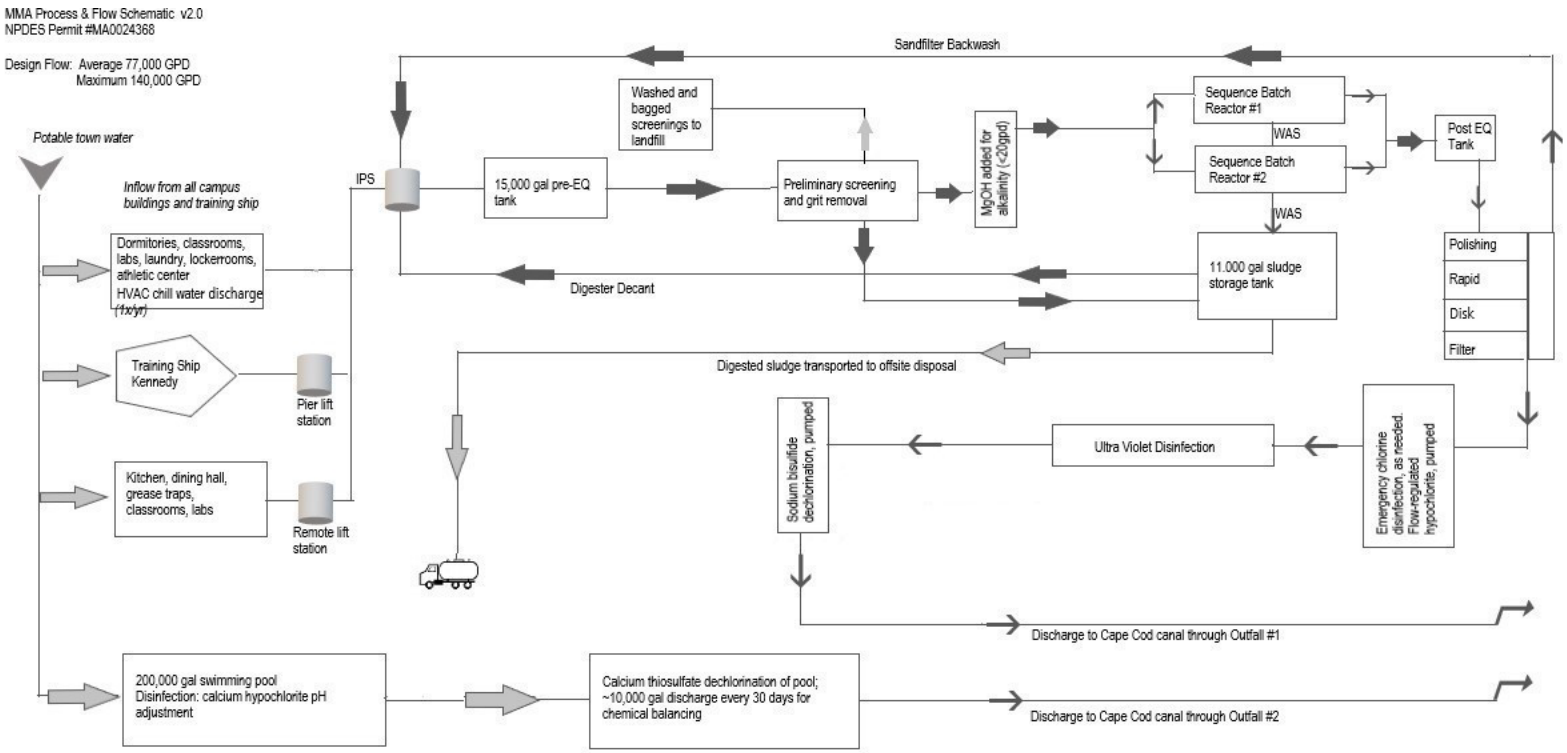
Masachusetts Maritime Academy

Location of permitted Outfalls #1 and #2



Tide in Cape Cod Canal changes every 6 hours:
WEST -Outgoing tide EAST - Incoming tide

Figure 2 – Schematic of Wastewater Treatment Plant



Appendix A – Discharge Monitoring Data

MASS MARITIME ACADEMY - Outfall Serial Number 001 Effluent Monitoring											
Parameter	**Flow**	**Flow**	**Flow**	**BOD5**	**BOD5**	**BOD5**	**BOD5**	**BOD5**	**TSS**	**TSS**	**TSS**
	Annual Rolling AVG	**Monthly Avg**	**Daily Max**	**Monthly Avg**	**Monthly Avg**	**Weekly Average**	**Daily Max**	**Daily Max**	**Monthly Avg**	**Weekly Average**	**Daily Max**
Units	**MGD**	**gal/d**	**MGD**	**lb/d**	**mg/L**	**mg/L**	**lb/d**	**mg/L**	**Mg/L**	**Mg/L**	**Mg/L**
Effluent Limit	**0.077**	**Report**	**Report**	**35**	**30**	**45**	**Report**	**Report**	**30**	**45**	**Report**
Minimum	**0.003**	**3000**	**0.007**	**0**	**0**	**0**	**0**	**0**	**2**	**2**	**3.9**
Maximum	**0.042**	**42000**	**0.072**	**5**	**10.1**	**10.1**	**9**	**14**	**34**	**34**	**44**
Median	**0.025**	**25000**	**0.0505**	**1.4**	**6.85**	**6.55**	**2.9**	**9**	**8.3**	**8.3**	**12.1**
No. of Violations	**0**	**N/A**	**N/A**	**0**	**0**	**0**	**N/A**	**N/A**	**1**	**0**	**N/A**
Monitoring Period End Date											
5/31/2016	0.035	35000	0.05	2.7	8.1	8.2	3.6	9.5	5.2	3.1	3.9
6/30/2016	0.02	20000	0.05	1.7	8.5	9	4.2	10.9	10.2	13.3	26
7/31/2016	0.012	12000	0.032	1.1	7.3	7.3	1.6	8.7	7	7	11.4
8/31/2016	0.017	17000	0.05	1.4	9.1	9.1	1.9	9.9	9	9	15.8
9/30/2016	0.035	35000	0.054	2.6	8.1	8.1	3.6	9.5	8.6	8.6	12.2
10/31/2016	0.036	36000	0.062	4.4	10	10	5.6	14	14	14	17
11/30/2016	0.033	33000	0.057	2.1	5.3	5.3	2.9	6	12.8	12.8	22
12/31/2016	0.029	29000	0.071	1.8	6.3	6.3	3.7	9.6	8.8	8.8	15
1/31/2017	0.01	10000	0.03	0.4	3.9	3.9	0.8	5.5	6.1	6.1	10
2/28/2017	0.008	8000	0.023	0.3	4.6	4.6	0.4	5.3	7.5	7.5	11
3/31/2017	0.036	36000	0.055	2.9	7.9	7.9	3.8	11	16.7	16.7	36
4/30/2017	0.03	30000	0.062	3.1	10	10	4.6	10	20	20	24

Parameter	Flow	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5	TSS	TSS	TSS
	Annual Rolling AVG	Monthly Avg	Daily Max	Monthly Avg	Monthly Avg	Weekly Average	Daily Max	Daily Max	Monthly Avg	Weekly Average	Daily Max
Units	MGD	gal/d	MGD	lb/d	mg/L	mg/L	lb/d	mg/L	Mg/L	Mg/L	Mg/L
5/31/2017	0.032	32000	0.048	3.3	9.1	9.1	3.7	10	22	22	38
6/30/2017	0.021	21000	0.051	2	9.1	9.1	4.3	10	12.8	12.8	20
7/31/2017	0.011	11000	0.045	0.7	7.3	7.3	0.9	9	7.3	7.3	9
8/31/2017	0.016	16000	0.054	0.8	6.9	6.9	1.7	9	18	18	29
9/30/2017	0.032	32000	0.047	3.2	8.5	8.5	3.8	10	15	15	23
10/31/2017	0.036	36000	0.05	3.5	8.8	8.8	4.2	10	12	12	16
11/30/2017	0.032	32000	0.052	2.6	6.8	6.8	4.1	10	7.2	7.2	9
12/31/2017	0.026	26000	0.058	1.1	5	5	2.1	8	6.3	6.3	10
1/31/2018	0.01	10000	0.032	0.05	4	4	2	6	5	5	8
2/28/2018	0.008	8000	0.02	0	3	3	0	3	2	2	4
3/31/2018	0.031	31000	0.051	1	4	4	3	9	6	6	7
4/30/2018	0.039	39000	0.067	1	3	3	2	4	4	4	5
5/31/2018	0.034	34000	0.053	1.4	3.5	3.5	1.9	5	4.8	4.8	6
6/30/2018	0.024	24000	0.057	1.1	5.8	5.8	2.4	8	5.5	5.5	7
7/31/2018	0.017	17000	0.045	1.3	7.3	7.3	2.3	8	10.5	10.5	22
8/31/2018	0.022	22000	0.059	0.6	5	5	0.5	3	5	5	6
9/30/2018	0.037	37000	0.053	3.3	7.8	7.8	4	9	10	10	17
10/31/2018	0.038	38000	0.058	3	8	8	4	9	15	15	18
11/30/2018	0.032	32000	0.032	3	8	8	4	10	10	10	12
12/31/2018	0.025	25000	0.051	2	7	7	3	10	12	12	20
1/31/2019	0.01	10000	0.026	0.06	6	6	1.7	8	10	10	13
2/28/2019	0.009	9000	0.02	0.3	3.3	3.3	0.5	5	7	7	14
3/31/2019	0.034	34000	0.053	3	9	9	4	10	**34**	34	44
4/30/2019	0.033	33000	0.052	3	9	9	4	10	14	14	24

Parameter	Flow	Flow	Flow	BOD5	BOD5	BOD5	BOD5	BOD5	TSS	TSS	TSS
	Annual Rolling AVG	Monthly Avg	Daily Max	Monthly Avg	Monthly Avg	Weekly Average	Daily Max	Daily Max	Monthly Avg	Weekly Average	Daily Max
Units	**MGD**	**gal/d**	**MGD**	**lb/d**	**mg/L**	**mg/L**	**lb/d**	**mg/L**	**Mg/L**	**Mg/L**	**Mg/L**
5/31/2019	0.039	39000	0.06	4	9	9	5	10	15	15	22
6/30/2019	0.025	25000	0.057	2	8	8	4	9	7	7	10
7/31/2019	0.016	16000	0.037	1	7	7	1	9	13	13	27
8/31/2019	0.021	21000	0.065	1	7	7	2	9	8	8	15
9/30/2019	0.039	39000	0.068	3	6	6	3	8	8	8	10
10/31/2019	0.042	42000	0.063	2	6	6	4	9	7	7	10
11/30/2019	0.035	35000	0.061	2.1	4.5	4.5	4.1	8	4	4	5
12/31/2019	0.026	26000	0.072	1	4	4	2	5	5	5	7
1/31/2020	0.013	13000	0.032	1	5	5	1	7	5	5	8
2/29/2020	0.009	9000	0.02	0	5	5	0	8	7	6	12
3/31/2020	0.039	39000	0.062	4.1	10.1	10.1	5	12.6	11.4	11.4	17
4/30/2020	0.037	37000	0.063	4	9.6	9.6	4.8	11.6	8.8	8.8	15
5/31/2020	0.003	3000	0.008	5	0	0	9	0	9	9	11
6/30/2020	0.004	4000	0.007	0	4	4	0	7	5.8	5.8	6.5
7/31/2020	0.004	4000	0.01	0	4	4	0	6	6.6	6.6	8.5
8/31/2020	0.011	11000	0.025	0	2	2	0	3	3	3	4.3
9/30/2020	0.019	19000	0.034	0.7	5	5	1.1	6.3	5	5	6
10/31/2020	0.018	18000	0.033	1	7	5	1	7	4	4	5
11/30/2020	0.017	17000	0.019	1	4	4	4	8	6	6	6.3
12/31/2020	0.007	7000	0.024	0.2	4.8	4.8	0.5	6.5	10	10	16
1/31/2021	0.004	4000	0.008	0.2	5.9	5.9	0.3	9.2	20	20	29
2/28/2021	0.027	27000	0.046	2.1	8.2	8.2	3.2	9.7	13	13	16
3/31/2021	0.028	28000	0.043	1.7	8.6	8.6	2.9	9.5	11	11	19

Notes: 0 = parameter not detected; N/A = not applicable

MASS MARITIME ACADEMY - Outfall Serial Number 001 Effluent Monitoring – Continued									
Parameter	**pH**	**pH**	**BOD5 % Removal**	**TSS % Removal**	**Settleable Solids**	**Entero-coccus**	**Entero-coccus**	**Fecal Coliform**	**Fecal Coliform**
	Min	**Max**	**Monthly Average**	**Monthly Average**	**Daily Max**	**Monthly Geometric Mean**	**Daily Max**	**Monthly Geometric Mean**	**Daily Max**
Units	**SU**	**SU**	**%**	**%**	**mL/L**	**CFU/100 mL**	**CFU/100 mL**	**CFU/100 mL**	**CFU/100 mL**
Effluent Limit	**6.5**	**8.5**	**85**	**85**	**Report**	**35**	**276**	**14**	**43**
Minimum	**6.5**	**7.5**	**85**	**86**	**0**	**0**	**0**	**0**	**0**
Maximum	**7.5**	**8.5**	**99**	**99**	**0**	**5**	**48**	**0**	**0**
Median	**6.7**	**8.1**	**95**	**96**	**0**	**0**	**0**	**0**	**0**
No. of Violations	**0**	**0**	**0**	**0**	**N/A**	**0**	**0**	**0**	**0**
Monitoring Period End Date									
5/31/2016	6.5	7.6	97	99	0	0	0	0	0
6/30/2016	6.8	8	96	99	0	0	0	0	0
7/31/2016	6.9	8.2	92	99	0	0	0	0	0
8/31/2016	6.9	8.3	96	99	0	0	0	0	0
9/30/2016	6.7	8.2	93	99	0	0	0	0	0
10/31/2016	7.2	8.3	98	99	0	0	1	0	0
11/30/2016	6.5	8.5	99	99	0	1	4	0	0
12/31/2016	6.5	8.5	98	99	0	0	0	0	0
1/31/2017	6.8	8.5	94	99	0	0	0	0	0
2/28/2017	7.5	8.5	95	99	0	0	0	0	0
3/31/2017	6.5	8.4	97	99	0	0	0	0	0
4/30/2017	6.5	8.3	95	99	0	0	43	0	0
5/31/2017	6.5	7.5	98	99	0	0	0	0	0

Parameter	pH	pH	BOD5 % Removal	TSS % Removal	Settleable Solids	Entero-coccus	Entero-coccus	Fecal Coliform	Fecal Coliform
	Min	Max	Monthly Average	Monthly Average	Daily Max	Monthly Geometric Mean	Daily Max	Monthly Geometric Mean	Daily Max
Units	SU	SU	%	%	mL/L	CFU/100 mL	CFU/100 mL	CFU/100 mL	CFU/100 mL
6/30/2017	6.5	8.5	96	99	0	0	3	0	0
7/31/2017	6.6	8.5	96	99	0	0	0	0	0
8/31/2017	6.7	8.5	97	99	0	0	0	0	0
9/30/2017	6.5	8.5	96	93	0	0	6	0	0
10/31/2017	6.5	8.4	97	95	0	0	8	0	0
11/30/2017	6.5	7.7	96	92	0	0	0	0	0
12/31/2017	6.7	7.8	95	95	0	0	0	0	0
1/31/2018	6.8	7.8	92	94	0	0	0	0	0
2/28/2018	7.2	7.7	85	95	0	0	0	0	0
3/31/2018	6.5	7.7	95	93	0	0	0	0	0
4/30/2018	6.5	7.8	98	92	0	5	17	0	0
5/31/2018	6.5	7.7	98	97	0	0	0	0	0
6/30/2018	6.8	8.1	97	96	0	0	0	0	0
7/31/2018	6.8	8.1	93	87	0	0	0	0	0
8/31/2018	6.5	8.2	96	96	0	0	0	0	0
9/30/2018	6.7	8.1	94	94	0	0	0	0	0
10/31/2018	6.5	8.3	96	93	0	4	48	0	0
11/30/2018	6.5	8.4	96	94	0	0	0	0	0
12/31/2018	6.9	8.2	95	92	0	0	0	0	0
1/31/2019	6.5	8.4	95	93	0	4	37	0	0
2/28/2019	6.5	8.5	95	93	0	0	0	0	0
3/31/2019	6.5	8.4	85	96	0	0	0	0	0

Parameter	pH	pH	BOD5 % Removal	TSS % Removal	Settleable Solids	Entero-coccus	Entero-coccus	Fecal Coliform	Fecal Coliform
	Min	Max	Monthly Average	Monthly Average	Daily Max	Monthly Geometric Mean	Daily Max	Monthly Geometric Mean	Daily Max
Units	SU	SU	%	%	mL/L	CFU/100 mL	CFU/100 mL	CFU/100 mL	CFU/100 mL
4/30/2019	6.6	8.3	92	88	0	0	0	0	0
5/31/2019	6.6	8.3	92	89	0	0	0	0	0
6/30/2019	6.7	8.5	86	94	0	0	0	0	0
7/31/2019	6.7	8.5	85	94	0	0	0	0	0
8/31/2019	6.5	8.4	93	95	0	0	0	0	0
9/30/2019	6.7	8.4	95	97	0	0	0	0	0
10/31/2019	6.5	7.7	95	96	0	4	48	0	0
11/30/2019	6.7	7.6	94	96	0	0	0	0	0
12/31/2019	6.6	7.8	98	98	0	0	0	0	0
1/31/2020	6.8	7.9	94	97	0	0	0	0	0
2/29/2020	6.6	7.8	91	96	0	0	0	0	0
3/31/2020	7.1	7.5	97	99	0	0	0	0	0
4/30/2020	6.5	7.8	97	99	0	0	0	0	0
5/31/2020	6.8	7.5	98	86	0	0	0	0	0
6/30/2020	6.9	7.6	88	96	0	0	0	0	0
7/31/2020	6.6	7.8	86	92	0	0	0	0	0
8/31/2020	7	7.6	87	98	0	0	0	0	0
9/30/2020	6.8	7.7	98	98	0	0	0	0	0
10/31/2020	6.9	7.6	97	98	0	0	0	0	0
11/30/2020	6.9	7.7	93	98	0	0	0	0	0
12/31/2020	7.1	7.9	93	90	0	0	0	0	0

Parameter	pH	pH	BOD5 % Removal	TSS % Removal	Settleable Solids	Entero-coccus	Entero-coccus	Fecal Coliform	Fecal Coliform
	Min	Max	Monthly Average	Monthly Average	Daily Max	Monthly Geometric Mean	Daily Max	Monthly Geometric Mean	Daily Max
Units	SU	SU	%	%	mL/L	CFU/100 mL	CFU/100 mL	CFU/100 mL	CFU/100 mL
1/31/2021	7	7.7	85	89	0	0	0	0	0
2/28/2021	6.8	7.6	91	96	0	0	0	0	0
3/31/2021	6.6	7.5	96	90	0	0	0	0	0

Notes: 0 = parameter not detected; N/A = not applicable

MASS MARITIME ACADEMY - Outfall Serial Number 001 Effluent Monitoring – Continued				
Parameter	**Ammonia**	**TKN**	**TN**	**Nitrite+Nitrate**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**
Minimum	**0**	**0**	**0**	**0**
Maximum	**86**	**45**	**110**	**100**
Median	**0.76**	**3.95**	**69**	**58.65**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date				
5/31/2016	0.5	0.9	95.8	92.4
6/30/2016	0	2.4	62.8	60.4
7/31/2016	0	0	0	0
8/31/2016	0	2.7	58.5	56
9/30/2016	86	0.6	91	86
10/31/2016	0.52	33.3	68.7	35.4
11/30/2016	0	2.7	91.8	89.1
12/31/2016	3	6.6	83	77
1/31/2017	0	1.9	60.3	58
2/28/2017	0	1.7	45.6	44
3/31/2017	2.7	6.7	81.5	75
4/30/2017	13.5	22.6	82.5	59.9
5/31/2017	22	32	99	67
6/30/2017	2.3	8.5	61	52

Parameter	Ammonia	TKN	TN	Nitrite+Nitrate
	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L
7/31/2017	0	2	32	29.6
8/31/2017	6.2	11	52	41
9/30/2017	27	34	110	73
10/31/2017	21	26	99	73
11/30/2017	0	3.4	104	100
12/31/2017	0	6.1	85	78
1/31/2018	0.61	4.3	72	68
2/28/2018	0	1.1	28	27
3/31/2018	1.4	7.5	74	66
4/30/2018	0	1.9	102	100
5/31/2018	0	2.4	90	88
6/30/2018	0	1.8	69	67
7/31/2018	1.1	2.5	39	36.5
8/31/2018	6.2	10	55	45.3
9/30/2018	3.5	9.8	86	75.8
10/31/2018	0.72	1.6	80	78.1
11/30/2018	0	3.6	81	77.8
12/31/2018	11	12	69	57
1/31/2019	0	1.3	37	37
2/28/2019	0.99	6.7	47	40.1
3/31/2019	39	45	96	51.5
4/30/2019	30	38	109	71
5/31/2019	20	29	95	65.5
6/30/2019	26	31	104	73

Parameter	Ammonia	TKN	TN	Nitrite+Nitrate
	Daily Max	Daily Max	Daily Max	Daily Max
Units	mg/L	mg/L	mg/L	mg/L
7/31/2019	4.2	12	57	44.2
8/31/2019	11	17	58	41.2
9/30/2019	12	20	80	59.1
10/31/2019	4.3	7.8	76	68.6
11/30/2019	0	1.8	57	55.5
12/31/2019	2.7	4.5	76	71.6
1/31/2020	1.7	4.9	62	57.5
2/29/2020	0	1.3	37	35.9
3/31/2020	26.9	33.3	91.5	58.2
4/30/2020	8.4	13.4	30.2	17
5/31/2020	0	0.9	17	16.2
6/30/2020	0	1.1	25	23.7
7/31/2020	0	1.3	30	16
8/31/2020	0	2	24	21.8
9/30/2020	78	1.6	0	76.6
10/31/2020	0	0	35	36
11/30/2020	0	0	87	86.5
12/31/2020	0	1.1	31	30.3
1/31/2021	0	1.2	4.8	3.6
2/28/2021	22	26	100	76
3/31/2021	0.8	6.2	75	68.9

Notes: 0 = parameter not detected; N/A = not applicable

MASS MARITIME ACADEMY - Outfall Serial Number 002 Effluent Monitoring					
Parameter	**Flow**	**pH**	**pH**	**TRC**	**Copper**
	Daily Max	**Minimum**	**Maximum**	**Daily Max**	**Daily Max**
Units	**gal/d**	**SU**	**SU**	**mg/L**	**mg/L**
Effluent Limit	**10000**	**6.5**	**8.5**	**1**	**0.5**
Minimum	**6000**	**7**	**7**	**0**	**0**
Maximum	**187000**	**7.8**	**7.8**	**0.5**	**0.2**
Median	**9500**	**7.6**	**7.6**	**0**	**0.01**
No. of Violations	**1**	**0**	**0**	**0**	**0**
Monitoring Period End Date					
5/31/2016	8500	7.6	7.6	0	0
6/30/2016	8250	7.6	7.6	0	0
7/31/2016	8500	7.6	7.6	0	0
8/31/2016	6000	7.5	7.5	0	0
9/30/2016	**187000#**	7.6	7.6	0	0
10/31/2016	9500	7.6	7.6	0	0
11/30/2016	8000	7.6	7.6	0	0.1
12/31/2016	6200	7.7	7.7	0	0.2
1/31/2017	9500	7.6	7.6	0	0.2
2/28/2017	9500	7.7	7.7	0	0.2
3/31/2017	8800	7.7	7.7	0.5	0.2
4/30/2017	10000	7.6	7.6	0.01	0.2
5/31/2017	8750	7.7	7.7	0.02	0.1
6/30/2017	8000	7.5	7.5	0	0.01

Parameter	Flow	pH	pH	TRC	Copper
	Daily Max	Minimum	Maximum	Daily Max	Daily Max
Units	gal/d	SU	SU	mg/L	mg/L
7/31/2017	8200	7.7	7.7	0.5	0.1
8/31/2017	7750	7.7	7.7	0	0
9/30/2017	9200	7.7	7.7	0	0.2
10/31/2017	9200	7.6	7.6	0	0.01
11/30/2017	9450	7.8	7.8	0	0.01
12/31/2017	7800	7.8	7.8	0	0.01
1/31/2018	8100	7.8	7.8	0	0.02
2/28/2018	9800	7.8	7.8	0	0.003
3/31/2018	9100	7.8	7.8	0	0.01
4/30/2018	6500	7.7	7.7	0	0.01
5/31/2018	9200	7.6	7.6	0	0.02
6/30/2018	9310	7.5	7.5	0	0.01
7/31/2018	8500	7.7	7.7	0	0.02
8/31/2018	9000	7.6	7.6	0	0.01
9/30/2018	10000	7.7	7.7	0	0.01
10/31/2018	10000	7.7	7.7	0	0.01
11/30/2018	7500	7.7	7.7	0	0.01
12/31/2018	9500	7.7	7.7	0	0.02
1/31/2019	9890	7.5	7.5	0	0.01
2/28/2019	9500	7.6	7.6	0	0.02
3/31/2019	7000	7	7	0	0.01
4/30/2019	9400	7.7	7.7	0	0.02
5/31/2019	9500	7.8	7.8	0	0.01
6/30/2019	9000	7.6	7.6	0	0.01

Parameter	Flow	pH	pH	TRC	Copper
	Daily Max	Minimum	Maximum	Daily Max	Daily Max
Units	gal/d	SU	SU	mg/L	mg/L
7/31/2019	9860	7.8	7.8	0	0.02
8/31/2019	10000	7.6	7.6	0	0.01
9/30/2019	10000	7.7	7.7	0	0.01
10/31/2019	9000	7.8	7.8	0	0.02
11/30/2019	10000	7.6	7.6	0	0.01
12/31/2019	9000	7.6	7.6	0	0.01
1/31/2020	10000	7.7	7.7	0	0.01
2/29/2020	10000	7.7	7.7	0	0.02
3/31/2020	9800	7.7	7.7	0	0.01
4/30/2020	7800	7.6	7.6	0	0.02
5/31/2020	10000	7.6	7.6	0	0.01
6/30/2020	10000	7.6	7.6	0	0.01
7/31/2020	10000	7.5	7.5	0	0.02
8/31/2020	10000	7.6	7.6	0	0.01
9/30/2020	10000	7.6	7.6	0	0.02
10/31/2020	10000	7.6	7.6	0	0.02
11/30/2020	10000	7.7	7.7	0	0.01
12/31/2020	10000	7.6	7.6	0	0.01
1/31/2021	10000	7.5	7.5	0	0.01
2/28/2021	10000	7.6	7.6	0	0.01
3/31/2021	10000	7.6	7.6	0	0.01

 # Swimming pool completely discharged

Mass Maritime Academy Outfall 001 - Whole Effluent Toxicity Testing - Effluent								
Parameter	**LC50 - Acute Mysidopsis Bahia**	**Aluminum**	**Cadmium**	**Copper**	**Lead**	**Nickel**	**Zinc**	**Ammonia**
	Daily Min							
Units	**%**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Effluent Limit	**50**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Minimum	**100**	**0**	**0**	**0.027**	**0**	**0.007**	**0.019**	**0**
Maximum	**100**	**0.915**	**0**	**0.222**	**0**	**0.135**	**0.555**	**0.076**
Median	**100**	**0.127**	**0**	**0.057**	**0**	**0.010**	**0.187**	**0.007**
No. of Violations	**0**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date								
6/30/2016	100	0.	0	0.035	0	0.014	0.187	0.007
6/30/2017	100	0.337	0	0.057	0	0.008	0.19	0.015
6/30/2018	100	0.127	0	0.064	0	0.135	0.112	0.076
6/30/2019	100	0.915	0	0.222	0	0.007	0.555	0.
6/30/2020	100	0.065	0	0.027	0	0.010	0.019	0

Mass Maritime Academy Outfall 001 - Whole Effluent Toxicity Testing – Receiving Water								
Parameter	**Aluminum**	**Cadmium**	**Copper**	**Lead**	**Nickel**	**Zinc**	**Ammonia**	**pH**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6.59**
Maximum	**0.11**	**0**	**0.004**	**0**	**0.031**	**0.076**	**0**	**7.9**
Median	**0.024**	**0**	**0**	**0**	**0**	**0.007**	**0**	**7.82**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date								
6/30/2016	0.01	0	0	0	0.031	0.007	0	7.9
6/30/2017	0.08	0	0	0	0	0.015	0	7.82
6/30/2018	0.11	0	0	0	0	0.076	0	7.89
6/30/2019	0.024	0	0	0	0	0	0	6.7
6/30/2020	0	0	0.004	0	0	0	0	6.59

Notes: 0 = parameter not detected; N/A = not applicable

Appendix B: Reasonable Potential Analysis

Methodology

A reasonable potential analysis is completed using a single set of critical conditions for flow and pollutant concentration that will ensure the protection of water quality standards. To determine the critical condition of the effluent, EPA projects an upper bound of the effluent concentration based on the observed monitoring data and a selected probability basis. EPA generally applies the quantitative approach found in Appendix E of the *Technical Support Document for Water Quality-based Toxics Control* (TSD)[15] to determine the upper bound of the effluent data. This methodology accounts for effluent variability based on the size of the dataset and the occurrence of non-detects (i.e., samples results in which a parameter is not detected above laboratory minimum levels). EPA used this methodology to calculate the 95th percentile.

EPA uses the calculated upper bound of the effluent data, along with a concentration representative of the parameter in the receiving water, the critical effluent flow, and the critical upstream flow to project the downstream concentration after complete mixing using the following simple mass-balance equation:

$$Q_s C_s + Q_e C_e = Q_d C_d$$

Where:

C_d = downstream concentration
C_s = upstream concentration (median value of available ambient data)
C_e = effluent concentration (95th percentile of effluent concentrations)
Q_s = upstream flow (7Q10 flow upstream of the outfall)
Q_e = effluent flow of the Facility (permitted maximum daily flow)
Q_d = downstream flow ($Q_s + Q_e$)

[15] USEPA, *Technical Support Document for Water Quality-Based Toxics Control*, Office of Water, Washington, D.C., March 1991.

Solving for the receiving water concentration downstream of the discharge (C_d) yields:

$$C_d = \frac{C_s Q_s + C_e Q_e}{Q_d}$$

EPA uses the calculated upper bound of the effluent data and a concentration representative of the parameter in the receiving water outside of the zone of influence of the discharge to project the downstream concentration after complete mixing using the following simple mass-balance equation:

$$C_s(DF - 1) + C_e = C_d(DF)$$

Where:

C_d = downstream concentration
C_e = effluent concentration (95th percentile of effluent concentrations)
DF = dilution factor (See Available Dilution section of the Fact Sheet)

Solving for the receiving water concentration downstream of the discharge (C_d) yields:

$$C_d = \frac{C_s(DF - 1) + C_e}{DF}$$

When the downstream concentration exceeds the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above WQSs. *See* 40 CFR § 122.44(d). When EPA determines that a discharge causes, has the reasonable potential to cause, or contribute to such an excursion, the permit must contain WQBELs for the parameter. The limitation is calculated by rearranging the above mass balance equation to solve for the effluent concentration using the applicable criterion as the downstream concentration. *See* 40 CFR § 122.44(d)(1)(iii).

Determination of Applicable Criteria

State water quality criteria are derived from EPA's *National Recommended Water Quality Criteria: 2002*, which are incorporated into the state WQSs by reference at 314 CMR 4.05(5). For dissolved to total recoverable metal conversion, see *Appendix A - Conversion Factors for Dissolved Metals:* http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#appendxa required by 314 CMR 4.05(5)(e). The criteria are presented in the following table:

Summary of Applicable Criteria

Parameter	Applicable Criteria[1]	
	Acute Criterion (CMC)	Chronic Criterion (CCC)
Units	**µg/L**	**µg/L**
Aluminum	-----	-----
Cadmium	40.2	8.9
Copper	5.8	3.7
Lead	220.8	8.5
Nickel	74.7	8.3
Zinc	95.1	85.6
Ammonia (warm)[2]	44.0	6.6
Ammonia (cold)[2]	200	30

[1] For dissolved to total recoverable metal conversion, see *Appendix A - Conversion Factors for Dissolved Metals:* http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm#appendxa; Required by 314 CMR 4.05(5)(e).

[2] Ammonia data was divided between warm weather months (April 1 – October 31) and cold weather months (November 1 – March 30). Ammonia criteria are calculated based on the temperature and pH of the receiving water. A temperature of 25°C was assumed for calculating warm weather criteria and a temperature of 5°C for cold weather criteria. A receiving water pH of 7.82 S.U. was calculated based on pH data from quarterly WET tests.

Calculation of Reasonable Potential

EPA first calculated the upper bound of expected effluent concentrations for each parameter. EPA then used the calculated upper bound of expected effluent concentrations, the median value of the available ambient data, the permitted daily maximum effluent flow and the upstream 7Q10 flow to project the in-stream concentration downstream from the discharge. When this resultant in-stream concentration (C) exceeds the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above water quality standards. The table below presents the reasonable potential calculations and, if applicable, the calculation of the limits required in the permit.

Summary of Reasonable Potential Results

Parameter	Ambient Concentration[1]	Effluent Concentration[2]	Downstream Acute Concentration[3]	Downstream Chronic Concentration[3]	Acute Criterion	Chronic Criterion	Acute Reasonable Potential[4]	Chronic Reasonable Potential[4]
Units	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**µg/L**	**—**	**—**
Aluminum	24	2104	28.2	28.2	----	----	N/A	N/A
Cadmium	0	0	0	0	40.2	8.9	N	N
Copper	0	510.6	1.0	1.0	1.0	3.7	N	N
Lead	0	0	0	0	220.8	8.5	N	N
Nickel	0	310.5	0.6	0.6	74.7	8.3	N	N
Zinc	7	1267.5	9.5	9.5	95.1	85.6	N	N
Ammonia (cold)	0	22.7	0	0	200.0	30.0	N	N
Ammonia (warm)	0	63.4	0.1	0.1	44.0	6.6	N	N

[1] Values represent the median receiving water concentration from Whole Effluent Toxicity testing. For certain parameters, the value of "0" represents a median value of non-detect.
[2] Values represent the 95th percentile concentration calculated using the monitoring data reported by the Facility (*See* Appendix A).
[3] Values are calculated as described above, using the dilution factor of 500:1
[4] 'Y' indicates there is a reasonable potential, 'N' indicates there is no reasonable potential

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

PUBLIC NOTICE PERIOD: **January 10, 2022 to February 8, 2022**

PERMIT NUMBER: **MA0024368**

NAME AND MAILING ADDRESS OF APPLICANT:

Massachusetts Maritime Academy
101 Academy Drive
Buzzards Bay, MA 02532

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Massachusetts Maritime Academy
101 Academy Drive
Buzzards Bay, MA 02532

RECEIVING WATER AND CLASSIFICATION:

Cape Cod Canal (MA 95-14); Buzzards Bay Watershed
Class SB – restricted shellfishing

PREPARATION OF THE DRAFT PERMIT AND EPA REQUEST FOR CWA § 401 CERTIFICATION:

EPA is issuing for public notice and comment the Draft NPDES Permit for the Massachusetts Maritime Academy Facility, which discharges treated sanitary wastewater, chiller water and treated swimming pool water. The effluent limits and permit conditions have been drafted pursuant to, and assure compliance with, the CWA, including EPA-approved State Surface Water Quality Standards at 314 CMR 4.00. MassDEP cooperated with EPA in the development of the Draft NPDES Permit. MassDEP retains independent authority under State law to publish for public notice and issue a separate Surface Water Discharge Permit for the discharge, not the subject of this notice, under the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53.

In addition, EPA has requested that MassDEP grant or deny certification of this Draft Permit pursuant to Section 401 of the CWA and implementing regulations. Under federal regulations governing the NPDES program at 40 Code of Federal Regulations (CFR) § 124.53(e), state certification shall contain conditions that are necessary to assure compliance with the applicable provisions of CWA sections 208(e), 301, 302, 303, 306, and 307 and with appropriate requirements of State law, including any conditions more stringent

than those in the Draft Permit that MassDEP finds necessary to meet these requirements. Furthermore, MassDEP may provide a statement of the extent to which each condition of the Draft Permit can be made less stringent without violating the requirements of State law.

INFORMATION ABOUT THE DRAFT PERMIT:

The Draft Permit and explanatory Fact Sheet may be obtained at no cost at https://www.epa.gov/npdes-permits/massachusetts-draft-individual-npdes-permits or by contacting:

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U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1579
Email: Papadopoulos.George@epa.gov

Following U.S. Centers for Disease Control and Prevention (CDC) and U.S. Office of Personnel Management (OPM) guidance and specific state guidelines impacting our regional offices, EPA's workforce has been directed to telework to help prevent transmission of the coronavirus. While in this workforce telework status, there are practical limitations on the ability of Agency personnel to allow the public to review the administrative record in person at the EPA Boston office. However, any electronically available documents that are part of the administrative record can be requested from the EPA contact above.

PUBLIC COMMENT AND REQUESTS FOR PUBLIC HEARINGS:

All persons, including applicants, who believe any condition of this Draft Permit is inappropriate must raise all reasonably ascertainable issues and submit all reasonably available arguments supporting their position by February 8, 2022**,** which is the close of the public comment period. Comments, including those pertaining to EPA's request for CWA § 401 certification, should be submitted to the EPA contact at the address or email listed above. Upon the close of the public comment period, EPA will make all comments available to MassDEP. All commenters who want MassDEP to consider their comments in the state decision-making processes (i.e., the separate state permit and the CWA § 401 certification) must submit such comments to MassDEP during the state comment period for the state Draft Permit and CWA § 401 certification. For information on submitting such comments to MassDEP, please follow the instructions found in the state public notice at: https://www.mass.gov/service-details/massdep-public-hearings-comment-opportunities.

Any person, prior to the close of the EPA public comment period, may submit a request in writing to EPA for a public hearing on the Draft Permit under 40 CFR § 124.10. 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 if 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.

Due to the COVID-19 National Emergency, if comments are submitted in hard copy form, please also email a copy to the EPA contact above.

FINAL PERMIT DECISION:

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

KEN MORAFF, DIRECTOR
WATER DIVISION
UNITED STATES ENVIRONMENTAL
PROTECTION AGENCY – REGION 1

LEALDON LANGLEY, DIRECTOR
DIVISION OF WATERSHED MGMT
MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION