STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

Chelsea Sandwich LLC
Chelsea Terminal
11 Broadway
Chelsea, Massachusetts

February 28, 2023

Prepared for:

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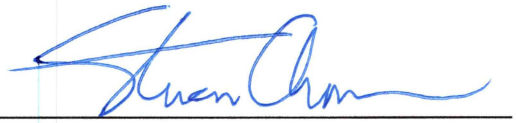
CERTIFICATION

In accordance with requirements of the United States Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Multi-Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activity (Part 6.1 of MSGP), this Stormwater Pollution Prevention Plan (SWPPP) has been prepared by qualified personnel and the undersigned provides the following certification:

I certify under penalty of law that this document and all attachments were prepared at my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



(Signature)

2-28-23

(Date)

Steven D. Charron, CHMM
Director, Environmental
Global Companies LLC &
Chelsea Sandwich LLC

1.0 INTRODUCTION

1.1 Background

The Chelsea Sandwich LLC (Global) bulk petroleum storage and distribution facility is located at 11 Broadway, Chelsea, Massachusetts (the Facility or Terminal). Refer to the Site Location Map included as **Figure 1**. The Facility operates under permits issued by the Environmental Protection Agency (EPA) and Massachusetts Department of Environmental Protection (MassDEP) identified as National Pollutant Discharge Elimination System (NPDES) Permit No. MA0003280, effective December 1, 2022, and expiring November 30, 2027 (collectively, the Permit), included as **Appendix A**.

In accordance with Part I.C.2 of the Permit, the Facility is required to develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that documents the selection, design, and installation of control measures, including best management practices (BMPs) designed to meet the effluent limitations required in the Permit, consistent with the general provisions for SWPPPs included in Part 6 of the EPA's Multi Sector General Permit (MSGP) for Stormwater Discharges Associated with Industrial Activity issued January 15, 2021.

1.2 Scope, Purpose, and Availability

This SWPPP has been prepared in accordance with the requirements set forth in the Facility's Permit, which specifically includes that the SWPPP elements listed in Parts 6.2.1 through 6.2.5 of the MSGP shall be incorporated. This SWPPP outlines the activities and pollution prevention measures Global has implemented to comply with the Permit and the applicable provisions of the MSGP. A copy of this SWPPP and any associated stormwater inspection or monitoring forms will be retained at the Facility for the full term of the Permit and will be updated as necessary to minimize impacts from Facility operations to stormwater runoff.

2.0 STORMWATER POLLUTION PREVENTION TEAM

In accordance with the 2021 MSGP (MSGP) Part 6.2.1, the SWPPP Team[1] is provided below. Global's SWPPP Team consists of four primary individuals (all Global employees) as well as independent environmental contractor who assists with sample collection, data analysis and Permit implementation expertise. Each member of this Team is provided access to the applicable portions of the Permit, this SWPPP and other relevant documents kept with this SWPPP that are necessary for its implementation. Individuals and general responsibilities of the Facility's SWPPP Team are provided below:

Stormwater Pollution Prevention Team	
David Slater *Title:* Terminal Manager	Tom Keefe *Title:* Vice President, Environmental, Health and Safety (EHS)
Colleen Burke *Title:* EHS Compliance Specialist	Steven Charron *Title:* Director, Environmental
Tom Henderson (Environmental Consultant) Roux Associates, Inc	
Responsibilities	
Terminal Manager	
Team Leader of SWPPP Team. Responsible for recordkeeping, routine inspections, spill reporting and implementation of site-level BMP requirements. Designated as incident commander for site.	
Vice President EHS	
Serves as liaison between the SWPP Team and other corporate departments, including the Legal Department and the Executive Division. Provides senior oversight of the SWPPP Team. Ensures adequate personnel and resources are available for successful implementation of the SWPP Plan (SWPPP).	
Director, Environmental	
Responsible for implementation of the Permit including contracting with third parties, reporting, communications with regulatory agencies and acting as liaison between the EHS Department and the Terminal Operations Department. Serves as lead on environmental compliance at the Terminal. Reviews and certifies the SWPPP.	
EHS Compliance Specialist	
Responsible for training and familiarizing employees with Permit requirements. Coordinates SWPP Team Meetings. Prepares SWPPP updates for SWPP Team review.	
Environmental Consultant(s)	
Performs sample collection and data analysis. Provides technical and regulatory support related to implementation of the Permit and MSGP-related BMPs.	

[1] The SWPPP Team are qualified personnel pursuant to the MSGP for purposes of preparing this SWPPP.

3.0 SITE DESCRIPTION

In accordance with the 2021 MGSP 6.2.2, the following describes the nature of the industrial activities at the Facility.

The Facility is a bulk petroleum storage and distribution terminal. The Facility consists of approximately 11 acres of land and is located in Chelsea, Massachusetts, along the northern bank of the Chelsea River. Its physical address is 11 Broadway and is located between the Chelsea River, Broadway, and Front Street.

The Facility receives, stores, and distributes petroleum products, biofuels, and associated fuel additives. It also has the capacity of physically blending some of the distillates to distribute additional products having similar chemical and physical properties (e.g., various grades of biofuel, as well as heating oil).

The Facility consists of the following operational areas:

Terminal Yard: area in the western portion of the Facility along Broadway, containing a 16-bay truck loading rack, operations buildings (dispatch office, foam house and Foreman's Office), pump back locations and additive above-ground storage tanks (AST);

Tank Farm: concrete-walled containment area containing nine bulk product ASTs and additive ASTs located in the west-central area of the Facility (Tank Farm);

Individual Bulk Storage Area: Central area of the Facility containing five bulk storage ASTs, each located within individual steel secondary containment structures, a pump house and additive ASTs;

Dock/Boiler House: area in the southwest portion of the Facility containing a boiler house, additive and own-use fuel oil ASTs, an OWS and a barge/ship marine dock; and

Lease Area: area in the eastern portion of the Facility leased to Alliance Energy/HOP for use as offices and fleet maintenance.

The Facility receives bulk quantities of petroleum products via ship or barge at the marine vessel dock and via tanker truck. The products from marine vessels are transferred via an above-ground piping network to ASTs located within the Terminal Farm and Individual Bulk Storage Area.. Both residual oil (also identified as No. 6 fuel oil and bunker oil) product and certain biofuel products are heated in the ASTs and piping to the rack to maintain a viscosity suitable for transfers. Final distribution of product is conducted primarily at the truck loading rack located in the Terminal Yard. Some product distribution also occurs at the marine vessel dock to ships, barges and tug boats via transfer stations located at the marine vessel dock.

A Site and Drainage Map showing the locations of the on-Site features and pervious/impervious areas is included as **Figure 2.**

Refer to Section 4.0 for additional information regarding the nature of the industrial activities performed at the Facility and identification of potential pollutant sources that are associated with the industrial activities.

3.1 Facility Abutters

The Facility is abutted to the north by Broadway Street, domiciles and a shipyard to the east, Chelsea Creek to the south, and the Mystic River to the west.

3.2 Facility Stormwater System

Pursuant to the Permit, treated stormwater at the Facility is discharged at the confluence of Mystic River and the Chelsea River. Outfall 001 is located at Latitude 42° 23' 7.4898" N and Longitude 71° 02' 40.844" W. An internal Outfall 002 is located at Latitude 42° 23' 8.9154" N and Longitude 71° 02' 42.681". Pursuant to the Permit, Outfall 001 discharges into water Segment MA71-06 of the Chelsea River, which MassDEP has designated as impaired for certain pollutants.

The Chelsea River is not designated as a Tier 2 or Tier 2.5 water. The Facility is not located in tribal lands and is not a federal facility. In addition, discharge from the Facility is not subject to Municipal Separate Storm Sewer (MS4) requirements. Facility stormwater discharges are subject to the effluent limits contained in the Permit.

Outfall 001 – Stormwater System

One stormwater drainage system at the Facility serves as drainage for stormwater runoff, treated groundwater from internal Outfall 002, a small amount of boiler blow-down, and discharge of hydrostatic test water. This stormwater drainage system consists of approximately 2,000 linear feet of subsurface pipe in combination with 21 catch basins. Stormwater at the Facility in this area flows to a single oil-water separator (OWS), 20,000 gallons in capacity, and ultimately discharges to the Chelsea River via Outfall 001.

Outfall 002 – Groundwater Remediation System

Outfall 002 is an internal outfall which receives the effluent flow from a groundwater remediation system (system). This system is currently used to treat impacted groundwater from five recovery wells located inside the Terminal Farm. Groundwater from the recovery wells is routed to a treatment system consisting of an OWS and two 1,000-pound granulated activated carbon (GAC) units. Treated groundwater is discharged via Outfall 002 into a station sump located in the Terminal Farm. The sump also collects storm water runoff accumulated inside the Terminal Farm. Treated groundwater and any storm water in the lift station is pumped to the Terminal's OWS prior to discharge to the Chelsea River via Outfall 001.

4.0 POTENTIAL POLLUTANT SOURCES

In accordance with the MSGP Part 6.2.3, this section provides a description of potential pollution sources that, if present at the Facility, will be addressed through awareness and implementation of this SWPPP. Reviewed and evaluated in further detail in the following sections are activities, materials, and physical features at the Facility that have potential to contribute pollutants to stormwater.

4.1 Industrial Activities and Potential Pollutants

In general, stormwater runoff at the Facility flows by gravity into collection basins located throughout the Facility to the lift stations located in the Tank Farm and at the OWS. The stormwater is visually inspected, drained into the respective stormwater collection systems, treated through the OWS, and discharged through Outfall 001.

Non-contact stormwater, which is water collected in areas of the Facility where there is little or no potential for stormwater to contact potential pollutants (i.e., paved parking areas, roof runoff, gravel pack access routes), is collected in the stormwater collection systems and discharged through the OWS. Stormwater collected inside secondary containment and at the marine vessel dock are likewise inspected, and then routed through the stormwater system and discharged through the OWS. If product or oil sheen is visually observed in the OWS by terminal staff, stormwater is not discharged until treated.

Refer to the Site and Drainage Map (**Figure 2**) for a depiction of industrial activities and potentially impacted outfalls. The industrial activities conducted at the Facility that have the potential for pollutants to be exposed to stormwater include the following:

Industrial Activity	Facility Area	Potential Pollutant(s)
Distillate and Residual Oil Storage (heating oil, diesel fuel, biofuel)	ASTs in Tank Farm and Individual Bulk Storage Area	Petroleum-related VOCs, Oil & Grease, PAHs, TPH, methyl esters (biofuels)
Loading and Unloading via Marine Vessels	Marine Vessel Dock	Petroleum-related VOCs, Oil & Grease, PAHs, TPH, TSS
Loading and Unloading via Tanker Trucks	Truck loading rack (Terminal Yard)	Petroleum-related VOCs, Oil & Grease, PAHs, TPH, TSS
Product Transfer	Pipeline network	Petroleum-related VOCs,, Oil & Grease, PAHs, TPH
Pump Stations	Collection Sumps	Petroleum-related VOCs, Oil & Grease, PAHs, TPH
Fuel Additive Storage (red dye, Heating Oil Plus, etc.)	ASTs in all areas of the Facility	Petroleum-related VOCs, PAHs, TPH
Utility Boilers – Boiler Blowdown	Boiler House	Iron, TSS, Temperature
Groundwater Remediation	Groundwater remediation system in the Tank Farm area	Petroleum-related VOCs, Oil & Grease, PAHs, TPH, Fe
Vehicle parking and driving	Parking Lots and Roadways	TSS
AST Hydrostatic Testing	ASTs in all areas of the Facility, pipe networks	Oil & Grease, PAHs, TPH, Fe, TSS, Total Residual Chlorine
Secondary Containment (limited contact)	ASTs in all areas of the Facility, pipe networks	TSS, Oil & Grease, PAHs, TPH, Petroleum-related VOCs

Other industrial activities conducted at the Facility include hazardous waste storage and vehicular maintenance, which are only performed indoors and do not pose a risk of pollutants discharging into stormwater or the environment. Truck washing is supervised by Terminal employees and conducted in a controlled environment (i.e. contained and not discharged to the stormwater system).

4.2 Spills and Leaks

In accordance with the MSGP Part 6.2.3.3, this section provides information about potential spills and leaks. Material storage and industrial activity locations where spills could potentially contribute pollutants to stormwater discharges are listed in Section 4.1 and the associated outfalls (or discharge areas) are shown on the Site and Drainage Map as **Figure 2**.

A list of the locations of potential spills and leaks with the possibility of contributing pollutants to stormwater discharges is shown below with the corresponding outfalls that would be impacted.

Location of Potential Spills	Impacted Outfall
Tank Farm - Secondary containment, fuel handling	Outfall 001 and 002
Terminal Yard – Truck loading, fuel handling, stormwater runoff from roadways or parking lots	Outfall 001
Individual Bulk Storage Area – Secondary containment, fuel handling, stormwater runoff from roadways or parking lots.	Outfall 001
Lease Area - Secondary containment, fuel handling, stormwater runoff from roadways or parking lots.	Outfall 001
Dock/Boiler House Area - Secondary containment, boiler blowdown, fuel handling, stormwater runoff from roadways or parking lots, transfer activities on the dock.	Outfall 001

The Facility maintains both a Spill Prevention Control and Countermeasures (SPCC) Plan and a Facility Response Plan (FRP) in accordance with the requirements of 40 CFR 112. These plans include measures for the containment, management, cleanup, response and reporting of spills at the Facility. Both the SPCC and FRP are maintained at the Facility and available to the SWPPP Team described above.

Below is a listing of any significant spills[2] and leaks of oil or toxic or hazardous substances that have occurred at the Facility within three years prior to the effective date of the new Permit.

Date of Spill	MassDEP RTN	Location of Spill	Affected Outfall	Cause of Release	Substance and Quantity Spilled
12/17/2019	3-0036045	Diked area of bulk storage facility surrounding Tank 110 (Tank Farm)	No impact as stormwater drainage pump was shut down immediately.	AST sudden release	~1425 GAL of biofuel
10/10/2022	3-0037786	Near Tank-105 (Tank Farm)	Contained in low permeability area, quickly recovered, no evidence of impact to surface water.	During an additive delivery, the delivery was routed to the wrong AST and caused an overfill.	~325 GAL additive (primarily vegetable - based oil)

[2] Includes, but is not limited to, releases of oil or hazardous substances in excess of quantities that are reportable under the Clean Water Act section 311, section 102 of the Comprehensive Environmental Response, Compensation, and Liability Act, or another state regulatory program.

4.3 Authorized Non-Stormwater Discharges Evaluation

There are several authorized sources of non-stormwater discharges, including groundwater remediation effluent, hydrostatic test water, and boiler blow-down water. In addition to those previously mentioned, the Permit also explicitly specifies allowance of particular discharges. The authorized non-stormwater discharges include:

Discharges from emergency/unplanned fire-fighting activities;

Fire hydrant flushings;

Potable water, including water line flushings (unless associated with hydrostatic testing);

Uncontaminated condensate from air conditioners, coolers/chillers, and other compressors and from the outside storage of refrigerated gases or liquids;

Irrigation drainage;

Landscape watering provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling;

Pavement wash waters where no detergents or hazardous cleaning products are used (e.g., bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols) and the wash waters do not come into contact with oil and grease deposits, sources of pollutants associated with industrial activities, or any other toxic or hazardous materials, unless residues are first cleaned up using dry clean-up methods (e.g., applying absorbent materials and sweeping, using hydrophobic mops/rags) and appropriate control measures have been implemented to minimize discharges of mobilized solids and other pollutants (e.g., filtration, detention; settlement);

Routine external building washdown/power wash water that does not use detergents or hazardous cleaning products (e.g., those containing bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols);

Uncontaminated groundwater or spring water;

Foundation or footing drains where flows are not contaminated with process materials; and

Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the Facility, but not intentional discharges from the cooling tower (e.g., “piped” cooling tower blowdown; drains).

The Facility is also permitted to discharge boiler blow-down water, consistent with its prior permit. The boiler blow-down discharges into the ‘man-way’ located near the Boiler House and flows into the storm water collection system.

4.4 Unauthorized Non-Stormwater Discharges Evaluation

Part I.B.2. of the Permit explicitly specifies non-stormwater discharges that are prohibited, unless otherwise authorized in a separate permit:

Discharge of tank bottom water and/or bilge water alone or in combination with stormwater discharge or other wastewater;

Discharge of any sludge and/or bottom deposits from any storage tank(s), basin(s) and/or diked area(s) to the receiving waters. Examples of storage tanks and/or basins include, but are not limited to: primary catch basins, oil/water separators, petroleum product storage tanks, baffled storage tanks collecting spills, and tank truck loading rack sumps;

Discharge of liquid hazardous waste alone or in combination with stormwater or other wastewater;

Discharges of runoff from any vehicle and equipment washing alone or in combination with stormwater and other wastewater, including from the Lease Area;

Discharges of ballast water alone or in combination with stormwater or other wastewater;

Runoff resulting from accidental spill or release, alone or in combination with stormwater or other wastewater;

Discharges of emulsion chemicals, including surfactants (e.g., detergents and soaps) alone or in combination with stormwater or other wastewater;

Discharges of contaminated groundwater, including, but not limited to wastewater generated during activities conducted under the Massachusetts Contingency Plan, alone or in combination with stormwater or other wastewater;

Discharges of aqueous film-forming foam and alcohol resistant foam either in concentrate form or as foam diluted with water during testing or maintenance of the fires suppression system at the Facility's marine vessel dock.

In addition, a vehicle maintenance garage is located on site and is operated by Chelsea Terminal's tenant, Alliance Express (HOP). Vehicle maintenance is conducted indoors and potential drips/spills in the garage are cleaned up (floor drains in their garage have been sealed). The current Permit also prohibits any discharge from the Maintenance Garage which is why the floor drains have been sealed.

In accordance with Part 6.2.3.4 of the MSGP, by the end of the first year of permit coverage, the Facility's SWPPP will include documentation that the Facility has been evaluated for the presence of non-stormwater discharges, which includes direct observation of discharge points. This evaluation is being performed concurrent with the infiltration evaluation discussed in Section 7.5 of this SWPPP.

4.5 Salt Storage

Salt is not stored at the Site. Individual buckets and bags of deicing materials are stored within the garage.

4.6 Historical Stormwater Sampling

In accordance with Part 6.2.3.6 of the MSGP, the Facility must summarize stormwater discharge sampling data collected at the facility during the previous permit term. The Facility's Permit (MA0003280) authorizes discharges through two outfalls, identified as Outfalls 001 and 002. Sampling data collected at the facility during the previous permit term (2014 through 2022) was submitted in the respective DMRs. A summary of analytical results from the last Permit period is included in **Appendix B**.

5.0 STORMWATER CONTROL MEASURES

In accordance with Part 6.2.4 of the MSGP, this section of the SWPPP provides general information concerning stormwater management control measures that have been implemented at the Facility to meet the non-numeric effluent limits, water quality limits and the effluent limitations authorized in the Facility's Permit. The stormwater management controls covered in this section include non-structural general best management practices and structural design controls implemented at the Facility to reduce or eliminate stormwater pollution, including run-on from off-site facilities. Detailed best management practices for specific industrial activities performed at the Facility can be found in the sections below. Control measures described in this SWPPP are currently in place.

5.1 Control Measures Selection and Design Considerations

Evaluation of potential pollutant sources, run-on from off-site sources, the types of pollutants that could impact stormwater, and the flow volume and flow path to the receiving water were used by the SWPPP Team to assess the control measures needed to minimize pollutant discharges at the Facility. This assessment included a determination of the applicability of each control measure and design consideration listed in Part 2.1.1 of the MSGP. The control measures implemented at the Facility are generally summarized in this section and Section 6.0. These control measures are believed by the SWPPP Team to be effective in minimizing pollutant discharges from the Facility.

Selected industrial activities and their specific control measures are described below:

5.1.1 Distillate, Biofuels and Residual Oil Storage

Industrial activity description: ASTs and fuel transfer pipes for storage of distillate, biofuel and residual oil.

Potential pollutants associated with the activity:

Distillate Storage (heating oil): Petroleum-related VOCs, Oil & Grease, PAHs, TPH

Distillate Storage (diesel fuel): Petroleum-related VOCs, Oil & Grease, PAHs, TPH

Biofuel Storage: Petroleum-related VOCs, Oil & Grease, PAHs, TPH, methyl esters

Residual Oil Storage: Petroleum-related VOCs, Oil & Grease, PAHs, TPH

Summary of control measures implemented to minimize pollutant discharges:

In the event of a spill/release in the Tank Farm area, the lift station can be turned off to isolate stormwater flow to the OWS. This lift station is the only means for stormwater to be discharged from the Tank Farm Area. For the Individual Bulk Storage Area, the valves to drain the secondary containment for the large bulk storage ASTs are left in a closed position. For the other operational areas, the pumps for the OWS can be turned off to prevent any releases to Chelsea Creek. Prior to activating the OWS, a visual inspection is performed by a trained terminal operator in areas where water has accumulated to inspect for signs of pollutants present (i.e. sheens, free product, etc.) in the water.

5.1.2 Loading and Unloading via Marine Vessels

Industrial activity description: Petroleum products including distillates, residual oil and biofuels are received via ship or barge at the manifold areas of the marine vessel dock located along the Chelsea River. Loading transfers of similar products also occurs at the marine vessel dock.

Potential pollutants associated with the activity: Petroleum-related VOCs, Oil & Grease, PAHs, TPH, TSS

Summary of control measures implemented to minimize pollutant discharges:
Steel drip pans are located beneath the marine dock manifold areas to retain any potentially spilled product. The drip pans are examined for contaminated stormwater and/or spilled product during and after a precipitation event and are regularly inspected by trained terminal operators after product transfer from ships and barges.

The vessel dock floor is sloped and equipped with a drain and a plug in the bottom. The plug is kept closed during normal operation, especially fuel transfers. Any stormwater that accumulates in the floor is visually inspected by trained terminal operators for product or oil sheen before being discharged back into the Tank Farm for flow through the OWS before discharge to the Chelsea River.

5.1.3 Loading and Unloading via Tanker Trucks

Industrial activity description: Fuel loading activities occur at the Terminal Yard in the loading rack area, or in the pump-off area. The loading rack has a total of 16 loading bays. Fuel unloading activities can occur in any of the described operational areas. Pump-off stations (total of 12) are used to deliver additives from delivery trucks to the ASTs.

Potential pollutants associated with the activity: Petroleum-related VOCs, Oil & Grease, PAHs, TPH, TSS

Summary of control measures implemented to minimize pollutant discharges: The loading rack is covered to eliminate/minimize the accumulation of rain water in this area. Sweeping activities are also performed within the loading rack area on a periodic basis, to minimize TSS loading. The 12 pump-off areas are equipped with their own respective concrete containment curbs and/or are located with the controlled facility drainage to capture spills/releases from pump-off operations. All pump off and unloading events are continuously supervised by trained terminal operators.

5.1.4 Groundwater Remediation

Industrial activity description: A groundwater remediation system is located in the Tank Farm and is used to treat groundwater. The groundwater system consists of five active recovery wells installed within the west-central area of the Tank Farm. The treatment system components consist of a cartridge bag filter and two 1,000-pound liquid phase granular activated carbon (LGAC) units. The system's maximum design flow rate is 25-gallons per minute.

Potential pollutants associated with the activity: Petroleum-related VOCs, Oil & Grease, PAHs, TPH, Iron

Summary of control measures implemented to minimize pollutant discharges: This discharge is sampled and managed in accordance with the Permit. This system is inspected routinely, on a biweekly basis, by the remediation system contractor. Informal inspections of the area are conducted by terminal personnel during each operational shift.

5.1.5 AST Hydrostatic Testing

Industrial activity description: Hydrostatic testing is required for tanks and pipe networks after certain structural work is completed to verify integrity. Hydrostatic testing involves testing an AST or pipe for leaks by filling it with water. River or potable water may be used; normally municipal water supply is used as the water source at the Facility. Hydrostatic testing is rarely necessary, on the order of potentially 1-2 times every 10 years.

Potential pollutants associated with the activity: Oil & Grease, PAHs, TPH, Iron, TSS, Chlorine

Summary of control measures implemented to minimize pollutant discharges: Following hydrostatic testing, the water is treated in an OWS and discharged via Outfall 001 and sampled/managed in accordance with the Permit. Hydrostatic test water is released to secondary containment and analyzed for permit parameters prior to discharge. Specifically, one sample prior to initiating discharge, one sample during the first 10% of discharge, a second at the midpoint of the discharge, and a third during the last 10% of discharge, to ensure discharge limits are met. To meet the Permit limits for total residual chlorine, chlorine may be removed with a non-toxic dichlorination chemical (commonly citric acid) or discharged to the dike area where it naturally degrades from sunlight, prior to discharge. Lastly, the flow of hydrostatic water is controlled to prevent exceedance of the design flow rate of the OWS.

5.1.6 Secondary Containment (limited contact)

Industrial activity description: Stormwater collects inside secondary containment in all operational areas of the Facility. The stormwater is then allowed to enter the stormwater system. Note in the Tank Farm there is also a lift station that delivers stormwater and treated water from the remediation system to the OWS.

Potential pollutants associated with the activity: TSS, Oil & Grease, PAHs, TPH, Petroleum-related VOCs

Summary of control measures implemented to minimize pollutant discharges: Stormwater is visually observed for oil sheen by trained terminal operators before discharge to the OWS.

5.2 Control Measures Implemented to Meet Non-Numeric Technology-Based Effluent Limits

Non-numeric effluent limitations are applicable to the Facility in accordance with the MSGP and the Permit. Non-numeric effluent limitations include visually observable impacts to potential Facility stormwater discharges, including sheens, foaming, and siltation. These non-numeric effluent limitations will be achieved at the Facility by several methods, including minimizing exposure of potential pollutant sources to rain, snow, snowmelt, and stormwater, maintaining good housekeeping, performing sufficient maintenance activities, implementing spill prevention, control, and response procedures, maintaining erosion and sediment controls, managing stormwater by diversion, infiltration, reuse, containment, or otherwise reduction, containment of salt, training employees, eliminating unauthorized non-stormwater discharges, and minimizing dust generation and vehicle tracking of industrial materials.

The following information summarizes the control measures implemented at the Facility to meet the non-numeric technology-based effluent limits.

5.2.1 Minimizing Exposure

The Facility minimizes exposure of potential pollutant sources to stormwater to minimize pollutant discharges. Below is a summary of best management practices used to minimize exposure to pollutant sources.

Secondary tank containment is used in all areas of the Facility, and stormwater catch basins are inspected on a quarterly basis and cleaned as necessary.

All chemical containers 55-gallons or smaller are stored indoors or under a roofed area with containment dikes and no floor drains;

Maintenance (equipment or vehicle) is conducted indoors, and stored trucks are routinely inspected for drips or leaks in addition to use of drip pans and absorbent pads;

The hazardous waste storage area consists of one Conex storage container, with secondary containment.

Covered solid waste dumpsters that are plugged or have no drains are inspected periodically and routinely emptied.

Minor spills or leaks at the facility are promptly cleaned using absorbent pads/materials;

The truck fuel loading rack has a roof canopy that was designed to prevent precipitation from coming in contact with the truck loading platforms;

Painting activities are performed during dry weather, paint is stored inside and in closed containers when not in use, use of spray paint is minimized, and drop cloths are used as feasible to prevent residual paint from being exposed to stormwater;

The groundwater remediation system is installed within a closed trailer with no floor drains, and the area is inspected regularly for small spills or leaks; and

In addition to preventing exposure, the OWS is equipped with coalesce packs that enhance the removal efficiency of pollutants. The OWS is inspected quarterly and cleaned as necessary. Stormwater that collects in all operational areas of the Facility is directed through the OWS prior to discharge.

5.2.2 Good Housekeeping

In accordance with Parts 6.2.5.1 and 2.1.2.2 of the MSGP, good housekeeping involves keeping work and storage areas neat and orderly to prevent the discharge of pollutants to stormwater. Some of the general good housekeeping practices regularly implemented by the Facility include those listed below:

Vehicles parked on paved surfaces to the extent feasible.

Daily visual and monthly inspections of equipment as discussed below

The truck loading rack is equipped with overflow protection devices to prevent discharges and a canopy roof that prevents most precipitation from contacting the distribution equipment. Overhead clearance is adequate for tanker trucks and the area is kept clear of vehicle hazards.

The truck loading rack is kept free of debris and unnecessary equipment and is regularly inspected to ensure the area is kept clean.

The loading area is cemented and impervious.

Minor spills or leaks at the loading and unloading racks, or elsewhere at the facility, are promptly cleaned using dry methods, such as speedy dry or absorbent pads.

Materials are stored in appropriate containers, tanks, and vessels, and are stored indoors if smaller than 55-gallons.

Dumpster lids are kept closed when not in use and either do not have drains or have plugged drains.

Solid waste, garbage, and floatable debris are kept away from exposed areas to prevent contact with stormwater.

A schedule is maintained for determining when pick-up or disposal of waste materials occurs.

Paved areas are swept periodically. Loading bays are swept frequently.

Drop cloths are used as feasible during painting activities. Painting is schedule when no precipitation is expected to allow paint to dry. Use of spray paints is kept to a minimum.

5.2.3 Maintenance

Maintenance is performed on stormwater infrastructure, Facility equipment and vehicles to ensure that they function properly and do not leak pollutants. The following activities are regularly performed at the Facility to ensure that equipment is kept in good condition to prevent breakdowns or failures that may result in a discharge of pollutants.

Routine maintenance is performed on facility equipment that is used regularly to handle a high product volume and equipment that is subject to normal wear and tear. This routine maintenance has demonstrated effective against unexpected equipment failure.

Equipment (i.e. pumps, valves, and flanges) is visually inspected by terminal operators on a daily basis. Monthly inspections are also performed by terminal staff utilizing an inspection checklist.

As described in the SPCC Plan, ASTs and pipeline integrity evaluation are conducted in accordance with USCG and/or industry-specific guidance.

Secondary containment, drainage, and flow equipment is maintained for integrity.

Catch basins are inspected on a quarterly basis and cleaned as needed. Per Part 2.1.2.3.a.v of the MSGP, "cleaning catch basins when the depth of debris reaches two-thirds (2/3) of the sump depth, or in line with manufacturer specifications, whichever is lower, and keeping the debris surface at least six inches below the lowest outlet pipe".

The OWS is inspected on a quarterly basis or before storm events, and cleaned as needed.

Spill equipment is strategically placed and restocked as needed at the Facility.

5.2.4 Spill Prevention and Response Procedures

Material storage and industrial activity locations where spills could potentially contribute pollutants to stormwater discharges are listed in Section 4.0 and the associated outfalls (or discharge areas) are shown on the Site and Drainage Map (**Figure 2**). The Chelsea Terminal maintains an Emergency Response Action Plan (ERAP), which is kept on-Site at the Dispatch office, the Foreman's office/blend shack and at the dock shack.

A Spill Management Team is responsible for oil spill prevention and cleanup. Spill prevention is accomplished through maintenance, training, inspection procedures, and structural and designed controls. The facility's preventative maintenance program mitigates potential spills by keeping equipment in good working condition. Monthly inspections are conducted by terminal staff on critical equipment, structures, and response equipment to ensure they are available for use in emergency situations. Additionally, drip plans, absorbent pads, overflow protection equipment, secondary containment, and proper storage of chemicals are used as described in Sections 5.2.1 through 5.2.3 to prevent the discharge of pollutants.

During loading operations, standard procedures are used to prevent spills. Procedures and/or high-level alarms are used during petroleum transfers. Trained terminal operators monitor deliveries, and they visually inspect equipment to be used in the transfer prior to each unloading event. Drivers using the loading rack must comply with Facility loading requirements.

Employees of the Facility involved in product transfer or other handling activities receive OSHA HAZWOPER training and job training to expeditiously stop, contain, and clean-up releases (including impacted materials such as dirt, sorbents, etc.), and to notify appropriate personnel in the case of a release. Mock drills and exercises are also conducted.

In general, if any spill or release (including AFFF) of were to occur at the Facility, the following procedure will be used:

Isolation or shutdown of the piece of equipment responsible for the leak will occur (if applicable).

Discharge from the OWS will cease.

Place sausage booms around any catch basins that could potentially be affected.

A third party emergency response contractor will be dispatched to clean-up of the spilled/released material. Spilled material and any impacted media (i.e., soil, sorbent materials, etc.) will be appropriately containerized, characterized and sent for off-site disposal at an appropriate waste handling facility.

5.2.5 Erosion and Sediment Controls

Areas at the Facility trafficked by vehicles are paved or gravel packed and swept periodically to prevent accumulation of sediment. Truck loading bays are paved, kept impermeable, and swept frequently. Stormwater collection basins are regularly inspected by the SWPPP Team during quarterly inspections, and cleaned as necessary. Polymers or other chemical treatment are not used in erosion and sediment controls.

5.2.6 Management of Stormwater Runoff

The Facility is located along the northern bank of the Chelsea River and between the Chelsea River, Broadway and Front Street. Approximately one half of the Terminal's perimeter is surrounded by rip rap or steel bulkhead to prevent erosion to the bank and the other half of the perimeter adjoins paved city street. The streets surface is at a lower elevation when compared to the terminal perimeter. The runoff from the streets is directed towards catch basins connected to the city's storm drainage system. Thus, potential for the off-site runoff comingling with the onsite runoff is very unlikely. The loading rack which is located several feet away from Broadway is installed with an independent perimeter drain connected to the terminal storm water collection system. Thus, potential for the non-contact water co-mingling with the off-site storm water is also unlikely.

On-site at the Facility, the perimeter pitches inwards and is designed to retain water runoff within the site. The entire site pitches towards the river and thus, potential for on-site runoff entering city's storm drain is very unlikely. ASTs' secondary containment areas isolate on-site run-off in segments and present additional control measures. On-site runoff is directed to the terminal storm water collection network and is treated prior to discharge via Outfall 001.

Refer to the Site and Drainage Map (**Figure 2**) for information concerning potential pollutant sources, stormwater flow patterns, and the location of structural stormwater management controls.

5.2.7 Salt Storage Piles

As noted in Section 4.4, salt/sand is not stored at the Facility. Individual bags and buckets of deicing chemicals are stored within Facility structures.

5.2.8 Employee Training

Stormwater pollution prevention awareness and knowledge are key elements to properly implementing the SWPPP. Personnel who manage, supervise or conduct activities that have the potential to pollute stormwater are trained. Training records are maintained electronically, through the Learning Management System (LMS), or on a hard copy located at the Terminal. The system generates a log of which specific employees receive training.

SWPPP training is conducted for new hires and refresher training of Facility personnel is performed annually through a stormwater pollution and SPCC training module. The training addresses the following areas: applicable regulations and SWPPP content overview, Stormwater Pollution Prevention Team, Pollution Sources, Stormwater Discharge Procedures, stormwater permitting, potential pollutant sources, BMPs, engineering controls, control management, inspections, emergency and spill response procedures, good housekeeping, and material (including used oil) management. This training will inform the appropriate personnel at all levels of responsibility at the Facility of the components and goals of the SWPPP. Facility personnel are also given spill prevention training, which addresses the following items: care in delivery of product, keeping fuel delivery operations attended at all times, keeping a close watch on levels of storage tanks and product pipelines during transfer operations, and performing preventative maintenance on equipment.

5.2.9 Non-Stormwater Discharges

Non-stormwater discharges that are not authorized by the Permit are hauled off-Site for treatment and disposal by licensed contractors. Also, a stormwater infiltration study will be conducted as required by Part C.1(b)(8) of the Permit. As part of this infiltration study it will be verified that there are no sanitary sewer cross connections from the stormwater drainage system. Any non-stormwater discharges that are identified during this study will be eliminated as required by Part C 1.(b)(9) of the Permit.

5.2.10 Waste Garbage and Floatable Debris

Solid waste generated on-site is placed in 55-gallon steel containers, which are routinely transferred to larger waste accumulation containers until they are transported off-site for reuse, treatment or disposal. Containers are covered, do not have drains and are inspected as a good housing measure.

5.2.11 Dust Generation and Vehicle Tracking of Industrial Materials

Terminal access ways and parking lots are paved or gravel packed and maintained in good condition to prevent soil erosion and dusting. Paved areas are swept periodically by a road sweeper, and sweepings are hauled off site for proper disposal. Tanker trucks have restricted access to only loading rack areas. Loading areas are broom swept frequently. Gravel pack roadways are only accessed by authorized personnel.

5.2.12 Rodent, Bird, Other Animal Control

In order to control/prevent rodents, birds, and other animals from feeding/nesting at the Terminal, the following actions are performed:

An independent pest control contractor is used on a routine basis at the Terminal.

Trash dumpsters are kept closed (i.e. lid down) and its drain plugged.

Trash barrels around loading rack are emptied regularly.

5.2.13 Bacteria Control

Procedures used to minimize bacteria employed at the Terminal are outlined in section 5.2.12 above.

5.3 Numeric Effluent Limitations Based on Effluent Limitation Guidelines

There are numeric effluent limitations applicable to the discharges from the Facility. Refer to the Facility's Permit (included in **Appendix A**) for the full list of parameters, effluent limitations, and monitoring requirements applicable at each outfall.

5.4 Water Quality-based Effluent Limitations and Water Quality Standards

Proper implementation of the control measures and best management practices outlined in this SWPPP are believed to be sufficient to meet the applicable water quality standards.

It is noted that the new Permit effective December 1, 2022 contains new and, in some cases, lower water quality standards. Any exceedances under the new Permit will be evaluated in accordance with Section 9.1 of this SWPPP to determine potential sources and/or any changes to the SWPPP that can be implemented to eliminate the exceedances.

Outfalls 001 and 002 discharge into water Segment MA71-06 of the Chelsea River. MassDEP Division of Watershed Management identifies the following pollutants and conditions requiring a Total Maximum Daily Load (TMDL) for this segment: ammonia (unionized), fecal coliform, dissolved oxygen, PCBs in fish tissue, petroleum hydrocarbons, sediment, taste, odor, and turbidity. The Chelsea River is not designated as a Tier 2 or Tier 2.5 water by MassDEP.

6.0 BEST MANAGEMENT PRACTICES

This section presents best practices to minimize the potential for stormwater contact with "industrial" materials at the Facility. These BMPs are required under the MSGP and/or individual NPDES Permits, including the Special Conditions in Section C of the Facility's Permit.. BMPs have been developed for the following at the Facility:

General Facility (Section 6.1);

Equipment Maintenance (e.g., tractors, trailers, forklifts) (Section 6.2);

Equipment Fueling and Fuel Storage (Section 6.3);

Equipment Cleaning (Section 6.4);

Material Storage/Handling (Section 6.5);

Prevention of Discharges From Major Storms and Flood Event BMPs (Section 6.6);

Quality Assurance / Quality Control (QA/QC) Practices (Section 6.7); and

Stormwater Infiltration Study (Section 6.8).

Members of the Stormwater Pollution Prevention Team will periodically monitor the work performed by outside service vendors at the Facility to verify that they are properly implementing the listed management practices.

6.1 General Facility BMPs

General practices currently in place to reduce or eliminate the potential for industrial activities to impact the stormwater discharges from the Facility include the following.

A dry-cleaning method will be used to clean up spills, leaks or excessive buildup of contaminants in areas that are exposed to stormwater. A dry-cleaning method is any method, including those methods that use water, which does not release untreated wastewater to the environment (e.g., using dry absorbent materials, sweeping, mopping, using a floor scrubber, pressure washing if the wastewater is captured). Cleaning methods using water can only be used if wastewater is captured and not released. If absorbent materials are used to clean up spills, the contaminated absorbent material will be removed promptly and disposed of properly after the spilled material has been absorbed.

Stormwater can be polluted by flowing over surfaces with excessive contaminant buildup. Outdoor surface areas that are exposed to stormwater will be cleaned, as needed, using a dry-cleaning method to prevent excessive buildup of contaminants.

Spill response equipment, including absorbent material and absorbent pads are kept at the Facility to clean up spilled materials.

Equipment will be maintained in good condition and free from excessive leaks. Equipment that is leaking excessively will be reported promptly to a supervisor for spill response and repair. The external surfaces of equipment will be kept free of excessive contaminant buildup.

Facility construction, renovation or maintenance (e.g., paving, painting, building repairs) projects conducted by employees or outside services should be done in a manner that minimizes exposure of stormwater to contaminants and prevents the release of chemicals/wastewater to external surfaces. Examples: Chemicals will not be used when cleaning overhead doors unless the wastewater is captured for proper disposal; consideration will be given to installing storm drain filtration inserts in areas impacted by paving/construction projects; workers will be asked to remove debris (e.g., cement cutting dust, sanding debris) regularly from surfaces that are exposed to stormwater; construction equipment (e.g., forklifts, dump trucks, vehicles, loaders, portable cement mixers) should be well maintained (i.e., not leaking) and free of excessive surface contamination; construction materials (e.g., rebar, cement bags,– anything that can rust, has contaminated surfaces, can be mobilized by stormwater) should be stored in a shelter or covered with a tarp and elevated if necessary.

Mechanical methods (e.g., snow plows), not deicing chemicals, will primarily be used to remove snow/ice from ground surfaces. Surface deicing chemicals (e.g., potassium/sodium acetate, magnesium chloride, ice melt) will only be used under manufacturer's recommended conditions and then only the minimal amount necessary for safety will be used.

Outdoor use of pesticides and herbicides will be avoided if possible. If application of these chemicals can't be avoided, the manufacturer's application instructions will be strictly followed.

6.2 Equipment Maintenance BMPs

If equipment maintenance is performed on-site, the following general practices will be used to reduce or eliminate exposure to stormwater:

Equipment maintenance will be performed inside whenever possible. If outdoor equipment maintenance is needed, the proper precautions will be taken to prevent spills, such as using spill containment devices (e.g., drip pans, tarps, absorbent pads, red shop rags) to contain spills during fluid transfers and from equipment that is leaking or may leak during outdoor maintenance.

Equipment (e.g., trailer tractors, forklifts, etc.) will be regularly checked for leaking fluids. If equipment is found to be leaking excessively, the leak will be contained and the spilled material will be promptly cleaned up using a dry cleaning method.

The following outdoor areas will be kept free of excessive contaminant buildup: Fluid top-off areas; material storage areas; areas where materials are loaded/unloaded; equipment staging areas; and areas where equipment is stored prior to maintenance (e.g. red tag areas).

Equipment maintenance materials (e.g., fluids, parts, wastes) will be stored inside a building or other shelter (e.g., shed, sea land container, cabinet, etc.) whenever possible. With the exception of tires, materials that are stored outdoors and are likely to contribute pollutants will be covered, and elevated if necessary, or stored in a leak free container to prevent exposure to stormwater. Tires may be stored outdoors uncovered. Outdoor storage containers will be maintained in good condition and the external surfaces kept free from excessive contaminant buildup. Containers storing used fluids will be emptied and/or removed periodically to ensure they don't overflow. Fluid transfers to/from outdoor storage containers will be attended.

If equipment maintenance materials are loaded/unloaded outdoors, the proper precautions will be taken to prevent spills. If spills occur, the proper spill response procedures will be used and the spilled material will be cleaned up promptly.

Used equipment maintenance fluids will be promptly transferred to the proper waste or recycling containers and oil filters will be drained before recycling or disposal to reduce the risk of spills.

Indoor maintenance areas will be kept clean so that contaminants (e.g., oil, grease, sanding debris, welding debris) will not be tracked outdoors to areas that are exposed to stormwater.

Scrap metal will be stored inside a building or storage shelter (e.g., shed, sea land container, covered storage container), or if stored outdoors, elevated and covered. The following practices will be implemented when outdoor scrap metal storage containers (i.e., bins) are used: The container will have a permanent cover (e.g., lids, mobile or fixed canopy, enclosed container with side doors; tarps will not be used); the cover will be kept in place when the container is not being accessed (e.g., lids/side doors closed, canopy in-place); the container should not be filled to the point that the lids/side doors can't be completely closed; liquids will be drained from parts prior to transporting to and storage in the container; the container will be kept in good condition to ensure against leaks; the area around the container will be cleaned as needed to prevent contaminant buildup; and if stormwater accumulates in the container it will be removed for proper disposal and *not* released to outdoor surfaces. Scrap metal that is painted and has no contamination on exposed surfaces (e.g., a clean painted bumper that will not rust) can be stored outdoors uncovered.

Equipment touch-up painting will be conducted inside the building or another type of storm-resistant shelter whenever possible. If this activity must be performed outdoors, the proper spill prevention precautions will be used. This activity will not be performed when there is a possibility of rain (the rain can wash off fresh paint if the paint is water soluble and not dry yet) or on a windy day when overspray and sanding debris can't be easily contained. Residues will be promptly cleaned from surfaces that are exposed to stormwater. (Note: Only small volumes of paints are generally stored at the Facility).

6.3 Equipment Fueling and Fuel Storage BMPs

If equipment fueling is performed on-site, the following general practices will be used to reduce or eliminate exposure to stormwater.

Fuelers are trained in good fueling practices to help reduce spills in fueling areas. These practices include: Not to top-off or overfill fuel tanks; to remain with the equipment and hose during the entire fuel transfer; to drain as much fuel back into the tank as possible before removing the nozzle from the tank; and to cock the nozzle back as it is removed from the tank.

Equipment fueling areas that are exposed to stormwater will be cleaned, as needed, using a dry-cleaning method to prevent excessive buildup of contaminants. Spills that occur during equipment fueling or during fuel drops will be promptly cleaned up and the contaminated clean-up material promptly removed from surfaces that are exposed to stormwater.

When fuel storage tanks are being filled, an employee or contractor certified in fuel drop procedures will attend the entire fuel transfer to ensure that fuel drop procedures are properly followed.

Fuel storage and dispensing equipment is inspected regularly and is maintained in good condition. The fuel and additive storage ASTs and piping are regularly monitored for leaks via visual inspection by trained terminal operators or checking of interstitial spaces where present. The large bulk ASTs are equipped with automatic overfill alarms. Additive ASTs are filled following the below procedure:

- Prior to transfer, the AST is gauged for existing product volume to determine AST capacity.
- The terminal operator overseeing the transfer discusses this information with the delivery driver to confirm the delivery volume is below the available capacity.
- Delivery trucks typically have programmable volume pre-sets, with the volume to be transferred entered into the system.
- During the transfer the delivery driver maintains a direct line of sight to the AST so the transfer can be terminated immediately if necessary.

6.4 Equipment Cleaning BMPs

If equipment cleaning is performed on-site, the following general practices will be used to reduce or eliminate exposure to stormwater.

Equipment will only be wet-washed in designated areas (e.g., inside a building, wash pad) where the wash water is completely captured and discharged to a treatment system (e.g., holding tank for pump/haul, evaporation system, reclamation system, etc.) or discharged to city sewer if in the facility wash bay. This ensures that the wash water is treated prior to release to the environment. Equipment will not be wet-washed outdoors where the wash water can get into storm sewers, street gutters or drainage channels. As specified above, truck washing will only be performed in a contained area to collect wash water.

If degreasers are used to clean equipment surfaces (e.g., dispenser cabinets, trailers, etc.) outdoors, a method will be used that prevents degreaser from dripping off the equipment and contaminating the ground below. Examples include: Placing a containment device (e.g., drop cloth, drip pad, absorbent pad) under the area to be cleaned; and applying the degreaser to a rag and not to the equipment surface.

Equipment windows/mirrors can be cleaned outdoors using any method that doesn't release wash water to surfaces that are exposed to stormwater (e.g., use small amounts of window washer fluid or water to wet surfaces and a rag to clean the surface and to remove the excess fluid). A hose and soap will not be used to wash these surfaces outdoors. Wash buckets will not be emptied onto outdoor surfaces.

Cleaning supplies (e.g., detergents, enzyme cleaners, wash brushes, buckets) will be stored inside a building, other type of storm-resistant shelter (e.g., shed, cabinet, sea land container) or in an area that is not exposed to stormwater (e.g., under a canopy; under a roof overhang).

Debris from the inside of equipment will be collected, bagged and placed in a waste receptacle.

6.5 Material Storage/Handling BMPs

Practices currently in place to minimize the potential for material storage activities to impact the stormwater discharging from the Facility that have not already been discussed in sections above include the following.

Materials (e.g., building materials, ice melt, sandbags, cement bags) will be stored inside a building or other type of storm-resistant shelter (e.g., shed, sea land container, cabinet) whenever possible. If materials must be stored outdoors, the material will be covered, and elevated if necessary, or stored in a leak free container to prevent exposure to stormwater. Outdoor storage containers will be maintained in good condition and the external surfaces will be kept free from excessive contaminant buildup. Materials and containers will be stored away from direct traffic routes to reduce the risk of spills.

If present, uncontained material piles (e.g., salt/sand piles, landscaping materials, excavation dirt piles) will be stored inside a storm-resistant shelter that does not allow contact with precipitation (i.e., rain, snow) or stormwater (i.e., run-off from rain and snowmelt) or inside a containment that does not allow discharge of impacted stormwater. Material piles may also be stored under a cover without side walls (e.g., a tarp, fixed or mobile canopy, roof overhang) if barriers are installed to divert stormwater around the material pile. If a temporary cover (e.g., tarp) or mobile canopy is used, it will be properly secured so it won't blow off the pile, maintained in good condition and kept in-place when the material pile is not being accessed. Surfaces that are exposed to stormwater around the material pile will be kept free from excessive contaminant buildup by preventing, or promptly cleaning up, drag-out from the pile.

All materials (e.g., parcels, general office supplies/equipment, automotive supplies, car wash supplies) should be loaded/unloaded either inside the building, under a canopy or into/from delivery equipment (e.g., trailers, vendor trucks) parked flush against protected docks (e.g., docks protected by dock seals, roof overhang, overhead dock bumpers) whenever possible. If materials are loaded/unloaded outdoors, the proper precautions will be taken to prevent spills. If spills occur, the proper spill response procedures will be used and the spilled material will be cleaned up promptly.

If present, pallet processing and storage areas will be periodically cleaned to remove trash and debris. Pallets with excessive contamination on exposed surfaces will not be stored outdoors unless covered.

6.6 Prevention of Discharges From Major Storm and Flood Event BMPs

This Section of the SWPPP has been prepared to identify BMPs and structural improvements in place and/or necessary to prevent discharges of oil and/or hazardous material (OHM) to stormwater as a result of major storm or flood events, under both current climate conditions, future sea level rise projections and extreme weather events (e.g. rain events, hurricanes, etc.).

In addition to the SWPPP Team, Global retained CHA Consulting Inc. (CHA) and Tighe&Bond Inc. (Tighe&Bond) to assist with review of potential major storm and flooding impacts at the Facility, including the development of this BMP. CHA conducted a site survey to provide Global with elevational data of the Facility property and features necessary to evaluate current Facility features in relation to potential storm and flood elevations. Tighe&Bond researched federal, state and local records to provide Global with base flood elevational data, sea level rise projections and 24 hour/25 year rainfall values necessary to evaluate impacts of storms and flooding at the Facility. This information has been incorporated into the below analysis.

This Section is organized as follows:

Historic observations of major storm events and flooding at the Facility during previous permit periods (Section 6.6.1);

Identification of BMPs in place to prevent discharges of OHM as a result of current Permit period storm and flood events (Section 6.6.2);

Discussion of potential future major storm and flood projections and BMPs (Section 6.6.3).

6.6.1 Historic Observations of Flooding and High Precipitation Events During Previous Permit Periods

The magnitude of flooding events at the Facility during previous permit periods have been minimal. Below is a summary of observations:

There have been no releases of OHM as a result of flooding or precipitation events;

There have been no releases of OHM as a result of hurricanes;

Bulk tank containments, additive and own-use fuel oil ASTs, the OWS units, the hazardous waste storage area (Conex storage container) and buildings have not been impacted by flooding.

There have been no releases of OHM at dock from flooding or significant precipitation events.

There has been no damage to critical infrastructure.

6.6.2 BMPs in Place to Prevent Discharges of OHM from Current Permit Period Storms and Flood Events

6.6.2.1 Derivation of Resiliency Planning Elevation For the Current Permit Period

For flood resiliency planning at the Facility for the current Permit in effect until December 2027, Global has identified an elevation of 12.1 feet relative to the National North American Vertical Datum (NAVD) of 1988 (this elevation is hereafter referred to as the Resiliency Planning Elevation or RPE). This elevation was derived from the base flood elevation (BFE) for the area of 11 feet, a worst-case sea level rise during the Permit Period of 0.6 feet and a maximum precipitation event of 0.5 feet. Note that an RPE of 12.1 feet is conservative as it assumes the maximum rain event occurs at once at the same time of the maximum flood elevation. The basis for the selection of these values is presented below.

Base Flood Elevation (BFE): The Federal Emergency Management Agency (FEMA) has identified an elevation of 11 feet for a flood having a 1% change of occurring during any given year (i.e. the 100-Year Flood). Consistent with the Individual Permit (P.19, footnote 6), Global used FEMA's 100-year flood as the BFE[3].

Mean Higher High Water (MHHW): The National Oceanic and Atmospheric Administration (NOAA) provides data on Tides and Currents for locations proximal to the Facility[4]. The nearest stations to the Facility are located in Chelsea, Massachusetts (Station 8443725) and Boston, Massachusetts (Station 8443970). The MHHW value posted for these stations are 10.35 feet and 10.28 feet, respectively, or approximately 5.2 feet when adjusted to the NAVD88 datum. Note that the MHHW is defined as the average of the higher high water height of each tidal day over the National Tidal Datum Epoch (NTDE), a 19-year period adopted by NOAA. The MHHW value is less than the FEMA BFE so is not used to derive the Facility RFE, but gives insight into typical Chelsea River high tide elevations.

Worst-Case Sea Level Rise: The U.S. Global Change Research Program (USGRP) Chapter 18, Northeast, identifies a general past sea level rise of 0.12 inches/year[5]. The report does not provide future sea level rise on the time scale of the Permit, but indicates it likely will be higher than the past 0.12 inches/year rate. The Massachusetts Coastal Zone Management (CZM) Sea Level Rise Guidance identifies a conservative (highest) sea level rise of 0.49 feet in Boston by 2025 and 1.08 feet by 2038. By extrapolation, the predicted sea level rise is 0.6 feet by 2027[6].)

Precipitation Events: NOAA's precipitation frequency estimates for Massachusetts (Logan Airport) list a value of 6.12 inches (0.5 feet) for a 24 hour long event that has a 4% change of occurring during any given year (i.e. the 24hr/25 year rainfall event). With a concern of future rainfall events being the rate and intensity of precipitation events as much as the total storm volume, Global's development of a RPE conservatively assumes all of this precipitation falls at one time with no percentage removed by the OWS systems.

3 https://www.fema.gov/flood-insurance; https://www.fema.gov/portal/home
4 https://tidesandcurrents.noaa.gov/datums.html?id=8443725
5 https://nca2018.globalchange.gov/chapter/18/
6 https://www.mass.gov/files/documents/2016/08/vp/slr-guidance-2013.pdf

In addition, as a condition of the Permit, the RPE will be reviewed and BMPs updated (if necessary) on a rolling annual basis[7]. Updates will be based on conditions observed during the previous permit year and any updates to the forward looking 25 to 100 year future time interval.

6.6.2.2 Major Storm and Flood Resiliency BMPs

The different sources of potential OHM releases at the Facility during a major storm and/or flood event are discussed separately below. Where necessary, the discussions include BMPs that are in place to prevent discharges. Note BMPs for hurricane events are discussed as a separate topic later in this Section.

Tank Farm and Individual Bulk Storage Area:

The large bulk storage ASTs at the Facility, located in the Tank Farm and as five individual ASTs with their own individual containments, are protected from flooding by concrete and steel containment systems that are higher in elevation than the RPE;

BMPs for these areas consist of:

- Discharging the standing water in containment structures routinely and before any storm event;
- Closing the dike drain valves prior to a major storm to prioritize drainage of other areas;
- Consideration towards removing manways from empty/cleaned ASTs prior to any major storm events. Removing the manways allows any accumulated water to enter the AST, eliminating the potential of floatation;

The bulk ASTs are not at risk of floatation from precipitation events alone due to an insufficient volume (height) of water in the dike areas from these events to cause the tanks to be buoyant.

Additive, Own-Use Fuel Oil and Leased Building Area ASTs:

ASTs are located in three primary areas: the Tank Farm, in the southeast area near the Boiler Building and near the Loading Rack;

Three smaller ASTs are additionally located adjacent to the leased office/garage building in the northeastern area of the Facility;

The additive ASTs in the Tank Farm and near the Loading Rack are in an area protected by flooding and elevated above the RPE, respectively;

Ground elevations of ASTs in the southeast area near the Boiler building and adjacent to the leased office/garage building are 1.2 to 5.7 feet and 1.6 to 2.3 feet below the RPE, respectively;

Global as a preventative BMP is in the process of evaluating the technical and cost benefit of installing floatation restraints or similar measures on these ASTs at the Facility;

The additive ASTs are not at risk of floatation from precipitation events alone.

Loading Rack:

The loading rack elevation ranges from 2.6 to 3.5 feet above the RPE;

BMPs for this area consist of:

- Inspect the Loading Rack area prior to forecasted major storms. Comply with the General Facility BMPs (Section 6.1) and Equipment Fueling and Fuel Storage BMPs (Section 6.3) discussed previously;
- Discontinue loading operations when any flooding of the Terminal Yard begins to occur, or earlier if forecasted conditions warrant it;
- Notifying customers not to send trucks or vessels to the Facility until they receive confirmation that flooding has abated, as appropriate.

[7] The rolling annual basis is interpreted to be annually on the anniversary of the date of initial SWPPP submittal under the current Permit

Dock:

The dock elevation is approximately 3.2 feet below the RPE. The dock does not contain equipment at risk of floatation and is structurally designed to withstand flooding.

BMPs for this area consist of:

- Inspect the dock area prior to forecasted major storms. Comply with the General Facility BMPs (Section 6.1) and Equipment Fueling and Fuel Storage BMPs (Section 6.3);
- Secure hoses that are stored on hose towers and docks with second lines;
- Follow the BMPs related to deliveries discussed further below.

Above-Grade Product Piping:

Above-grade product piping is utilized to connect the dock to the Tank Farm ASTs and Individual Bulk Storage Area ASTs, and these ASTs to the Loading Rack.

Piping is 8-16 inches in diameter, constructed of steel and positioned above grade on pipe supports or secured to the dock. This piping is elevated above RPE or within containment areas the majority of the Facility, and is not at risk of floatation in areas that would be subject to flooding.

BMPs for product piping are limited to the previously discussed facility BMPs related to routine and frequent inspections to confirm that no leaking from the product piping is occurring.

OWS Unit:

The Facility OWS unit has a top of wall elevation approximately 1.1 feet below the RPE and will only be affected by worst-case flood conditions.

BMPs consist of inspecting and removing any accumulated oil 48 hours prior to any major forecasting event that could lead to Facility flooding. Oil accumulation in the OWS units historically has been rare to non-existent. But if found as part of this BMP, it will be removed by a contractor prior to the flooding event.

Facility Buildings:

Threshold elevations of the buildings located in the Terminal Yard northern area of the site abutting Broadway are above the RPE;

Threshold elevations of the building located in the Dock/Boiler House Area and Lease Area are below the RPE;

BMPs for these areas consist of:

- Assessment of potential pollutant exposure in buildings to stormwater at RPE elevations;
- Where an exposure is present, elimination of the potential exposure (e.g. permanent and/or temporary measures to eliminate flooding of the building(s), relocation of stored materials to locations above RPE, etc.).

Facility buildings are not at risk of floatation from precipitation events alone.

Generators and Electrical Equipment:

Global maintains one 500kw mobile generator at the Facility.

Electrical transformers are located in the Terminal Yard area of the Facility, at an elevation above the RPE.

BMPs for this area consist of:

- Prior to any major storm, relocate the stationary generator to higher ground if not presently stored in the northern area of the Facility;

Hazardous Waste Storage Areas:

Hazardous waste storage at the facility is limited to a Conex storage container located in the Individual Bulk Storage Area of the Facility. Typical storage is approximately 1-2, 55-gallon drums used for the storage of non-hazardous petroleum-impacted absorbents (solids) and/or waste oil (state-only hazardous waste), and awaiting off-site transport. Threshold elevations for the structure is approximately 3 feet below RPE.

As a current BMP, drums containing OHM will be temporarily relocated to the warehouse prior to any forecasted event with the potential to cause flooding in the area of greater than 0.5 feet (floor elevation above grade).

As a longer term BMP, the structure will either be permanently elevated or moved to a higher elevation area.

The Conex storage container is not at risk of floatation from precipitation events alone.

Deliveries:

Deliveries of OHM to the facility primarily consist of additive deliveries by truck and barge/ship deliveries of petroleum products to the dock. Below are several BMPs related to these deliveries during major storm and/or precipitation events:

- When an additive delivery of OHM is expected by truck, or other hazardous materials are scheduled to the warehouse, and a major storm is anticipated within 48 hours that has the risk of flooding transfer areas, the delivery will be delayed to the extent feasible until after the storm. Transfers will not take place during a major storm event.
- Similarly, when the delivery is scheduled by barge or ship, transfers will not be initiated if review of predicted water elevations during the period of transfer indicate flooding of the dock structure is possible.
- Global routinely monitors weather patterns, and in particular river levels, as part of its coordination of material deliveries (i.e., petroleum ships/barges). Transfers will be delayed as necessary.

Hurricanes:

The Facility has not been subject to a hurricane during Global's operation and has a very low probability of experiencing an hurricane during the current Permit period. In the unlikely event a hurricane was to affect the Facility, the OHM storage and infrastructure is structurally capable of withstanding hurricane-related winds, with risk and prevention focused on hurricane-related storm surge flooding.

Global has developed the following BMP for hurricane preparation to minimize the potential impact to the Facility from a hurricane. These BMPs are in addition to applicable BMPs described in Section 6 of this SWPPP.

Two days prior to hurricane arrival:

- Start securing loose items (Fire extinguishers, barrels, signs and covers);
- Empty and secure drip receptacles and buckets;
- Check OWS units for oil, remove if present and close and secure covers;
- Open man-ways on tanks that are empty (note: Global policy is that ASTs are cleaned if left temporarily out of service);
- Secure AST vents;
- If AST product levels are below elevations necessary to prevent floatation, consolidate product in ASTs to obtain calculated levels (Global is in the process of conducting buoyancy calculations to determine product levels to prevent floatation under storm surge elevations associated with hurricanes. In the interim, a conservative product level will be used, derived from the projected flood elevation plus an additional two feet, adjusted for specific gravity of the stored fuel);
- Close and secure dumpsters;

- Check emergency generators and supply of batteries and flashlights;
- Check portable pumps and fuel;
- On ASTs with weather dome roofs doors are to be closed and secured;
- Have any hazardous waste containers (typically 55-gallon drums) picked up by a hazardous waste transporter or relocate to the warehouse;
- Close and secure hazardous waste storage containers;
- Contact OSRO and USCG in your area for cell telephone # s.

One day prior to hurricane arrival:

- Close valves on ASTs and lines not necessary for truck loading;
- Secure hoses that are stored on hose towers and docks with second lines;
- Check loading rack valves at tanks for proper operation;
- Start preparing to secure loading arms at truck rack;
- Fuel up terminal trucks;
- Charge cell phones and spare batteries;
- Close individual dike drainage valves.

Within 8 hours of arrival:

- Tie down loading arms after each use at the Truck rack.
- Check valves for proper alignment.
- Secure secondary buildings.
- Conduct a facility Inspection.

Post Hurricane:

- The Terminal Manager will assess the situation to determine the best approach to follow in returning to normal operations.

Miscellaneous Additional BMPs:

Below is a list of additional BMPs to be implemented at the Facility to prevent the release of OHM during major storm and flood events:

Facility vehicles and equipment maintained at the Facility are limited primarily to several pick-up trucks and light constructional or industrial equipment present as part of ongoing third party projects (e.g. backhoe, lift, etc.). As a BMP, this equipment will be relocated to elevations above RPE to the extent feasible prior to any flooding of the Facility. This equipment may be used in emergency response or to implement other BMPs in preparation for the major storm event or flooding.

Material storage structures are constructed upon concrete foundations that are anticipated to withstand flooding and additional exertion of force.

To the extent practicable, semi-stationary structures (such job trailers or Conex boxes) will be elevated or moved to a higher-elevation, above the RPE. If the semi-stationary structure cannot be moved to a higher-elevation structure, they will be secured to a stationary structure with a non-corrosive device, or in the case of the Conex box, OHM drums will be picked up by a waste contractor and transported off-site or to an area above the RPE prior to the storm event.

Facility personnel will inspect outdoor areas for identification of items that could impact stormwater quality. Identified equipment or potential pollutant sources will be temporarily relocated to the norther area of the Facility.

Global's existing emergency response plans include procedures that have been developed for weather-related emergencies. In addition, annual table-top exercises of response plans include stormwater related aspects to spill response discussions.

6.6.3 Potential Future Major Storm and Flood Projections and BMPs

In accordance with footnote 4 of Permit condition C.1.b(6), this evaluation is to consider "the 25 to 100 years forward-looking from the review year to assess impacts that are likely to occur." Global presents the following information in response to this requirement.

6.6.3.1 2020 Mystic River Exercise

In October 2020, Global participated in the Mystic River Watershed Area Exercise hosted by the Resilient Mystic Collaborative (RMC). The exercise was designed around a 2050 1% annual exceedance probability nor'easter storm (i.e. 2050, 100 year storm). Mapping from the exercise showed flooding of approximately 1 to 1.5 feet in the central and southeastern area of the Facility, and a more localized area between the dock and the Boiler Building of 2-2.5 feet. These results are generally consistent with the flooding elevations discussed previously in Section 6.6.2.1 of this SWPPP, and as such, the associated BMPs in that Section would be appropriate for this scenario. In addition, with the Facility mobile generator above the RPE, the Facility would remain operational until power was restored.

The overall result was that the Facility was not significantly impacted and release of OHM was not likely for a storm of this nature.

6.6.3.2 Future Sea Level Rise Projections

Sea level rise projections for the current permit period and associated sources were discussed in Section 6.6.2.1 of this SWPPP. Below are the projected sea level rise projections from the same sources for the 2025-2100 period:

The Massachusetts CZM Sea Level Rise Guidance identifies the following conservative (highest) sea level rise projections for Boston:

- 2050: 1.81 feet
- 2075: 3.92 feet
- 2100: 6.83 feet

USGRP Chapter 18, Northeast, identifies the following predictions on sea level rise for the Northeast:

- Projections estimate a global average of 0.12 feet/year which equates to 3 feet by the year 2048 (25 years) and 9 feet in the year 2098 (75 years).
- The study also provides year 2100 estimates of 2 feet (intermediate-low scenario), 4.5 feet (intermediate) and a worst case/lowest probability scenario of 11 feet.

At this time, no structural changes related to long-term sea level rise projections are necessary at the Facility given the overall low year to year increases and the existing BMPs in place. However, these values will be reviewed during the annual update of the SWPPP resiliency measures to see if BMP updates or structural improvements become necessary.

6.6.3.3 Future Changes in Precipitation and Stormwater Management

Since the issuance of the current Permit, Global had a site-wide topographic survey of the Facility conducted to assist with the evaluation conducted in Section 6.6 of this SWPPP. While changes in precipitation patterns during the five year period of the current permit are not anticipated to be significantly different, Global plans to use the survey data to look further into future estimates of rainfall intensity to allow development of a BMP for stormwater management during any of these events. The results of this evaluation will be presented in future SWPPP updates.

6.7 Quality Assurance Quality Control Practices

The Facility shall document quality assurance/quality control (QA/QC) practices.

The SWPPP must include a summary of monitoring requirements, map of sampling locations, details on bottle-ware, approved EPA test methods, a schedule for reviewing sampling results, and description of data validation and reporting processes.

Documentation supporting this requirement is retained in **Appendix E**.

6.8 Stormwater Infiltration Study

The Facility shall implement a stormwater system BMP that ensures the integrity of the stormwater system components through elimination of the infiltration of contaminated groundwater to the stormwater conveyance system where such infiltration contributes pollutants but are not otherwise explicitly authorized.

In accordance with Part C.1.b(8) of the Permit, the above conditions must be satisfied within one year of the effective date of the Permit (i.e. by December 1, 2023). Documentation supporting this requirement will be retained in **Appendix E**.

7.0 SCHEDULES AND PROCEDURES

In accordance with 6.2.5.2 of the MSGP and Part C.1.(a)1 of the Permit the Facility must perform routine inspections and assessments. The following inspection and assessment are performed at the Facility in an effort to comply with these requirements:

Quarterly Routine Facility inspections (Section 7.1 of this SWPPP)

Quarterly visual assessment of storm water discharges (Section 7.2 of this SWPPP)

Monthly visual inspections (Section 7.3 of this SWPPP)

Daily Inspections (Section 7.4 of this SWPPP)

Additional procedures/activities are performed in compliance with the MSGP and the Facility's Permit. These additional procedures/activities are discussed below:

Additional Requirements – Special Conditions (7.5 of this SWPPP)

Analytical Monitoring (7.6 of this SWPPP).

Reporting (7.7 of this SWPPP).

7.1 Quarterly Routine Facility Inspections

Global employs a Facility Inspection Program to prevent polluted discharge at the Facility. The Facility Inspection Program includes quarterly routine facility inspections, as well as monthly and daily inspections (discussed in Sections 7.3 and 7.4 of this SWPPP, respectively). The quarterly inspections are performed by the Terminal Manager or other appropriate personnel. The purpose of the site inspection is to verify that the control measures and BMPs outlined in the SWPPP are being properly implemented and are effective in minimizing pollutant discharges. The results of the inspection, and any corrective actions taken to address issues noted during the inspection, will be recorded on the Routine Facility Inspection Form. Blank forms are retained in **Appendix C**. Completed forms are retained in Facility files.

In accordance with the Permit, if any of the following conditions occur or are identified during a routine facility inspection and/or review of monitoring data, Global will review and revise, as appropriate, this SWPPP:

An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or another permit);

A discharge violates a numeric effluent limit listed in the Permit;

Stormwater control measures are not stringent enough to control stormwater discharges as necessary such that the receiving water will meet applicable water quality standards and/or non-numeric limits listed in the Permit;

A required control measure was never installed, was installed incorrectly, or is not being properly operated or maintained; or

Whenever a visual assessment shows evidence of stormwater pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam).

7.2 Quarterly Visual Assessments of Stormwater Discharges

A sample of stormwater discharge will be collected once each calendar quarter (Jan-March; April-June; July-Sept; Oct-Dec) by a member of the SWPP Team and/or designated alternate. Stormwater samples will be collected from visual examination points shown on the Site and Drainage Map.

The visual assessment must address the following aspects:

Sample of discharge must be contained in a clean, colorless glass or plastic container, and examined in a well-lit area;

Samples must be collected within the first 30 minutes of a discharge from an actual storm event. If it is not possible to collect samples within 30 minutes of a discharge, samples will be collected as soon as practicable and the reason for the delay will be documented on the monitoring form. In the case of snowmelt, samples must be taken during a period with a measurable discharge from the Site; and

Storm events are defined as discharges that occur at least 72 hours (3 days) from the previous discharge. The 72-hour (3-day) storm interval does not apply if you document that less than a 72-hour (3-day) interval is representative for local storm events during the sampling period.

Samples must be visually inspected or observed for the following water quality characteristics:

- Color;
- Odor;
- Clarity;
- Floating solids;
- Settled solids;
- Suspended solids;
- Foam;
- Oil sheen; and
- Other obvious indictors of stormwater pollution

Copies of the completed forms will be retained in **Appendix D**.

7.3 Monthly Visual Inspections

The Monthly Inspection Log lists the areas, systems, and equipment that should be primarily evaluated in each monthly inspection, including:

Marine dock areas;

Bulk ASTs;

Secondary Containment;

Miscellaneous;

Truck Loading areas;

Security;

Communication Equipment;

Spill Response Equipment;

Fire Protection System;

Product Transfer Piping; and

Drainage system.

Each of these components is evaluated per the requirements included in this SWPPP. If any requirements are identified to not be met, corrective actions must be taken in accordance with Sections 9.1 and 9.2 of this SWPPP.

7.4 Daily Inspections

Typically, daily walkthroughs are conducted by Facility personnel during each shift to verify that equipment, systems, and structures are in good condition. The primary focuses of this inspection include:

Product storage and handling equipment;

Containment and diversionary structures;

Facility Security.

If any requirements are identified to not be met, corrective actions must be taken in accordance with Sections 9.1 and 9.2 of this SWPPP.

7.5 Additional Requirements – Special Conditions

In accordance with the Permit, the following additional requirements are listed in the special condition section of the permit. Refer to the relevant Permit sections for additional details and requirements associated with each special condition.

7.5.1 Implementation of Best Management Practices (Part C.1 of the Permit);

Refer to Section 5.0 (Stormwater Control Measures) and Section 6.0 Best Management Practices of this SWPPP for details regarding BMPs implemented at the Site to maintain compliance with the Permit.

7.5.2 Implementation of a Stormwater Pollution Prevention Plan (Part C.2 of the Permit)

This SWPPP has been developed to meet the requirements of the Permit. Implementation of SWPPP procedures is the responsibility of the SWPP Team. Requirements listed in Part C.2 of the Permit are presented throughout this SWPPP.

7.5.3 Hydrostatic Test Water (Part C.3 of the Permit)

Hydrostatic test water is monitored and treated through the stormwater treatment system prior to being discharges through Outfalls 001 and 002.

- Refer to Part C.3 of the Permit for testing and reporting requirements associated with the discharge of hydrostatic test water.
- Refer to Section 5.1.5 of this SWPPP for a detailed discussion of control measures associated with any hydrostatic test water discharges.

7.5.4 Prevention of Unauthorized Discharges of Chemicals and Additives (Part C.4 of the Permit)

The discharge of any chemical or additive, including chemical substitution, which is not approved by the EPA, is prohibited.

Refer to Part C.4 for written notification requirements to the EPA in the event that the discharge of a chemical or additive is proposed.

7.5.5 Bioassessment (Part C.5 of the Permit)

The Facility shall design and implement a bioassessment to characterize the extent to which, if any, pollutants discharged from the Facility to the receiving water affect the benthic morphology, substrate, and/or biota.

There are specific timelines detailed in the Permit for when data collection activities must be performed.

A draft Work Plan for the bioassessment, prepared for Global by Normandeau Associates of Bedford, New Hampshire, was submitted to EPA and MassDEP on January 30, 2023.

Work Plans and reports produced as part of the bioassessment will be made available upon request.

7.6 Analytical Monitoring

A summary of the Facility's analytical monitoring requirements is provided in **Appendix E**. The limitations and benchmark thresholds applicable for the outfalls are identified on the tables in Part I of the NPDES Permit No. MA0003280 (Pages 2-25).

The monitoring locations will be located at Outfall 001 and 002 (see Site and Drainage Map) immediately prior to the outfalls and/or discharge area for each drainage area where regulated industrial activities (equipment maintenance and cleaning) are performed, unless there are safety or accessibility issues or one outfall/discharge area is designated as a representative monitoring location.

Samples shall be collected pursuant to the requirements of the Permit. Although the Permit specifies that sampling must occur within 15 minutes of the initiation of discharge but in no case later than within the first hour of the discharge, occasionally, due to the timing of a storm event or the need to discharge to facilitate safe operations in a particular area, this condition may not be feasible. These instances are documented and included in the Annual Certification, discussed below.

7.7 Reporting

The following reports documenting data collected during facility inspections and monitoring events are required:

Monthly Discharge Monitoring Reports (DMRs)

Annual Certification

These reports are discussed in more detail below.

7.7.1 Discharge Monitoring Reports

The monitoring data for required analytical monitoring must be submitted to the EPA no later than the 15th day of the month for the previous month reporting period. The monitoring data must be submitted electronically using the EPA's online eNOI system or using NetDMR. NetDMR is accessible through EPA's Central Data Exchange at http://www.cdx.epa.gov/. Analytical monitoring records (e.g., completed DMRs, laboratory reports) are retained in the Facility files and can be furnished upon request.

7.7. 2 Annual Certifications

The certifying official or their designated alternate must certify at least annually that the previous year's inspections, corrective actions, control measures, and training activities were conducted, results were recorded, and records were maintained. If the Facility is identified to not be in compliance with a limitation or BMP described in this SWPPP, the annual certification must document the non-compliance and provide documentation that a remedy is being undertaken.

Annual certifications must be submitted by January 15th of the following calendar year. The Facility shall submit a copy of the SWPPP and SWPPP certifications signed during the effective period of this Permit to the EPA for posting on EPA Region 1's Chelsea River Terminals public website.

All documentation of SWPPP activities performed are retained by the Facility for at least five years and are available to the EPA upon request.

8.0 FEDERAL PERMITTING REQUIREMENTS

Federal permitting requirements are applicable to the Facility. The following sections discuss the actions taken to address these requirements.

8.1 Documentation Regarding Endangered Species Act (ESA)

As part of the Facility's permitting process, the EPA reviewed the federal endangered or threatened species of fish, wildlife, and plants in the expected action area of the outfalls to determine if the Facility's permitted discharges could potentially impact any such listed species. Per the Permit's Fact Sheet:

> EPA has determined that no USFWS federally protected species or their critical habitat overlap with the action area of the Facility. Therefore, ESA section 7 consultation with USFWS is not required.
>
> EPA has determined that no NOAA Fisheries federally protected species are likely to be present in the action area. Therefore, ESA section 7 consultation with NOAA Fisheries is not required.
>
> No taking of a listed species is anticipated or exempted.

8.2 Documentation Regarding Essential Fish Habitat (EFH)

EPA has determined that the limits and conditions contained in the Permit minimize adverse effects to the Essential Fish Habitat and the associated managed species, if present. The EPA's rationale for this determination, per the Permit's Fact Sheet, is noted below:

> The Permit action does not constitute a new source of pollutants. It is a reissuance of an existing NPDES permit;
>
> Acute toxicity tests will be conducted to confirm that the discharge does not present toxicity problems;
>
> The frequency of discharge from the Facility is intermittent, resulting almost entirely from the accumulation of stormwater;
>
> No water is withdrawn by the Facility from the Chelsea River, so no life stages of EFH species are vulnerable to impingement or entrainment;
>
> The Permit includes limits that are designed to be protective of aquatic species, including those with EFH designations;
>
> The Permit prohibits any violation of Massachusetts water quality standards; and
>
> The Permit includes a bioassessment special condition (discussed in Section 7.5 of this SWPPP).

EPA believes that the conditions and limitations contained within the Permit adequately protect aquatic life, including those species with EFH designation in the Chelsea River. Further mitigation is not warranted. However, if new information is identified that changes EPA's opinion, then the EFH will be re-evaluated.

8.3 Documentation Regarding Environmental Justice

Per the Permit's Fact Sheet, the water pollution prevention and control requirements in the Permit addresses current adverse impacts to aquatic life, aesthetics, and recreation in the Chelsea River, and the Permit will lead to continued water quality improvements in the river. EPA therefore has determined that the Facility's discharges will not result in disproportionately high and adverse human health or environmental effects on minority or low-income populations within the meaning of Executive Order 12898.

9.0 SWPPP MODIFICATIONS

This SWPPP is a living document and will be updated by the Facility on an as needed basis. Changes or updates made to the Facility layout, the stormwater system, or Facility BMPs will be documented in this SWPPP and evaluated for potential impacts or exposures to Facility stormwater. Corrective actions resulting from Facility monitoring or inspections will also be documented with this SWPPP. Descriptions of the Facility or procedure modifications, the date, and the name and signature of the individual making the modification(s) will be documented in the SWPPP Modification Log provided in **Appendix G**.

9.1 Necessary Conditions for Corrective Actions

Per the Permit, the Facility shall comply with the corrective action requirements in Part 5.1 of the MSGP and the corrective action documentation requirements in Part 5.3 of the MSGP. These requirements are provided herein.

If any of the following conditions occur, the Facility will review and revise the SWPPP, if warranted, so that the Permit's effluent limits are met, and pollutant discharges are minimized:

Unauthorized release or discharge (e.g., spill or leak);

Exceedance of numeric effluent limit;

Identification that stormwater controls are not stringent enough to meet WQS and/or the non-numeric limits;

Identification that stormwater controls were never installed, were installed incorrectly, or were not being properly operated or maintained; or

A visual assessment of discharged water shows evidence of stormwater pollution.

If any of the above conditions are triggered, the Facility will take reasonable steps to minimize or prevent the discharge of pollutants until a permanent solution can be implemented immediately (i.e., the day a condition requiring corrective action is identified, or, if it is identified too late in the work day to initiate corrective action, the following work day morning). "Reasonable steps" shall include, but not be limited to, cleaning up (e.g., sweeping) any contaminated surfaces so that the material will not discharge in subsequent storm events or making arrangements for a new stormwater control measure to be installed. It should be noted that not all numerical permit exceedances have a "reasonable step" to correct the exceedance. Specific examples include, when there is a minor or slight exceedance of the permit effluent limit. In these instances, assessment of the exceedance and additional sampling will be performed.

If additional actions are required, the Facility must complete corrective actions within 14 days. If 14 days is infeasible, the Facility will document why it considers it infeasible, and will implement such modifications within 45 days. If the completion of corrective action is anticipated to exceed the 45-day timeframe, the Facility must take the minimum additional time necessary to complete the corrective action, provided that the EPA is notified of the Facility's intention to exceed 45 days and the extension is granted.

Where corrective actions result in changes to any of the controls or procedures documented in this SWPPP, the Facility will modify the SWPPP accordingly within 14 days of completing corrective action work.

9.2 Corrective Action Documentation

Documentation of the condition triggering corrective actions must be documented within 24 hours of becoming aware of such condition. The documentation must include the following information:

Description of the condition or event triggering the need for corrective action review. For any spills or leaks, include a description of the incident including material date/time, amount, location, and reason for the spill, and any leaks, spills, or other releases that resulted in discharges of pollutants to waters of the United States;

Date the condition/triggering event was identified;

Description of immediate actions taken to minimize or prevent the discharge of pollutants. For any spills or leaks, include response actions, the date/time clean-up completed, notifications made, and staff involved. Also include any measures taken to prevent the reoccurrence of such releases; and

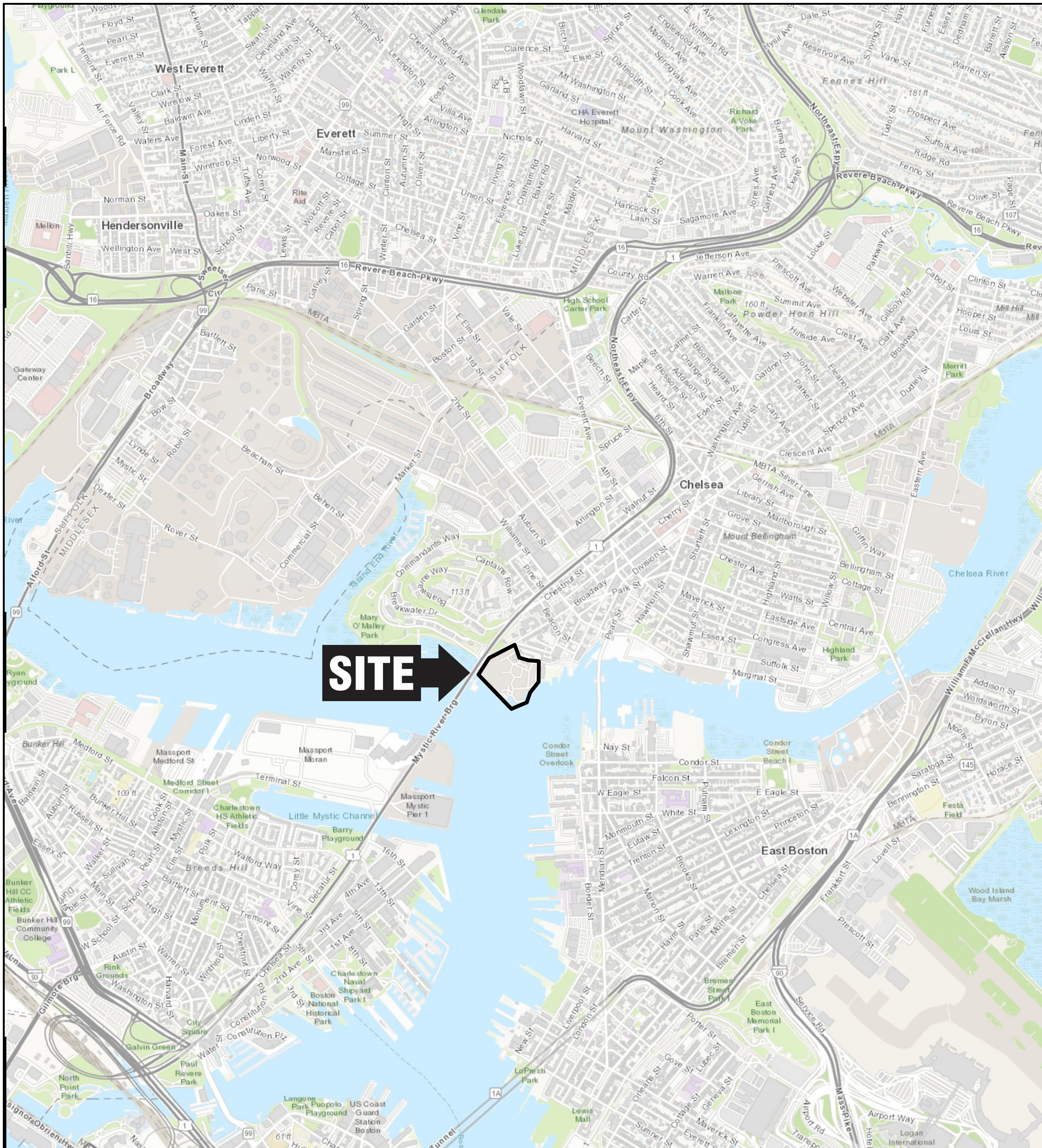
A statement, signed and certified by a certifying official.

Documentation of the corrective actions implemented or to be implemented must be prepared within 14 days from the time of discovery. The dates when corrective actions were initiated, completed (or to be completed) must be included. If infeasible to complete the necessary corrective actions within the specified timeframe in Section 9.1, there must be documentation of the rationale and schedule for installing the controls and making them operational as soon as practicable after the specified timeframe.

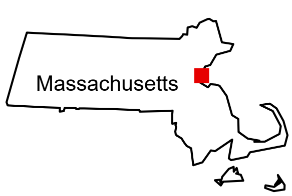
Documentation is not required to be submitted to the EPA, unless it is specifically requested. However, the corrective actions must be summarized in the annual report.

FIGURES

1. Site Location Map
2. Site and Drainage Map



QUADRANGLE LOCATION



N

1,000 0 1,000'

Title:

STORMWATER PREVENTION POLLUTION PLAN

SITE LOCATION MAP

GLOBAL COMPANIES LLC
11 BROADWAY, CHELSEA, MASSACHUSETTS

Prepared for:

GLOBAL COMPANIES LLC
CHELSEA TERMINAL

ROUX

Compiled by: SB	Date: 02/17/23	FIGURE
Prepared by: SB	Scale: AS SHOWN	1
Project Mgr: TH	Project: 1629.0007M003	
File: 1629.0009M002.109.02.mxd		

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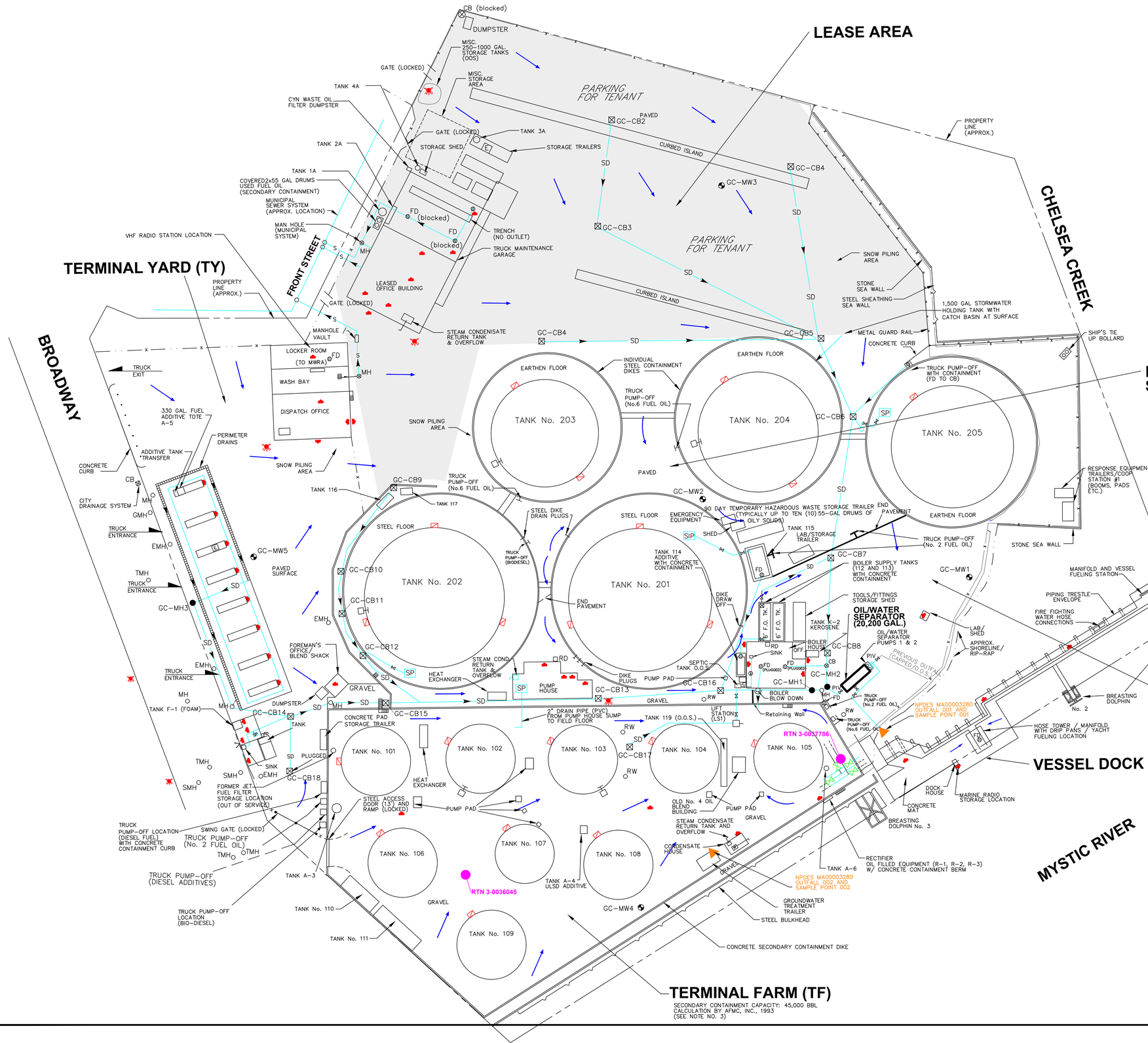

LEGEND

- MANHOLE
- CATCH BASIN
- MONITORING WELL
- INFERRED STORM WATER FLOW DIRECTION
- ROOF DRAIN
- SUMP EQUIPPED W/ PUMP
- SECONDARY CONTAINMENT DIKE
- MANHOLE/TELEPHONE MANHOLE/SANITARY MANHOLE/ELECTRIC MANHOLE
- CATCH BASIN
- PROPERTY LINE
- FENCE
- HOP TENANT AREA – PAVED
- FOAM CHAMBER
- ROOF DRAIN
- U.S.C.G. JURISDICTIONAL VALVE
- HYDRANT
- APPROXIMATE LOCATION OF HISTORICAL RELEASE

RTN = RELEASE TRACKING NUMBER

NOTES

1) This Terminal Plot Plan was modified from "Figure 2 Terminal Plot Plan dated 4/27/00" prepared by Triton Environmental, Inc. based on "Site Plan"; (File No. S11778S1.dwg) prepared by Environmental compliance Services, Inc. dated Feb 1994, and "Site Plan" Dwg. No. 2394-C-18 prepared by Clean Harbors EnvironmentalServices, Inc., dated 2/93 presented in the terminal SPCC Plan (1993). Additional information was provided by chelsea terminal and collected during site inspections conducted by Tighe & Bond in October 2010.

2) Secondary containment information was taken from PCA Eningeering February 18, 2005 Report. Tanks 201, 202, 203, 204, and 205 have cascading containment via overhead piping connection.

3) No surface impoundments, weirs, process buildings

All locations, dimensions, and property lines depicted on this plan are approximate. This plan should not be used for construction or land conveyance purposes.

4) Site is approximately 11.4 acres.

5) Receiving water impairment status: The receiving water, Chelsea Creek and Mystic River, has listed impairments. Impaired pollutants include – Ammonia (unionized), fecal coliform, dissolved oxygen, PCBs in fish tissue, petroleum hydrocarbons, sediment, taste odor, and turbidity. (See Section 5.4 of SWPPP).

6) Facility Outfalls are located at the following coordinates:

Outfall 001
42°23'07.76"N 71°02'40.79"W

Outfall 002
42°23'08.82"N 71°02'42.55"W

Title:

STORMWATER POLLUTION PREVENTION PLAN

TERMINAL PLAN AND DRAINAGE DIAGRAM
CHELSEA TERMINAL
CHELSEA, MASSACHUSETTS

Prepared for:
GLOBAL COMPANIES LLC CHELSEA TERMINAL

ROUX	Compiled by: SB	Date: 2/27/2023
	Prepared by: MV	Scale: AS SHOWN
	Project Mgr: TH	Project: 1629.0009M002
	File: 1629.0009M002.109.02.DWG	PLATE 2

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APPENDICES

A. NPDES Permit
B. Historical Data
C. Blank Inspection Forms
D. Completed Inspection Forms
E. Special Conditions Reports
F. Recordkeeping Documentation
G. SWPPP Modification Log

APPENDIX A

NPDES Permit

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"),

Chelsea Sandwich LLC

is authorized to discharge from a facility located at

Chelsea Sandwich LLC
11 Broadway
Chelsea, MA 02150

to receiving water named

Chelsea River (MA71-06)
Mystic River Watershed

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

This permit shall become effective on [DATE].

This permit expires at midnight on [DATE].

This permit supersedes the permit issued on September 24, 2014.

This permit consists of this **cover page**, **Part I**, **Attachment A** (Marine Acute Toxicity Test Procedure and Protocol, July 2012), and **Part II** (NPDES Part II Standard Conditions, April 2018).

Signed this day of

KENNETH MORAFF
Digitally signed by KENNETH MORAFF
Date: 2022.09.30 11:01:17 -04'00'

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

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 stormwater, hydrostatic test water, groundwater remediation effluent from internal Outfall 002, and boiler blowdown/steam condensate through Outfall Serial Number 001 to the Chelsea River. The discharge shall be limited and monitored as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitation**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type**
Flow Rate[5]	---	700 GPM	When Discharging	Estimate
Total Effluent Flow[6]	---	Report MGal/Mo	When Discharging	Meter
Number of Events	---	Report #	When Discharging	Count
Total Suspended Solids (TSS)	30 mg/L	100 mg/L	2/Month	Grab
Turbidity	Report NTU	Report NTU	2/Month	Grab
pH[7]	6.5 - 8.5 S.U.		1/Month	Grab
Chemical Oxygen Demand	---	Report mg/L	1/Month	Grab
Oil and Grease	---	15 mg/L	1/Month	Grab
Fecal Coliform[8]	---	Report MPN	1/Month	Grab
Enterococcus[8]	---	Report CFU	1/Month	Grab

Effluent Characteristic	Effluent Limitation		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type
Benzene[10]	---	5 µg/L	1/Month	Grab
Ethylbenzene[10]	---	Report µg/L	1/Year[11]	Grab
Toluene[10]	---	Report µg/L	1/Year[11]	Grab
Total Xylenes[10]	---	Report µg/L	1/Year[11]	Grab
Benzo(a)pyrene[12]	0.00013 µg/L	Report µg/L	1/Month	Grab
Benzo(a)anthracene[12]	0.0013 µg/L	Report µg/L	1/Month	Grab
Benzo(b)fluoranthene[12]	0.0013 µg/L	Report µg/L	1/Month	Grab
Benzo(k)fluoranthene[12]	0.013 µg/L	Report µg/L	1/Month	Grab
Chrysene[12]	0.13 µg/L	Report µg/L	1/Month	Grab
Dibenzo(a,h)anthracene[12]	0.00013 µg/L	Report µg/L	1/Month	Grab
Indeno(1,2,3-cd)pyrene[12]	0.0013 µg/L	Report µg/L	1/Month	Grab
Naphthalene	---	20 µg/L	1/Month	Grab
Acenaphthene	---	Report µg/L	1/Year[11]	Grab
Acenaphthylene	---	Report µg/L	1/Year[11]	Grab
Anthracene	---	Report µg/L	1/Year[11]	Grab
Benzo(g,h,i)perylene	---	Report µg/L	1/Year[11]	Grab

Effluent Characteristic	Effluent Limitation		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type
Fluoranthene	---	Report µg/L	1/Year[11]	Grab
Fluorene	---	Report µg/L	1/Year[11]	Grab
Phenanthrene	---	Report µg/L	1/Year[11]	Grab
Pyrene	---	Report µg/L	1/Year[11]	Grab
Total Residual Chlorine[13]	---	13 µg/L	1/Month	Grab
Total Phthalates[14]	---	Report µg/L	1/Quarter	Grab
Total Copper	---	5.8 µg/L	1/Month	Grab
Total Zinc	---	95.1 µg/L	1/Month	Grab
Cyanide[15]	---	1 µg/L	1/Month	Grab
Total Ammonia (as N) (April 1 through October 31)	---	1.8 mg/L	1/Month	Grab
Perfluorohexanesulfonic acid (PFHxS)[16,17]	---	Report ng/L	1/Quarter	Grab
Perfluoroheptanoic acid (PFHpA)[16,17]	---	Report ng/L	1/Quarter	Grab
Perfluorononanoic acid (PFNA)[16,17]	---	Report ng/L	1/Quarter	Grab
Perfluorooctanesulfonic acid (PFOS)[16,17]	---	Report ng/L	1/Quarter	Grab
Perfluorooctanoic acid (PFOA)[16,17]	---	Report ng/L	1/Quarter	Grab
Perfluorodecanoic acid (PFDA)[16,17]	---	Report ng/L	1/Quarter	Grab

Effluent Characteristic	Effluent Limitation		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type
Whole Effluent Toxicity (WET) Testing[18, 19]				
LC_{50}	---	Report %	1/Year	Grab
Total Residual Chlorine	---	Report mg/L	1/Year	Grab
Salinity	---	Report g/kg	1/Year	Grab
pH	---	Report SU	1/Year	Grab
Total Solids	---	Report mg/L	1/Year	Grab
Total Suspended Solids	---	Report mg/L	1/Year	Grab
Ammonia Nitrogen	---	Report mg/L	1/Year	Grab
Total Organic Carbon	---	Report mg/L	1/Year	Grab
Total Cadmium	---	Report µg/L	1/Year	Grab
Total Copper	---	Report µg/L	1/Year	Grab
Total Lead	---	Report µg/L	1/Year	Grab
Total Nickel	---	Report µg/L	1/Year	Grab
Total Zinc	---	Report µg/L	1/Year	Grab

Ambient Characteristic[20]	Reporting Requirements		Monitoring Requirements[1,2,3]	
	Average Monthly	Maximum Daily	Measurement Frequency[4]	Sample Type[5]
Salinity	---	Report g/kg	1/Year	Grab
Ammonia Nitrogen	---	Report mg/L	1/Year	Grab
Total Cadmium	---	Report µg/L	1/Year	Grab
Total Copper	---	Report µg/L	1/Year	Grab
Total Nickel	---	Report µg/L	1/Year	Grab
Total Lead	---	Report µg/L	1/Year	Grab
Total Zinc	---	Report µg/L	1/Year	Grab
pH[21]	---	Report SU	1/Year	Grab
Temperature[21]	---	Report °C	1/Year	Grab
Benzene	---	Report µg/L	1/Year[22]	Grab
Ethylbenzene	---	Report µg/L	1/Year[22]	Grab
Toluene	---	Report µg/L	1/Year[22]	Grab
Total Xylenes	---	Report µg/L	1/Year[22]	Grab
Benzo(a)anthracene	---	Report µg/L	1/Year[22]	Grab
Benzo(a)pyrene	---	Report µg/L	1/Year[22]	Grab

Benzo(b)fluoranthene	---	Report µg/L	1/Year[22]	Grab
Benzo(k)fluoranthene	---	Report µg/L	1/Year[22]	Grab
Chrysene	---	Report µg/L	1/Year[22]	Grab
Dibenzo(a,h)anthracene	---	Report µg/L	1/Year[22]	Grab
Indeno(1,2,3-cd)pyrene	---	Report µg/L	1/Year[22]	Grab
Acenaphthene	---	Report µg/L	1/Year[22]	Grab
Acenaphthylene	---	Report µg/L	1/Year[22]	Grab
Anthracene	---	Report µg/L	1/Year[22]	Grab
Benzo(g,h,i)perylene	---	Report µg/L	1/Year[22]	Grab
Fluoranthene	---	Report µg/L	1/Year[22]	Grab
Fluorene	---	Report µg/L	1/Year[22]	Grab
Naphthalene	---	Report µg/L	1/Year[22]	Grab
Phenanthrene	---	Report µg/L	1/Year[22]	Grab
Pyrene	---	Report µg/L	1/Year[22]	Grab

Footnotes:

1. Grab samples for Outfall 001 shall be collected at the discharge point from the Facility's oil/water separator (OWS), prior to commingling with any other wastestream. Samples shall be collected after treatment through the stormwater treatment system and free from tidal influence. Samples shall be grab samples taken within 15 minutes of the initiation of a discharge where practicable, but in no case later than within the first hour of discharge from the outfall. Changes in sampling location must be approved in

writing by the Environmental Protection Agency Region 1 (EPA). The Permittee shall report the results to EPA and the State of any additional testing above that required herein, if testing is done in accordance with 40 Code of Federal Regulations (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 sample ML for that parameter (e.g., < 5 µg/L, if the sample ML for a parameter is 5 µg/L). For calculating and reporting the average monthly concentration when one or more values are not detected, assign a value of zero to all non-detects and report the average of all the results. The number of exceedances shall be enumerated for each parameter in the field provided on every Discharge Monitoring Report (DMR).

4. Measurement frequency of "when discharging" is defined as the sampling of any measurable discharge event, reported for each calendar month. Sampling frequency of 1/month is defined as the sampling of one discharge event in each calendar month. Sampling frequency of 1/quarter is defined as the sampling of one discharge event in each quarter. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. Sampling frequency of 1/year is defined as the sampling of one discharge event during one calendar year, unless otherwise specified. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code.

5. For Flow Rate, the maximum daily value represents the maximum instantaneous flow rate measured by the Facility as passing through the treatment system for each day that a discharge occurs during the reported period. The maximum instantaneous flow rate, which is to be reported in units of gallons per minute (GPM), shall be an estimate based on the summation of the pump curve value(s) for all pumps in operation which control the rate of flow through the OWS when discharge is occurring. The Permittee shall at no time exceed the design flow rate of the treatment system.

6. For Total Flow, the value reported represents the sum of the recorded discharge volume for each day that effluent is discharged during that month, measured at the treatment system using a totalizer or similar device. Total Flow shall be reported in the units of millions of gallons per month (Mgal/Mo). The Permittee shall also report the total number of days during the reporting period discharges from the outfall occurred (i.e., a measurable volume of effluent passes through the totalizer or similar device), noted on the DMR form under "Event Total."

7. 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.).

8. Results must be reported as colony forming units (CFU). After a minimum one year following the effective date of the permit and 12 samples, the sampling frequency for *Enterococcus* shall reduce to 1/year if all sample results are less than the applicable water quality criteria.

9. Daily maximum temperature must be taken for the influent (i.e., boiler blowdown/steam condensate), the effluent, and the receiving water at the time of collection and the results reported on the appropriate DMR. Temperature shall be measured using EPA-approved methods in 40 CFR §136 (e.g., Method 2550-B-2000).

10. The ML for analysis for benzene, ethylbenzene, toluene and total xylenes shall be no greater than 2 µg/L.

11. The Permittee shall conduct annual monitoring of the effluent during the month of April for the following compounds: acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, phenanthrene, pyrene, toluene, ethylbenzene, and total xylenes. Sampling shall be performed during the first Qualifying Event and concurrently with the April monthly monitoring event. A Qualifying Event shall be defined as a discharge that occurs during daylight hours on an outgoing tide at least one hour from both the low and high slack tide. To identify a Qualifying Event, the permittee may use tide charts to predict the two four-hour intervals of an outgoing tide each day that are one hour from both low and high slack tide. If a measurable discharge does not occur such that sampling cannot be completed during the first Qualifying Event of the required sampling frequency, the permittee is to sample the next Qualifying Event. If no discharge occurs during the month of April, the Permittee shall sample the next qualifying event.

12. Analysis for the Group I and II Polycyclic Aromatic Hydrocarbons (PAHs) shall use Method 625.1 (low level GC/MS). The expected ML for benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, and chrysene is 0.05 µg/L. The expected ML for dibenzo(a,h)anthracene and indeno(1,2,3-cd)pyrene is 0.1 µg/L. The expected ML for acenaphthene,

acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene is 5 µg/L. The compliance level for Group I PAHs with numeric effluent limits less than the minimum level shall be non-detect at any sample ML above the numeric limit.

13. TRC analysis must be completed using a test method in 40 CFR Part 136 that achieves a minimum level of detection no greater than 30 µg/L. The compliance level for TRC is 30 µg/L. The Permittee may request that this limit and associated monitoring apply only to discharges that have been previously chlorinated or that contain residual chlorine following completion of a source identification study demonstrating the source of TRC and implementation of BMPs to control TRC in the effluent.

14. Total Phthalates is the sum of: diethylhexyl phthalate (CAS No. 117-81-7); butyl benzyl phthalate (CAS No. 85-68-7); di-n-butyl phthalate (CAS No. 84-74-2); diethyl phthalate (CAS No. 84-66-2); dimethyl phthalate (CAS No. 131-11-3); di-n-octyl phthalate (CAS No. 117-84-0).

15. For the purposes of this permit, the analysis must be completed for total cyanide using a test method in 40 CFR Part 136 that achieves a minimum level of detection no greater than 5 µg/L. The compliance level for total cyanide is 5 µg/L.

16. The monitoring requirement for the listed PFAS parameters takes effect during the first quarter following six months after receiving written notification of availability of the multi-laboratory validation of analytical test Method 1633 for the analysis of PFAS in wastewater and biosolids. Results must be reported in nanograms per liter (ng/L).

17. After three years of monitoring or a minimum of 12 samples, if all samples are non-detect for all six PFAS compounds, using EPA's multi-lab validated method for wastewater, the Permittee may request to remove the requirement for PFAS monitoring.

18. The Permittee shall conduct acute toxicity tests (LC_{50}) 1/year during the month of April in accordance with test procedures and protocol specified in **Attachment A** of this permit. LC_{50} is defined in Part II.E. of this permit. Sampling shall be conducted during a Qualifying Event concurrently with the annual effluent monitoring described above. The Permittee shall test the mysid shrimp, *Americamysis bahia*, and the inland silverside, *Menidia beryllina*. The complete report for each toxicity test shall be submitted as an attachment to the monthly DMR submittal immediately following the completion of the test.

19. 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. Even

where alternate dilution water has been used, the results of the receiving water control (0% effluent) analyses must be reported. Minimum levels and test methods are specified in **Attachment A**, Part VI. CHEMICAL ANALYSIS.

20. 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 upstream 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.

21. 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.

22. The Permittee shall conduct annual monitoring of the receiving water during the month of April for the following compounds: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene, benzene, toluene, ethylbenzene, and total xylenes. The ML for analysis shall be equivalent to the MLs for effluent monitoring. The receiving water sample shall be collected from the Chelsea River at a point immediately outside of Outfall 001's zone of influence at a reasonably accessible location. Sampling shall be performed during a Qualifying Event concurrently with the annual toxicity monitoring and annual effluent monitoring described above.

2. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated stormwater and hydrostatic test water through internal Outfall Serial Number 002 to the Chelsea River via Outfall Serial Number 001. The discharge shall be limited and monitored as specified below; the receiving water shall be monitored as specified below.

Effluent Characteristic	**Effluent Limitation**		**Monitoring Requirements[1,2,3]**	
	Average Monthly	**Maximum Daily**	**Measurement Frequency[4]**	**Sample Type**
Flow Rate[5]	---	25 GPM	When Discharging	Estimate
Total Effluent Flow[6]	---	Report MGal/Mo	When Discharging	Meter
pH[7]	6.5 - 8.5 S.U.		1/Month	Grab
Benzene	---	5 µg/L	1/Month	Grab
Total BTEX	---	100 µg/L	1/Month	Grab
Total Petroleum Hydrocarbons	---	5 mg/L	1/Quarter	Grab

1.Grab samples for Outfall 002 shall be collected at the discharge point from the Facility's treatment system, prior to commingling with any other wastestream. Sampling may be conducted inside of the treatment system building at the outlet of the final treatment component. Samples shall be grab samples taken within 15 minutes of the initiation of a discharge where practicable, but in no case later than within the first hour of discharge from the outfall. Changes in sampling location must be approved in writing by the Environmental Protection Agency Region 1 (EPA). The Permittee shall report the results to EPA and the State of any additional testing above that required herein, if testing is done in accordance with 40 Code of Federal Regulations (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 sample ML for that parameter (e.g., < 5 µg/L, if the sample ML for a parameter is 5 µg/L). For calculating and reporting the average monthly concentration when one or more values are not detected, assign a value of zero to all non-detects and report the average of all the results. The number of exceedances shall be enumerated for each parameter in the field provided on every Discharge Monitoring Report (DMR).

4. Measurement frequency of "when discharging" is defined as the sampling of any measurable discharge event, reported for each calendar month. Sampling frequency of 1/month is defined as the sampling of one discharge event in each calendar month. Sampling frequency of 1/quarter is defined as the sampling of one discharge event in each quarter. Calendar quarters are defined as January through March, inclusive, April through June, inclusive, July through September, inclusive and October through December, inclusive. Sampling frequency of 1/year is defined as the sampling of one discharge event during one calendar year, unless otherwise specified. If no sample is collected during the measurement frequencies defined above, the Permittee must report an appropriate No Data Indicator Code.

5. For Flow Rate, the maximum daily value represents the maximum instantaneous flow rate measured by the Facility as passing through the treatment system for each day that a discharge occurs during the reported period. The maximum instantaneous flow rate, which is to be reported in units of gallons per minute (GPM), shall be an estimate based on the summation of the pump curve value(s) for all pumps in operation which control the rate of flow through the OWS when discharge is occurring. The Permittee shall at no time exceed the design flow rate of the treatment system.

6. For Total Flow, the value reported represents the sum of the recorded discharge volume for each day that effluent is discharged during that month, measured at the treatment system using a totalizer or similar device. Total Flow shall be reported in the units of millions of gallons per month (Mgal/Mo). The Permittee shall also report the total number of days during the reporting period discharges from the outfall occurred (i.e., a measurable volume of effluent passes through the totalizer or similar device).

7. 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.).

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.

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.

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

   a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

      (1) 100 micrograms per liter (µg/L);
      (2) 200 µg/L for acrolein and acrylonitrile; 500 µg/L for 2,4-dinitrophenol and for 2-methyl-4,6-dinitrophenol; and one milligram per liter (mg/L) for antimony;
      (3) Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or
      (4) Any other notification level established by the Director in accordance with 40 CFR § 122.44(f) and State regulations.

   b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":

      (1) 500 µg/L;
      (2) One mg/L for antimony;
      (3) 10 times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR § 122.21(g)(7); or

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

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

B. UNAUTHORIZED DISCHARGES

1.This permit authorizes discharges only from the outfall(s) listed in Part I.A.1, in accordance with the terms and conditions of this permit. Discharges of wastewater from any other point sources are not authorized by this permit and shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this permit (24-hour reporting).

2. The following discharges are expressly prohibited:

a. Discharge of tank bottom water and/or bilge water alone or in combination with stormwater discharge or other wastewater;

b. Discharge of any sludge and/or bottom deposits from any storage tank(s), basin(s), and/or diked area(s) to the receiving waters. Examples of storage tanks and/or basins include, but are not limited to: primary catch basins, oil/water separators, petroleum product storage tanks, baffled storage tanks collecting spills, and tank truck loading rack sumps;

c. Discharge of liquid hazardous waste alone or in combination with stormwater or other wastewater;

d. Discharges of runoff from any vehicle and equipment washing alone or in combination with stormwater or other wastewater, including from the leased property;

e. Discharges of ballast water alone or in combination with stormwater or other wastewater;

f. Runoff resulting from accidental spill or release, alone or in combination with stormwater or other wastewater;

g. Discharges of emulsion chemicals, including surfactants (e.g., detergents and soaps) alone or in combination with stormwater or other wastewater;

h. Discharges of contaminated groundwater, including, but not limited to wastewater generated during activities conducted under the Massachusetts Contingency Plan, alone or in combination with stormwater or other wastewater;

i. Discharges of aqueous film-forming foam and alcohol resistant foam either in concentrate form or as foam diluted with water during testing or maintenance of the fires suppression system at the Facility’s marine vessel dock

C. SPECIAL CONDITIONS

1. Best Management Practices (BMPs)

a. The Permittee shall design, install, and implement control measures to minimize pollutants discharged from stormwater associated with the Facility operations to the receiving water. At a minimum, the Permittee must implement control measures, both structural controls (e.g., OWS, containment areas, holding tanks) and non-structural (e.g., operational procedures and operator training) consistent with those described in Part 2.1.2 and of EPA's Multi-Sector General Permit (MSGP).[1] The control measures must ensure the following non-numeric effluent limitations are met:

(1) Minimize exposure of processing and material storage areas to stormwater discharges;
(2) Design good housekeeping measures to maintain areas that are potential sources of pollutants;
(3) Implement preventative maintenance programs to avoid leaks, spills, and other releases of pollutants to stormwater that is discharged to receiving waters;
(4) Implement spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur, including, but not limited to, those required by Section 311 of the CWA, 33 U.S.C. § 1321. The Permittee shall report immediately the appearance of any size sheen attributable to the discharge from the Facility to the appropriate agency of the United States Government in accordance with Section 311 of the CWA;
(5) Design of erosion and sediment controls to stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants;
(6) Utilize runoff management practices to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff;
(7) Develop proper handling procedures for salt or materials containing chlorides that are used for snow and ice control;
(8) Conduct employee training to ensure personnel understand the requirements of this permit;
(9) Evaluate for the presence of non-stormwater discharges and require the elimination of any non-stormwater discharges not explicitly authorized in this permit or covered by another NPDES permit; and
(10) Minimize dust generation and vehicle tracking of industrial materials.
(11) Demonstrate that no illicit discharges exist, including, but not limited to, sanitary sewer cross connections. If any illicit discharge is detected, the Permittee shall locate, identify, and eliminate the illicit discharge as expeditiously as possible;
(12) Use known, available, and reasonable methods to prevent rodents, birds, and other animals from feeding/nesting/roosting at the Facility. Known, available, and reasonable methods do not include methods that would be construed as a violations of

[1] The current MSGP was effective March 21, 2021 and is available at https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp.

any applicable federal, state, or local statutes, ordinances, or regulations, including the Migratory Bird Act;

(13) Implement practices to minimize bacteria from known sources (e.g., dumpsters, food waste, or animal waste).

b. In addition, the Permittee must design, install, and/or implement the following BMPs:

(1) The Permittee shall comply with the inspection requirements in Parts 3.1 and 3.2 of the 2021 MSGP, the corrective action requirements in Part 5.1 of the 2021 MSGP, and the corrective action documentation requirements in Part 5.3 of the 2021 MSGP. If any of the following conditions occur or are detected during an inspection, monitoring or by other means, the Permittee shall review and revise, as appropriate, the SWPPP so that the permit's effluent limits are met and pollutant discharges are minimized:
   i. An unauthorized release or discharge (e.g., spill, leak, or discharge of non-stormwater not authorized by this or another NPDES permit;
   ii. A discharge violates a numeric effluent limit listed in Part I.A of this permit;
   iii. The stormwater control measures are not stringent enough to control stormwater discharges as necessary such that the receiving water will meet applicable water quality standards and/or the non-numeric limits in Part I.C of this permit;
   iv. A required control measure was never installed, was installed incorrectly, or is not being properly operated or maintained; and
   v. Whenever a visual assessment shows evidence of stormwater pollution (e.g., color, odor, floating solids, settled solids, suspended solids, foam).

(2) The Permittee shall comply with the control measure requirements in Part 2.1 and 2.1.1 of the 2021 MSGP in order to identify pollutant sources and select, design, install and maintain the pollution control technology necessary to meet the effluent limitations in the permit that ensure dilution is not used as a form of treatment.

(3) The Permittee shall minimize, to the maximum extent practicable, discharging stormwater, hydrostatic test water and groundwater during worst-case conditions (i.e., approximately one hour before and after slack tide and during periods of lowest receiving water flow). The Permittee shall, to the maximum extent practicable, discharge stormwater, hydrostatic test water and groundwater on an outgoing tide. In the event that a discharge outside of the parameters described above cannot be avoided, the Permittee shall document the reason for the discharge in an attachment to the SWPPP;

(4) The Permittee shall document the measures and methods used to control flow through both the stormwater and groundwater treatment system to ensure that the design flow of the treatment system is not exceeded;

(5) The Permittee shall design and implement response procedures for ethanol, materials that are used for spill and fire control (e.g. aqueous film-forming foam). This must include specific provisions for the treatment of ethanol and/or pollutants in materials that are used for spill and fire control, should release occur;

(6) The Permittee shall implement structural improvements, enhanced/resilient pollution prevention measures, and/or other mitigation measures to minimize[2] discharges that result from impacts of major storm and flood events.[3] The Permittee must document in the SWPPP its evaluation of the major storm and flood risks at the Facility, and all control measures considered to address discharges resulting from these risks. For all control measures considered, the Permittee must document in the SWPPP the factual basis (i.e., the maps, data sets and calculations for the analysis), for either implementing or not implementing the measure. The factual basis and analysis must be presented in sufficient detail to allow EPA, the public, or an independent qualified person to evaluate the reasonableness of the decision. For control measures already in place, including requirements from state, local or federal agencies, a description of the controls and how they meet the requirement(s) of this permit must be documented in the SWPPP. The Permittee must consider, at a minimum, the following control measures to minimize discharges:[4,5]

i. Reinforce materials storage structures to withstand flooding and additional exertion of force;
ii. Prevent floating of semi-stationary structures by elevating above the relative base flood elevation[6] or securing with non-corrosive device;
iii. When a delivery of materials is expected, and a storm is anticipated within 48 hours, delay delivery until after the storm or store materials as appropriate (refer to emergency procedures);
iv. Temporarily store materials and waste above the relative base flood elevation;

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[2] For the purposes of this provision, the term "minimize" means to reduce and/or eliminate to the extent achievable using stormwater control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practice.

[3] "Major storm and flood events" refers to instances resulting from major storms such as hurricanes, extreme/heavy precipitation events, and pluvial, fluvial, and flash flood events such as high-water events, storm surge, and high-tide flooding. "Extreme/heavy precipitation" refers to instances during which the amount of rain or snow experienced in a location substantially exceeds what is normal. What constitutes a period of heavy precipitation varies according to location and season. "Extreme/heavy precipitation" does not necessarily mean the total amount of precipitation at a location has increased—just that precipitation is occurring in more intense or more frequent events.

[4] To determine the risks at the Facility of discharges from major storm and flood events, you must conduct the evaluation using, at a minimum, the worst-case data relating to changes in precipitation, sea level rise, extreme weather events, coastal flooding, and inland flooding, and relevant to the facility's discharges from: 1) the data generated by the 13 federal agencies that conduct or use research on global change that contributed to the latest National Climate Assessment produced by the U.S. Global Change Research Program (USGCRP); 2) climate data generated by the Commonwealth of Massachusetts; and 3) resiliency planning completed by the municipality in which a given facility is located (i.e., City of Boston, Revere, and Chelsea) and incorporate the results of the evaluation in a manner that demonstrates that the control measures taken are precautionary and sufficiently protective. Evaluation must be completed by a qualified person on a rolling annual basis considering: 1) historical observations from all years the Permittee has operated the facility prior to this permit's term; 2) all observations of events that occurred in the calendar year; and 3) the 25 to 100 years forward-looking from the review year to assess impacts that are likely to occur.

[5] EPA Region 1 currently maintains a resource of additional data sources for evaluation and incorporation pursuant to this BMP at https://www.epa.gov/npdes-permits/dewatering-and-remediation-general-permit-drgp.

[6] Relative base flood elevation is the computed elevation to which floodwater is anticipated to rise during the reference flood. BFEs shown on the Federal Emergency Management Agency's Flood Maps, for example, are the elevation of surface water resulting from a flood that has a 1% chance of equaling or exceeding that level in any given year. This is the regulatory standard also referred to as the "100-year flood." The base flood is the national standard used by the National Flood Insurance Program (NFIP), accessed at https://msc.fema.gov/portal/search.

v. Temporarily reduce or eliminate outdoor storage;
vi. Temporarily relocate any mobile vehicles and equipment to upland areas;
vii. Develop scenario-based emergency procedures for major storms that are complementary to regular stormwater pollution prevention planning and identify emergency contacts for staff and contractors; and
viii. Conduct staff training for implementing your emergency procedures at regular intervals.

(7) The Permittee shall document quality assurance/quality control (QA/QC) practices including, at a minimum:
i. A summary of the monitoring requirements specified in the permit;
ii. A map and/or treatment system diagram indicating the location of each sampling location with a geographic identifier (i.e., latitude and longitude coordinates);
iii. Specifications for the number of samples, type of samples, type and number of containers, type of preservation, type and number of quality assurance samples, if applicable, type and number of field samples, if applicable, and sample storage, holding times, and shipping methods, including chain-of-custody procedures;
iv. Specifications for EPA-approved test methods and sufficiently sensitive minimum levels for each required parameter;
v. A schedule for review of sample results; and
vi. A description of data validation and data reporting processes.

(8) The Permittee shall implement a stormwater system BMP that ensures the integrity of stormwater system components through elimination of the infiltration of contaminated groundwater to the stormwater conveyance system where such infiltration contributes pollutants but are not otherwise explicitly authorized (i.e., internal Outfall 002, above, or by another NPDES permit). Within one year of the effective date of the permit, the Permittee must complete:
i. One-time cross-connection evaluation, to ensure that the stormwater conveyance system does not contribute pollutants to or convey pollutants from a municipal separate storm sewer system (MS4) to the receiving water;
ii. A schedule for routine visual or video inspection of the readily accessible portions of the stormwater system installed below grade;
iii. Measurement of the flow rate, and flow direction of known areas of groundwater contamination;
iv. Sampling of total cyanide at groundwater monitoring points representative of groundwater conditions at the Facility, including known areas of contamination, collected during dry weather absent of tidal influence;
v. Sampling of total cyanide at accumulation points within the stormwater system that are likely susceptible to groundwater infiltration, including points located in known areas of contamination, collected during dry weather absent of tidal influence in addition to routine cyanide monitoring at Outfall 001 as required in Part I.A; and
vi. A procedure for implementation and confirmation of corrective actions in accordance with Part I.C.1.b.(1), above, to eliminate infiltration of groundwater to the stormwater conveyance system where such infiltration is identified through cyanide sampling as required in Part I.A and/or described above. If cyanide is detected above the minimum level in any of the monthly samples taken within a

calendar year, the Permittee shall repeat the sampling requirements identified in (ii) through (v) during the following calendar year. Confirmation of monitoring the stormwater system integrity shall be documented in the first annual SWPPP certification and, when required based on cyanide detection, in the SWPPP certification for any subsequent years.

2. Stormwater Pollution Prevention Plan

The Permittee shall develop and implement a Stormwater Pollution Prevention Plan (SWPPP) that documents the selection, design and installation of control measures, including BMPs designed to meet the effluent limitations required in this permit to minimize the discharge of pollutants from the Facility's operations to the receiving water. The SWPPP shall be a written document and consistent with the terms of this Permit.

a. The SWPPP shall be developed and signed consistent with the signatory requirements in Part II.D.2 of this Permit within 90 days after the effective date of this Permit.

b. The SWPPP shall be consistent with the general provisions for SWPPPs included in Part 6 of EPA's 2021 MSGP. The SWPPP shall be prepared in accordance with good engineering practices and manufacturer's specifications and must take future conditions into consideration. The SWPPP must identify potential sources of pollution that may reasonably be expected to affect the quality of the stormwater discharges, and document the implementation of non-numeric technology based effluent limitations in Part I.C.1 that will be used to reduce the pollutants and assure compliance with this Permit, including any remedies taken when non-compliance occurs. Specifically, the SWPPP shall contain the elements listed in Parts 6.2.1 through 6.2.5 of the 2021 MSGP and briefly described below:

(1) Stormwater pollution prevention team;
(2) Site description;
(3) Drainage area site map;
(4) Summary of potential pollutant sources;
(5) Description of all stormwater control measures;[7] and
(6) Schedules and procedures pertaining to implementation of stormwater control measures, inspections and assessments, and monitoring.

c. The Permittee shall amend and update the SWPPP within fourteen (14) days of any changes at the Facility affecting the SWPPP. Changes that may affect the SWPPP include, but are not limited to: 1) a change in design, construction, operation, or maintenance, which has a significant effect on the potential for the discharge of pollutants to the waters of the United States; 2) a release of a reportable quantity of pollutants as described in 40 CFR § 302; 3) a determination by the Permittee or EPA that the SWPPP appears to be ineffective in achieving the general objective of controlling pollutants in

[7] For any control measure implemented or considered but not implemented, the Permittee must document in the SWPPP its evaluation of the risks at the Facility and the factual basis for either implementing or not implementing the measure.

stormwater discharges associated with industrial activity; and 4) any revisions or improvements made to the Facility's stormwater management program based on new information and experiences with wet weather events, including major storm events and extreme flooding conditions. Any amended or updated versions of the SWPPP shall be re-certified by the Permittee. Such re-certifications also shall be signed in accordance with the requirements identified in Part II.D.2 of this Permit.

d. The Permittee shall certify at least annually that the previous year's inspections, corrective actions, control measures, and training activities were conducted, results were recorded, and records were maintained, as described in the SWPPP. Certifications must be submitted by January 15th of the following calendar year. If the Facility is not in compliance with any limitations and/or BMPs described in the SWPPP, the annual certification shall state the non-compliance and the remedies which are being undertaken. Such annual certifications also shall be signed in accordance with the requirements identified in Part II.D.2 of this Permit. The Permittee shall submit a copy of the current SWPPP and all SWPPP certifications (i.e., the initial certification, recertifications, and annual certifications) signed during the effective period of this Permit at the Facility and shall make them available for inspection to EPA for posting on EPA Region 1's Chelsea River Terminals public website. All documentation of SWPPP activities shall be kept at the Facility for at least five years and provided to EPA upon request.

3. Hydrostatic Test Water

Hydrostatic test water shall be monitored as described below and treated through the stormwater treatment system prior to being discharged through Outfall 001 to Chelsea River and is subject to the Effluent Limitations in Part I.A.1., above.

a. The flow of hydrostatic test water into the stormwater treatment system shall be controlled to prevent it from exceeding the maximum design flow rate of the system (i.e., 700 gpm at OWS to Outfall 001).

b. The Permittee shall take a minimum of five representative samples of the hydrostatic test water:

(1) For tanks, one in-process sample of the tank water following maintenance or testing, but before draining. The operator shall analyze and review the results of the in-process sample prior to initiating discharge. If the analysis indicates that the tank water does not meet the effluent limitations in this permit, the operator shall not discharge the tank water to the river unless treatment will reduce the pollutant levels below the effluent levels established in this permit;
(2) For pipelines, one in-process sample of the pipeline water following depressurization, but before draining. The operator shall analyze and review the results of the in-process sample prior to initiating discharge. If the analysis indicates that the pipeline water does not meet the effluent limitations in this permit, the operator shall not discharge the pipeline water unless treatment will reduce the pollutant levels below the effluent levels established in this permit; and

(3) Three grab samples of the effluent (at the discharge point for the treatment system), one sample during the first 10% of discharge, one sample at the approximate midpoint of discharge, and one sample during the last 10% of discharge after treatment. One grab sample of the effluent during the first 10% of discharge is sufficient for discharges from tanks with volumes no greater than 50,000 gallons. If at any time analysis indicates that the hydrostatic test water does not meet the effluent limitations in this permit, corrective action must be taken in accordance with Part I.C.1.b(1), above.

c. The in-process and effluent samples of hydrostatic test water shall be analyzed for the following parameters:

(1) Total Flow;
(2) Flow Rate;
(3) Total Suspended Solids (TSS);
(4) Oil & Grease (O&G);
(5) pH;
(6) Chemical Oxygen Demand (COD);
(7) Dissolved Oxygen (DO);
(8) Total Surfactants;
(9) VOCs (benzene, toluene, ethylbenzene, and total xylenes);
(10) PAHs (Group I and II PAHs listed in Part I.A.1., benzo(a)anthracene through pyrene);
(11) Metals (total recoverable iron, and total recoverable metals listed in Part I.A.1., Whole Effluent Toxicity, cadmium through zinc);
(12) Ethanol, if tank or line has been used to store and/or convey ethanol and/or petroleum products containing ethanol within the previous year; and
(13) Total Residual Chlorine, if potable water or a similar source of water which is likely to contain residual chlorine concentrations is used for hydrostatic testing.

d. The Permittee shall submit a letter/report to EPA and the MassDEP, summarizing the results of the hydrostatic test **within 90 days of completion of the test**. This report shall contain:

(1) The date(s) during which the hydrostatic testing occurred;
(2) The volume of hydrostatic test water discharged;
(3) A copy of the laboratory data sheets for each analysis, providing the test method, the detection limits for each analyte, and a brief discussion of whether all appropriate QA/QC procedures were met and were within acceptable limits; and
(4) A brief discussion of the overall test results and how they relate to the Effluent Limitations in this permit.

e. EPA reserves the right to re-open this permit, in accordance with 40 CFR § 122.62(a)(2), to examine hydrostatic test water discharges in the event that sampling results indicate that the water quality standards for the assigned classification of the Chelsea River might not be attained.

4. Discharges of Chemicals and Additives

The discharge of any chemical or additive, including chemical substitution, which was not reported in the application submitted to EPA or provided through a subsequent written notification submitted to EPA is prohibited. Upon the effective date of this permit, chemicals and/or additives which have been disclosed to EPA may be discharged up to the frequency and level disclosed, provided that such discharge does not violate §§ 307 or 311 of the CWA or applicable State water quality standards. Discharges of a new chemical or additive are authorized under this permit 30 days following written notification to EPA unless otherwise notified by EPA. To request authorization to discharge a new chemical or additive, the Permittee must submit a written notification to EPA in accordance with Part I.D.3 of this permit. The written notification must include the following information, at a minimum:

a. The following information for each chemical and/or additive that will be discharged:

(1) Product name, chemical formula, general description, and manufacturer of the chemical/additive;
(2) Purpose or use of the chemical/additive;
(3) Safety Data Sheet (SDS), Chemical Abstracts Service (CAS) Registry number, and EPA registration number, if applicable, for each chemical/additive;
(4) The frequency (e.g., daily), magnitude (i.e., maximum application concentration), duration (e.g., hours), and method of application for the chemical/additive;
(5) The maximum discharge concentration; and
(6) The vendor's reported aquatic toxicity, if available (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)).

b. Written rationale which demonstrates that the discharge of such chemicals and/or additives as proposed will not: 1) add any pollutants in concentrations which exceed any permit effluent limitation; and 2) add any pollutants that would justify the application of permit conditions different from, or in addition to those currently in this permit.

c. Discharges of glutaraldehyde, ethylene glycol, butoxyethanol, alkylacrelate nitrito styrene polymer, coco alkylamine, 1,2,3 and 4-trimethylbenzene, 1,3,5-trimethylbenzene and methyl isobutyl ketone are prohibited.

5. Bioassessment

The Permittee shall design and implement a bioassessment to characterize the extent to which, if any, pollutants discharged from the Facility to the receiving water affect the benthic morphology, substrate, and/or biota. Unless otherwise specified below, data collection activities shall be conducted: 1) quarterly for one year starting 90 days following the effective date of the permit; and 2) quarterly for one year in the fifth year of the permit. Within 60 days of the effective date of the permit, the Permittee shall submit a plan for conducting the bioassessment to EPA and MassDEP. EPA and MassDEP will provide any comments on the plan within 30 days of receipt of the plan and comments will be reasonably considered by the Permittee for inclusion into the

plan. The bioassessment must comply with applicable local, state and federal regulations, and shall consist of the following elements, at a minimum:

a. Water Column Characterization

(1) One water quality monitoring station shall be established within the vicinity of Outfall 001. The station must be positioned to collect water quality data representative of incoming and outgoing tides.
(2) For each monitoring period, relative water quality data must be collected at the water quality monitoring station during the months of January, April, July and October at approximately:
   i. one foot below the surface;
   ii. mid-depth; and
   iii. one foot above the bottom.
(3) At each collection depth, the following data shall be collected:
   i. depth from the surface (feet);
   ii. water temperature (degrees Fahrenheit);
   iii. pH (Standard Units);
   iv. dissolved oxygen (milligrams per liter);
   v. salinity (parts per thousand);
   vi. turbidity (nephelometric turbidity units);
   vii. nutrients; and
   viii. current velocity (feet per second).
(4) During each quarterly data collection period, all water quality data at all station depths shall be collected over a 48-hour period during the apex of the spring tide and the neap tide.
   i. Continuous recording data sondes shall be used to collect water quality data for all parameters (except where noted otherwise in Part I.C.6) at all depths. The recording frequency shall be at least one reading for all parameters, every 15 minutes over the course of the 48-hour sampling period.
   ii. Current velocity data may be collected manually at the water monitoring station, at the three depths, every three hours (when deemed safe to do so), over the course of the 48-hour sampling period.
(5) The following supporting environmental data, recorded concurrent with continuous water quality data collection, shall be obtained from a near-by official weather station and a near-by official tide gauge:
   i. local air temperature (degrees Fahrenheit), collected at least once per hour, over the 48-hour sampling period;
   ii. local total precipitation (inches) for each 24-hour period, beginning 48 hours before water quality data is collected through the end of the 48-hour sampling period (four days in total);
   iii. the river level in relation to mean low water level when data is collected over the 48-hour sampling period; and
   iv. the tidal stage (flood current, ebb current) when data is collected over the 48-hour sampling period.

b. Substrate Characterization

(1) For each year that data collection is required, substrate characterization shall be conducted once. The Permittee shall collect samples of the substrate as follows:
   i. Along a transect upstream of the outfall from the bank to the approximate edge of the navigation channel and a transect downstream of the outfall from the bank to the approximate edge of the navigation channel. Transects shall be positioned perpendicular to river current.
   ii. At each location, three substrate samples must be collected at evenly spaced intervals between the bank and the edge of the main navigational channel.
   iii. The location, depth, and analysis of each substrate sample shall be recorded. The depth information must be calibrated to the mean low water level.
   iv. The analysis of each substrate sample must include, at a minimum, grain size composition (percent of silt, sand and clay); total organic carbon (TOC); and benthic infauna.
   v. Secchi disk readings shall be recorded at each location.

c. Benthic Pollutant Analysis

(1) Concurrent with substrate data collection and in the same locations, the Permittee shall collect additional substrate samples to determine contamination present within the benthic habitat. The parameters required for analysis shall include:
   i. Table I.A.1 pollutants;
   ii. Total volatile solids, acid volatile sulfides, sediment oxidation reduction potential; and
   iii. Sediment toxicity test (i.e., 10-day static test).
(2) Analysis shall be performed using the test method for each constituent in accordance with EPA-600-R-97-072.[8]

d. Qualitative Biological Monitoring

(1) The permittee shall conduct a qualitative biological assessment to determine the organisms present in the vicinity of the water quality monitoring station.
(2) The collection effort shall take place, at a minimum, in April, July and October, as specified above, and on a sequential basis during year four
(3) The biological survey shall be designed to collect:
   i. fish (early life stages, juvenile, and adult);
   ii. benthic macroinvertebrates;
   iii. aquatic macrophytes;
   iv. phytoplankton;
   v. zooplankton;
   vi. epibenthos; and
   vii. paleoenvironmental remains (e.g., diatoms, dinoflagellates, and foraminifera)

[8] Methods for the Determination of Chemical Substances in Marine and Estuarine Environmental Matrices - 2nd Edition: EPA-600-R-97-072. Office of Research and Development, U.S. EPA, Washington, D.C. 1997, as specified in 314 CMR 4.03(6)(f).

(4) The organisms shall be identified to species. For larger bodied organisms that are collected, an evaluation of overall condition shall be recorded (e.g., spawning condition, lesions, or deformities).

e. Summary Report

(1) The Permittee shall prepare and submit a report to EPA and MassDEP within 60 days of the first permit year's (four quarters) data collection and the fifth permit year's (four quarters) data collection in accordance with Part I.D.3 of this Permit.
(2) The summary report shall consist of the following, at a minimum:
   i. A description of the sampling locations, including a figure depicting the geographic locations, a figure depicting the vertical distribution relative to mean low tide, and a copy of the laboratory data sheets for each analysis.
   ii. A brief discussion of the overall bioassessment results and how they relate to the effluent limitations in this permit.
   iii. A description of the results of water column characterization, and a table summarizing the sample results.
   iv. A description of the substrate characterization results, and a table summarizing the sample results.
   vi. A description of the benthic pollutant analysis, and a table summarizing the sample results.
   vii. A description of the biological assessment results, and a table summarizing the the total number of each species of organisms found for each monitoring period, the date they were collected, the depth (if available), and location where they were collected.
   viii. A brief discussion of whether any of the requirements of the QA/QC BMP were not met. If any QA/QC requirements impact the usability of data, the Permittee must repeat collection of the unacceptable data.

D. 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 DMRs to EPA and the State no later than the 15th day of the month electronically using NetDMR. 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.D.5. 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 particular report due date specified in this permit.

3. 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 WD:

(1) Transfer of Permit notice;
(2) Request for changes in sampling location;
(3) BMP/SWPPP reports and certifications;
(4) Request to discharge new chemicals or additives;
(5) Request for change in WET testing requirements;
(6) Bioassessment reports; and
(7) Report on unacceptable dilution water/request for alternative dilution water.

b. These reports, information, and requests shall be submitted to EPA WD electronically at R1NPDESReporting@epa.gov or by hard copy mail to the following address:

U.S. Environmental Protection Agency
Water Division
NPDES Applications Coordinator
5 Post Office Square - Suite 100 (06-03)
Boston, MA 02109-3912

4. Submittal of Reports in Hard Copy Form

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

(1) Written notifications required under Part II, Standard Conditions. Beginning December 21, 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 Region 1's Enforcement and Compliance Assurance Division 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

5. 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

6. 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's Enforcement and Compliance Assurance Division at:

617-918-1510

c. Verbal reports and verbal notifications shall be made to MassDEP's Emergency Response at:

888-304-1133

E. REOPENER CLAUSE

1.This permit may be modified or revoked and reissued in accordance with 40 C.F.R. §122.62. The reason for modification or revocation may include, but is not limited to:

a. Material and substantial alterations or additions to the Terminal or activity have occurred.

b. New information is received which was not available at the time of permit issuance and that would have justified the application of different permit conditions at the time of issuance.

c. An applicable effluent standard or limitation is issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, which:
(1) Contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or
(2) Controls any pollutant not limited by this permit.

2.If the permit is modified or reissued, it shall be revised to reflect all currently applicable requirements of the CWA.

F. STATE PERMIT CONDITIONS

EPA has received the state water quality certification issued by the State under § 401(a) of the CWA and 40 CFR § 124.53. EPA incorporates by reference the following state water quality certification requirements into this 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, within 6 months of the effective date of the 2021 Federal NPDES permit, the permittee shall submit to MassDEP an evaluation of whether the facility uses any products containing any per- and polyfluoroalkyl substances (PFAS) and whether use of those products can be reduced or eliminated. The analysis shall be submitted electronically to massdep.npdes@mass.gov.

2. 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, within 6 months after the permittee has been notified by EPA of a multi-lab validated method for wastewater, or two years from the effective date of the 2021 Federal NPDES permit, whichever is earlier, the permittee shall conduct monitoring of the effluent for PFAS compounds as detailed in the table below. If the permittee has not been notified by EPA of a multi-lab validated method for wastewater by two years from the effective date of the 2021 Federal NPDES permit, the permittee shall conduct monitoring of the effluent for PFAS compounds as detailed in the table below using a method specified by MassDEP. If EPA's multi-lab validated method is not available by 20 months after the effective date of the 2021 Federal NPDES permit, the permittee shall contact MassDEP (massdep.npdes@mass.gov) for guidance on an appropriate analytical method.

Effluent (Outfall 001)

Parameter	Units	Measurement Frequency	Sample Type
Perfluorohexanesulfonic acid (PFHxS)	ng/L	Quarterly[9]	Grab
Perfluoroheptanoic acid (PFHpA)	ng/L	Quarterly	Grab
Perfluorononanoic acid (PFNA)	ng/L	Quarterly	Grab
Perfluorooctanesulfonic acid (PFOS)	ng/L	Quarterly	Grab
Perfluorooctanoic acid (PFOA)	ng/L	Quarterly	Grab
Perfluorodecanoic acid (PFDA)	ng/L	Quarterly	Grab

[9] 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. 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, after completing one year of monitoring, if 4 consecutive samples are reported as non-detect for all 6 PFAS compounds, then the permittee may submit a request to MassDEP to discontinue PFAS monitoring. Any such request shall be made in writing and sent to massdep.npdes@mass.gov. The permittee shall continue such monitoring pending written approval from MassDEP to discontinue it.

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: MA0003280

PUBLIC NOTICE START AND END DATES: 2/10/2021 – 4/11/2021

NAME AND MAILING ADDRESS OF APPLICANT:

Chelsea Sandwich LLC
11 Broadway
Chelsea, MA 02150

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Chelsea Sandwich Terminal
11 Broadway
Chelsea, MA 02150

RECEIVING WATER AND CLASSIFICATION:

Chelsea River (MA71-06)
Mystic River Watershed
Class SB (CSO)

SIC CODES: 5171 (Petroleum Bulk Stations & Terminals)
4491 (Marine Cargo Handling)

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1.0 Proposed Action

Chelsea Sandwich LLC (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 Chelsea Sandwich Terminal (the Facility) into the Chelsea River.

The permit currently in effect was issued on September 24, 2014, with an effective date of December 1, 2014, and expired on November 30, 2019, (the 2014 Permit). The 2014 Permit superseded the permit issued on June 30, 2005 (the 2005 Permit). The Permittee filed an application for permit reissuance with EPA dated May 29, 2019, as required by 40 Code of Federal Regulations (CFR) § 122.6. Since the permit application was deemed timely and complete by EPA on November 19, 2019, the Facility's 2014 Permit has been administratively continued pursuant to 40 CFR § 122.6 and § 122.21(d). EPA and the State conducted a site visit on December 5, 2019.

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(b); 40 CFR §§ 122, 125, and 131. Section 402(p) of the CWA, 33 U.S.C. § 1342(p) requires stormwater discharges associated with industrial activity to be authorized by a NPDES permit. *See also* 40 CFR § 122.26(a)(1)(ii).

2.1 Technology-Based Requirements

Technology-based treatment requirements represent the minimum level of control that must be imposed under CWA §§ 301(b) and 402 to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. *See* 40 CFR § 125 Subpart A.

Subpart A of 40 CFR Part 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under § 301(b) of the CWA, including the application of EPA promulgated Effluent Limitation Guidelines (ELGs) and case-by-case determinations of effluent limitations under CWA § 402(a)(1). EPA promulgates New Source Performance Standards (NSPS) under CWA § 306 and 40 CFR § 401.12. *See also* 40 CFR §§ 122.2 (definition of "new source") and 122.29.

In general, ELGs for non-POTW facilities must be complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989. *See* 40 CFR § 125.3(a)(2). Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA cannot be authorized by a NPDES permit. In the absence of published technology-based effluent guidelines, the permit writer is authorized under CWA § 402(a)(1)(B) to establish effluent limitations on a case-by-case basis using best professional judgment (BPJ).

2.2 Water Quality-Based Requirements

The CWA and federal regulations require that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when 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), 125.84(e) and 125.94(i).

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) beneficial designated use or uses 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 Title 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 monthly average 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 regulations, entitled "Antidegradation Provisions," are found in the State's WQSs at 314 CMR 4.04. The Massachusetts policy for the implementation of these regulations is in an associated document entitled "Implementation Procedures for the Antidegradation Provisions of the Massachusetts Surface Water Quality Standards, 314 CMR 4.00" dated October 21, 2009. According to the policy, no lowering of water quality is allowed, except in accordance with the antidegradation regulations. All existing in-stream designated uses of a receiving waterbody and the water quality necessary to protect the designated uses must be maintained and protected.

This permit is being reissued with effluent limitations sufficiently stringent to satisfy the State's antidegradation regulations, including the protection of the designated 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 CWA § 305(b) and § 303(d). 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 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 CWA § 303. *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).

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

Generally, EPA uses effluent flow both to determine whether an NPDES permit needs certain effluent limitations and to calculate the effluent 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 CWA § 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 might not be sufficiently protective (i.e., might not meet WQSs). Further, pollutants that do not have the reasonable potential to exceed WQSs at a 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" 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.

[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 Aqueduct Water Supply Sys., 11 E.A.D. 565, 584 (EAB 2004).*

The limitation on effluent flow is within EPA's authority to condition a permit to carry out the objectives and satisfy the requirements of the CWA. *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 validity of EPA's WQBELs and reasonable potential calculations that account for "worst case" conditions is encompassed by the references to "condition" and "limitations" in CWA §§402 and 301 and the implementing regulations, as WQBELs are designed to assure compliance with applicable water quality regulations, including antidegradation requirements. Regulating the quantity of pollutants in the discharge through a restriction on the quantity of effluent is also consistent with 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. Improper operation and maintenance may result in non-compliance with permit effluent limitations. Consequently, the effluent flow 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:

- 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
- 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
- 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 State 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 State 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.

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[2] Fed. Reg. 49,001 (Aug. 19, 2014).
[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), 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. 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

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 less stringent limitations or conditions than those contained in a 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 2014 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 Facility, a bulk oil terminal involved in the receipt, storage, and distribution of petroleum products, is located on about 10-acres between the Chelsea River and Broadway and Front Street in the Admirals Hill neighborhood in Chelsea, Massachusetts. The Facility is located along the northern bank of the Chelsea River at the confluence with the Mystic River. The Facility consists of a marine vessel dock, a tank farm consisting of aboveground petroleum storage tanks, and a terminal yard, including a truck loading rack, various buildings, and paved areas. A location map is provided in Figure 1.

The Facility receives bulk quantities of petroleum products via ship or barge at the marine vessel dock, except a limited inventory transported by tanker truck. The bulk unloading facilities are located on the Mystic River, on the southwest side of the Facility site. Product is then transferred to aboveground storage tanks (ASTs) located within the tank farm. The ASTs are situated within secondary containment areas. There are no underground storage tanks (USTs) at the Facility. The Facility can store a gross capacity of approximately 670,000 barrels (or 28,000,000 gallons) of product. The Facility handles petroleum fuels including diesel, No. 2 and No. 6 fuel oils, fuel additives, and biofuels. The Facility has the capability of physically blending some of these products together to market products (e.g., No. 4 fuel oil, bio-diesel and bio-heating oil). The Facility also stores small quantities of kerosene. A site plan is provided in Figure 2.

The marine vessel dock is located along a rip-rap embankment at the confluence of the Mystic and Chelsea Rivers. The dock is equipped with a manifold area for receipt and distribution of product. The bulk of the product received at the Facility is off-loaded at the dock from ship or barge. Petroleum products are transferred to the ASTs via above ground dock lines. Stored fuel

oil products are distributed either via the truck loading racks, the marine dock, or via fueling stations located at the marine vessel dock.

The truck loading rack is located along Broadway at the street entrance to the Facility. It consists of a total of 17 loading locations, with 15 top loading and two bottom loading positions. The Facility operates seven pump off stations to off load product from tanker trucks. Two are actively used and are constructed with secondary containment.

The tank farm, which encompasses approximately two acres, is located along the western edge of the Facility property adjacent to the Mystic River. The tank farm contains nine bulk ASTs, two 20,000-gallon horizontal steel ASTs, three smaller 500-gallon fuel additive tanks, and a groundwater remediation system trailer. The tank farm is surrounded by a concrete secondary containment wall. The tank farm has a capacity to hold the contents of the largest bulk storage tank and sufficient freeboard for precipitation (an additional 10 percent of the volume of the largest tank or the volume of a 24 hour, 25-year storm event).

On December 17, 2019, a bio-diesel tank located in the tank farm containing approximately 1,500 gallons of cooking oil overheated and caught fire (Tank 110; approx. 30,000-gallon capacity). The fire was extinguished primarily using a water fog along with a small amount of aqueous film-forming fire-fighting foam. According to the Permittee, the volumes of water and foam used were minimal. Once the fire was extinguished, the bio-diesel product and impacted water were contained and recovered. Gravel and soil within the impacted area were subsequently excavated. Tank 110 has been removed from the site. Two new, replacement bio-fuel tanks were installed at the site. They were installed to replace Tank 110, which was taken out of service in December 2019 and subsequently removed from the site along with Tank 111, which was also empty at that time. These tanks are double walled steel tanks each with a 20,000-gallon capacity and also numbered 110 and 111.[5]

The terminal yard, which encompasses approximately 3.5 acres, consists of a smaller tank farm with five ASTs, each having their own secondary containment, and 14 ASTs ranging in size from several hundred gallons to several thousand gallons, two of which are not in use. The secondary containment for this tank farm area is provided through interconnected steel containment dikes which surround each tank. The steel walled containment dikes are designed to hold the contents of the largest bulk AST and sufficient freeboard for precipitation (10 percent of the volume of the largest tank or the volume of a 24 hour, 25-year storm event). The smaller tanks are primarily used to store fuel additives, heating oil, kerosene, and diesel fuel for the Facility's own use.

The areas of the terminal yard outside of secondary containment include paved access ways, a parking lot, an administration building, a garage and truck wash bay, a boiler house, a foam house, a blending house (product blending units and a regenerative thermal oxidizer), a truck loading rack, seven truck pump-off stations, and the treatment system for Outfall 001, consisting of an oil/water separator (OWS). A second two-story office building, a truck maintenance garage and a large parking lot are located in the northeast corner of the terminal yard.

[5] Email correspondence from Tom Keefe, Global Companies, LLC, to John Nagle, EPA, dated January 29, 2020.

3.1.1 Effluent Limitation Guidelines

EPA has not promulgated technology-based ELGs for petroleum bulk stations and terminals (SIC 5171) in 40 CFR Subchapter N Parts 405 through 471 for the discharge of pollutants from petroleum bulk stations and terminals. Therefore, in accordance with CWA § 402(a)(1)(B) and 40 CFR § 125.3(c)(2), EPA may establish effluent limitations on a case-by-case basis using BPJ. The NPDES regulations in 40 CFR § 125.3(c)(2) state that permits developed on a case-by-case basis under CWA § 402 (a)(1) shall apply the appropriate factors listed in 40 CFR § 125.3(d) and must consider 1) the appropriate technology for the category class of point sources of which the applicant is a member, based on available information, and 2) any unique factors relating to the applicant.

To the extent applicable to the Facility, EPA considered the following information from other ELGs and/or NPDES permits.

- EPA promulgated technology-based ELGs for the Steam Electric Point Source Category in 1974, and amended the regulations in 1977, 1978, 1980, 1982 and 2015. *See* 40 CFR 423. This regulation applies to discharges resulting from the operation of a generating unit by an establishment whose generation of electricity is the predominant source of revenue or principal reason for operation, and whose generation of electricity results primarily from a process utilizing fossil-type fuel (coal, oil, or gas), fuel derived from fossil fuel (e.g., petroleum coke, synthesis gas), or nuclear fuel in conjunction with a thermal cycle employing the steam water system as the thermodynamic medium. EPA considered ELGs for facilities that utilize tank farms for bulk fuel storage.

- EPA's *Technical Support Document for the 2004 Effluent Guidelines Program Plan.*[6] In 2003, EPA evaluated whether a new subcategory, petroleum bulk stations and terminals (SIC 5171), was appropriate under the Petroleum Refining Point Source Category. *See* CWA Section 304(b). EPA deferred the development of effluent guidelines for petroleum bulk stations and terminals as a new subcategory under 40 CFR Part 419. EPA considered pollutant sources and/or control measures described in its case-by-case evaluation of technology-based effluent limitations.

- EPA's *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP)[7] issued January 15, 2021 ("2021 MSGP"), and EPA's *General Permit for Remediation Activity Discharges* (RGP)[8] effective April 8, 2017.

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[6] EPA Office of Science and Technology. *Technical Support Document for the 2004 Effluent Guidelines Program Plan.* EPA-821-R-04-014: August 2004, Section 7.12, p 81-126. EPA-821-R-04-014 is currently available at: https://www.epa.gov/eg/effluent-guidelines-plan-support-documents.

[7] *Multi-Sector General Permit for Stormwater Discharges Associated with Industrial Activity* (MSGP), currently available at: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp#. The 2021 MSGP becomes effective on March 1, 2021.

[8] EPA Region 1. *National Pollutant Discharge Elimination System (NPDES) General Permit for Remediation Activity Discharges* – the Remediation General Permit (RGP), currently available at https://www.epa.gov/npdes-permits/remediation-general-permit-rgp-massachusetts-new-hampshire.

EPA considered industrial sectors and/or activity categories with similar operations, pollutants, and/or treatment technologies in its case-by-case evaluation of technology-based effluent limitations.

3.2 Location and Type of Discharge

Outfall 001 is located at Latitude 42º 23' 7.4898" N Longitude -71º 02' 40.844" W adjacent to the approximately 300-foot marine vessel dock. The discharge consists of 1) stormwater runoff; 2) hydrostatic test water; 3) groundwater remediation effluent from Outfall 002; and 4) boiler blowdown. Outfall 002 is an internal outfall located at Latitude 42º 23' 8.9154" N Longitude -71º 02' 42.681" W. A site plan for the Facility and the locations of Outfall 001 and internal Outfall 002 is provided in Figure 2.

Stormwater

Stormwater is collected at the Terminal in the following areas: 1) marine vessel dock; 2) terminal yard; and 3) terminal field. Stormwater runoff from each of these areas is visually inspected, drained separately and treated through the OWS prior to discharging to the Chelsea River via Outfall 001. Stormwater collected inside the secondary containment areas is visually inspected for product or an oil sheen before it is released from the containment to the stormwater catch basins located in the terminal yard. If product or oil sheen is visually detected, the stormwater is not released to the stormwater conveyance system and is instead either treated on site or disposed of offsite.

The marine vessel dock is equipped with a drip pan that collects any fuel leaked from overhead fuel transfer hose(s). Contents of the drip pan are disposed of in accordance with applicable regulations. The floor of the vessel dock is shaped like a shallow cone. Stormwater that accumulates along the floor of the marine vessel dock is transferred manually via an insulated pipeline into the terminal yard and directed to the stormwater collection system. The Draft Permit prohibits discharges of stormwater from the dock directly to the Chelsea River.

The tank farm area of the terminal yard is located within secondary containment, constructed of steel or concrete walls supported by concrete foundations. Stormwater collection sumps are located within the secondary contaminant of three of the five ASTs in the tank farm. Accumulated stormwater within these containment areas is either transferred to a concrete dike containment area or discharged directly into adjacent stormwater catch basins. Stormwater accumulated within the earthen floor containment dikes for the two additional tanks either evaporates and/or infiltrates into the ground and/or is drained through removable flow control plugs into the stormwater conveyance system via nearby catch basins. Four additional tanks in the terminal yard are constructed with individual concrete containment structures. Each is equipped with a floor drain plug or control valve that are manually operated to gravity drain stormwater to the OWS.

Stormwater collected on the parking lot and paved areas of the terminal yard (approximately four acres) collects in nearby catch basins. Stormwater, if necessary, can be stored in this area by

closing an independent gate value leading to the OWS. Two of the seven truck pump-off stations in the terminal yard are equipped with a concrete containment structure designed to collect minor leaks that may occur during fuel transfer. Stormwater collected in the concrete containment structure of one of these stations is confined inside the secondary containment and has no drainage provisions. The second station has secondary containment with a drain plug that discharges stormwater to the underground stormwater conveyance system. The remaining stations are associated with individual tanks and are rarely used. Stormwater runoff from the paved truck loading rack area (approximately ½ acre) flows to a perimeter drain that encompasses approximately two-thirds of the loading area. A canopy roof covering the truck loading rack directs precipitation away from loading equipment towards and into the perimeter drains. Stormwater runoff that is not captured by the perimeter drain travels toward lower elevation catch basins located in the vicinity of the loading area. The stormwater runoff collected by the perimeter drain enters the underground stormwater conveyance system via a manway located near the entrance of the foam house. This man way also acts as an isolation point for the perimeter drains. The stormwater collection system carries the runoff by gravity to the OWS prior to discharging into the Chelsea River via Outfall 001.

The terminal field located on the west side of the Terminal property encompasses approximately 2 acres. Stormwater runoff within the terminal field is directed overland towards a shallow lift station located between Tanks 104 and 105. The lift station has a gate valve and a float control activated pump which are manually operated. The control switch for the pump is maintained in the off position at all times, except when operating the pump to discharge accumulated stormwater. Stormwater from the lift station is pumped over the secondary containment wall into the underground stormwater collection system via a catch basin located outside the terminal field. Stormwater entering the underground collection system from the terminal field then flows by gravity to the OWS and discharges into the Chelsea River via Outfall 001.

The OWS is an open underground steel wall structure having two chambers. The first chamber is for stormwater collection and treatment, and the second chamber is a pumping station. To increase efficiency of the OWS, the stormwater collection chamber is equipped with coalescing packs. Coalescing packs enhance the floating product and oil sheen removal efficiency, while additionally increasing the settlement of suspended solids. The pumping station is equipped with two discharge pumps. Pumps are used to lift treated water from the OWS and discharge it via Outfall 001. In 2017, as a precaution to prevent against any future high tidal water entering into the OWS, a three (3)-foot high steel collar wall was installed around the perimeter the OWS. The OWS is emptied, cleaned and inspected for integrity on a minimum annual basis. Discharge from the OWS is metered and recorded monthly.

Hydrostatic Test Water

The aboveground storage tanks are subject to annual external inspections (502 CMR 5.00) and their integrity is certified annually by a licensed tank inspector. Internal inspections of the above ground storage tanks are conducted every 10 years. The testing procedures are detailed in API 653 Standard. In addition, repairs are occasionally made at the Terminal to tanks and piping used for the storage and conveyance of petroleum products and additives. To ensure safe working conditions during this maintenance work, storage tanks and/or pipe networks are rigorously

cleaned (e.g. “Poly Brushed”, “Squeegee Pigged”) and certified as being product-free. After completing certain maintenance work, the tanks and/or piping may be hydrostatically tested for leaks. Hydrostatic testing involves filling the tank or pipe with water under pressure and monitoring pressure drops over time. If the system maintains a constant pressure, there are no leaks. River water or potable water may be used as a source of hydrostatic test water. Thus, hydrostatic test water discharge may contain minimal amounts of foreign matter, trace amounts of hydrocarbons, background material found in the river, or residual chlorine. Hydrostatic test water is released from tanks and/or piping only after testing demonstrates that the water quality is consistent with the effluent limitations and requirements of the permit. Hydrostatic test water is processed through the Facility’s treatment system prior to discharge to the Chelsea River through Outfall 001.

Groundwater Remediation Effluent

The 2005 Permit established internal Outfall 002 for the discharge of groundwater remediation effluent. A groundwater treatment system was installed in November 2003 and is operated to recover fuel oil from a historical spill regulated under the Massachusetts Contingency Plan (MCP) (310 CMR 40.0000). The groundwater system consists of nine recovery wells installed within and adjacent to the terminal field tank farm: three in the terminal yard and six inside the terminal field. Recovery wells located in the terminal yard are inactive. Of the six recovery wells installed inside the terminal field, four are currently in use. The average flow rate generated by the four recovery wells is 7 to 8 gallons per minute (GPM). However, the treatment system has the potential to treat a maximum design flow capacity of 25 GPM.

Groundwater is pumped from the recovery wells to a treatment system consisting of an OWS, a cartridge filter bag, and two 1,000-pound granulated activated carbon (GAC) units in series. Treated groundwater is discharged via Outfall 002 into the lift station sump located in the terminal field. The sump also collects stormwater runoff accumulated inside the terminal field. Treated groundwater and any stormwater in the lift station is pumped to the Terminal’s OWS prior to discharge to the Chelsea River via Outfall 001. At one time, the groundwater treatment system also included use of an air stripper to remove VOCs from groundwater. Monitoring data demonstrated concentrations of VOCs were not detected in the recovered groundwater. Thus, use of air stripper was discontinued. Internal Outfall 002 was established upstream of the stormwater treatment system and Outfall 001 to ensure that monitoring results reflect the characteristics of the remediation waste stream and not the stormwater, hydrostatic test water, and boiler blowdown with which it is being mixed (see 40 CFR §122.45(h)).

Boiler Blowdown

Chelsea Sandwich operates two boilers to generate steam used to heat several buildings located at the Terminal. Steam is also used to heat No.6 fuel oil to lower the viscosity and to heat biofuels to prevent the product from solidifying. Typically, a small volume of water is withdrawn from the boilers on a daily basis as part of the required operation and maintenance. This discharge, or “boiler blowdown” is required to prevent the potential buildup of naturally occurring mineral salts inside the boiler’s heat transfer tubes that can lead to corrosion. In addition, a small volume of steam condensate is generated.

Boiler blowdown and steam condensate discharges are intermittent, of short duration (typically seconds), occur in small volumes (approximately ½ gallon maximum), and at high pressures (up to 1200 pounds per square inch). The discharge consists of water and steam or water that may contain metals or feed water corrosion inhibitors (i.e., water softeners) that are added to the boiler. The terminal discharges approximately one-half gallon per day of boiler blowdown into the stormwater collection system.

A quantitative description of the discharge in terms of effluent parameters, based on monitoring data submitted by the Permittee, including Discharge Monitoring Reports (DMRs), from December 1, 2014 through October 31, 2020, is provided in Appendix A of this Fact Sheet.[9]

4.0 Description of Receiving Water and Dilution

4.1 Receiving Water

The Facility discharges through Outfall 001 to Chelsea River Segment (MA71-06), which flows from the east or west along the northern edge of the Facility site, depending on the tidal stage. This segment is 0.37 square miles between the confluence with Mill Creek, in Chelsea/Revere to the confluence with Boston Inner Harbor, in Chelsea/East Boston/Charlestown. The Facility is located approximately 0.5 miles east of the inlet to Chelsea River at the confluence with the Mystic River and Boston Inner Harbor.

Chelsea River is classified as Class SB (CSO). Class SB waters are described in the Massachusetts Surface WQSs at 314 CMR 4.05(4)(b) 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."* The Chelsea River is one of eleven Designated Port Areas (DPAs) established by the Massachusetts Office of Coastal Zone Management to promote and protect water-dependent industrial uses. The Chelsea River is part of the Mystic River Basin and the Boston Harbor Drainage Area.

Chelsea River is listed in the *Massachusetts Year 2016 Integrated List of Waters* (303(d) List) as a Category 5 "Waters Requiring a TMDL.[10] The pollutants and conditions requiring a TMDL are ammonia (un-ionized), fecal coliform, dissolved oxygen, polychlorinated biphenyls (PCBs) in fish tissue, petroleum hydrocarbons, sediment screening value, odor, and turbidity. This segment is also impaired for debris/floatables/trash, but this is considered a non-pollutant and does not

[9] Additional monitoring data submitted by the Permittee (i.e., DMRs) since November 30, 2019 was reviewed by EPA for consistency with the data for the monitoring period from December 1, 2014 through November 30, 2019, which is the date range used to determine the effluent limitations and conditions proposed in the Draft Permit. EPA finds that the additional monitoring data are consistent and as a result, no changes to the proposed effluent limitations and conditions are warranted. Therefore, these data are not included in Appendix A of this Fact Sheet.
[10] *Massachusetts Year 2016 Integrated List of Waters*. MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts; December 2019. https://www.mass.gov/lists/integrated-lists-of-waters-related-reports#2016-integrated-list-of-waters-

require a TMDL. The status of each designated use for Chelsea River is described in the Mystic River Watershed and Coastal Drainage Area 2004-2008 Water Quality Assessment Report (WQAR)[11] is presented in Table 1.

Table 1: Chelsea River Summary of Designated Uses and Listing Status

Designated Use	Status	Cause of Impairment	Source(s)
Aquatic Life	Not Supporting	Sediment screening value, petroleum hydrocarbons, ammonia (un-ionized), dissolved oxygen	Unspecified urban stormwater, CSOs, industrial point discharge, municipal (urbanized high-density area), cargo loading/unloading, above ground storage tank leaks, accidental release, contaminated sediments
Aesthetics	Not Supporting	Taste and odor, turbidity, debris/floatable/trash, petroleum hydrocarbons	Unspecified urban stormwater, CSOs, industrial point discharge, municipal (urbanized high-density area), cargo loading/unloading, above ground storage tank leaks, accidental release
Primary Contact	Not Supporting	Fecal coliform, turbidity, debris/floatable/trash, taste and odor, petroleum hydrocarbons	Unspecified urban stormwater, CSOs, industrial point discharge, cargo loading/unloading, above ground storage tank leaks, accidental release
Secondary Contact	Not Supporting	Fecal coliform, turbidity, debris/floatable/trash, taste and odor, petroleum hydrocarbons	Unspecified urban stormwater, CSOs, industrial point discharge
Fish Consumption	Not Supporting	PCB in fish tissue, other	Contaminated sediments, unknown
Shellfishing	Not Supporting	Fecal coliform	Unknown

As listed above, Chelsea River is not supporting designated uses for Aquatic Life, Aesthetics, Primary Contact, Secondary Contact and Fish Consumption/Shellfishing. The WQAR identified the sources of these impairments as aboveground storage tank leaks (from tank farms), accidental releases/spills and/or cargo loading/unloading associated with bulk petroleum terminals, and municipal sources (i.e., an urbanized high-density area). In the instance of the Aquatic Life and Aesthetics uses, the WQAR additionally notes contamination of groundwater as a result of petroleum releases. Pollutants related to materials currently and/or historically present at the Facility are explicitly listed as the cause of these impairments, and the sources of these pollutants have been attributed to one or more activities that occur at the Facility. Regarding contaminated sediments as an additional cause of the Aquatic Life impairment, a 2005 United States

[11] *Mystic River Watershed and Coastal Drainage Area 2004-2008 Water Quality Assessment Report.* MassDEP Division of Watershed Management, Worcester, Massachusetts; March 2010, Report Number: 71-AC-2. http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/71wqar09.pdf

Geological Survey study identified chemicals present in sufficiently high concentrations in Chelsea River sediment to pose a threat to benthic organisms.[12] The Fish Consumption and Shellfishing Designated Uses are not supporting as a result of PCBs in fish tissue and fecal coliform, respectively. The WQAR also notes "other contaminants in fish and shellfish". The source of these impairments is listed as contaminated sediments as well as unknown sources.

4.2 Ambient Data

A summary of the ambient data collected in the receiving water in the vicinity of the Facility that are referenced in this Fact Sheet can be found in Appendix B of this Fact Sheet. Ambient data consist of the following:

- Receiving water chemical analysis conducted in accordance with Whole Effluent Toxicity testing requirements included in the 2014 Permit, conducted by the Permittee.
- Pollutant scan receiving water analysis requirements included in the 2014 Permit, conducted by the Permittee.
- Water quality data from the Massachusetts Water Resources Authority's (MWRA) monitoring program for sampling location 027, located near the Facility on Chelsea River.

Results indicate that, overall, the pollutants included in the monitoring required in the 2014 Permit are generally not present in the vicinity of the Facility's outfall. Pollutants detected on at least one occasion from December 1, 2014 through November 30, 2019 in the vicinity of Outfalls 001 were as follows:

- Six of seven Group I PAHs;
- Four of nine Group II PAHs;
- Total residual chlorine;
- Total suspended solids;
- Ammonia; and
- Metals: copper, lead, nickel, and zinc.

4.3 Available Dilution

To ensure that discharges do not cause or contribute to violations of WQSs under all expected conditions, WQBELs are derived assuming critical conditions for the receiving water.[13]

The critical flow in marine and coastal waters is determined on a case-by-case basis. State WQSs specify that, "the Department will establish extreme hydrologic conditions at which aquatic life criteria must be applied on a case-by-case basis. In all cases existing uses shall be protected and the selection shall not interfere with the attainment of designated uses." *See* 314 CMR 4.03(3)(c).

[12] Breault, R.F., Durant, J.L., and Robbat, A, 2005. *Sediment quality of lakes, rivers, and estuaries in the Mystic River Basin, Eastern Massachusetts, 2001–03.* U.S. Geological Survey Scientific Investigations Report: 2005-5191, 110 p.
[13] EPA Permit Writer's Manual, Section 6.2.4

State WQSs further specify that, "human health-based criteria may be applied at conditions the Department determines will result in protection at least equivalent to that provided for rivers and streams." *See* 314 CMR 4.03(3)(d). The State determined that the dilution factor for the Facility is zero (i.e., 1:1). EPA used this dilution factor (DF) in its quantitative derivation of WQBELs for pollutants in the Draft Permit.

5.0 Description of 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 bases of which are discussed throughout this Fact Sheet, may be found in Part I of the Draft Permit.

The State and Federal regulations, data regarding discharge characteristics, and data regarding ambient characteristics described above, were used during the effluent limitation development process. Discharge and ambient data are included in Appendix A and B. EPA's Reasonable Potential Analysis for chemical-specific parameters is included in Appendix C and results are discussed in the sections below.

In accordance with 40 CFR § 122.45(b)(2), EPA determined that the measure of production appropriate for this Facility is the design flow of the treatment system. For the purposes of this permit, design flow is defined as the maximum flow rate through the treatment component with the lowest capacity based on the specifications as reported by the Permittee. The design flow reflects the magnitude, frequency and duration of discharges treated within the specifications of the treatment system in use. EPA based this design flow on the treatment system specifications reported by the Permittee.

5.1 Indicator Parameters

During the development of the 2005, and/or 2014 Permits, EPA identified common groups of pollutants present or likely present at this and similar facilities. Further, EPA determined that it would be both impractical and unnecessary to attempt to evaluate and limit every possible individual pollutant among these common groups of pollutants. As a result, EPA determined that limiting "indicator parameters" in accordance with 40 CFR § 122.44(d)(1)(vi)(C) is reasonable and sufficiently stringent to carry out the provisions of the CWA and ensure compliance with applicable WQSs as required by CWA §401(a)(2) and 40 CFR §122.4(d).

For this Draft Permit, EPA maintains that:

- The Draft Permit identifies indicator parameters and which pollutants are intended to be controlled using the effluent limitations for these indicator parameters;
- This Fact Sheet sets forth the basis for the limitations, and finds that compliance with the effluent limitations on the indicator parameters will result in controls on the pollutants of concern which are sufficient to attain and maintain applicable WQSs;
- The Draft Permit requires effluent and ambient monitoring necessary for EPA to evaluate whether the limitations on the indicator parameters meet applicable WQSs; and

- The Draft Permit contains a reopener clause allowing EPA to modify or revoke and reissue the permit if the limitations on the indicator parameters no longer attain and maintain applicable WQSs.

EPA selected indicator parameters that: 1) are more common (i.e., more frequently detected in effluent from this and similar facilities); 2) are more toxic (e.g., priority pollutants in Appendix A to 40 CFR §423); 3) exhibit limiting physical and/or chemical characteristics with respect to susceptibility to treatment by pollution control technologies; and/or 4) exhibit physical and/or chemical characteristics strongly representative of other pollutants, which ensures that other pollutants with similar characteristics would also be removed by pollution control technologies. Therefore, effluent limitations established to control indicator parameters, also control the pollutants the indicator parameters represent. EPA has grouped most indicator parameters, as shown below and described in the sections that follow. Stand-alone parameters included in the Draft Permit are noted as such (e.g., effluent flow, pH, ammonia).

- Conventional Pollutants
- Volatile Organic Compounds (VOCs)
- Semi-Volatile Organic Compounds (SVOCs)
- Chemicals and Additives
- Metals

The majority of indicator parameters included in the Draft Permit are unchanged from the indicator parameters included in the 2014 Permit. However, EPA has added, revised or removed indicator parameters if necessary and appropriate. The following sections describe the indicator parameters and the basis for the effluent limitations or monitor-only requirements for the selected indicator parameters, including justification for removal, if applicable.

5.2 Proposed Effluent Limitations and Monitoring Requirements for Outfall 001

5.2.1 Effluent Flow

OWSs are the typical minimum treatment technology employed by petroleum bulk storage terminals for treatment of stormwater runoff. These devices use gravity to separate lower-density oils from water, resulting in an oil phase above the oil/water interface and a heavier particulate phase on the bottom of the separator. The sizing of an OWS is based upon the flow rate, density of oil to be separated, desired percent removal of oil, and the operating temperature range. The OWS for Outfall 001 has a design flow capacity of 700 gallons per minute (GPM). Stormwater runoff, hydrostatic test water, groundwater remediation effluent and boiler blowdown discharge to the Chelsea River through Outfall 001 after treatment.

From December 1, 2014, through October 31, 2020, the total monthly flow reported for Outfall 001 ranged from 0.012 to 1.2915 million gallons (Mgal) and the total monthly flow reported for Outfall 002 ranged from 0.017 to 0.129 Mgal. The daily maximum flow rate reported for this period was 175 GPM (0.25 MGD) for Outfall 001 for each month in which flow was recorded. The daily maximum flow rate reported for this period was 25 GPM (0.04 MGD) for Outfall 002 each month.

The Draft Permit maintains the daily maximum flow rate limit of 700 GPM for Outfall 001 and 25 GPM for Outfall 002 as well as weekly monitoring for flow using a totalizer or similar device, when the Facility is discharging. The Draft Permit also maintains the reporting requirements for total flow per month for Outfall 001 and 002 and total number of discharge events per month for Outfall 002, in order to accurately characterize the magnitude and frequency of discharges from the Facility going forward. The Draft Permit requires effluent sampling during periods of discharge from the OWS and not necessarily during periods associated with a specific precipitation event. The Permittee must document the measures and methods used to control flow through the stormwater treatment systems in its Stormwater Pollution Prevention Plan (SWPPP). See Sections 5.3.1 and 5.3.2, below.

5.2.2 Conventional Pollutants

5.2.2.1 Total Suspended Solids (TSS)

Solids could include inorganic (e.g., silt, sand, clay, and insoluble hydrated metal oxides) and organic matter (e.g., flocculated colloids and compounds that contribute to color). Solids can clog fish gills, resulting in an increase in susceptibility to infection or asphyxiation. Suspended solids can increase turbidity in receiving waters and reduce light penetration through the water column or settle to form bottom deposits in the receiving water. Suspended solids also provide a medium for the transport of other adsorbed pollutants, such as metals, which may accumulate in settled deposits that can have a long-term impact on the water column through cycles of re-suspension.

The 2014 Permit included a daily maximum effluent limit of 100 mg/L and a monthly average effluent limit of 30 mg/L for TSS, monitored twice per month. From December 1, 2014 through October 31, 2020, daily maximum TSS levels have ranged from below laboratory minimum levels to 132 mg/L at Outfall 001 with this maximum value being the only limit exceedance.

In establishing the technology-based limits in the 2005 permit, and continuing these limits in the 2014 Permit, EPA considered similar facilities and the Facility's use of an OWS. In the technology guidelines promulgated at 40 CFR § 423 for the Steam Electric Power Point Source Category, the storage of fuel oil at steam electric facilities at the time the technology guidelines were promulgated was similar to the storage of petroleum products at bulk stations and terminals. In developing effluent limits for the Steam Electric Power Point Source Category, EPA considered the level of treatment that could be technologically achieved for TSS using an OWS and set corresponding limits in the guidelines.[14] *See* 40 CFR § 423.12(b)(3) and (12). EPA identified TSS as a potential pollutant due to the drainage associated with equipment containing fuel oil and/or the leakage associated with the storage of oil.[15] In reviewing the technology-based limits for TSS for the Draft Permit, EPA determined that operations at the Facility remain consistent with the conditions under which the technology guidelines promulgated at 40 CFR §

[14] *See* Steam Electric Power Generating Category Effluent Guidelines and Standards. 39 Fed. Reg. 36186 (October 8, 1974).

[15] *See* Development Document for Effluent Limitations Guidelines and Standards and Pretreatment Standards for the Steam Electric Point Source Category. EPA-440-1-82-029. Washington, DC. (November 1982).

423 can be achieved. Furthermore, EPA determined that the TSS limits in the Draft Permit are similar to technology-based limits established for other facilities in Region 1 and similar facilities in other regions, as described in the ELG documents cited above.

The Draft Permit maintains the maximum daily limit of 100 mg/L, and the average monthly limit of 30 mg/L for Outfall 001, monitored twice per month, consistent with anti-backsliding requirements found in 40 CFR § 122.44(*l*).

5.2.2.2 Turbidity

Turbidity is a measure of relative water clarity, with relatively higher turbidity corresponding to relatively lower water clarity. Materials such as inorganic matter (e.g., silt, sand, and clay), organisms (e.g., algae, plankton, and microbes), and detritus can contribute turbidity. Highly turbid water can influence the amount of dissolved oxygen in the water by decreasing light penetration in the water, in turn reducing photosynthesis, by increasing water temperature as suspended particles absorb heat, or by oxygen depletion as bacteria consume dead plant matter. These materials can also have physical effects on aquatic life and waterbodies, clogging fish gills, reducing growth and disease resistance, smothering fish eggs and benthic macroinvertebrates, and causing sedimentation that may alter the nature of bottom sediments.

State WQSs for color and turbidity for Class SB waters states, "These waters shall be free from color and turbidity in concentrations or combinations that are aesthetically objectionable or would impair any use assigned to this class." 314 CMR 4.05(4)(b)6. A turbidity value of 25 NTU is consistent with the upstream turbidity cited in EPA's *Quality Criteria for Water* to explain major increases in stream suspended solids.[16] Impacts to aquatic life from elevated sediment and turbidity can take place both through direct mortality in the short term and reduced reproductive success in the long term.[17] This value is also consistent with several states that have established numeric water quality criteria for turbidity, including the New England states of Vermont[18] and New Hampshire.[19]

EPA has determined turbidity is a pollutant of concern under State WQSs for color and turbidity at 314 CMR 4.05(4(b)6, for aesthetics at 314 CMR 4.05(5)(a) and for bottom pollutants or alterations at 314 CMR 4.05(5)(b), given: 1) the Facility operation, which involves the treatment of solids; 2) the occasionally elevated levels of TSS measured in the discharge; 3) turbidity is a listed cause of the aesthetics and primary and secondary contact impairments in the Chelsea River; and 4) turbidity is a pollutant that requires a TMDL in the Chelsea River. However, turbidity concentrations have not been measured in the Facility's discharges. Therefore, the Draft Permit contains daily maximum and monthly average monitoring for turbidity in nephelometric

[16] EPA 440/5-86-001, May 1, 1986. Solids (Suspended, Settleable) and Turbidity, p. 270 of 395.
[17] *National Marine Fisheries Service Endangered Species Act Section 7 Consultation Biological And Conference Opinion* for EPA's Multi-Sector General Permit for Stormwater Associated with Industrial Activity Pursuant to the National Pollutant Discharge Elimination System; Table 10; March 19, 2015.
[18] *See* Vermont Water Quality Standards, Subchapter 3, § 29A-302(4), effective January 15, 2017.
[19] *See* "Review of New Hampshire's Water Quality Criteria for Turbidity (Env-Wq 1703.11)," State of New Hampshire Inter-Department Communication, October 6, 2011.

turbidity units (NTUs) for Outfall 001, monitored twice per month by grab samples, in conjunction with TSS sampling.

This information is necessary to determine if discharges of turbidity from the Facility cause, or have the reasonable potential to cause, or contribute to an excursion above State WQSs in accordance with 40 CFR §122.44(d)(1)(ii).

5.2.2.3 pH

The hydrogen-ion concentration in an aqueous solution is represented by the pH using a logarithmic scale of 0 to 14 standard units (S.U.). Solutions with pH 7.0 S.U. are neutral, while those with pH less than 7.0 S.U. are acidic and those with pH greater than 7.0 S.U. are basic. Discharges with pH values markedly different from the receiving water pH can have a detrimental effect on the environment. Sudden pH changes can kill aquatic life. pH can also have an indirect effect on the toxicity of other pollutants in the water.

From December 1, 2014 through October 31, 2020 (Appendix A), pH has ranged from 6.55 SU to 9.44 SU for Outfall 001 and 6.42 SU to 7.76 SU for Outfall 002, with one violation for each outfall. The Draft Permit requires a pH range of 6.5 to 8.5 S.U. at both Outfall 001 and Outfall 002 when the Facility is discharging, monitored weekly by grab samples. The pH limitations are based on the State WQSs for Coastal and Marine Waters, Class SB at 314 CMR 4.05(4)(b)3, which require that the pH of the receiving water be in the range of 6.5 to 8.5 S.U. These limitations are based on CWA § 301(b)(1)(C) and 40 CFR § 122.44(d).

5.2.2.4 Chemical Oxygen Demand

Oxygen is measured in its dissolved form as dissolved oxygen (DO). Indirect indicators commonly used to measure the oxygen demand in wastewater include biological oxygen demand (BOD) and chemical oxygen demand (COD). BOD measures the amount of oxygen consumed by microorganisms in decomposing organic matter in water. COD measures the chemical oxidation of organic and inorganic matter (i.e., the extraction of dissolved oxygen from water via chemical reaction). The rate of oxygen consumption in a waterbody is affected by several variables: temperature, pH, the presence of microorganisms, and the type of organic and inorganic materials. Oxygen demand directly affects the amount of dissolved oxygen in rivers and streams. The greater the oxygen demand (i.e., the higher the concentration of BOD and/or COD), the more rapidly oxygen is depleted in the stream. Depletion of the in-stream oxygen levels cause aquatic organisms to become stressed, suffocate, and die.

As described above, the Chelsea River is listed in the Massachusetts Year 2016 Integrated List of Waters as not supporting for its designated uses and DO is listed as a cause. The Massachusetts WQSs at 314 CMR 4.05(4)(b)4 requires DO levels in Class SB waters designated for shellfishing be no less than 5.0 mg/L. EPA does not currently have information regarding dissolved oxygen in discharges from the Facility. However, the 2019 permit application provides a sample result for both BOD and COD for Outfall 001. BOD was not detected in this sample. COD was detected at a concentration of 25 mg/L. Therefore, COD is the appropriate indirect indicator for DO at this Facility.

Therefore, the Draft Permit includes a monitoring requirement for COD for Outfall 001, monitored monthly. This information is necessary to determine if discharges of COD from the Facility cause, or have the reasonable potential to cause, or contribute to an excursion above State WQSs.

5.2.2.5 Oil and Grease

Oil and Grease is not a single chemical constituent, but includes a large range of organic compounds, which can be both petroleum-related (e.g., hydrocarbons) and non-petroleum (e.g., vegetable and animal oils and greases, fats, and waxes). These compounds have varying physical, chemical, and toxicological properties. Generally, oils and greases in surface waters either float on the surface, are solubilized or emulsified in the water column, adsorb onto floating or suspended solids and debris, or settle on the bottom or banks. Oil and grease, or certain compounds within an oil and grease mixture, can be lethal to fish, benthic organisms and water-dwelling wildlife.

From December 1, 2014 through October 31, 2020, oil and grease levels reported for Outfall 001 have ranged from below laboratory minimum levels to 31 mg/L.

The 2014 Permit limit of 15 mg/L is based on the benchmark level from EPA's guidance to, and as a means of establishing a categorization within, the petroleum marketing terminals and oil production-facilities categories.[20] Performance data from this Facility and other terminals in Massachusetts support that this effluent limit can be achieved through the proper operation of a correctly-sized OWS and properly implemented best management practices (BMPs). In addition, a concentration of 15 mg/L is recognized as the level at which many oils produce a visible sheen and/or cause an undesirable taste in fish.[21] As described above, the designated uses aesthetics primary and secondary contact and fish consumption designated use are not supported in Chelsea River

Consistent with anti-backsliding requirements found in 40 CFR § 122.44(*l*), and to meet State WQSs, given the impairments to Chelsea River, the Draft Permit maintains the maximum daily limit of 15 mg/L for oil and grease at Outfall 001, monitored monthly.

Total Petroleum Hydrocarbons
TPH analysis measures the hydrocarbon fraction of oil and grease, consisting of compounds with six carbon atoms (C_6) to compounds with 25 carbon atoms (C_{25}). The physical characteristics of the various petroleum fractions determine their fate and transport in the environment. The more soluble and volatile fractions are more likely to leach to groundwater, enter the air, or biodegrade. The relatively low density of smaller petroleum fractions tend to float in water and form thin surface films that affect aquatic organisms or other animals on the water's surface. The higher molecular weight compounds tend to sorb to sediment and persist at the site of release.

[20] See *Additional Guidance for Petroleum Marketing Terminals and Oil Production Facilities.* N-74-1. Washington, D.C. (July, 1974).
[21] USEPA. 1976. *The Red Book – Quality Criteria for Water.* July 1976.

These petroleum fractions tend to accumulate in substrates, causing stresses for benthic organisms, shellfish, or bottom-feeding fish.[22]

TPH is regulated by the CWA as stated in Title 40 Section 112, which pertains to stormwater discharge permitting. *See also* 40 CFR 122.26. Because petroleum products are complex mixtures of hundreds of hydrocarbon compounds, sampling a range of hydrocarbon compounds (e.g., TPH) and the most prevalent individual compounds (e.g., benzene, toluene, ethylbenzene, xylenes and Group I and II polycyclic aromatic hydrocarbons) serves as an indicator of relative petroleum contamination. The use of TPH as an indicator parameter is a common approach implemented by regulatory agencies in the United States to establish target cleanup levels for contaminated soil or water.[23]

TPH was included in the 2014 Permit with a maximum daily limit of 5 mg/L at Outfall 002. From December 1, 2014 through October 31, 2020, TPH ranged from below the laboratory minimum levels to 2.2 µg/L at Outfall 002. Consistent with anti-backsliding requirements found in 40 CFR §122.44(l), and to meet State WQSs, given the impairments to Chelsea River, the Draft Permit maintains this limitation at Outfall 002.

5.2.2.6 Bacteria

While the Facility does not engage in activities that would be expected to generate large sources of bacteria, stormwater runoff can readily transport bacteria from the waste products of warm-blooded animals or pathogens, which attach to organic and inorganic particles. Fecal coliform, *E. coli*, and enterococci bacteria, are indicators of contamination from sewage and/or the feces of warm-blooded wildlife (mammals and birds). Bacteria can survive in freshwater and saltwater environments and can impact water quality. As described above, the Chelsea River is a Class SB water. Where designated, Class SB waters shall be suitable for shellfish harvesting with depuration (Restricted and Conditionally Restricted Shellfish Areas). Waters with a shellfishing designated use have fecal coliform as the indicator bacteria for recreational uses and for shellfishing use. *See* 314 CMR 4.05(4)(b)(4). The Massachusetts Division of Marine Fisheries (DMF) Shellfish Sanitation and Management classifies the shellfish area including Chelsea River and the Mystic River (GBH4) as prohibited for shellfishing (closed to harvest of shellfish under all conditions, except gathering of seeds for municipal propagation programs under a DMF permit).[24]

The 2014 Permit included monitoring requirements for fecal coliform as part of the pollutant scan to determine if bacteria in stormwater discharges from the Facility could occur at concentrations that could cause or contribute to an excursion above WQSs. From December 1, 2014 through April 30, 2021, fecal coliform was detected in most of the samples for Outfall 001,

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[22] *Toxicological Profile for Total Petroleum Hydrocarbons (TPH).* September 1999; Agency for Toxic Substances and Disease Registry.
[23] See Weisman, W. (1998) *Analysis of Petroleum Hydrocarbons in Environmental Media.* Total Petroleum Hydrocarbons Criteria Working Group Series. Volume 1.
[24] Massachusetts Division of Marine Fisheries Shellfish Area Classification Map. Growing Area Code GBH4. Available at http://www.massmarinefisheries.net/shellfish/dsga/GBH4.pdf.

with a median of 1585 colony forming units per 100 mL (cfu/100 mL) and a high of 9900 cfu/100 mL.

The Massachusetts WQSs at 314 CMR 4.05(4)(b)(4)(a) limit fecal coliform in Class SB waters designated for shellfishing. The Massachusetts water quality standards limit fecal coliform to a geometric mean MPN (most probable number) of 88 organisms per 100 mL and not more than 10% of the samples exceeding an MPN of 260 organisms per 100 mL or other values of equivalent protection based on sampling and analytical methods used by the Massachusetts Division of Marine Fisheries and approved by the National Shellfish Sanitation Program in the latest revision of the *Guide For The Control of Molluscan Shellfish* (more stringent regulations may apply, *see* 314 CMR 4.06(1)(d)(5)). Monitoring over the past permit term demonstrates that the Facility has the potential to discharge levels of bacteria in excess of water quality standards.

The Massachusetts Year 2016 Integrated List of Waters indicates that Chelsea River is impaired for shellfishing and listed fecal coliform as a pollutant requiring a TMDL. However, shellfishing is currently prohibited in Chelsea River by the Massachusetts Department of Public Health. MassDEP released the Final Pathogen TMDL for the Boston Harbor, Weymouth-Weir, and Mystic Watersheds in October 2018.[25] The TMDL contains specific water quality targets for pathogens in the Mystic River sub-basin, including the Chelsea River (MA71-06). According to the TMDL, bacteria problems persist over much of the area due to a combination of point and non-point source pollution, including wastewater treatment plant effluent, piped discharges of stormwater from Phase I and Phase II communities, and discharges from CSOs. Most of the bacteria sources are believed to be stormwater related. The TMDL identifies the Chelsea River (MA71-06, SB/CSO) as a high priority with wet and dry weather bacteria issues as indicated by fecal coliform sampling. High priority segments are indicative of the potential presence of raw sewage and pose a greater risk to the public. CSOs, such as those in Chelsea River, have historically been a significant contributor to bacteria pollution. As aggressive efforts to control CSO discharges reduce bacteria loads from these sources, stormwater discharges will be a dominant source of bacteria pollution along with non-point sources. Fecal coliform samples collected under the 2014 Permit contain relatively high pathogen counts. Given the pathogen levels in the effluent and the requirements of the TMDL, the Draft Permit establishes fecal coliform effluent limitations of 88 organisms per 100 mL and not more than 10% of the samples exceeding an MPN of 260 organisms per 100 mL for Outfall 001.

At the same time, Massachusetts WQSs use *Enterococcus* as the preferred indicator for recreational designated uses. *See* 314 CMR 4.05(4)(b)(4)(b). The Boston Harbor Final Pathogen TMDL also specifies enterococci as the indicator bacteria for Chelsea River (Class SB(CSO)). Therefore, the Draft Permit establishes monitoring requirements for *Enterococcus* consistent with the TMDL and State WQSs. The Draft Permit specifies monthly monitoring to provide data necessary to further evaluate pathogen issues in Chelsea River. After one year, if all monitoring results are below the applicable WQS, the monitoring frequency may be reduced to once per year, in conjunction with the annual monitoring event.

[25] Final Pathogen TMDL for the Boston Harbor, Weymouth-Weir, and Mystic Watersheds. October 2018. https://www.mass.gov/total-maximum-daily-loads-tmdls

5.2.2.7 Temperature

Section 502(6) of the Clean Water Act defines heat as a "pollutant." 33 U.S.C. § 1362(6). Therefore, thermal effluent, such as boiler blowdown, is considered a pollutant, and such discharges require a NPDES permit. As described above, the Facility discharges a small volume of boiler blowdown and steam condensate, necessitated by the storage of No. 6 fuel oil, the viscosity of which can be affected by ambient temperatures. The boiler blowdown and steam condensate enters the stormwater conveyance system, comingles with stormwater and groundwater remediation effluent, and receives treatment through the oil/water separator prior to entering the Chelsea River. Based on the proportion of boiler blowdown relative to the total volume of effluent, the configuration of the stormwater conveyance system and expected retention times, the temperature noted for the effluent in the permittee's NPDES permit renewal application, and ambient temperature data collected by the Massachusetts Water Resources Authority,[26] EPA determined no measurable thermal effluent is discharged to the Chelsea River from this facility.

EPA evaluated temperature during the summer when a heated discharge would be of most concern. During the issuance of the 2014 Permit, EPA requested additional temperature monitoring data and information regarding the generation of boiler blowdown from the Facility. The boiler blowdown is generated as a liquid condensate and to some extent, steam. Boiler blowdown is generated by boiler number 1 at a rate and typical total of 25 gallons per day. Boiler blowdown is generated by boiler number 2 at a rate and typical total of 30 gallons per day. The maximum daily volume if boiler blowdown is discharged from both boilers is typically 55 gallons up to a reported maximum of 200 gallons per day. The operating temperature of the boilers ranges from 100 to 170 degrees Fahrenheit, which is equivalent to the maximum possible temperature of boiler blowdown. The temperature of the boiler blowdown effluent upon mixing at the point it enters the stormwater conveyance system was recorded at 84 and 92 degrees Fahrenheit in July 2014. The temperature of the stormwater and groundwater remediation effluent prior to comingling with boiler blowdown was recorded at 73.3 degrees Fahrenheit. The storage capacity of the oil/water separator is 10,000 gallons. The temperature of the comingled effluents in the oil/water separator was recorded at 74.4 degrees Fahrenheit. This temperature neither exceeds the applicable water quality criterion for temperature of a Class SB waterbody, 85 degrees Fahrenheit, nor does this temperature demonstrate a change in temperature of more than 1.5 degrees Fahrenheit (applicable July through September) even before mixing with ambient water.

To evaluate any potential thermal impact to the Chelsea River that would exceed applicable water quality criteria, EPA also considered ambient conditions during issuance of the 2014 Permit. As described above, between 2008 through 2018, temperature in Chelsea River has ranged from 1.5°C to 24.7°C (76.46°F). The Chelsea River holds an average 269,243,682 cubic feet of water.[27] Even if EPA overestimates the thermal impact by calculating an instream

[26] See surface samples collected in the month of July at station 027 (Chelsea Creek) in dataset titled: *MWRA Harbor Physical Measurements, collected 1989 through 2013.*

[27] Estimated using the surface area of segment MA71-06 in *Massachusetts Year 2016 Integrated List of Waters* and river depths recorded on the National Oceanic and Atmospheric Administration, Office of Coast Survey nautical chart number 13272 for Boston Inner Harbor.

temperature using only the upstream critical low flow contribution to Chelsea River, 0.055 million gallons per day,[28] at the maximum temperature of the Chelsea River, 24.7°C, 10,000 gallons of effluent discharged at 76.46°F does not exceed 85 degrees Fahrenheit and will not raise the temperature of the Chelsea River 1.5 degrees Fahrenheit or more.[29] Furthermore, even the direct discharge of 200 gallons per day of boiler blowdown at the maximum 170 degrees Fahrenheit, which is technically not possible given the facility configuration, does not exceed 85 degrees Fahrenheit and will not raise the temperature of the Chelsea River 1.5 degrees Fahrenheit or more.[30] Therefore, EPA maintains that no thermal limits are necessary to meet Massachusetts' WQSs for temperature for a Class SB waterbody. However, to ensure that thermal discharges meet the assumptions of EPA's analysis, the Draft Permit includes temperature monitoring requirements. EPA will use these data to evaluate compliance with State WQSs for temperature.

5.2.3 Volatile Organic Compounds (VOCs)

5.2.3.1 Benzene, Toluene, Ethyl benzene, and Xylenes

Refined petroleum products contain numerous types of volatile organic compounds (VOCs). Effluent limitations for the VOCs present in refined petroleum products are typically established for the compounds most difficult to remove from the environment and that demonstrate the greatest degree of toxicity. VOCs partition to environmental media based on physical and chemical properties, including solubility and vapor pressure. Generally, the higher the solubility of a VOC in water, the more difficult it is to remove. Relative to other VOCs, the VOCs benzene, toluene, ethylbenzene, and the three xylene compounds (i.e., total xylenes) – collectively known as BTEX – exhibit high solubility, are more toxic, are more difficult to treat, and are found at high concentrations in gasoline and light distillates such as diesel fuel. BTEX concentrations generally decrease in heavier grades of petroleum distillate products such as fuel oils.[31]

In developing the 2014 Permit, benzene was selected as the indicator parameter for the volatile petroleum-related organic compounds at Outfall 001. Benzene was selected because this compound has the highest solubility, is one of the most toxic petroleum constituents, is found at relatively high concentrations in light distillate products and a recommended water quality criterion has been published. The concentration of benzene in gasoline is approximately 20,000 parts per million.[32] The concentration in diesel fuel, although several orders of magnitude

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[28] Probability of perennial flow statistics determined using U.S. Geological Survey Massachusetts StreamStats tool for NAD83 Latitude 42.4031 and Longitude -71.0140 available at http://water.usgs.gov/osw/streamstats/massachusetts.html.

[29] The mixing equation is as follows: downstream concentration = (effluent flow*effluent temperature + ambient 7Q10*maximum ambient temperature)/sum of effluent flow and ambient 7Q10; (0.01 MGD*170°F + 0.055 MGD*76.46°F)/0.065 MGD = 76.14°F; therefore ΔT = -0.32°F.

[30] The mixing equation is as follows: downstream concentration = (effluent flow*effluent temperature + ambient 7Q10*maximum ambient temperature)/sum of effluent flow and ambient 7Q10; (0.0002 MGD*170°F + 0.055 MGD*76.46°F)/0.0552 MGD = 76.8°F; therefore ΔT = 0.34°F.

[31] *Toxicological Profile for Benzene.* Agency for Toxic Substances and Disease Registry: August, 2007.

[32] See "Composition of Petroleum Mixtures", Total Petroleum Hydrocarbon Criteria Working Group Series, T.L. Potter and K.E. Simmons, Vol. 2, p. 52 (May 1998).

smaller than that found in gasoline, is still environmentally significant. The average percent by weight of benzene in diesel fuel is approximately 0.03 percent which is equivalent to a concentration of benzene of approximately 300 parts per million. The State WQSs contain minimum criteria applicable to all surface waters for toxic pollutants and require the use of EPA's *National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002* where a specific pollutant is not otherwise listed in 314 CMR 4.00. *See* 314 CMR 4.05(5)(e).

As a result, the 2005 Permit established a WQBEL of 51 µg/L for benzene at Outfall 001. The 2014 Permit maintained this benzene WQBEL and required monthly monitoring. The 2014 Permit also required monthly monitoring, without limits, for the daily maximum concentration. In addition, quarterly monitoring for benzene toluene, ethyl benzene, and the three xylene compounds at Outfall 001 and in the Chelsea River was required to ensure that selection of benzene as an indicator parameter was sufficiently stringent to meet State WQSs. This monitoring requirement was automatically reduced to annually after three years.

The Final Massachusetts Year 2016 Integrated List of Waters lists Chelsea River as impaired for petroleum hydrocarbons. The bulk petroleum storage facilities that discharge to the Chelsea River are explicitly noted as one of the sources of these pollutants. From December 1, 2014 through April 30, 2020, benzene was not detected in any sample for Outfall 001. Further, all samples for toluene, ethylbenzene, and xylene were non-detect at Outfall 001. Since monitoring results indicate that the concentrations of toluene, ethylbenzene, and xylene compounds do not exceed applicable criteria, EPA has determined that the use of benzene as an indicator parameter and the effluent limitation imposed meets State WQSs.

In 2015, EPA updated human health criteria for benzene using both noncarcinogenic and carcinogenic toxicity endpoints. The updated human health criteria for noncarcinogenic effects for benzene are 90 µg/L for consumption of organisms only. The updated human health for carcinogenic effects (at a 10^{-6} cancer risk level) for benzene are 16 µg/L using the lower cancer slope factor and 58 µg/L using the upper cancer slope factor for consumption of organisms only. EPA recommended the lower criterion, based on the carcinogenic effects of benzene, as the updated human health criterion. These updated criteria replaced EPA's previously published values (i.e., 2002). The State issued proposed revised surface WQSs for public notice and comment from October 4, 2019, through November 8, 2019, that would adopt EPA's recommended criteria. The revised surface WQSs have not been finalized, however. If the proposed benzene criterion, 16 µg/L, is finalized prior to issuance of the Final Permit, EPA will consider the applicability of the 16 µg/L criterion to discharges from this Facility when establishing the appropriate effluent limitation.

Further, EPA is required to apply the more stringent of applicable water quality-based effluent limits and technology-based limits. In 2017, EPA issued a revised benzene limitation in EPA's RGP of 5 µg/L. In establishing this revised limitation, EPA considered the presence of benzene at contaminated or formerly contaminated sites. EPA identified benzene as a pollutant based on: 1) the type of activity taking place, which includes dewatering, remediation and/or hydrostatic testing; and 2) available data showing the presence of benzene in discharges of contaminated groundwater and certain surface waters, which may include stormwater, surface water and

potable water. EPA then considered the types of treatment typically used for dewatering, remediation and/or hydrostatic testing. Treatment types considered in the RGP, which are required at RGP sites if necessary to meet effluent limitations, include: 1) adsorption/absorption; 2) advanced oxidation processes; 3) air stripping; 4) granulated activated carbon/liquid phase carbon adsorption; 5) ion exchange; 6) precipitation/coagulation/flocculation; and 7) separation/filtration. Free product recovery, air stripping,[33] mechanical pre-treatment, flow equalization, oil/water separation, membrane, and adsorptive media[34] remove benzene.

In reviewing the applicability of a 5 µg/L technology-based limitation for benzene to this Facility, EPA finds that discharges from bulk stations and terminals are consistent with the type of discharges considered under the RGP, which include hydrostatic testing discharges from dewatering of pipelines, tanks, and similar structures and appurtenances that store or convey petroleum products, and dewatering and/or remediation discharges from collection structures (e.g., dikes) utilized for collecting miscellaneous sources of water from contaminated or formerly contaminated sites or sources, including when contamination is a result of the infiltration of contaminated groundwater or stormwater. Further, conditions at the Facility are consistent with those under which this limitation can be achieved. Specifically, the combination of best management practices and treatment are used at the Facility. Finally, EPA finds that a benzene concentration of 5 µg/L is consistent with monitoring results from this and other facilities in Region 1 with similar activities and discharges. Specifically, the concentrations of benzene reported by other bulk petroleum storage facilities that discharge to coastal waters within the Boston Harbor Drainage Area from December 1, 2014 through October 31, 2020 are summarized in Table 2, below.

Table 2: Summary of Benzene Concentrations in Discharges from the Bulk Petroleum Storage Facilities located in the Boston Harbor Drainage Area

Permit Number (Facility)	Outfall Number	Number of Detections	Maximum of Detected Values (µg/L)	Number of Values >5 µg/L
MA0000825 (former Global South, Revere)	001	10	3.8	0
MA0001091 (Gulf, Chelsea)	003	4	64	1
MA0001929 (Irving, Revere)	001	13	58.7	5
MA0003280 (Chelsea Sandwich, Everett)	001	0	---	---
MA0003280 (Chelsea Sandwich, Everett)	002	1	48.2*	1
MA0003425 (former Global Petroleum, Revere)	002	8	5.95	1

[33] See *Model NPDES Permit for Discharges Resulting From The Cleanup of Gasoline Released From Underground Storage Tanks*, June 1989.
[34] See benzene entries in *Industrial Wastewater Treatment Technology Database (IWTT)* at https://watersgeo.epa.gov/iwtt/guided-search.

MA0003425 (Global Petroleum, Revere)	Former Petroleum internal 002	29	56.8**	10
MA0003425 (Global Petroleum, Revere)	003	0	---*	---
MA0003298 (former Global REVCO, Revere)	004	0	---	---
MA0003298 (former Global REVCO, Revere)	005	4	4.2	0
MA0004006 (Sunoco, East Boston)	001	9	9.1	2
MA0004782 (CITGO, Braintree)***	001	21	13.3	16
MA0004782 (CITGO, Braintree)***	002	0	--*	---
MA0028037 (Sprague Twin Rivers)***	001	0	---	---
MA0020869 (Sprague Quincy)***	002	0	---	---

Note: *This outfall is already limited to 5 µg/L for benzene.
** This outfall has been eliminated and was limited to 5 µg/L for benzene.
*** The reporting period is July 1, 2015 through June 30, 2020. Reporting periods differ for these facilities due to differences in when draft permits were developed.

Relative to the monitoring data from December 1, 2014 through October 31, 2020, the Facility reported a benzene concentration less than 5 µg/L 100 percent of the time (in 57 of 57 samples). Therefore, based on available information, EPA has determined that discharges containing benzene at this Facility can achieve a limitation of 5 µg/L using existing controls. *See* 40 CFR § 125.3(d). The Draft Permit proposes a daily maximum technology-based effluent limitation for benzene of 5 µg/L for Outfall 001 on a case-by-case basis using best professional judgement, consistent with requirements found in CWA § 402(a)(1)(B). The Draft Permit requires monthly monitoring. The Draft Permit also maintains the annual monitoring requirements for toluene, ethylbenzene and xylenes in the discharge and all BTEX compounds in the receiving water, as well as the reopener clause, in accordance with 40 CFR § 122.44(d)(1)(vi)(C).

The 2005 Permit also established a limitation for benzene at 5 µg/L and for total BTEX at 100 µg/L for Outfall 002 on a case-by-case basis using BPJ. These TBELs were maintained in the 2014 Permit. During the monitoring period, these parameters were detected once, with benzene detected at 48.2 µg/L and total BTEX at 156.1 µg/L. Consistent with anti-backsliding requirements found in 40 CFR §122.44(l), and to meet State WQSs, given the impairments to Chelsea River, the Draft Permit maintains the maximum daily limit for benzene and total BTEX compounds at Outfall 002.

The Permittee requested that monitoring for these parameters be eliminated or reduced to once per year consistent with EPA's RGP for groundwater remediation discharges. Consistent with Part 5.1.2 of EPA's RGP, request for reduction in monitoring requirements, the discharge "must be in compliance with the effluent limitation for any parameter for which a reduction is requested." Given that both benzene and total BTEX exceeded the permit limits, EPA has not provided a monitoring frequency reduction. The Draft Permit maintains monthly monitoring for both parameters at Outfall 002.

5.2.4 Semi-Volatile Organic Compounds (SVOCs)

5.2.4.1 Polycyclic Aromatic Hydrocarbons

Polycyclic Aromatic Hydrocarbons (PAHs) are a group of semi-volatile organic compounds (SVOCs) that form through the incomplete combustion of hydrocarbons and are present in petroleum derivatives and residuals. Discharge of these materials can introduce PAHs into surface water where they may volatilize, photolyze, oxidize, biodegrade, bind to suspended particles or sediments, or accumulate in aquatic organisms.[35] In soils, PAHs may also undergo degradation, accumulation in plants, or transport via groundwater. In an estuarine environment, volatilization and adsorption to suspended sediments with subsequent deposition are the primary removal processes for medium and high molecular weight PAHs. Several PAHs are well known animal carcinogens, while others can enhance the response of the carcinogenic PAHs.

There are 16 PAH compounds identified as priority pollutants under the CWA. *See* Appendix A to 40 CFR Part 423. Group I PAHs are comprised of seven known animal carcinogens. They are: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. Group II PAHs are comprised of nine priority pollutant PAHs which are not considered carcinogens, but which can enhance or inhibit the response of the carcinogenic PAHs. They are: acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene.

In developing the 2014 Permit, one Group I PAH, benzo(a)pyrene, and one Group II PAH, naphthalene, were selected as the indicator parameters for semi-volatile petroleum-related organic compounds at Outfall 001. While the distillation process removes a greater proportion of Group I PAHs by weight, these compounds can still be present in low concentrations, particularly benzo(a)pyrene. Benzo(a)pyrene has been used extensively as a model carcinogen and as a positive control in a variety of risk assessment tests. EPA has designated this compound as a known animal carcinogen and probable human carcinogen. Relative to the other Group I PAHs, it is strongly carcinogenic. Of Group II PAHs, naphthalene, like benzo(a)pyrene poses high calculable risk relative to other PAHs. It is included as a priority pollutant under the CWA and is classified as a possible human carcinogen. In middle and heavy distillates, naphthalene is one of the most commonly found compounds, present in diesel fuel at up to approximately 0.8 and 0.4 percent by weight, respectively.[36] Naphthalene is only slightly soluble in water, but is highly soluble in benzene and other solvents.

The 2014 Permit included a monthly average effluent limit of 0.018 µg/L for benzo(a)pyrene monitored monthly, and monthly monitoring, without limits, for the daily maximum concentration. The 2014 Permit also included a daily maximum effluent limit of 100 µg/L for naphthalene at Outfall 001. Finally, quarterly monitoring for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, naphthalene, phenanthrene, and pyrene at Outfall 001 and in the Chelsea River was required to ensure that selection of benzo(a)pyrene and naphthalene as indicator parameters is sufficiently stringent to meet State WQSs, which automatically reduced to annually after three years.

[35] Bioconcentration factors generally range from 10-10,000.
[36] See Agency for Toxic Substances and Disease Registry Toxic Substances Portal entries for naphthalene at http://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=240&tid=43.

As described above, Aquatic Life, Aesthetics, Primary and Secondary Contact Recreation designated uses are not supported in Chelsea River. The bulk petroleum storage facilities that discharge to the Chelsea River are explicitly noted as one of the sources of these pollutants. From December 1, 2014 through October 31, 2020, for Outfall 001, Group I and Group II PAH compounds were detected above the laboratory minimum levels, as shown in Table 3 below. Benzo(a)pyrene was detected above laboratory minimum levels in nine samples for Outfall 001 during this time period ranging from 0.05 to 0.25 µg/L. Naphthalene was detected above laboratory minimum levels in two samples at Outfall 001 during this time period.

Table 3: Summary of Detected PAH Compounds

Parameter	Number of Detections	Minimum of Detected Values (µg/L)	Maximum of Detected Values (µg/L)
Benzo(a)anthracene	2	0.15	0.16
Benzo(a)pyrene	9	0.05	0.25
Benzo(b)fluoranthene	4	0.087	0.33
Benzo(k)fluoranthene	2	0.187	0.27
Chrysene	3	0.075	0.37
Dibenzo(a,h)anthracene	1	0.062	0.062
Indeno(1,2,3-cd)pyrene	5	0.062	0.25
Acenaphthene	1	0.15	0.15
Acenaphthylene	1	0.21	0.21
Anthracene	1	0.16	0.16
Benzo(g,h,i)perylene	3	0.07	0.38
Fluoranthene	3	0.092	0.57
Fluorene	2	0.123	0.32
Naphthalene	2	0.094	3.87
Phenanthrene	3	0.064	0.71
Pyrene	4	0.12	0.79

Group I PAHs

Group I PAH compounds are listed as priority pollutants in Appendix A to 40 CFR Part 423. Concentrations of each of the Group I PAH compounds exceed applicable criteria; therefore, EPA has determined that discharges of these priority pollutants cause or have a reasonable potential to cause or contribute to an excursion above WQSs. This determination is based on the monitoring data collected during the permit term, as well as the Chelsea River impairments for the Aquatic Life, Aesthetics, Primary Contact and Secondary Contact Uses due to the presence of petroleum hydrocarbons. Further, the bulk petroleum storage facilities that discharge to the Chelsea River, including the Facility, are explicitly noted as one of the sources of these pollutants. Therefore, effluent limitations are required.

The Draft Permit proposes an effluent limitation for benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoroanthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene of 0.018 µg/L, monitored monthly. This effluent limitation is based on

the "organism only" human health WQC for each individual compound, selected because the uses designated for Chelsea River includes fishing (i.e., consumption of organisms). The Draft Permit also requires annual monitoring for Group I PAHs in the receiving water to ensure these limitations are sufficiently stringent to meet WQSs.

Where effluent limits have been established in NPDES permits but compliance cannot be determined using currently approved analytical methods (e.g. if WQBELs are less than the analytical capability of the methods), EPA must establish a compliance level. The *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*[37] requires the use of an EPA-approved method that is sufficiently sensitive. Therefore, the Draft Permit requires that the quantitative methodology used for PAH analysis must achieve the ML of ≤0.1 µg/L for each Group I PAH compound and this ML is the compliance level for each Group I PAH compound. This ML is based on the method that has the lowest ML of the analytical methods approved under 40 CFR Part 136,[38] and is consistent with EPA's TSD, page 111, which recommends, "the compliance level be defined in the permit as the minimum level (ML).

Group II PAHs

Group II PAH compounds are listed as priority pollutants in Appendix A to 40 CFR Part 423. Although several Group II PAH compounds were detected, since monitoring results indicate that the concentrations of individual Group II PAHs do not exceed applicable criteria (i.e., acenaphthene human health organism-only criteria of 990 µg/L, anthracene human health organism-only criteria of 40,000 µg/L, fluoranthene human health organism-only criteria of 140 µg/L, fluorene human health organism-only criteria of 5,300 µg/L and pyrene human health organism-only criteria of 4,000 µg/L), EPA has determined that discharges of these priority pollutants do not cause, or have a reasonable potential to cause or contribute to an excursion above WQSs and WQBELs for additional Group II PAHs are not required. However, EPA is required to apply the more stringent of applicable water quality-based effluent limits and technology-based limits. *See* CWA § 301(b)(1)(C) and 40 CFR §§ 122.44(d)(1),122.44(d)(5), 125.84(e) and 125.94(i). In 2017, EPA reissued a naphthalene limitation in EPA's RGP of 20 µg/L. In establishing this limitation, EPA considered the presence of napthalene in discharges from contaminated or formerly contaminated sites. EPA identified napthalene as a pollutant based on: 1) the type of activity taking place, which includes dewatering, remediation and/or hydrostatic testing; and 2) available data showing the presence of napthalene in discharges of contaminated groundwater and certain surface waters, which may include stormwater, surface water and potable water. EPA then considered the types of treatment typically used for dewatering, remediation and/or hydrostatic testing. Treatment types considered in the RGP, which are required at RGP sites if necessary to meet effluent limitations, include: 1) adsorption/absorption; 2) advanced oxidation processes; 3) air stripping; 4) granulated activated carbon/liquid phase carbon adsorption; 5) ion exchange; 6) precipitation/coagulation/flocculation; and 7) separation/filtration. Granular activated carbon and

[37] Fed. Reg. 49,001 (Aug. 19, 2014).
[38] Method 624 with the selected ion monitoring modification.

air stripping[39] are appropriate treatment technologies for naphthalene, and flow equalization, oil/water separation, aeration and membrane[40] remove napthalene.

In reviewing the applicability of a 20 µg/L technology-based limitation for naphthalene to this Facility, EPA finds that discharges from bulk stations and terminals are consistent with the type of discharges considered under the RGP, which include hydrostatic testing discharges from dewatering of pipelines, tanks, and similar structures and appurtenances that store or convey petroleum products, and dewatering and/or remediation discharges from collection structures (e.g., dikes) utilized for collecting miscellaneous sources of water from contaminated or formerly contaminated sites or sources, including when contamination is a result of the infiltration of contaminated groundwater or stormwater. Further, conditions at the Facility are consistent with those under which this limitation can be achieved, specifically, the combination of applicable best management practices and treatment are used at the Facility. Finally, EPA finds that a naphthalene concentration of 20 µg/L is consistent with monitoring results from this and other facilities in Region 1 with similar activities and discharges. Specifically, the concentrations of naphthalene reported by the bulk petroleum storage facilities that discharge directly to Chelsea River and Sales Creek from December 1, 2014 through October 31, 2020 are summarized in Table 4, below.

Table 4: Summary of Naphthalene Concentrations in Discharges from the Bulk Petroleum Storage Facilities located along Chelsea River

Permit Number (Facility)	Outfall Number	Number of Detections	Maximum of Detected Values (µg/L)	Number of Values >20 µg/L
MA0000825 (Global South, Revere)	001	10	0.8	0
MA0001091 (Gulf, Chelsea)	003	3	46	1
MA0001929 (Irving, Revere)	001	2	19.6	0
MA0003280 (Chelsea Sandwich, Everett)	001	2	3.87	0
MA0003280 (Chelsea Sandwich, Everett)	002	1	0.082*	---
MA0003298 (Global REVCO, Revere)	004	6	0.416	0
MA0003298 (Global REVCO, Revere)	005	3	0.566	0
MA0003425 (Global Petroleum, Revere)	002	4	0.82	0
MA0003425 (Global Petroleum, Revere)**	former Petroleum internal outfall	20	7.3	0
MA0003425 (Global Petroleum, Revere)	003	0	---	---
MA0004006 (Sunoco, East Boston)	001	6	5*	0
MA0004782 (CITGO, Braintree)***	001	2	0.457	0
MA0004782 (CITGO, Braintree) ***	002	---	---	---

[39] U.S. EPA. *Contaminant Candidate List Regulatory Determination Support Document for Naphthalene.* EPA-815-R-03-14: July 2003.
[40] See napthalene entries in *Industrial Wastewater Treatment Technology Database (IWTT)* at https://watersgeo.epa.gov/iwtt/guided-search.

MA0028037 (Sprague Twin Rivers) ***	001	0	---	---
MA0020869 (Sprague Quincy) ***	002	0	---	---

Note: *This outfall is already limited to 10 or 20 ug/L for naphthalene.
** This outfall has been eliminated and was limited to 20 µg/L for naphthalene.
*** The reporting period is July 1, 2015 through June 30, 2020. Reporting periods differ for these facilities due to differences in when draft permits were developed.

Relative to the monitoring data from December 1, 2014 through October 31, 2020, the Facility reported a naphthalene concentration less than 20 µg/L 100 percent of the time (in 57 of 57 samples). Therefore, based on available information, EPA has determined that discharges containing naphthalene at this Facility can achieve a limitation of 20 µg/L using existing controls. *See* 40 CFR § 125.3(d). Therefore, the Draft Permit proposes a daily maximum effluent limitation of 20 µg/L for naphthalene, monitored monthly at outfall 001. The Draft Permit also requires annual monitoring for acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, phenanthrene, and pyrene (additional Group II PAHs) to ensure these compounds continue to meet the applicable criteria.

The Permittee has requested relaxation of monitoring requirements for PAHs. Given the impairments to the Chelsea River and petroleum hydrocarbons having been identified as a pollutant contributing to these impairments, the proposed effluent limitations and continued monitoring requirements are necessary and appropriate to carry out the provisions of the CWA and ensure compliance with State WQSs. *See* CWA §§ 308(a), 402(a)(1) and (2), 33 U.S.C. §§ 1318(a), 1342(a)(1) and (2).

5.2.5 Chemicals and Additives

5.2.5.1 Total Residual Chlorine

Chlorine and chlorine compounds are toxic to aquatic life. Free chlorine is directly toxic to aquatic organisms and can react with naturally occurring organic compounds in receiving waters to form toxic compounds such as trihalomethane. The Facility uses potable water for hydrostatic test water and washdown water. Potable water sources are typically chlorinated to minimize or eliminate pathogens. 40 CFR § 141.72 stipulates that a public water system's residual disinfectant concentration in the water entering the distribution system cannot be less than 0.2 mg/L for more than four hours. The 2014 Permit included monitoring requirements for total residual chlorine (TRC) in conjunction with Whole Effluent Toxicity testing at Outfall 001. From December 1, 2014 through October 31, 2020, (Appendix A), TRC was detected in two samples at concentrations of 36 µg/L and 38 µg/L.

The *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters* (February 23, 1990) specifies that "Waters shall be protected from unnecessary discharges of excess chlorine." State WQSs further require the use of federal water quality criteria where a specific pollutant could reasonably be expected to adversely affect existing or designated uses. *See* 314 CMR 4.05(5)(e). Because the discharge of stormwater occurs intermittently, EPA considered the acute criterion. EPA's *National Recommended Water Quality Criteria* for aquatic life in saltwater for TRC is as follows:

13 µg/L (0.013 mg/L) acute criterion

Given that the dilution factor for the Chelsea River is zero (i.e., 1:1), the TRC maximum daily effluent limitation is equivalent to the acute criterion as follows:

Acute TRC limit = 13 µg/L

Since the concentrations of TRC detected in the discharges from Outfall 001 occasionally exceed this criterion, the discharge of effluent has a reasonable potential to cause or contribute to excursions of the acute criterion for TRC (Appendix C). The Draft Permit proposes a daily maximum TRC effluent limitation of 13 µg/L, monitored monthly. The proposed effluent limitation and continued monitoring requirements are necessary and appropriate to carry out the provisions of the CWA and ensure compliance with State WQSs. *See* CWA §308(a), 33 U.S.C. §1318(a); 40 CFR §§ 122.4(d), 122.44(d)(1). Because the minimum level of detection for TRC is above the criterion, and similar to the approach discussed above for PAHs, EPA has set a compliance level of 30 µg/L.[41] This ML is based on the method that has the lowest method detection limit of the analytical methods approved under 40 CFR Part 136, and is calculated in accordance with 40 CFR Part 136.

5.2.5.2 Phthalates

Phthalates are a widely used group of compounds that contain a phenyl ring with two attached acetate groups, often referred to as plasticizers. Because phthalates are not a part of the polymers that make up plastics, they can be released from these materials fairly easily. The use of plastics and materials containing plasticizers is widespread. Total phthalates is the sum of: diethylhexyl phthalate (DEHP), benzyl butyl phthalate, di-n-butyl phthalate, diethyl phthalate, dimethyl phthalate and di-n-octyl phthalate. These six phthalates are listed as a priority pollutant in Appendix A to 40 CFR Part 423. DEHP, also known as bis (2-ethyl hexyl) phthalate, is a plasticizer most widely used in the manufacturing of polyvinyl chloride (PVC), but is also used in boilers and/or cooling towers. It is one of the more toxic phthalate compounds and is listed as a class B2 probable carcinogen.

The 2014 Permit included monitoring for phthalates because the Facility discharges boiler blowdown and to ensure these compounds are not present in discharges from the Facility at concentrations that cause, have a reasonable potential to cause, or contribute to an excursion above State WQSs. Because the receiving water is not a public water supply, EPA considers the human health organism-only criteria. The human health organism-only EPA *National Recommended Water Quality Criteria* for phthalates are as follows:

Butylbenzyl Phthalate:
0.10 µg/L

Diethyl Phthalate:

[41] Standard Method 4500-Cl E, low-level amperometric direct method (low-level amperometric titration method).

600 µg/L

Dimethyl Phthalate:
2000 µg/L

Di-n-Butyl Phthalate:
30 µg/L

Bis(2-Ethylhexyl) Phthalate:
0.37 µg/L

From December 1, 2014, through April 30, 2020, phthalates were detected on two occasion: 0.676 µg/L in December 2017 and 7.759 ug/L in April 2018. EPA notes that data entry errors were identified for phthalates. Data that could not be validated have been excluded. Since the concentration of phthalates measures is below applicable criteria, the Draft Permit does not include limitations for phthalates. However, because the Facility has detected phthalates in the effluent at a level that is above the revised human health organism-only criteria for one or more phthalate compounds, and given the data validation encountered, the Draft Permit includes a quarterly monitoring requirement for phthalates.

5.2.5.3 Phenol

Phenol and phenolic compounds are widely used chemical intermediates and occur in the environment as a result of manufacturing, use of products containing phenols, from combustion sources, coal gas, and natural decay of organic matter. Phenol can also be present at low concentrations in gasoline, diesel and kerosene. Phenol and a number of other compounds including nitro-phenols and chlorinated phenols are listed as priority pollutants in Appendix A to 40 CFR Part 423. Further, phenol and other phenolic compounds are included in EPA's *National Recommended Water Quality Criteria* as having organoleptic (i.e., taste and odor) effects in water at low levels. The threshold at which phenol has an effect on taste and odor in water is 300 µg/L.

The 2014 Permit included a quarterly monitoring requirement for phenol in the pollutant scan to ensure it is not present in quantities that could cause or contribute to an excursion above WQSs. This monitoring requirement automatically reduced to annually after three years. From December 1, 2014 through April 30, 2020, phenol was not detected above laboratory minimum levels at Outfall 001. As a result, the Draft Permit does not include monitoring for this parameter.

5.2.6 Metals

Metals are naturally occurring constituents in the environment and generally vary in concentration according to local geology. Metals are neither created nor destroyed by biological or chemical processes. However, metals can be transformed through processes including adsorption, precipitation, co-precipitation, and complexation. Some metals are essential nutrients at low levels for humans, animals, plants and microorganisms, but toxic at higher levels (e.g.,

copper and zinc). Other metals have no known biological function (e.g., lead). The environmental chemistry of metals strongly influences their fate and transport in the environment and their effects on human and ecological receptors. Toxicity results when metals are biologically available at concentrations affecting the survival, reproduction and behavior of an organism.

The Permittee has obtained monitoring data for total recoverable cadmium, copper, lead, nickel and zinc in the discharge and the receiving water in conjunction with Whole Effluent Toxicity testing, total recoverable chromium and iron in the discharge in conjunction with pollutant scan requirements, and total recoverable lead as a separate monitoring requirement. From December 1, 2014 through April 30, 2020 (Appendix A) for Outfall 001, total recoverable cadmium, copper, lead nickel, zinc, chromium and iron were detected in the discharge and total recoverable copper, lead, nickel, and zinc were detected in the receiving water. EPA completed an analysis to determine if these discharges cause, or have a reasonable potential to cause, or contribute to an excursion above State WQSs using EPA's 2002 *National Recommended Water Quality Criteria* for metals (Appendix C). State WQSs contain minimum criteria applicable to all surface waters for toxic pollutants, which requires the use of EPA's *National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002* where a specific pollutant is not otherwise listed in 314 CMR 4.00. *See* 314 CMR 4.05(5)(e). Because the discharge occurs intermittently, EPA considered the acute saltwater aquatic life criteria, and because the receiving water is not a public water supply, EPA considered the human health organism-only criteria. The acute saltwater aquatic life and human health organism-only EPA *National Recommended Water Quality Criteria* for metals, expressed in terms of the dissolved metal in the water column, are as follows:

Copper:
Saltwater acute (Class SB) = 4.8 µg/L

Lead:
Saltwater acute (Class SB) = 210 µg/L

Nickel:
Saltwater acute (Class SB) = 74 µg/L
Organism-only = 4,600 µg/L

Zinc:
Saltwater acute (Class SB) = 90 µg/L
Organism-only = 26,000 µg/L

Chromium: (chromium 6+ shown)
Saltwater acute (Class SB) = 1,100 µg/L

Given the impairment in the Chelsea River for odor, EPA also considered criteria for metals listed in EPA's *National Recommended Water Quality Criteria* that cause an organoleptic effect (i.e., taste and odor). The organoleptic effect EPA *National Recommended Water Quality Criteria* for metals are as follows:

Copper:
1,000 µg/L

Zinc:
5,000 µg/L

The results of EPA's analysis (Appendix C) indicate discharges of cadmium, lead, nickel, and chromium do not cause, or have a reasonable potential to cause, or contribute to an excursion above WQSs. As a result, the Draft Permit does not include effluent limitations for these metals. Monitoring for total recoverable cadmium, lead, nickel, and zinc in the discharge and the receiving water continue to be required in conjunction with Whole Effluent Toxicity testing, discussed further below. The monitoring requirement for total recoverable chromium, which is not required in the saltwater Whole Effluent Toxicity testing protocol, has been eliminated.

However, the results of EPA's analysis (Appendix C) indicate discharges of copper and zinc cause, or have a reasonable potential to cause, or contribute to an excursion above the acute aquatic life water quality criterion. Because 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, effluent limitations are expressed as total recoverable metals.[42] As a result, the Draft Permit includes a daily maximum effluent limitation of 5.8 µg/L for total recoverable copper and a daily maximum effluent limitation of 95.1 µg/L for total recoverable zinc, both monitored monthly. In addition, monitoring for total recoverable copper and zinc in the discharge and the receiving water continue to be required in conjunction with Whole Effluent Toxicity Testing, discussed further below.

Finally, while iron is a non-priority pollutant under the CWA, EPA considered the following water quality criterion for the protection of domestic water supplies.[43] This criterion was established for aesthetic, rather than toxicological significance, specifically to prevent objectionable tastes or laundry staining. This criterion has been published by EPA as an organoleptic effect *National Recommended Water Quality Criteria* for iron.

Iron:
300 µg/L

The results of EPA's analysis (Appendix C) indicate discharges of iron cause, or have a reasonable potential to cause, or contribute to an excursion above the organoleptic effect criterion. As a result, the Draft Permit includes an effluent limitation of 300 µg/L for daily maximum total recoverable iron, monitored monthly.

5.2.7 Cyanide

[42] *See* EPA-823-B96-007, *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion:*1996.
[43] USEPA. *Quality Criteria for Water*. EPA 440-9-76-023; July 26, 1976; and *Quality Criteria for Water 1986*. EPA 440/5-86-001; May 1, 1986.

Cyanide is an inorganic pollutant often limited in conjunction with metals, because it readily forms complexes with transition metals, particularly iron. Cyanide occurs in water in many forms, including hydrogen cyanide (HCN), the cyanide ion (CN^-), simple cyanides, metallocyanide complexes, and as organic compounds. The relative concentrations of these forms depend mainly on pH and temperature. Both HCN and CN^- are toxic to aquatic life. The cyanide ion readily converts to hydrogen cyanide at pH values less than 7.0. As a result, when present in surface water, cyanide occurs more commonly as the more toxic hydrogen cyanide. Certain bacteria, fungi, and algae can also produce cyanide, and cyanide is found naturally in several species of plants.[44]

The 2014 Permit included a monitoring requirement for cyanide at Outfall 001 as part of the pollutant scan requirements given concentrations historically measured in groundwater. From December 1, 2014 through April 30, 2020 (Appendix A) for Outfall 001, cyanide was detected above laboratory minimum levels in 2 samples, ranging from 7.62 µg/L and 23 µg/L. EPA completed an analysis to determine if these discharges cause, or have a reasonable potential to cause, or contribute to an excursion above State WQSs using EPA's 2002 *National Recommended Water Quality Criteria* for metals (Appendix C). State WQSs contain minimum criteria applicable to all surface waters for toxic pollutants, which requires the use of EPA's *National Recommended Water Quality Criteria: 2002, EPA 822-R-02-047, November 2002* where a specific pollutant is not otherwise listed in 314 CMR 4.00. *See* 314 CMR 4.05(5)(e). Because the discharge occurs intermittently, EPA considered the acute saltwater aquatic life criteria, and because the receiving water is not a public water supply, EPA considered the human health organism-only criteria. The acute saltwater aquatic life and human health organism-only EPA *National Recommended Water Quality Criteria* for cyanide, expressed as free cyanide, are as follows:

Cyanide:
Saltwater acute (Class SB) = 1 µg/L
Organism-only = 220,000 µg/L

The results of EPA's analysis (Appendix C) indicate discharges of cyanide cause, have a reasonable potential to cause, or contribute to an excursion above the acute aquatic life water quality criteria. As a result, the Draft Permit includes a daily maximum effluent limitation of 1 µg/L for cyanide, monitored monthly. This effluent limitation is expressed as free cyanide. The proposed effluent limitation and continued monitoring requirements are necessary and appropriate to carry out the provisions of the CWA and ensure compliance with State WQSs. *See* CWA §308(a), 33 U.S.C. §1318(a); 40 CFR §§ 122.4(d), 122.44(d)(1).

Because the minimum level of detection for free cyanide is above the criterion, and similar to the approach discussed above for PAHs and TRC, EPA has set a compliance level of 2 µg/L.[45] This value is based on the method with the lowest published minimum level of the analytical methods approved under 40 CFR Part 136.

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[44] *Toxicological Profile for Cyanide.* Agency for Toxic Substances and Disease Registry: July, 2006.
[45] Method OIA 1677-09. *Available Cyanide by Ligand Exchange and Flow Injection Analysis (FIA).* 2010.

5.2.8 Ammonia

Ammonia (NH_3) is the un-ionized form of ammonia nitrogen. Elevated levels of ammonia can be toxic to aquatic life. Temperature and pH affect the toxicity of ammonia to aquatic life. The toxicity of ammonia increases as temperature increases and ammonia concentration and toxicity increase as pH increases. Ammonia can affect fish growth, gill condition, organ weights and hematocrit, and can result in excessive plant and algal growth, which can cause eutrophication. Ammonia can also affect dissolved oxygen through nitrification, in which oxygen is consumed as ammonia is oxidized. Low oxygen levels can then, in turn, increase ammonia by inhibiting nitrification. Total ammonia-nitrogen concentrations in surface waters tends to be lower during summer than during winter due to uptake by plants and decreased ammonia solubility at higher temperatures.

As described above, the Chelsea River is impaired and requires a TMDL for ammonia (un-ionized). EPA's recommended criteria for ammonia in saltwater are based on temperature, pH and salinity in the receiving water. Higher temperatures and higher (more basic) pH values are of greater environmental concern because these conditions result in higher concentrations of the more toxic neutral form of ammonia (NH_3) rather than the ammonium ion (NH_4^+). Based on receiving water sampling from December 1, 2014 through September 30, 2020 , the surface water pH in Chelsea River ranged from 6.95 to 7.95 S.U. and the salinity ranged from 0.0151 to 40.5 grams per kilogram (g/kg) (or parts per thousand (ppt)). Water quality data from the Massachusetts Water Resources Authority's (MWRA) monitoring program for sampling location 027, located near the Facility on Chelsea River[46] indicates that the surface water temperature in the Chelsea River from June to October during the years 2008 through 2018 ranged from 1.5°C to 24.7°C. The salinity at MWRA sampling location 027 ranged from 7 to 33 ppt with a median value of 30 ppt. EPA determined applicable criteria for ammonia representative of the worst-case scenario using values for pH set at 8.5 SU, which is the maximum allowable water quality standard for Class SB waters, a median salinity of 30 ppt, and maximum and minimum temperature of 24.7°C and 1.5°C, respectively, representative of warm and cold water conditions.

Stormwater discharges from the Facility are intermittent. Therefore, EPA has assessed the potential for discharges of stormwater from the Facility to exceed the acute criterion. According to the 1989 *Ambient Aquatic Life Water Quality Criteria for Ammonia (Saltwater[47])*, when the receiving water temperature is 24.7°C, the maximum allowable pH of the receiving water is 8.5 SU, and the receiving water salinity is 30 ppt, the recommended warm-water acute criterion value is 1.8 mg/L. When the cold-water temperature is 1.5°C, the recommended cold-water acute criterion value is 9.4 mg/L. The 2014 Permit included quarterly monitoring for ammonia associated with WET testing. From December 1, 2014 through October 31, 2020, ammonia was detected above laboratory detection limits in 11 of 15 samples with a maximum value of 1.87 mg/L at Outfall 001. The results of EPA's analysis indicate discharges of ammonia have a reasonable potential to cause or contribute to an excursion above the State WQS (Appendix C).

[46] Massachusetts Water Resources Authority Water Quality Monitoring Program Water Quality Data available at: http://www.mwra.state.ma.us/harbor/html/wq_data.htm

[47] http://water.epa.gov/scitech/swguidance/standards/upload/2001_10_12_criteria_ambientwqc_ammoniasalt1989.pdf

As a result, the Draft Permit includes a maximum daily effluent limitation for ammonia (as N) of 1.8 mg/L for the warm weather period of April through October, monitored monthly.

5.2.9 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 individual 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.

The regulations at 40 CFR §122.44(d)(ii) state, "*When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution...(including) the sensitivity of the species to toxicity testing...*" In 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 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*." Further, State implementation policy[48] specifies WET testing requirements as part of its interpretation of the narrative criteria for toxic pollutants, stating that "[w]*hole effluent toxicity testing will be used to complement specific chemical testing*." This State implementation policy establishes numeric criteria for toxicity. The State recommended criterion to prevent acutely toxic effects is 0.3 toxic units (T.U.). This is based on an adjustment factor of one-third used to extrapolate the LC_{50} to an LC_1 (concentration at which 1% of the test organisms die).

EPA considered WET testing in addition to chemical specific criteria when evaluating whether discharges from the Facility meet WQSs. The 2014 Permit required acute WET testing for effluent and chemical analysis requirements for the receiving water quarterly for three years, and once per year thereafter. The 2014 Permit required that testing be conducted for both the Mysid Shrimp (*Americamysis bahia*) and Inland Silverside (*Menidia beryllina*). The State recommended criterion to prevent acutely toxic effects is 0.3 toxic units (T.U.). This is based on an adjustment factor of one-third used to extrapolate the LC_{50} to an LC_1 (concentration at which 1% of the test organisms die). From December 1, 2014 through November 30, 2019, WET testing results indicate a LC_{50} of equal to or greater than 100% in each of the tests completed for both test species. Since no toxicity was detected in the effluent, there is no reasonable potential to cause an excursion above the acute criterion for toxicity, and numeric effluent limitations for toxicity are not required.

[48] *Massachusetts Water Quality Standards Implementation Policy for the Control of Toxic Pollutants in Surface Waters.* February 23, 1990.

In accordance with EPA guidance,[49] and as described in the Fact Sheet issued with the draft 2014 Permit, EPA determined that WET testing is warranted because: 1) the receiving water is impaired for its designated uses; 2) the discharge is a source of these pollutants; and 3) one or more of these pollutants are known to exhibit additive, synergistic or antagonistic effects. These conditions have not changed since the issuance of the 2014 Permit. Therefore, EPA maintains that WET testing is necessary to ensure WQSs are met when the discharge contains pollutants not limited through chemical-specific testing, pollutants that have additive, synergistic or antagonistic effects, for which bioavailability can vary. WET testing will also address monitoring necessary for additional pollutants required in this permit reissuance for the discharge, the receiving water, or both (e.g., metals in the discharge and receiving water). Therefore, the WET requirements are necessary and appropriate to carry out the provisions of the CWA and ensure compliance with State WQSs. *See* CWA §308(a), 33 U.S.C. §1318(a).

Toxicity testing must be performed in accordance with EPA Region 1's test procedures and protocols specified in **Attachment A,** *Marine Acute Toxicity Test Procedure and Protocol* (July 2012) of the Draft Permit. The Permittee must collect the required receiving water sample (i.e., diluent) from the Chelsea River at a point immediately outside of the permitted discharge's zone of influence at a reasonably accessible location. A receiving water control (0% effluent) must also be tested. If toxicity is indicated, the Permittee may use alternate dilution water in accordance with the provisions in the Draft Permit. Results of these toxicity tests will demonstrate compliance with State WQSs.

5.2.10 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.[50] 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.

On October 2, 2020, Massachusetts DEP published an Office of Research and Standards Guideline (ORSG) level for drinking water that applies to the sum of the following PFAS: [51,52]

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[49] See *Policy for the Development of Water Quality-Based Permit Limitations for Toxic Pollutants*, 49 FR 9016, March 9, 1984, *NPDES Permit Writer's Manual*, EPA-833-K-10-001, September 2010, and *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991 (Second Printing).
[50] 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
[51] https://www.mass.gov/info-details/per-and-polyfluoroalkyl-substances-pfas
[52] https://www.mass.gov/regulations/310-CMR-22-the-massachusetts-drinking-water-regulations

- Perfluorohexanesulfonic acid (PFHxS)
- Perfluoroheptanoic acid (PFHpA)
- Perfluorononanoic acid (PFNA)
- Perfluorooctanesulfonic acid (PFOS)
- Perfluorooctanoic acid (PFOA)
- Perfluorodecanoic acid (PFDA)

Based on the ORSG, MassDEP recommends that:

1. Consumers in sensitive subgroups (pregnant women, nursing mothers and infants) not consume water when the level of the six PFAS substances, individually or in combination, is above 20 ppt.
2. Public water suppliers take steps expeditiously to lower levels of the six PFAS individually or in combination, to below 20 ppt for all consumers.

In October 2020, MassDEP finalized revisions to 310 CMR 22.00: Drinking Water Regulation that set a new PFAS Maximum Contaminant Level (MCL) of 20 ppt (ng/L) for the sum of the concentrations of six PFAS compounds, including all six compounds addressed by the ORSG (listed above).

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.

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 effluent sampling for PFAS chemicals, six months after 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 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 six months after EPA's multi-lab validated method for wastewater is made available to the public on EPA's CWA methods program website For wastewater see https://www.epa.gov/cwa-methods/other-clean-water-act-test-methods-chemical and https://www.epa.gov/cwa-methods. EPA expects this method will be available by the end of 2021.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. After one year of monitoring, if all samples are non-detect for all six PFAS compounds, using EPA's multi-lab validated method for wastewater, the Permittee may request to remove the requirement for PFAS monitoring.

5.3 Special Conditions

5.3.1 Best Management Practices

Best management practices (BMPs) may be expressly incorporated into a permit on a case-by-case basis where it is determined that they are necessary to achieve effluent limitations and standards or to carry out the purpose and intent of the CWA under § 402(a)(1). BMPs may be necessary to control or abate the discharge of pollutants when: 1) authorized under section 304(e) of the CWA for the control of toxic pollutants and hazardous substances from ancillary industrial activities; 2) authorized under CWA § 402(p) for the control of stormwater discharges; 3) numeric effluent limitations are infeasible; or 4) the practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. *See* 40 CFR 122.44(k). Stormwater at the Facility has the potential to come into contact with

materials stored at the Facility or contamination in soil or groundwater from historical and/or current activities. The Facility also periodically discharges hydrostatic test water.

The Draft Permit requires the selection, design, installation, and implementation of control measures for stormwater associated with the Facility operations to comply with the non-numeric technology-based effluent limits in the Draft Permit. In essence, the Draft Permit requires the Permittee to implement and continually evaluate the Facility's structural controls (e.g., OWS, containment areas, holding tanks), operational procedures, and operator training. Proper implementation of BMPs will minimize the potential discharge of pollutants in stormwater related to inadequate treatment, human error, and/or equipment malfunction. The non-numeric limitations in the Draft Permit, listed below, have been updated based on the limitations specified in Part 2.1.2 of EPA's MSGP.[53] Non-numeric limitations include:

- Minimize exposure of processing and material storage areas to stormwater discharges.
- Design good housekeeping measures to maintain areas that are potential sources of pollutants;
- Implement preventative maintenance programs to avoid leaks, spills, and other releases of pollutants to stormwater that is discharged to receiving waters;
- Implement spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur;
- Design erosion and sediment controls to stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants; the Draft Permit also proposes a site-specific enhancement that the Permittee incorporate control measures to ensure bank stabilization, including, but not limited to, the marine vessel dock and any seawall areas owned or controlled by the Permittee;
- Utilize runoff management practices to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff;
- Develop proper handling procedures for salt or materials containing chlorides that are used for snow and ice control;
- Conduct employee training to ensure personnel understand the requirements of this permit;
- Evaluate for the presence of non-stormwater discharges. Any non-stormwater discharges not explicitly authorized in the Draft Permit or covered by another NPDES permit must be eliminated; and
- Minimize dust generation and vehicle tracking of industrial materials.

In addition to the general limitations described above, the Draft Permit also includes BMPs, either continued from the 2014 Permit or based on EPA's *Technical Support Document for the 2004 Effluent Guidelines Program Plan*, EPA's MSGP, and/or EPA's RGP.[54] BMP requirements include:

[53] The 2021 MSGP is currently available at: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp#.
[54] EPA-821-R-04-014 is currently available at: https://www.epa.gov/eg/effluent-guidelines-plan-support-documents;

- Administrative control BMP: requires the Permittee to comply with the inspection and visual assessment requirements in Part 3.1 and 3.2 of the 2021 MSGP and the corrective action requirements in Part 5.1 through 5.3 of the 2021 MSGP;[55]
- Control Measure BMP: requires the Permittee to comply with the control measure requirements in Part 2.1 and 2.1.1 of the 2021 MSGP in order to identify pollutant sources and select, design, install and maintain the pollution control technology necessary to meet the effluent limitations in the permit and[?] that ensure dilution is not used as a form of treatment;[56]
- Discharge practices BMP: requires the Permittee, to the maximum extent practicable, to avoid discharging stormwater, hydrostatic test water and groundwater during worst-case conditions (i.e., the hour before and after slack tide and during periods of lowest receiving water flow). The Draft Permit also proposes that the Permittee further avoid discharging concurrently with the other facilities located along Chelsea Creek.
- Effluent Flow BMP: requires the Permittee to document the measures and methods used to control flow through both the stormwater and groundwater treatment systems to ensure that the design flow of the treatment system is not exceeded;
- Flammable Material/Fire Control BMP: requires the Permittee to design and implement response procedures for ethanol, materials that are used for spill and fire control (e.g. aqueous film-forming foam). This must include specific provisions for the treatment of ethanol and/or pollutants in materials that are used for spill and fire control, should release occur;
- Major Storm Events BMP: requires the Permittee to implement structural improvements, enhanced/resilient pollution prevention measures, and other mitigation measures can help to minimize impacts from stormwater discharges from major storm events such as hurricanes, storm surge, extreme/heavy precipitation and flood events.[57] This BMP requirement is based on a similar provision in EPA's 2021 MSGP;[58] and
- Quality Assurance/Quality Control BMP: requires the Permittee to document monitoring requirements, sample collection procedures, sample analysis procedures,[59] a schedule for the review of sample results and data validation and reporting processes.

The 2021 MSGP is currently available at: https://www.epa.gov/npdes/stormwater-discharges-industrial-activities-epas-2021-msgp#; The 2017 RGP is currently available at: https://www.epa.gov/npdes-permits/remediation-general-permit-rgp-massachusetts-new-hampshire.

[55] Where the MSGP refers to limitations, conditions or benchmarks, including the SWPPP, for the purposes of this permit, these shall refer to the limitations and conditions in this permit.

[56] Page 7-113 of EPA-821-R-04-014 states, "[w]astewater requiring primary and/or secondary treatment (because it is contaminated with oil and grease and total petroleum hydrocarbons) is typically tank bottom water, loading/unloading rack water, a portion of the tank basin water, wastewater generated during remediation, and water used for hydrostatic testing." *See* Part 2.5.2.d of the 2017 RGP for example technologies and additional resources.

[57] If such stormwater control measures are already in place due to existing requirements mandated by other state, local or federal agencies, the Permittee must document in the SWPPP a brief description of the controls and a reference to the existing requirement(s). If the Facility may be exposed to or has previously experienced such major storm events, additional stormwater control measures that must be considered are specified in the Draft Permit.

[58] 85 Fed. Reg. 04254 (March 2, 2020).

[59] Sample analysis must comply with the *National Pollutant Discharge Elimination System (NPDES): Use of Sufficiently Sensitive Test Methods for Permit Applications and Reporting Rule*. *See* Fed. Reg. 49,001 (Aug. 19, 2014).

- Stormwater system BMP: requires the Permittee to eliminate discharges of groundwater to the stormwater conveyance system if such discharges contribute pollutants and are not otherwise explicitly authorized (e.g., internal Outfall 003) and implement routine inspection and sampling to ensure identification and elimination. The Draft Permit also proposes that the Permittee complete a cross-connection evaluation, to ensure that the stormwater conveyance system does not contribute pollutants to or convey pollutants from a municipal separate storm sewer system (MS4) to the receiving water.

The non-numeric effluent limitations support, and are as equally enforceable as, the numeric effluent limitations included in the Draft Permit. The purpose of these requirements is to reduce or eliminate the discharge of pollutants to waters of the United States. They have been selected on a case-by-case basis based on those appropriate for this specific facility. *See* CWA §§ 304(e), 402(a)(1); 40 CFR § 122.44(k). These requirements will also ensure that discharges from the Facility will meet State WQSs pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1). Unless otherwise stated, the Permittee may select, design, install, implement and maintain BMPs as the Permittee deems appropriate to meet the permit requirements. The selection, design, installation, implementation and maintenance of control measures must be in accordance with good engineering practices and manufacturer's specifications and must take future conditions into consideration.

As noted previously, the 2014 Permit included a site-specific discharge practices BMP, which required the Permittee to avoid discharges during worst-case conditions, relative to slack tide and periods of lowest receiving water flow, specifically. EPA requests comment on whether it is also appropriate for the permit to require the Facility to avoid discharging at the same time as the other petroleum bulk storage facilities along Chelsea River and/or whether it would be best to require a permittee to sequence its discharge starting from the uppermost Facility (i.e., Global Companies, LLC) and progressing downstream to the confluence with Boston Inner Harbor (i.e., Chelsea Sandwich, LLC). EPA believes this type of control could reduce the potential for cumulative impacts.

One approach could be to use EPA's *Watershed-Based National Pollutant Discharge Elimination System (NPDES) Permitting Implementation Guidance*.[60] The Draft Permit for the Facility implements controls on the near-field effects of discharges, that is, the predicative impact of discharges from the Facility immediately downstream based on effluent and ambient data, and no available dilution. However, regulated point source discharges to the Chelsea River are located throughout the watershed in relatively close proximity. Therefore, the control of watershed-wide loading from far-field lends itself to a larger-scale approach to worst-case conditions and ensures water quality standards are met. EPA requests comment regarding how such controls should be identified and implemented in the permit. It is in the interests of the watershed and all stakeholders for EPA to make as informed a decision as possible on this critically important issue, in order for EPA to select an appropriate permit regime (i.e., one that will be effective on a watershed-wide basis).

[60] EPA 833-B-03-004, December 2003. Currently available at: https://www3.epa.gov/npdes/pubs/watershedpermitting_finalguidance.pdf

EPA also requests comment on whether it is appropriate for the permit to require the Facility to consider implementing enhanced controls to minimize impacts from stormwater discharges from major storm events. EPA requests information on structural improvements, enhanced pollution prevention measures, and other mitigation measures that the permit could require the Facility to consider. EPA also requests comment on how the Permittee might identify areas of the Facility that are at the highest risk for stormwater impacts from major storms that cause extreme flooding conditions.

One approach could be to use the Federal Emergency Management Agency's (FEMA) Flood Map Service Center (found at https://msc.fema.gov/portal/search) to determine if a facility (or portions thereof) is in a "Special Flood Hazard Area" (SFHA) or "Other Area of Flood Hazard." SFHAs are defined as the area that will be inundated by the flood event having a 1-percent chance of being equaled or exceeded in any given year. The 1-percent annual chance flood is also referred to as the base flood or 100-year flood. SFHAs are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. "Other flood hazard areas" (or moderate flood hazard areas) labeled Zone B or Zone X (shaded) are also shown on the Flood Map and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (unshaded). More information on FEMA flood zones can be found at https://www.fema.gov/flood-zones.

According to the FEMA map(s) covering the location of the Facility, the marine vessel dock, tank farm and portions of the terminal yard are within the SFHA and are classified Zone AE. *See* https://msc.fema.gov/portal/search. The remaining portions of the terminal yard, including the truck loading rack, are not within the SFHA and are classified Zone X. *Id.* EPA seeks comment on whether it should use the FEMA maps to identify areas for which the Major Storm Events BMP should apply and, if so, which classifications EPA should use and why. EPA also invites comment on whether it should consider other data or information and, if so, requests that commenters identify any such data and information with particularity.

As noted previously, the 2014 Permit included a site-specific stormwater system BMP, which required the Permittee to evaluate the integrity of the stormwater collection system, and to determine the relative contribution of pollutants, if any, from contact with potentially contaminated groundwater and soil. The Permittee was specifically required to document any stormwater system components that are potentially located below the annual high groundwater table that are susceptible to groundwater infiltration and assess through appropriate measures the level of infiltration that occurs (e.g., conduct a visual inspection of the readily accessible portions of the stormwater collection system, and/or measurement of groundwater and stormwater accumulation points as verification of segregation). EPA expects that these activities have been completed, except the proposed evaluation of potential MS4 cross-connections. Therefore, this BMP requirement has been updated in the Draft Permit as listed in this section, above.

This stormwater system BMP is necessary because the Draft Permit only explicitly authorizes discharges of remediation wastewater, where captured and treated, and discharges of

uncontaminated groundwater or spring water (i.e., groundwater infiltration that does not contribute pollutants). See Section 5.5.3, below. To further clarify the groundwater discharges authorized under the Draft Permit, the Draft Permit explicitly prohibits discharges of remediation wastewater, except via internal Outfall 003. In the event prohibited wastewater remediation discharges (i.e., groundwater infiltration that contributes pollutants) have been identified or are identified in the future, this discharge is now considered prohibited under the Draft Permit, and the Permittee must follow the corrective action requirements described above to eliminate such discharges. See also Section 5.5.6, below.

Finally, the 2014 Permit included a site-specific spill control BMP, which required the Permittee to document methods and measures intended to reduce, minimize or eliminate the occurrence and impact of spills, document the procedure for informing the appropriate entity of accidental releases, and maintain a record of reportable releases. Since both the spill prevention and response and non-stormwater discharges limitations are included in full by reference from EPA's 2021 MSGP, these site-specific BMPs are redundant. As a result, EPA has not included them in the Draft Permit. Where duplicative, activities documented under spill prevention and response regulations (e.g., Spill Prevention Control and Countermeasure (SPCC) plan and Facility Response Plan (FRP)) may be incorporated into the Facility's SWPPP.

5.3.2 Stormwater Pollution Prevention Plan

On September 9, 1992, EPA issued its general permit for stormwater discharges associated with industrial activity, which, among other things, required all facilities to implement technology-based pollution prevention measures in lieu of numeric limitations and to prepare a Stormwater Pollution Prevention Plan (SWPPP) documenting the implementation of these measures. [61] The general permit established a process whereby the operator of the industrial facility evaluates potential pollutant sources at the site and selects and implements appropriate measures designed to prevent or control the discharge of pollutants in stormwater runoff.[62] This Draft Permit contains BMPs for stormwater associated with industrial activity at the Facility. In addition to BMPs, the Draft Permit also requires the Permittee to develop, implement, and maintain a SWPPP for stormwater discharges associated with the operation of the Facility. These requirements are consistent with Part 5 of EPA's 2021 MSGP. The Draft Permit specifies that the SWPPP must include the following, at a minimum:

- Stormwater pollution prevention team;
- Site description;
- Drainage area site map;
- Summary of potential pollutant sources;
- Description of all stormwater control measures; and
- Schedules and procedures pertaining to implementation of stormwater control measures, inspections and assessments, and monitoring.

[61] 57 Fed. Reg. 41,236, 41,264 (September 9, 1992).
[62] *Id.* at 41242.

The development and implementation of the SWPPP is an enforceable element of the permit. The Draft Permit directs the Permittee to incorporate BMPs, as described above, directly into the SWPPP, which serves to document the selection, design and installation of control measures selected to meet the permit effluent limitations. The goal of the SWPPP is to document the implementation of BMPs designed to reduce or prevent the discharge of pollutants to waters of the United States either directly or indirectly through stormwater runoff.

The Draft Permit requires the Permittee within ninety (90) days of the effective date of the permit to certify that the SWPPP has been prepared, meets the requirements of the permit, and documents the control measures, including BMPs, that have been implemented to reduce or eliminate the discharge of pollutants from stormwater associated with the operation of the Facility. The Permittee must also certify at least annually that the Facility has complied with the BMPs described in the SWPPP, including inspections, maintenance, and training activities. The Permittee is required to amend and update the SWPPP if any change occurs at the Facility affecting the SWPPP, such as changes in the design, construction, operation, or maintenance of the Facility, or revisions and improvements are made to the stormwater management program based on new information and experiences with wet weather events, including major storm events and extreme flooding conditions. The SWPPP must be maintained on site at the Facility and provided to EPA and/or the State upon request. All SWPPP records must be maintained on-site for at least three years.

5.3.3 Allowable Non-Stormwater Discharges

The 2014 Permit specified additional non-stormwater discharges allowed in discharges from the Facility, provided the additional non-stormwater discharges meet all effluent limitations in the Draft Permit. These discharges, listed below, have been updated based on the non-stormwater discharges allowable under EPA's 2021 MSGP.[63]

- Discharges from emergency/unplanned fire-fighting activities;
- Fire hydrant flushings;
- Potable water, including water line flushings (unless associated with hydrostatic testing);
- Uncontaminated condensate from air conditioners, coolers/chillers, and other compressors and from the outside storage of refrigerated gases or liquids;
- Irrigation drainage;
- Landscape watering provided all pesticides, herbicides, and fertilizers have been applied in accordance with the approved labeling;
- Pavement wash waters where no detergents or hazardous cleaning products are used (e.g., bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols) and the wash waters do not come into contact with oil and grease deposits, sources of pollutants associated with industrial activities, or any other toxic or hazardous materials, unless residues are first cleaned up using dry clean-up methods (e.g., applying absorbent materials and sweeping, using hydrophobic mops/rags) and appropriate control measures have been implemented to minimize discharges of mobilized solids and other pollutants (e.g., filtration, detention; settlement);

[63] *See* Part 1.2.2.1 of EPA's 2021 MSGP.

- Routine external building washdown/power wash water that does not use detergents or hazardous cleaning products (e.g., those containing bleach, hydrofluoric acid, muriatic acid, sodium hydroxide, nonylphenols);
- Uncontaminated groundwater or spring water;
- Foundation or footing drains where flows are not contaminated with process materials; and
- Incidental windblown mist from cooling towers that collects on rooftops or adjacent portions of the Facility, but not intentional discharges from the cooling tower (e.g., "piped" cooling tower blowdown; drains).

EPA notes that the routine washdown of the exterior of the tanks at the Facility is allowable under these conditions. EPA believes this activity is encompassed by "building washdown/power wash water" provided chemicals and/or additives are not added, unless in accordance with the conditions pertaining to discharges of chemicals and additives, below.

EPA also notes, as previously described, the 2014 Permit contained non-numeric requirements for the Permittee to identify infiltration of groundwater into the stormwater system. EPA expects that these activities have been completed. The 2014 Permit authorized uncontaminated groundwater or spring water (i.e., groundwater infiltration that does not contribute pollutants). The Draft Permit continues to authorize discharges of uncontaminated groundwater or spring water (i.e., groundwater infiltration that does not contribute pollutants). To further clarify the groundwater discharges authorized under the Draft Permit, the Draft Permit explicitly prohibits discharges of remediation wastewater (i.e., groundwater infiltration that contributes pollutants). See Section 5.5.6, below.

5.3.4 Hydrostatic Testing

The tanks and/or pipe networks used for the storage and conveyance of petroleum products at the Terminal sometimes require maintenance or repair. To ensure safe working conditions during this maintenance work, storage tanks and/or pipe networks are rigorously cleaned (e.g., "Poly Brushed", "Squeegee Pigged") and certified as being product-free. After completing maintenance work, the vessels and/or pipe networks may be hydrostatically tested for leaks. Hydrostatic testing involves filling the vessel or pipe with fluid under pressure and monitoring pressure drops over time. If the system maintains a constant pressure, there are no leaks. River water or potable water may be used as a source of hydrostatic test water. Thus, hydrostatic test water discharge may contain minimal amounts of foreign matter, trace amounts of hydrocarbons, background material found in the river or residual chlorine. Hydrostatic testing has not been conducted at the Facility in the last five years.

As a precaution, the Draft Permit requires any hydrostatic test water to be monitored as described in Part I.C.3 of the Draft Permit and treated through the stormwater treatment system prior to being discharged to the Chelsea River. In addition, the Draft Permit requires control of the flow of hydrostatic test water to prevent exceeding the maximum design flow rate of the OWS, 700 GPM. The Draft Permit requires the collection of a minimum of five representative samples of the hydrostatic test water, and specifies the pollutants required. These pollutants include those limited in the Draft Permit and the additional parameters that were included in the 2014 Permit,

based on requirements for this type of discharge surveyed in EPA's ELG Document and/or included in EPA's RGP, Category IV – Pipeline and Tank Dewatering.

The Draft Permit requires the hydrostatic test waters released from the tank(s) and/or pipelines and treated through the stormwater treatment system meet the effluent limitations and satisfy all other conditions of the Draft Permit. In addition, the Draft Permit requires the Permittee to routinely observe the surface of the OWS during discharge of hydrostatic test waters, in order to detect any increases in the separated oil layer and to prevent inadvertent release of hydrocarbons to the receiving water. In the event that there is evidence of such a release (e.g., visible oil sheen and/or noticeable increase in turbidity of discharge water), the Draft Permit requires the Permittee to immediately halt the transfer of hydrostatic test water and take steps to correct the problem.

These requirements are intended to provide adequate characterization of the influent, in-process, and effluent hydrostatic test water and are similar to requirements for similar facilities that discharge hydrostatic test water to Massachusetts receiving waters under EPA's RGP. Sampling of the above parameters is necessary to identify whether there are any residual contaminants present in the hydrostatic test water that might require the permit to be modified or reopened. All discharges of hydrostatic test water are subject to the numeric and non-numeric effluent limitations in the Draft Permit.

5.3.5 Discharges of Chemicals and Additives

Chemicals and additives include, but are not limited to: algaecides/biocides, antifoams, coagulants, corrosion/scale inhibitors/coatings, disinfectants, flocculants, neutralizing agents, oxidants, oxygen scavengers, pH conditioners, and surfactants. The Draft Permit allows the discharge of only those chemicals and additives specifically disclosed by the Permittee to EPA. The following chemicals and additives were disclosed to EPA:

- Paints
- Antifreeze
- Oils and fluids – transmission fluid, hydraulic oil, compressor oil
- Ice Melts and Road Salts – rock salt
- pH adjustment – Vita-D-Chlor, sodium metabisulfite
- Fire suppressant foams – foam seal oil, universal plus C6 3%/6% alcohol resistant, AR-AFFF
- Piping epoxys
- Weed and pest control – Esplande 200 SC, Telar XP, Rodeo herbicide, Oust Extra herbicide
- Boiler chemicals

EPA recognizes that new chemicals and additives may become necessary at a Facility during the term of the permit. As a result, the Draft Permit includes a provision that requires the Permittee to notify EPA and the State in writing of the proposed discharge of a new chemical or additive; allows for EPA and State review of the change; and provides the factors for EPA and State

consideration of such a change. The Draft Permit specifies that for each chemical or additive, the Permittee must submit the following information, at a minimum, in writing to EPA and the State:

- Product name, chemical formula, and manufacturer of the chemical/additive.
- Purpose or use of the chemical/additive.
- Safety Data Sheet (SDS) and Chemical Abstracts Service (CAS) Registry number for each chemical/additive.
- The frequency (e.g., hourly, daily), magnitude (e.g., maximum and application concentration), duration (e.g., hours, days), and method of application for the chemical/additive.
- If available, the vendor's reported aquatic toxicity (i.e., NOAEL and/or LC_{50} in percent for aquatic organism(s)).

The Permittee must also provide an explanation which demonstrates that the discharge of such chemical or additive will not: 1) add any pollutants in concentrations which exceed any permit effluent limitation; and 2) add any pollutants that would justify the application of permit conditions different from, or in addition to those currently in this permit.

Assuming these requirements are met, discharge of a new chemical or additive is authorized under the permit upon notification to EPA and the State unless otherwise notified by EPA or the State.

EPA notes that the 2014 Permit expressly prohibited the discharge of the following additives: glutaraldehyde, ethylene glycol, butoxyethanol, alkyl acrylate nitrito styrene polymer, coco alkylamine, 1,2,3 and 4-trimethylbenzene, 1,3,5-trimethylbenzene and methyl isobutyl ketone. These additives continue to be prohibited in the Draft Permit.

5.3.6 Bioassessment

EPA recognizes that the Chelsea River aquatic habitats have been impacted by industrial activity in the watershed. This includes the designated use for aquatic life and designated essential fish habitat in the vicinity of the Facility's outfalls. As described above, the Chelsea River is impaired for, and listed as not supporting, the Aquatic Life designated use due to sediment screening value. See Section 4.1 above. Contaminated sediments are explicitly noted as one of the sources of this cause , and activities at the Terminals are listed among the sources of the impairment to the Aquatic Life designated use (i.e., cargo loading/unloading, above ground storage tank leaks, accidental release). In addition, the Chelsea River is impaired for the Fish Consumption designated use, and while the cause of the impairment is noted as "other," contaminated sediments are also identified as a source. State WQSs at 314 CMR 4.05(5)(b) (b) include narrative criteria for bottom pollutants or alterations, which states, "[a]ll surface waters shall be free from pollutants in concentrations or combinations or from alterations that adversely affect the physical or chemical nature of the bottom, interfere with the propagation of fish or shellfish, or adversely affect populations of non-mobile or sessile benthic organisms." State WQSs at 314 CMR 4.05(5)(e)3 also contain narrative criteria for accumulation of pollutants applicable to all classes, which states, "[w]here appropriate the Department shall use an additional margin of safety when establishing water quality based effluent limits to assure that pollutants do not persist in the environment or accumulate in organisms to levels that: a. are toxic

to humans, wildlife or aquatic life; or b. result in unacceptable concentrations in edible portions of marketable fish or shellfish or for the recreational use of fish, shellfish, other aquatic life or wildlife for human consumption.

As referenced above, a 2005 United States Geological Survey study identified chemicals present in sufficiently high concentrations in Chelsea River sediment to pose a threat to benthic organisms. As described above, the types of pollutants in the discharges from the Facility include sediment/solids, and pollutants that exhibit physical and chemical characteristics that can accumulate in sediments. While the 2014 Permit included a site-specific ambient monitoring program that required the Permittee to collect data regarding ambient water chemistry in the vicinity of the Facility to address the impairments to the Chelsea River, this monitoring was limited to the water column and did not address impairments related to contaminated sediments. EPA has determined that such an assessment is needed to inform the extent of ongoing and/or cumulative impacts to the waterbody and its designated uses, including as habitat for fish and other aquatic life.

Specifically, the bioassessment requires the Permittee to collect: water quality data (e.g., water temperature, turbidity); supporting environmental data (e.g., air temperature, precipitation); river channel morphology data (e.g. cross sectional profile of the river depth); substrate characterization data (e.g. grain size composition, total organic carbon (TOC) and benthic infauna); benthic pollutant data (e.g, Part I.A.1 list of pollutants); and qualitative biological data (e.g., macroinvertebrates, fish, aquatic macrophytes). These requirements have been proposed largely based on EPA's *Estuarine and Coastal Marine Waters: Bioassessment and Biocriteria Technical Guidance*.[64] An example of a summary report and procedures, for reference, may be found in the 2018 Boston Harbor Benthic Monitoring Report.[65] Test methods used for analysis of water samples must be sufficiently sensitive. Water analysis must utilize test methods in 40 CFR Part 136. Sediment and biological sampling must follow *Methods for the Determination of Chemical Substances in Marine and Estuarine Environmental Matrices - 2nd Edition*, whenever possible.[66]

These data will enable EPA to complete a comparative analysis during subsequent permit development regarding the extent to which discharges from the Facility cause, or have a reasonable potential to cause or contribute, to excursions above State WQSs. These data will further inform whether the numeric and non-numeric effluent limitations (e.g., BMPs) in the Draft Permit result in measurable improvement in the habitat and whether additional limitations are necessary. Therefore, the proposed effluent monitoring requirements are necessary and appropriate to carry out the provisions of the CWA and ensure compliance with applicable WQSs as required by CWA § 402(a)(2) and 40 CFR § 122.4(d). See CWA §308(a), 33 U.S.C. §1318(a). The 2005 data noted above, to the extent possible, will be used to inform the baseline conditions.

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[64] EPA Office of Water. *Estuarine and Coastal Marine Waters: Bioassessment and Biocriteria Technical Guidance.* EPA-822-B-00-024: December 2000.
[65] Massachusetts Water Resources Authority, Environmental Quality Report No. 2019-09: July 2019.
[66] EPA Office of Research and Development. *Methods for the Determination of Chemical Substances in Marine and Estuarine Environmental Matrices - 2nd Edition.* EPA/600/R-97/072, as may be revised.

The objective of the CWA, Section 101, is to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). Thus, the Act mandates the restoration and maintenance of biological integrity in the Nation's waters. The combination of performing biological assessments and comparing the results with established biological criteria is an efficient approach for evaluating the biological integrity of aquatic ecosystems. *See also* CWA §§ 305(b), 301(h), and 403(c). Section 9.1.1 of EPA's Permit Writer's Manual notes that, "[a]dditional monitoring requirements and special studies generally are used to supplement numeric effluent limitations or support future permit development activities. Examples of the types of special studies that could be required in an NPDES permit include…[s]ediment monitoring," included in a permit if pollutants contained in discharges may accumulate in the sediments of the receiving water.[67] The application of sediment and biological monitoring in this case will inform:

- Measuring improvement or lack of improvement of mitigation efforts (e.g., BMPs).
- Developing protocols that demonstrate the relationship of biological metrics to effluent characteristics.
- Performing aquatic life use compliance monitoring.
- Helping to verify that NPDES permit limits are resulting in achievement of State WQSs.

EPA requests comment on: 1) the degree to which the permit requires the Facility to assess the physical, chemical and biological condition of the bottom sediments, for example, utilizing a different guidance; 2) whether this assessment is better conducted in conjunction with the other petroleum bulk storage facilities along Chelsea River; 3) whether it would be best to require permittees to sequence assessment over the entire permit term (e.g., starting from the uppermost Facility (i.e., Global Companies, LLC) and progressing downstream (i.e., Irving, Gulf and Sunoco) to the confluence with Boston Inner Harbor (i.e., Chelsea Sandwich, LLC); 4) the extent to which existing data substitution should be allowed; 5) if a comparative analysis should include hydrodynamic modelling conducted by the Permittee.

5.3.7 Prohibited Discharges

The 2014 Permit specified several discharges that are explicitly prohibited. These discharges continue to be prohibited in the Draft Permit and have been revised as described below. These prohibited discharges are based on EPA's *Technical Support Document for the 2004 Effluent Guidelines Program Plan*[68] and are necessary to protect the receiving water from the discharges that are most likely to contain toxic pollutants.

5.3.7.1 Tank Bottom Water

The 2014 Permit prohibited discharges of tank bottom water. Tank bottom water is generally a layer of water that has separated from the stored petroleum product in storage tanks due to the density difference between the product and water. Because there is much more product than

[67] EPA Office of Wastewater Management, Water Permits Division. *NPDES Permit Writer's Manual*. EPA-833-K-10-001: September 2010.
[68] EPA-821-R-04-014 is currently available at: https://www.epa.gov/eg/effluent-guidelines-plan-support-documents.

water in a storage tank, as this water settles to the bottom of the tank, it can become highly concentrated with water-soluble materials in the product (e.g., BTEX and PAHs). Whereas stormwater primarily contacts only those hydrocarbons present at the ground surface and then generally only for short periods of time, tank bottom water remains in contact with petroleum products for prolonged periods. Facility operators drain this layer of water to prevent transfer with the finished product as well as to free up storage space. As a result, EPA considers tank bottom water process wastewater, since soluble toxic materials may partition from the petroleum product into the water over time. Discharges of any tank bottom water, either alone or in combination with stormwater or other wastewater discharges, are prohibited in the Draft Permit.

5.3.7.2 Solid Hazardous Waste

The 2014 Permit prohibited discharges of sludge and bottom deposits from any storage tank(s), basin(s), and/or containment area(s) to the receiving water, such as the removal and disposal of accumulated sludge during tank cleaning. While not necessarily emptied specifically for cleaning purposes, a storage tank may be cleaned if it is emptied for maintenance or if it is needed to store a different product. Examples of storage tanks and/or basins include, but are not limited to: primary catch basins, oil/water separators, petroleum product storage tanks, baffled storage tanks collecting spills, and tank truck loading rack sumps. The Draft Permit uses the term “solid and hazardous waste” to refer not just to sludge and solid bottom deposits but to also more broadly include any solids generated at the Facility that must be managed as hazardous waste. Discharges of any solid hazardous waste, either alone or in combination with stormwater or other wastewater discharges, are prohibited in the Draft Permit.

5.3.7.3 Liquid Hazardous Waste

Several liquid hazardous waste sources are described in EPA’s *Technical Support Document for the 2004 Effluent Guidelines Program Plan*, which are common at bulk petroleum storage facilities. For example, tank cleaning may include the recovery of water or detergents used for cleaning. Product sampling may include small volumes of product released from sampling nozzles and stations when the piping is purged of dead volume to obtain a representative sample. Equipment drainage may include pocketing (i.e., product trapped in low points in the piping that is not able to drain in either direction). Waste product (i.e., slop oil) is generated when petroleum product does not meet product specifications and cannot be used or distributed as is. Discharges of these, or any other liquid hazardous waste, either alone or in combination with stormwater or other wastewater discharges, are prohibited in the Draft Permit.

5.3.7.4 Vehicle and Equipment Washing

Vehicle maintenance and equipment washing wastewater sources are described in EPA’s *Technical Support Document for the 2004 Effluent Guidelines Program Plan*. Vehicles and other product transferring equipment typically generate detergents or petroleum product residues. Such wastewater could also contain oil, antifreeze, brake fluid, or other vehicle fluids. The Permittee previously reported that vehicle washing does not occur at the Facility. Discharges of runoff from any vehicle and equipment washing, either alone or in combination with stormwater or

other wastewater discharges, including from the leased portion of the property, are prohibited in the Draft Permit.

5.3.7.5 Ballast Water

The 2014 Permit prohibited discharges of bilge water (i.e., ballast water). Tankers transporting petroleum products may contain ballast water, which may result in wastewater contaminated with product. These wastewaters are typically dilute and very large in volume and usually require treatment such as oil/water separation, dissolved air flotation, biological treatment, and air stripping. The effluent concentration of oil and grease reported for a facility that discharges ballast water ranged from 3 to 5 mg/L. Discharges of ballast water, either alone or in combination with stormwater or other wastewater discharges, are prohibited in the Draft Permit.

5.3.7.6 Accidental Spill and Release

The 2014 Permit prohibited discharges of runoff from spills and releases of petroleum products, excepting conditions that meet the requirements defined in Part II., Standard Conditions. Several sources are described in EPA's *Technical Support Document for the 2004 Effluent Guidelines Program Plan*, including leaks, tank deterioration, and product transfer mishaps. There are various types of leaks, such as pump seal leaks, valve seal leaks, and piping leaks. Tanks can deteriorate over time, causing leaks and rupture. Product transfer mishaps, such as tank overfilling and accidental opening of nozzles can result in accidental releases. Discharges of runoff from any accidental spill or release alone or in combination with stormwater or other wastewater are prohibited in the Draft Permit. *See* CWA § 311.

5.3.7.7 Emulsion Chemicals

Emulsions, the dispersion of product in water or vice versa, are commonly referred to as "rag" or "cuff." Emulsions typically accumulate at the product/water interface because their density is in between the densities of the product and water. Emulsions are stabilized by surfactants (e.g., detergent and soaps) collecting at the product/water interface, which reduce the surface tension and inhibit phase separation. Several sources of emulsions are described in EPA's *Technical Support Document for the 2004 Effluent Guidelines Program Plan*, including product droplets, surfactants, and fine solids. The 2014 Permit prohibited the discharge of surfactants, as well as detergents, and emulsifiers, that were not disclosed in the permit application. However, because petroleum product is separated from wastewater in an OWS by gravity separation, the addition of surfactants, detergents and emulsifiers to the wastewater could adversely affect the separation of petroleum product from wastewater. As a result, discharges of emulsion chemicals, including surfactants (e.g., detergents and soaps), either alone or in combination with stormwater or other wastewater discharges, are prohibited in the Draft Permit.

5.3.7.8 Wastewater Remediation

Soil, sediment and/or groundwater contamination at the Facility is a result of past operations, current operations, or off-site contamination that has migrated on site. Several areas of the Facility have undergone remediation at various times. Groundwater contaminated with dissolved

hydrocarbons is typically pumped to the surface, treated, and discharged. Soil contaminated with petroleum hydrocarbons is typically treated using technology such as air sparging and may generate dewatering discharges. Sediment along the bank disturbed during bank construction, stabilization, and dredging activities typically undergoes dewatering (i.e., drain back waters). The only wastewater remediation authorized by the Draft Permit is Outfall 003. In the event additional groundwater or soil/sediment remediation/dewatering is conducted at the Facility during the permit term, the Permittee is responsible for informing EPA and MassDEP and obtaining coverage for wastewater remediation discharges, either by modifying this NPDES permit or seeking alternative coverage for these discharges (e.g., RGP coverage). Discharges of wastewater generated during remediation activities, including, but not limited to contaminated groundwater, drain back waters, either alone or in combination with stormwater or other wastewater discharges, are prohibited in the Draft Permit.

As previously described, the 2014 Permit contained non-numeric requirements for the Permittee to identify infiltration of groundwater into the stormwater system. EPA expects that these activities have been completed. The 2014 Permit authorized discharges of remediation wastewater via internal Outfall 002. To further clarify the groundwater discharges authorized under the Draft Permit, the Draft Permit explicitly prohibits discharges of remediation wastewater, except via internal Outfall 002. In the event prohibited wastewater remediation discharges (i.e., groundwater infiltration that contributes pollutants) have been identified or are identified in the future, this discharge is now considered prohibited under the Draft Permit, and the Permittee must follow the corrective action requirements described above to eliminate such discharges. See Section 5.3.1, above EPA notes that in order for discharges from the Facility to meet this prohibition, physical modification of the existing stormwater conveyance system may be necessary. Therefore, EPA encourages public comment regarding whether the permit should include a compliance schedule(s) and, if so, what the terms of any schedule(s) should be. See Section 5.3.8, below.

5.3.7.9 Fire Protection Foam

Aqueous fire protection foam is used for fire and vapor suppression of liquid fuel fires. This includes but is not limited to aqueous film-forming foam (AFFF) and alcohol-resistant foam. AFFF is a low expansion foam and can contain surfactants, solvents, or other additives such as corrosion inhibitors, and per- and polyfluoroalkyl substances (PFAS)..[69] Alcohol-resistant foams contain polymers that prevent alcohols from breaking down the foam. The 2014 Permit prohibited discharges of AFFF either in concentrate form or as foam diluted with water during testing or maintenance of the fire suppression system at the Facility. The Draft Permit continues this prohibition. Refer to Section 5.3.4 for information regarding allowable non-stormwater discharges related to emergency fire-fighting activities.

5.3.8 Reopener Clause

[69] U.S. EPA. *Technical Fact Sheet – Perfluoroctane Sulfonate (PFOS) and Perfluorooctanoic Acid (PFOA).* November 2017.

The 2014 Permit included a reopener clause because of the use of indicator parameters. Since indicator parameters are included in the Draft Permit and in accordance with 40 CFR § 122.44(d)(1)(vi)(C), the Draft Permit continues to include a reopener clause. The reopener clause in the Draft Permit allows EPA to modify or revoke and reissue the permit in accordance with 40 CFR § 122.62, including if the limits on the indicator parameters no longer attain and maintain applicable water quality standards.

5.3.9 Compliance Schedule

Several new or more stringent effluent limitations are proposed in the Draft Permit (e.g., TRC, ammonia, cyanide, metals). The Draft Permit does not propose a compliance schedule. However, in order for discharges from the Facility to meet the proposed effluent limitations, physical modification of the existing treatment system may be necessary. Therefore, EPA encourages public comment regarding whether the permit should include a compliance schedule(s) and, if so, what the terms of any schedule(s) should be. Federal regulations provide that any such schedule must require compliance "as soon as possible, but not later than the applicable statutory deadline under the CWA." 40 CFR § 122.47(a)(1). Thus, while a NPDES permit may not include a compliance schedule to meet technology-based effluent limits, a permit may include compliance schedules for meeting water quality-based effluent limits, provided that the schedule would achieve compliance with such limits "as soon as possible." *See id.* § 125.3(a)(2). Further, if a permit establishes a schedule of compliance which exceeds one year from the date of permit issuance, the schedule must include interim requirements and the dates for their achievement. *See id.* § 122.47(a). Massachusetts regulations for schedules of compliance can be found at 314 CMR 3.11(10).

6.0 Federal Permitting Requirements

6.1 Endangered Species Act

Section 7(a) of the Endangered Species Act of 1973, as amended (ESA), grants authority to and imposes requirements on Federal agencies regarding endangered or threatened species of fish, wildlife, or plants (listed species) and any habitat of such species that has been designated as critical under the ESA (i.e., "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 (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 Facility, which discharges treated: 1) stormwater runoff; and 2) hydrostatic test water through Outfall 001 into the Chelsea River. Outfall 001 is located at Latitude 42º 23' 7.4898" N Longitude -71º 02' 40.844" W . The Draft Permit is intended to replace the 2014 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 with the Services, when required under § 7(a)(2) of the ESA.

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. For protected species under the jurisdiction of the USFWS, no threatened or endangered species are expected to be present in the general area encompassing the Chelsea River and the confluence of the Mystic and Chelsea Rivers.[70] EPA has determined that no USFWS federally protected species or their critical habitat overlap with the action area of the Facility. Therefore, ESA section 7 consultation is not required.

Regarding protected species under the jurisdiction of NOAA Fisheries, a number of anadromous and marine species and life stages are present in coastal Massachusetts waters. Various life stages of the following fish, sea turtles and whales have been documented in these near shore waters: Atlantic sturgeon (*Acipenser oxyrinchus*), shortnose sturgeon (*Acipenser brevirostrom*), protected sea turtles such as leatherback sea turtles (*Dermochelys coriacea*), loggerhead sea turtles (*Caretta caretta*), Kemp's ridley sea turtles (*Lepidochelys kempii*) and green sea turtles (*Chelonia mydas*), along with North Atlantic right whales (*Eubalaena glacialis*) and fin whales (*Balaenoptera physalus*).

According to general information from the NOAA Fisheries website, Atlantic sturgeon, shortnose sturgeon, North Atlantic right whales and fin whales may be present in the general area of the bulk oil storage facility (Chelsea River and Inner Boston Harbor).[71] However, when more detailed NOAA Fisheries species tables were reviewed, none of the protected species identified above are expected to be present in the Chelsea or Mystic Rivers or the Inner Boston Harbor.[72]

Based on this assessment, EPA has determined that no NOAA Fisheries federally protected species are likely to be present in the action area. No taking of a listed species is anticipated or exempted.[73] Therefore, consultation with NOAA Fisheries or the USFWS under Section 7 of the ESA is not required. Initiation of consultation is required and shall be requested by EPA or by NOAA Fisheries where discretionary Federal involvement or control over the action has been retained or is authorized by law and if: 1) 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; 2) 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; 3) A new species is listed or critical habitat designated that may be affected by the identified action; or 4) There is any incidental taking of a listed species.

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[70] See §7 resources for USFWS at https://ecos.fws.gov/ipac/.
[71] See §7 resources for NMFS at https://noaa.maps.arcgis.com/apps/webappviewer/index.html?id=1bc332edc5204e03b250ac11f9914a27
[72] https://www.fisheries.noaa.gov/new-england-mid-atlantic/consultations/section-7-species-critical-habitat-information-maps-greater#species-tables
[73] The term "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct. *See* ESA §3(19).

6.2 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". 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". 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), or 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.[16] *See* 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. In a letter to EPA New England dated October 10, 2000, NOAA Fisheries agreed that for NPDES permit actions, EFH notification for purposes of consultation can be accomplished in the EFH section of the Draft Permit's supporting Fact Sheet.

EPA has determined that the Chelsea River is covered by the EFH designation for estuarine systems at Latitude 42º 23' 7.4898" N Longitude -71º 02' 40.844" W, as determined by the NOAA Fisheries EFH Mapper.[74] A list of the managed species and associated life stages expected to occur within the EFH area, as well as a Habitat Area of Particular Concern, are included in Appendix D.

EPA specifically noted that the documentation in support of the Boston Harbor Inner Harbor Maintenance Dredging Project identified a "potential winter flounder spawning area" near the confluence of the Chelsea and Mystic Rivers.[75] Egg, juvenile, larva and adult life stages of winter flounder are covered under Essential Fish Habitat regulations and identified as occurring in the Chelsea River (see Appendix D). This species is a commercially fished, federally managed, bottom dwelling fish. Winter flounder eggs and larvae are typically found near the benthic habitat in shallow areas. However, since winter flounder are expected to spawn on clean sand, the deep navigation channels of the Chelsea and Mystic Rivers, with more silt by composition, would not be expected to be high quality spawning habitat for winter flounder in the vicinity of the Facility.

EPA has determined that the limits and conditions contained in this Draft Permit minimize adverse effects to the EFH and the associated managed species, if present, for the following reasons:

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[74] NOAA Fisheries EFH Mapper available at https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper

[75] See U.S. Army Corps of Engineers New England District, *Final Summary Report Plume Monitoring, Boston Harbor Inner Harbor Maintenance Dredging Project*. June 2009.

- This Draft Permit action does not constitute a new source of pollutants. It is the reissuance of an existing NPDES permit;
- No water is withdrawn by the Facility from the Chelsea or Mystic Rivers, so no life stages of EFH species are vulnerable to impingement or entrainment;
- Acute toxicity tests will be conducted annually to confirm that the discharge does not present toxicity problems;
- The frequency of discharge from the Facility is limited, being intermittent and resulting mainly from the accumulation of stormwater and the operation of the groundwater remediation system;
- The Draft Permit proposes limits on the oil/water separator flow, pH, total suspended solids, oil and grease, benzene, benzo(a)pyrene, benzo(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene,naphthalene, total residual chlorine, total copper, total zinc, total iron, cyanide, and total ammonia;
- The effluent limitations and other permit requirements identified in this Fact Sheet are designed to be protective of all aquatic species, including those with EFH designations;
- The permit prohibits any violation of Massachusetts WQSs; and
- The Draft Permit proposes a bioassessment special condition.

EPA believes that the conditions and limitations contained within the Draft Permit adequately protect all aquatic life, including those species with EFH designation in the Chelsea River. 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 Conservation Division will be contacted and an EFH consultation will be re-initiated.

In addition to this Fact Sheet and the Draft Permit, information to support EPA's finding is included in a letter under separate cover that will be sent to the NOAA Fisheries Habitat Conservation Division during the public comment period.

As described above, EPA has proposed a special condition in the Draft Permit that requires additional information that may inform the federal permit action's essential fish habitat consultation responsibilities under the Magnuson–Stevens Act.[76] Specifically, site-specific environmental data are proposed to be collected in the vicinity of the Facility's outfalls that are the subject of EPA's EFH consultation under the Magnuson–Stevens Act.[77] For more information regarding this special condition, see Section 5.5.6, above.

6.3 Environmental Justice

Executive Order 12898 entitled "Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations" states in relevant part that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as

[76] 50 CFR 600.920 (e)(4) Additional information.
[77] 50 CFR 600.920 (e)(4)(i); The results of an on-site inspection to evaluate the habitat and the site-specific effects of the project.

appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations....” The order also provides that federal agencies are required to implement the order consistent with and to the extent permitted by existing law.

In addition, in May 2013, EPA Region 1 issued the *EPA Region 1 Regional Implementation Plan to Promote Meaningful Engagement of Overburdened Communities in Permitting Activities* which describes actions that the Region’s permitting programs will take when issuing EPA permits in order to promote greater participation in the permitting process by communities that have historically been underrepresented in the process.[78] It addresses four elements: 1) what types of permits will be prioritized, 2) how these permits will be reviewed for EJ concerns, 3) roles and responsibilities within Region 1 to carry out this plan, and 4) what actions Region 1 will take to ensure enhanced meaningful involvement where there are EJ concerns. Conducting enhanced outreach for permits that impact communities that have been historically underrepresented in the permitting process is a key element of Region 1’s efforts to help ensure meaningful involvement.

Consistent with this plan, EPA’s enhanced outreach activities for the Draft Permit will include: the release of a detailed EJ Analysis; phone calls and email notification to community stakeholders; a 60-day public comment period; the release of a concise information sheet for the benefit of the community, explaining in simple language the Draft Permit and the public process; designating an EPA point of contact that the community can contact to discuss EJ concerns; and translating key documents into the primary languages spoken by community members. EPA will also host a virtual public meeting during which EPA will present an overview of the Draft Permit and the EJ Analysis and answer questions from meeting participants. EPA will also host a separate virtual public hearing to allow the public an opportunity to provide oral comments for the record. In order to adhere to current COVID-19 guidance from the Centers for Disease Control and state and local restrictions on large gatherings presently in effect, the meeting and the hearing will be conducted virtually and will be accessible by computer, mobile device or telephone. EPA will provide necessary translation and interpretation services in the primary languages spoken by community members during the meeting and the hearing.

The Draft Permit implements water pollution prevention and control requirements, including applicable technology-based and water quality-based limits, standards, and practices to ensure compliance with applicable CWA requirements, and meet State WQSs. Where EPA determined that a pollutant is discharged at a level that will cause, has a reasonable potential to cause, or contribute to an excursion above WQSs, EPA has maintained or added numeric WQBELs. The monitoring program is designed to obtain additional information, which can be used in ongoing surveillance of permitted activities and in future permit decisions. Several additional special conditions continue to be included in the Draft Permit to ensure adverse impacts do not occur because of discharges from the Facility alone or in combination with other discharges from similar facilities to Chelsea River. Additionally, the Draft Permit includes new numeric limits (e.g., total residual chlorine, copper, zinc, ammonia, fecal coliform) that were derived from data

[78] Available at: https://www.epa.gov/environmentaljustice/epa-region-1-regional-implementation-plan-promote-meaningful-engagement

required in the 2014 Permit in response to concerns expressed by the public in public comments. EPA has the authority to modify a permit if the threat of adverse environmental impact from the discharges were to occur, that is, a discharge which violates State WQSs. EPA therefore determined that the pollutant discharge levels authorized by the Draft Permit will not cause, have the reasonable potential to cause, or contribute to an excursion above WQSs.

The water pollution prevention and control requirements in the Draft Permit will address current adverse impacts to aquatic life, aesthetics and recreation in the Chelsea River, and the Draft Permit will lead to continued water quality improvements in the river. EPA therefore has determined that the facility's discharges will not result in disproportionately high and adverse human health or environmental effects on minority or low-income populations within the meaning of Executive Order 12898. EPA's evaluation and determination are discussed in more detail in the November 2020 *Environmental Justice Analysis for Clean Water Act National Pollutant Discharge Elimination System Permits for Chelsea River Bulk Petroleum Storage Facilities*, which is included in the administrative record associated with the Draft Permit (MA0003280).

7.0 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:

Shauna Little
EPA Region 1
5 Post Office Square, Suite 100 (06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1989
Email: little.shauna@epa.gov

EPA intends to hold a public hearing in consideration of the Draft Permit. Any person may submit oral or written comments to EPA and the State Agency at the public hearing, scheduled for March 29, 2021. 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 the public hearing, 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 and/or oral 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.

8.0 Administrative Record

The administrative record on which this Draft Permit is based may be accessed at EPA's Boston office between the hours of 9:00 a.m. and 5:00 p.m., Monday through Friday, excluding holidays, from Shauna Little, EPA Region 1, Water Division**,** Industrial Permits Section, 5 Post Office Square, Suite 100, Boston, Massachusetts 02109-3912 or via email to little.shauna@epa.gov.

6/18/2020

Ken Moraff, Director
Water Division
U.S. Environmental Protection Agency

Figure 1: Location Map

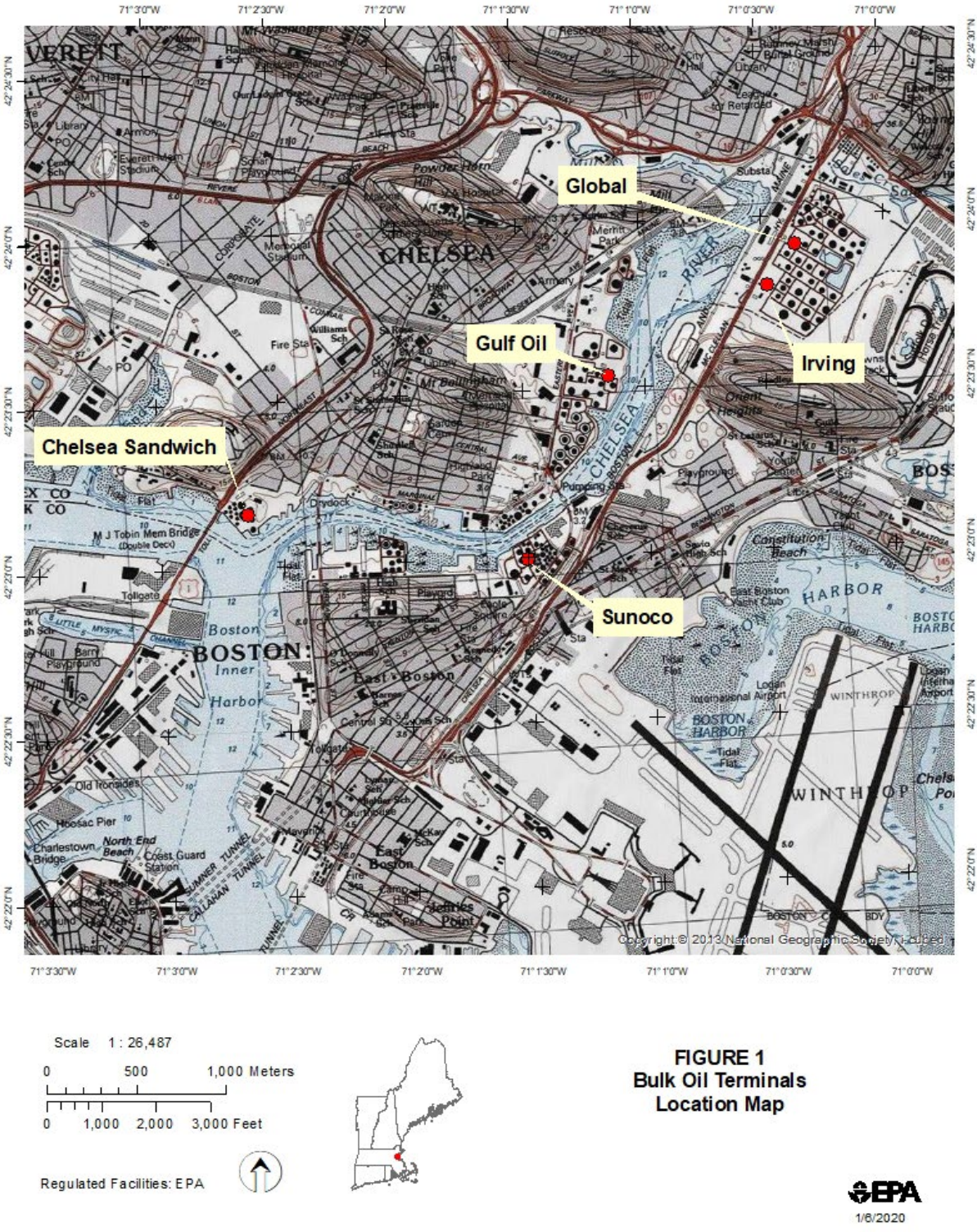


Figure 2: Site Plan

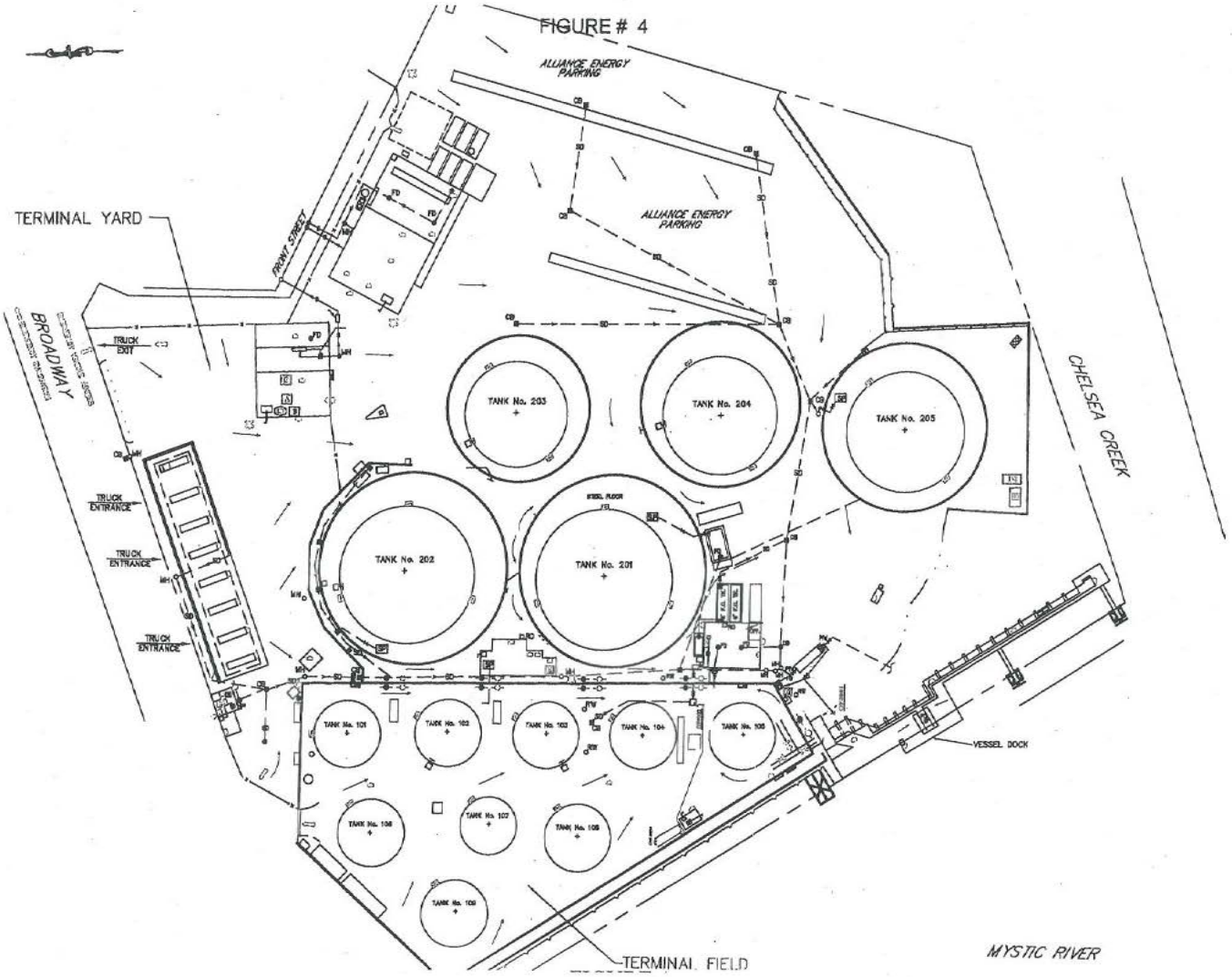
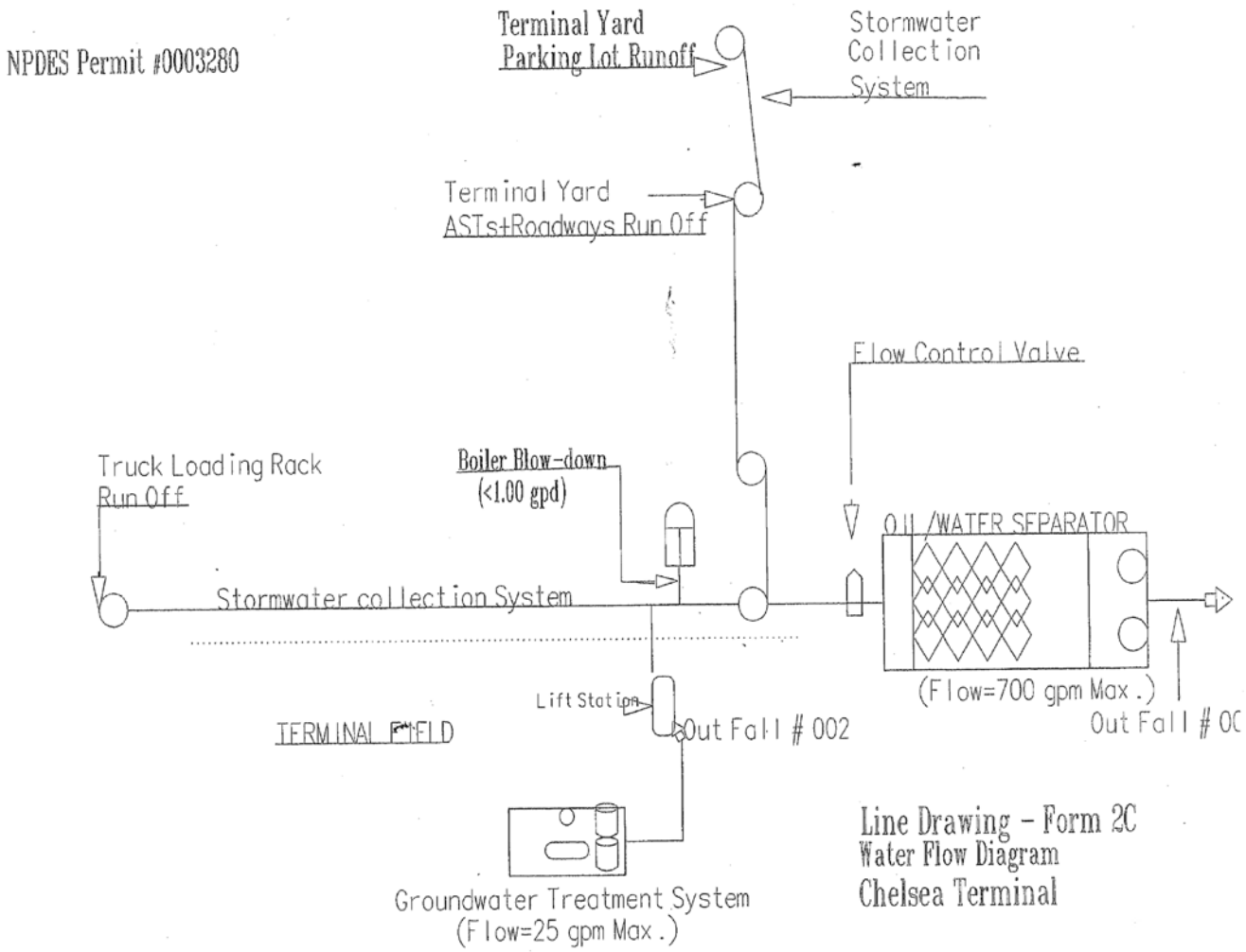


Figure 3: Schematic of Flow



Appendix A: Discharge Monitoring Data

CHELSEA SANDWICH **Outfall Serial Number 001** **Monthly Effluent Monitoring**										
Parameter	**Flow rate**	**Total Flow**	**TSS**	**TSS**	**Number of Events**	**pH**	**pH**	**Oil & grease**	**Benzene**	**Benzene**
	Daily Max	**Monthly Avg**	**Monthly Avg**	**Daily Max**	**Daily Max**	**Minimum**	**Maximum**	**Daily Max**	**Monthly Avg**	**Daily Max**
Units	**gal/min**	**Mgal/mo**	**mg/L**	**mg/L**	**occur/mo**	**SU**	**SU**	**mg/L**	**ug/L**	**ug/L**
Effluent Limit	**700**	**Report**	**30**	**100**	**Report**	**6.5**	**8.5**	**15**	**51**	**Report**
Minimum	**175**	**0.012**	**0**	**0**	**1**	**6.55**	**0**	**0**	**0**	**0**
Maximum	**175**	**1.2915**	**31.4**	**132**	**12**	**9.44**	**9.44**	**31**	**0**	**0**
Median	**175**	**0.241**	**5**	**6.72**	**4**	**7.35**	**7.36**	**0**	**0**	**0**
No. of Violations	**0**	**N/A**	**1**	**1**	**N/A**	**0**	**1**	**2**	**0**	**N/A**
Monitoring Period End Date										
12/31/2014	175	1.2915	5	5	4	7.13	7.13	0	0	0
1/31/2015	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
2/28/2015	175	0.077	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E	NODI: E
3/31/2015	175	0.62265	**31.4**	**132**	6	7.04	7.04	**19.3**	0	0
4/30/2015	175	0.2216	4	8	6	7.26	7.26	0	0	0
5/31/2015	175	0.221	18	18	1	9.44	**9.44**	0	0	0
6/30/2015	175	0.016185	0	0	1	7.15	7.15	0	0	0
7/31/2015	175	0.19744	0	0	2	7.25	7.25	0	0	0
8/31/2015	175	0.0921	0	0	2	7.7	7.7	0	0	0

9/30/2015	175	0.209959	0	0	1	7.65	7.65	0	0	0
10/31/2015	175	0.0921	2.5	5	2	7.1	8.25	0	0	0
11/30/2015	175	0.162708	0	0	2	7.65	7.73	0	0	0
12/31/2015	175	0.42334	4.55	9.1	5	7.15	7.16	0	0	0
1/31/2016	175	0.221385	0	0	1	7.7	7.7	0	0	0
2/29/2016	175	0.23473	21	37	3	7.42	7.6	0	0	0
3/31/2016	175	0.27959	0	0	5	7.05	7.9	0	0	0
4/30/2016	175	0.17313	18	18	1	7.17	7.17	0	0	0
5/31/2016	175	0.127421	0	0	2	7.4	7.4	0	0	0
6/30/2016	175	0.112332	10	10	2	8.2	0	0	0	0
7/31/2016	NODI: F	0.039	NODI: F	NODI: F	3	NODI: F	NODI: F	NODI: F	NODI: F	NODI: F
8/31/2016	175	0.042	4.5	4.5	2	7.3	7.3	0	0	0
9/30/2016	175	0.012	3.9	4.6	3	7.35	7.35	0	0	0
10/31/2016	175	0.37	3.5	2.2	4	7.86	7.86	< 1.4	0	0
11/30/2016	175	0.206	3.9	4.3	3	7.8	7.8	0	0	0
12/31/2016	175	0.256066	5	5.5	6	7.75	7.75	0	0	0
1/31/2017	175	0.455	8.85	13	4	7.2	7.2	3.12	0	0
2/28/2017	175	0.285	3.4	4.5	5	8.01	8.01	0	0	0
3/31/2017	175	0.226	5.55	7.6	5	8.04	8.04	0	0	0
4/30/2017	175	0.557	8	12.6	3	7.79	7.79	0	0	0
5/31/2017	175	0.245	7.35	10.8	5	7.78	7.78	0	0	0
6/30/2017	175	0.397	4.15	6	6	7.66	7.66	0	0	0
7/31/2017	175	0.352	4.5	4.9	5	7.25	7.25	0	0	0
8/31/2017	175	0.104	6.4	6.4	2	7.21	7.21	0	0	0
9/30/2017	175	0.143	4.1	5	3	7.3	7.3	0	0	0
10/31/2017	175	0.481	4.6	7.4	5	7.25	7.25	0	0	0
11/30/2017	175	0.61	11.35	20	4	7.47	7.47	1.4	0	0
12/31/2017	175	0.096	4.85	5.9	3	7.78	7.78	0	0	0
1/31/2018	175	0.123	15.7	19.4	4	6.75	6.75	0	0	0
2/28/2018	175	0.194	10.4	13.8	6	7.4	7.4	1.05	0	0
3/31/2018	175	0.398	21.95	37.6	6	7.89	7.89	0	0	0

4/30/2018	175	0.398	5.15	7	5	7.6	7.6	2.78	0	0
5/31/2018	175	0.0968	5.4	5.4	5	7.18	7.18	0	0	0
6/30/2018	175	0.234	11.35	17.8	4	7.17	7.17	1.22	0	0
7/31/2018	175	0.181	14.25	24	4	7.32	7.32	2.1	0	0
8/31/2018	175	0.378	6.4	8.8	5	6.98	6.98	0	0	0
9/30/2018	175	0.474	9.95	10.1	5	7.05	7.05	1.35	0	0
10/31/2018	175	0.216	3.35	3.7	5	7.07	7.07	2.48	0	0
11/30/2018	175	1.116	1.25	1.7	7	6.71	6.71	0	0	0
12/31/2018	175	0.22	4.2	5	4	7.16	7.16	1.22	0	0
1/31/2019	175	0.43	11.5	17	6	6.86	6.86	0	0	0
2/28/2019	175	0.242	0	0	5	8.05	8.05	0	0	0
3/31/2019	175	0.191	13	21	4	7.99	7.99	0	0	0
4/30/2019	175	0.376	0	0	6	7.08	7.08	0	0	0
5/31/2019	175	0.241	5	10	12	7.57	7.57	0	0	0
6/30/2019	175	0.276	23.375	41.5	7	7.57	7.57	0	0	0
7/31/2019	175	0.711	2.46	3.43	5	7.36	7.36	0	0	0
8/31/2019	175	0.37	3.06	6.12	3	7.6	7.6	0	0	0
9/30/2019	175	0.15	0	0	4	6.95	6.95	0	0	0
10/31/2019	175	0.576	6.35	6.7	6	7.64	7.64	**31**	0	0
11/30/2019	175	0.445	13.15	17	7	7.55	7.55	0	0	0
12/31/2019	175	0.765	5.85	8	8	6.55	6.55	0	0	0
1/31/2020	175	0.24202	5.5	7	8	7.81	7.81	0	0	0
2/29/2020	175	0.34	21.15	35	5	7.63	7.63	0	0	0
3/31/2020	175	0.393	3.36	6.72	5	7.93	7.93	0	0	0
4/30/2020	175	0.68	4.75	5	8	8.12	8.12	0	0	0
5/31/2020	175	0.285083	8.7	8.7	5	7.08	7.08	0	0	0
6/30/2020	175	0.247205	9.1	11.2	3	6.9	6.9	0	0	0
7/31/2020	175	0.183	17	22	4	7.27	7.27	0	0	0
8/31/2020	175	0.135522	13	13	3	7.67	7.67	0	0	0
9/30/2020	175	0.07362	18.5	18.5	5	7.46	7.46	0	0	0
10/31/2020	175	0.592	7.8	10.6	4	6.64	6.64	0	0	0

CHELSEA SANDWICH **Outfall Serial Number 001** **Monthly Effluent Monitoring – Continued**				
Parameter	**Benzo(a)pyrene**	**Benzo(a)pyrene**	**Naphthalene**	**Naphthalene**
	Monthly Avg	**Daily Max**	**Monthly Avg**	**Daily Max**
Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**
Effluent Limit	**0.1**	**Report**	**100**	**Report**

Minimum	**0**	**0**	**0**	**0**
Maximum	**0.126**	**0.126**	**3.87**	**3.87**
Median	**0**	**0**	**0**	**0**
No. of Violations	**2**	**N/A**	**0**	**N/A**
Monitoring Period End Date				
12/31/2014	**0.126**	0.126	0	0
1/31/2015	NODI: E	NODI: E	NODI: E	NODI: E
2/28/2015	NODI: E	NODI: E	NODI: E	NODI: E
3/31/2015	0	0	0	0
4/30/2015	0	0	0	0
5/31/2015	0	0	0	0
6/30/2015	0	0	0	0
7/31/2015	0	0	0	0
8/31/2015	0	0	0	0
9/30/2015	0	0	0	0
10/31/2015	0	0	3.87	3.87
11/30/2015	0	0	0	0
12/31/2015	0	0	0	0
1/31/2016	0	0	0	0
2/29/2016	0	0	0	0
3/31/2016	0	0	0	0
4/30/2016	0	0	0	0
5/31/2016	0	0	0	0
6/30/2016	0	0	0	0
7/31/2016	NODI: F	NODI: F	NODI: F	NODI: F
8/31/2016	0	0	0	0
9/30/2016	0	0	0	0
10/31/2016	0	0	0	0

11/30/2016	0.0585	0.117	0	0
12/31/2016	0	0	0	0
1/31/2017	0	0	0	0
2/28/2017	0	0	0	0
3/31/2017	**0.11**	0.11	0	0
4/30/2017	0.079	0.079	0	0
5/31/2017	0	0	0	0
6/30/2017	0	0	0	0
7/31/2017	0	0	0	0
8/31/2017	0	0	0	0
9/30/2017	0	0	0	0
10/31/2017	0	0	0	0
11/30/2017	0	0	0	0
12/31/2017	0	0	0	0
1/31/2018	0	0	0.094	0.094
2/28/2018	0	0	0	0
3/31/2018	0	0	0	0
4/30/2018	0	0	0	0
5/31/2018	0	0	0	0
6/30/2018	0	0	0	0
7/31/2018	0	0	0	0
8/31/2018	0	0	0	0
9/30/2018	0.05	0.05	0	0
10/31/2018	0	0	0	0
11/30/2018	0.05	0.05	0	0
12/31/2018	0	0	0	0
1/31/2019	0	0	0	0
2/28/2019	0	0	0	0
3/31/2019	0	0	0	0
4/30/2019	0	0	0	0
5/31/2019	0	0	0	0

6/30/2019	0	0	0	0
7/31/2019	0	0	0	0
8/31/2019	0	0	0	0
9/30/2019	0	0	0	0
10/31/2019	0	0	0	0
11/30/2019	0	0	0	0
12/31/2019	0	0	0	0
1/31/2020	0	0	0	0
2/29/2020	0	0	0	0
3/31/2020	0	0	0	0
4/30/2020	0	0	0	0
5/31/2020	0	0	0	0
6/30/2020	0	0	0	0
7/31/2020	0	0	0	0
8/31/2020	0	0	0	0
9/30/2020	0	0	0	0
10/31/2020	0	0	0	0

CHELSEA SANDWICH **Outfall Serial Number 001** **Quarterly-to-Yearly Pollutant Scan**									
Parameter	**Benzene**	**Ethylbenzene**	**Toluene**	**Xylene**	**Benzo(a)anthracene**	**Benzo(a)pyrene**	**Benzo(b)fluoranthene**	**Benzo(k)fluoranthene**	**Chrysene**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Maximum	**0**	**0**	**0**	**0**	**0.16**	**0.25**	**0.33**	**0.27**	**0.37**
Median	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date									
12/31/2014	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
3/31/2015	0	0	0	0	0.16	0.148	0.263	0.187	0.239
6/30/2015	0	0	0	0	0	0	0	0	0
9/30/2015	0	0	0	0	0	0	0	0	0
12/31/2015	0	0	0	0	0	0	0	0	0
3/31/2016	0	0	0	0	0.15	0.25	0.33	0.27	0.37
6/30/2016	0	0	0	0	0	0	0	0	0
9/30/2016	0	0	0	0	0	0	0	0	0
12/31/2016	0	0	0	0	0	0	0	0	0
3/31/2017	0	0	0	0	0	0.11	0.087	0	0

6/30/2017	0	0	0	0	0	0	0	0	0
9/30/2017	0	0	0	0	0	0	0	0	0
12/31/2017	0	0	0	0	0	0	0	0	0
4/30/2018	0	0	0	0	0	0	0	0	0
12/31/2018	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
12/31/2019	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
4/30/2019	0	0	0	0	0	0	0	0	0
4/30/2020	0	0	0	0	0	0	0.095	0	0.075

CHELSEA SANDWICH
Outfall Serial Number 001
Quarterly-to-Yearly Pollutant Scan – Continued

Parameter	**Dibenzo(a,h)anthracene**	**Indeno(1,2,3-cd)pyrene**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**	**Benzo(ghi)perylene**	**Fluoranthene**	**Fluorene**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Maximum	**0.062**	**0.25**	**0.15**	**0.21**	**0.16**	**0.38**	**0.57**	**0.32**
Median	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date								
12/31/2014	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
3/31/2015	0.062	0.225	0	0	0	0.205	0.393	0.123
6/30/2015	0	0	0	0	0	0	0	0
9/30/2015	0	0	0	0	0	0	0	0
12/31/2015	0	0	0	0	0	0	0	0
3/31/2016	0	0.23	0.15	0.21	0.16	0.38	0.57	0.32

6/30/2016	0	0.25	0	0	0	0	0	0
9/30/2016	0	0	0	0	0	0	0	0
12/31/2016	0	0	0	0	0	0	0	0
3/31/2017	0	0.16	0	0	0	0	0	0
6/30/2017	0	0	0	0	0	0	0	0
9/30/2017	0	0	0	0	0	0	0	0
12/31/2017	0	0	0	0	0	0	0	0
4/30/2018	0	0	0	0	0	0	0	0
12/31/2018	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
4/30/2019	0	0	0	0	0	0	0	0
12/31/2019	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
4/30/2020	0	0.062	0	0	0	0.07	0.092	0

CHELSEA SANDWICH - Outfall Serial Number 001 - Quarterly-to-Yearly Pollutant Scan – Continued

Parameter	**Naphthalene**	**Phenanthrene**	**Phenol**	**Phthalates, total**	**Pyrene**	**Chromium**	**Cyanide, total (as CN)**	**Iron**	**Ammonia**	**Coliform, fecal, colony forming units**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**mg/L**	**CFU/100mL**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**124**	**0**	**0**
Maximum	**0**	**0.71**	**0**	**0.676**	**0.79**	**4.1**	**23**	**3000**	**1.4**	**9900**
Median	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1640**	**0.0105**	**1585**

No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date										
12/31/2014	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
3/31/2015	0	0.208	0	0	0.421	0	7.62	1760	0.21	0
6/30/2015	0	0	0	0	0	0	0	857	0.91	4200
9/30/2015	0	0	0	0	0	2.6	0	499	0	6600
12/31/2015	0	0	0	0	0	0	0	2290	0	0
3/31/2016	0	0.71	0	0	0.79	4.1	23	2870	0	4200
6/30/2016	0	0	0	0	0	0	0	2160	0	2400
9/30/2016	0	0	0	0	0	0	0	2270	1.4	0
12/31/2016	0	0	0	0	0	0	0	1520	0.67	780
3/31/2017	0	0.064	0	0	0.16	0	0	873	0.86	2300
6/30/2017	0	0	0	0	0	0	0	658	0.005	200
9/30/2017	0	0	0	0	0	0	0	124	0.001	9900
12/31/2017	0	0	0	0.676	0	0	0	3000	0.016	870
4/30/2018	0	0	0	7.759	0	2.7	0	1010	18.9	300
12/31/2018	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
4/30/2019	0	0	0	0	0	0	0	868	3.35	710
12/31/2019	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
4/30/2020	0	0	0	0	0.12	2.1	0	366	4.3	110

CHELSEA SANDWICH - Outfall Serial Number 001 - Quarterly-to-Yearly Whole Effluent Toxicity Monitoring									
Parameter	**LC50 Acute Menidia**	**LC50 Mysid. Bahia**	**TRC**	**Salinity**	**pH**	**Total Solids**	**TSS**	**Ammonia**	**TOC**

	MO MIN	MO MIN	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	**%**	**%**	**mg/L**	**g/g**	**SU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**100**	**100**	**0**	**0**	**7.04**	**62**	**0**	**0**	**1.93**
Maximum	**100**	**100**	**0.038**	**64.9**	**8.2**	**620**	**35**	**1.87**	**11.7**
Median	**100**	**100**	**0**	**0**	**7.535**	**194**	**6.85**	**0.205**	**4.76**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date									
12/31/2014	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
3/31/2015	100	100	0	0	7.04	202	33	0	3.87
6/30/2015	100	100	0	0	7.45	190	0	0.91	7.7
9/30/2015	100	100	0	0	7.65	186	0	0.19	3.7
12/31/2015	100	100	0	0	7.15	62	9.1	0	4.3
3/31/2016	100	100	0	< 2	7.6	620	35	0	5.5
6/30/2016	100	100	0	64.9	8.2	198	13.2	0	2.8
9/30/2016	100	100	0	0	7.35	79	0	1.4	6.2
12/31/2016	100	100	0	0.00032	7.75	285	4.6	0.67	11.7
3/31/2017	100	100	0	0.00065	8.04	611	10.4	0.71	3
6/30/2017	100	100	0	0	7.66	104	2.3	0.22	5.22
9/30/2017	100	100	0.036	0	7.3	108	3.2	0.16	1.93
12/31/2017	100	100	0.038	0.00049	7.47	612	20	1.87	10.3
12/31/2018	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
12/31/2019	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
9/30/2018	100	100	0	0	7.05	145	10.1	0.18	2.33
9/30/2019	100	100	0.02	0	6.95	260	0	2.16	6.9
9/30/2020	100	100	0.03	0	7.46	31000	18.5	0.41	4.4

CHELSEA SANDWICH - Outfall Serial Number 001 Quarterly-to-Yearly Whole Effluent Toxicity Monitoring - Continued				
Parameter	**Cadmium**	**Copper**	**Nickel**	**Zinc**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**
Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**
Minimum	**0**	**4**	**0**	**17.9**
Maximum	**0.22**	**25.9**	**2.1**	**167**
Median	**0**	**9.1**	**0**	**53.85**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date				
12/31/2014	NODI	NODI	NODI	NODI
3/31/2015	0	13.8	0	127
6/30/2015	0	24.4	2.1	17.9
9/30/2015	0	11.3	0	49.1
12/31/2015	0	9.1	0	73.4
3/31/2016	0	25.9	0	167
6/30/2016	0	9.1	0	64.9
9/30/2016	0	6.8	0	36.4
12/31/2016	0	4	0	63.3
3/31/2017	0	8.3	0	56.7
6/30/2017	0	6.76	1.14	50.4
9/30/2017	0	4.93	0.72	25.7
12/31/2017	0.22	16	0	51
12/31/2018	NODI	NODI	NODI	NODI
12/31/2019	NODI	NODI	NODI	NODI
9/30/2018	0	14.4	4.8	102

9/30/2019	0	3	2	18.2
9/30/2020	0	11	1.4	39

CHELSEA SANDWICH
Outfall Serial Number 002
Monthly Effluent Monitoring

Parameter	**Total Flow**	**Flow rate**	**pH**	**pH**	**Polynuc aromatic HC per Method 610**	**Polynuc aromatic HC per Method 610**	**Benzene**	**BTEX**	**Hydrocarbons, total petroleum**	**Naphthalene**
	Daily Max	**Daily Max**	**Minimum**	**Maximum**	**Monthly Avg**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**Mgal/mo**	**gal/min**	**SU**	**SU**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**mg/L**	**ug/L**
Effluent Limit	**Report**	**25**	**6.5**	**8.5**	**0.018**	**Report**	**5**	**100**	**5**	**20**
Minimum	**0.01685**	**7.5**	**6.42**	**6.42**	**0**	**0**	**0**	**0**	**0**	**0**
Maximum	**0.129**	**25**	**7.76**	**7.76**	**0**	**0**	**48.2**	**156.1**	**2.2**	**0.082**
Median	**0.067**	**25**	**7.2**	**7.2**	**0**	**0**	**0**	**0**	**0**	**0**
No. of Violations	**N/A**	**0**	**1**	**0**	**0**	**N/A**	**1**	**1**	**0**	**0**
Monitoring Period End Date										
12/31/2014	0.05044	25	7.28	7.28	0	0	0	0	0	0
1/31/2015	0.027276	25	7.2	7.2	0	0	0	0	0	0
2/28/2015	0.03179	25	7.35	7.35	0	0	0	0	0	0
3/31/2015	0.033122	25	7.4	7.4	0	0	**48.2**	**156.1**	0	0
4/30/2015	0.03829	25	7.35	7.35	0	0	0	0	0	0

5/31/2015	0.026	25	7.25	7.25	0	0	0	0	0	0
6/30/2015	0.01685	7.5	7.45	7.45	0	0	0	0	0	0
7/31/2015	0.062744	25	7.21	7.21	0	0	0	0	0	0
8/31/2015	0.058703	25	7.32	7.32	0	0	0	0	0	0
9/30/2015	0.058703	25	7.02	7.02	0	0	0	0	0	0
10/31/2015	0.034843	7.5	7.08	7.08	0	0	0	0	0	0
11/30/2015	0.047099	25	6.97	6.97	0	0	0	0	0	0
12/31/2015	0.0643	25	7.13	7.13	0	0	0	0	0	0
1/31/2016	0.07014	25	7.11	7.11	0	0	0	0	0	0
2/29/2016	0.113115	25	7.05	7.05	0	0	0	0	0	0
3/31/2016	0.08735	25	7.44	7.44	0	0	0	0	0	0
4/30/2016	0.0793	25	7.15	7.15	0	0	0	0	0	0
5/31/2016	0.0909	25	6.88	6.88	0	0	0	0	0	0
6/30/2016	0.06157	25	**6.42**	6.42	0	0	0	0	0	0
7/31/2016	0.073351	25	7.11	7.11	0	0	0	0	0	0
8/31/2016	0.077	25	7.39	7.39	0	0	0	0	0	0
9/30/2016	0.047	25	7.4	7.4	0	0	0	0	0	0
10/31/2016	0.0697	25	7.36	7.36	0	0	0	0	0	0
11/30/2016	0.081	25	7.5	7.5	0	0	0	0	0	0
12/31/2016	0.0703	25	7.12	7.12	0	0	0	0	0	0
1/31/2017	0.113	25	7.5	7.5	0	0	0	0	0	0
2/28/2017	0.102	25	7.65	7.65	0	0	0	0	0	0
3/31/2017	0.127	25	6.98	6.98	0	0	0	0	0.535	0
4/30/2017	0.054	25	6.97	6.97	0	0	0	0	0	0
5/31/2017	0.08	25	7.16	7.16	0	0	0	0	0.58	0
6/30/2017	0.129	25	6.75	6.75	0	0	0	0	0	0
7/31/2017	0.067	25	7.53	7.53	0	0	0	0	0	0
8/31/2017	0.045	25	7.05	7.05	0	0	0	0	0	0
9/30/2017	0.051	25	6.92	6.92	0	0	0	0	0	0
10/31/2017	0.053	25	6.81	6.81	0	0	0	0	0	0
11/30/2017	0.058	25	6.6	6.6	0	0	0	0	0	0

12/31/2017	0.035	25	6.94	6.94	0	0	0	0	0	0
1/31/2018	0.054333	25	6.9	6.9	0	0	0	0	0	0
2/28/2018	0.095	25	7.03	7.03	0	0	0	0	0	0
3/31/2018	0.129	25	6.9	6.9	0	0	0	0	0	0
4/30/2018	0.079	25	6.92	6.92	0	0	0	0	0	0
5/31/2018	0.0809	25	7.05	7.05	0	0	0	0	0	0
6/30/2018	0.068	25	7.06	7.06	0	0	0	0	0	0
7/31/2018	0.069	25	7.15	7.15	0	0	0	0	0	0
8/31/2018	0.117	25	7.21	7.21	0	0	0	0	0	0
9/30/2018	0.082	25	7.2	7.2	0	0	0	0	2.2	0
10/31/2018	0.025	25	7.15	7.15	0	0	0	0	2	0
11/30/2018	0.046	25	7.39	7.39	0	0	0	0	1.1	0
12/31/2018	0.065	25	7.15	7.15	0	0	0	0	0	0
1/31/2019	0.079	25	7.18	7.18	0	0	0	0	< 1.8	0
2/28/2019	0.06	25	7.3	7.3	0	0	0	0	0	0
3/31/2019	0.093	25	7.34	7.34	0	0	0	0	0	0
4/30/2019	0.067	25	7.64	7.64	0	0	0	0	0	0
5/31/2019	0.035	25	7.75	7.75	0	0	0	0	< 1.9	0
6/30/2019	0.029	25	7.76	7.76	0	0	0	0	0	0
7/31/2019	0.032	25	7.44	7.44	0	0	0	0	0	0
8/31/2019	0.024	25	7.64	7.64	0	0	0	0	0	0
9/30/2019	0.027	25	7.75	7.75	0	0	0	0	0	0
10/31/2019	0.025	25	6.65	6.65	0	0	0	0	0	0
11/30/2019	0.062	25	7.2	7.2	0	0	0	0	0	0
12/31/2019	0.067	25	7.3	7.3	0	0	0	0	0	0
1/31/2020	0.081414	25	7.4	7.4	0	0	0	0	0	0
2/29/2020	0.105	25	7.3	7.3	0	0	0	0	0	0
3/31/2020	0.109	25	7.45	7.45	0	0	0	0	0	0
4/30/2020	0.102	25	7.25	7.25	0	0	0	0	0	0
5/31/2020	0.114811	25	7.1	7.1	0	0	0	0	0	0
6/30/2020	0.062579	25	7.4	7.4	0	0	0	0	0	0

7/31/2020	0.083	25	7.5	7.5	0	0	0	0	0	0
8/31/2020	0.075682	25	7.3	7.3	0	0	0	0	0	0.082
9/30/2020	0.087	25	7.3	7.3	0	0	0	0	0	0
10/31/2020	0.082	25	6.8	6.8	0	0	0	0	0	0

CHELSEA SANDWICH **Outfall Serial Number 002 – EG** **Monthly Effluent Monitoring**	
Parameter	**Polynuc aromatic HC per Method 610**
	Daily Max
Units	**ug/L**
Effluent Limit	**10**
Minimum	**0**
Maximum	**0.133**
Median	**0**

No. of Violations	**0**
Monitoring Period End Date	
12/31/2014	0
1/31/2015	0
2/28/2015	0
3/31/2015	0
4/30/2015	0
5/31/2015	0
6/30/2015	0
7/31/2015	0
8/31/2015	0
9/30/2015	0
10/31/2015	0
11/30/2015	0
12/31/2015	0
1/31/2016	0
2/29/2016	0
3/31/2016	0
4/30/2016	0
5/31/2016	0
6/30/2016	0
7/31/2016	0
8/31/2016	0
9/30/2016	0
10/31/2016	0
11/30/2016	0
12/31/2016	0
1/31/2017	0

2/28/2017	0
3/31/2017	0
4/30/2017	0
5/31/2017	0
6/30/2017	0
7/31/2017	0
8/31/2017	0
9/30/2017	0
10/31/2017	0
11/30/2017	0
12/31/2017	0
1/31/2018	0
2/28/2018	0
3/31/2018	0
4/30/2018	0
5/31/2018	0
6/30/2018	0
7/31/2018	0
8/31/2018	0
9/30/2018	0
10/31/2018	0
11/30/2018	0
12/31/2018	0.133
1/31/2019	0
2/28/2019	0
3/31/2019	0
4/30/2019	0
5/31/2019	0
6/30/2019	0
7/31/2019	0
8/31/2019	0

9/30/2019	0
10/31/2019	0
11/30/2019	0
12/31/2019	0
1/31/2020	0
2/29/2020	0
3/31/2020	0
4/30/2020	0
5/31/2020	0
6/30/2020	0
7/31/2020	0
8/31/2020	0
9/30/2020	0
10/31/2020	0

CHELSEA SANDWICH Outfall Serial Number 002 – Y Monthly Effluent Monitoring	
Parameter	**Polynuc aromatic HC per Method 610**
	Daily Max
Units	**ug/L**
Effluent Limit	**20**
Minimum	**0**
Maximum	**0.082**

Median	**0**
No. of Violations	**0**
Monitoring Period End Date	
12/31/2014	0
1/31/2015	0
2/28/2015	0
3/31/2015	0
4/30/2015	0
5/31/2015	0
6/30/2015	0
7/31/2015	0
8/31/2015	0
9/30/2015	0
10/31/2015	0
11/30/2015	0
12/31/2015	0
1/31/2016	0
2/29/2016	0
3/31/2016	0
4/30/2016	0
5/31/2016	0
6/30/2016	0
7/31/2016	0
8/31/2016	0
9/30/2016	0
10/31/2016	0
11/30/2016	0
12/31/2016	0

1/31/2017	0
2/28/2017	0
3/31/2017	0
4/30/2017	0
5/31/2017	0
6/30/2017	0
7/31/2017	0
8/31/2017	0
9/30/2017	0
10/31/2017	0
11/30/2017	0
12/31/2017	0
1/31/2018	0
2/28/2018	0
3/31/2018	0
4/30/2018	0
5/31/2018	0
6/30/2018	0
7/31/2018	0
8/31/2018	0
9/30/2018	0
10/31/2018	0
11/30/2018	0
12/31/2018	0.065
1/31/2019	0
2/28/2019	0
3/31/2019	0
4/30/2019	0
5/31/2019	0
6/30/2019	0
7/31/2019	0

8/31/2019	0
9/30/2019	0
10/31/2019	0
11/30/2019	0
12/31/2019	0
1/31/2020	0
2/29/2020	0
3/31/2020	0
4/30/2020	0
5/31/2020	0
6/30/2020	0
7/31/2020	0
8/31/2020	0.082
9/30/2020	0
10/31/2020	0

Notes:

0 = parameter not detected
NA = not applicable
gal/min = gallons per minute
Mgal/mo = million-gallons per month
mg/L = milligrams per liter
ug/L = micrograms per liter
g/g = grams per gram
occur/mo: = occurrences per month
SU = standard units
CFU = colony forming units
NODI: = parameter not reported
NODI: E = analysis not conducted/no sample
NODI: B = below detection limit/no detection
NODI: C = no discharge
NODI: 8 = Other
NODI: 9 = conditional monitoring – not required this period

Red text indicates limit exceedance

Appendix B: Ambient Data

CHELSEA SANDWICH
Receiving Water Name: Chelsea River
Quarterly-to-Yearly Pollutant Scan

Parameter	Benzene	Ethylbenzene	Toluene	Xylene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(k)fluoranthene
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Units	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Effluent Limit	Report	Report	Report	Report	Report	Report	Report	Report
Minimum	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Maximum	**0**	**0**	**0**	**0**	**0.067**	**0.083**	**0.085**	**0.05**
Median	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
No. of Violations	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Monitoring Period End Date								
12/31/2014								
3/31/2015	0	0	0	0	0.067	0.083	0.085	0.05
6/30/2015	0	0	0	0	0	0	0	0
9/30/2015	0	0	0	0	0	0	0	0
12/31/2015	0	0	0	0	0	0	0	0
3/31/2016	0	0	0	0	0	0	0	0
6/30/2016	0	0	0	0	0	0	0	0
9/30/2016	0	0	0	0	0	0	0	0
12/31/2016	0	0	0	0	0	0	0	0
3/31/2017	0	0	0	0	0	0	0	0
6/30/2017	0	0	0	0	0	0	0	0
9/30/2017	0	0	0	0	0	0	0	0
12/31/2017	0	0	0	0	0	0	0	0

3/31/2018	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
4/30/2018	0	0	0	0	0	0	0	0
6/30/2018	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8
9/30/2018	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8
12/31/2018	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8
3/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
4/30/2019	0	0	0	0	0	0	0	0
6/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
12/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
4/30/2020	0	0	0	0	0	0	0	0
6/30/2020	0	0	0	0	0	0	0	0
9/30/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

CHELSEA SANDWICH
Receiving Water Name: Chelsea River
Quarterly-to-Yearly Pollutant Scan

Parameter	**Chrysene**	**Dibenzo(a,h)anthracene**	**Indeno(1,2,3-cd)pyrene**	**Acenaphthene**	**Acenaphthylene**	**Anthracene**	**Benzo(ghi)perylene**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**

Minimum	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Maximum	**0.069**	**0**	**0.25**	**0**	**0**	**0**	**0.053**
Median	**0**	**0**	**0**	**0**	**0**	**0**	**0**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date							
12/31/2014							
3/31/2015	0.069	0	0.09	0	0	0	0.053
6/30/2015	0	0	0	0	0	0	0
9/30/2015	0	0	0	0	0	0	0
12/31/2015	0	0	0	0	0	0	0
3/31/2016	0	0	0	0	0	0	0
6/30/2016	0	0	0.25	0	0	0	0
9/30/2016	0	0	0	0	0	0	0
12/31/2016	0	0	0	0	0	0	0
3/31/2017	0	0	0	0	0	0	0
6/30/2017	0	0	0	0	0	0	0
9/30/2017	0	0	0	0	0	0	0
12/31/2017	0	0	0	0	0	0	0
3/31/2018	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2018	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8
9/30/2018	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8
12/31/2018	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8
3/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
12/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2020	0	0	0	0	0	0	0

9/30/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
4/30/2018	0	0	0	0	0	0	0
4/30/2019	0	0	0	0	0	0	0
4/30/2020	0	0	0	0	0	0	0

CHELSEA SANDWICH **Receiving Water Name: Chelsea River** **Quarterly-to-Yearly Pollutant Scan**					
Parameter	**Fluoranthene**	**Fluorene**	**Naphthalene**	**Phenanthrene**	**Pyrene**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**0**	**0**	**0**	**0**	**0**
Maximum	**0**	**0**	**0.082**	**0.134**	**0.128**
Median	**0**	**0**	**0**	**0**	**0**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date					
12/31/2014					
3/31/2015		0	0.082	0.134	0.128
6/30/2015	0	0	0	0	0
9/30/2015	0	0	0	0	0
12/31/2015	0	0	0	0	0
3/31/2016		0	0	0	0
6/30/2016	0	0	0	0	0
9/30/2016	0	0	0	0	0
12/31/2016	0	0	0	0	0

3/31/2017		0	0	0	0
6/30/2017	0	0	0	0.055	0
9/30/2017	0	0	0	0	0
12/31/2017	0	0	0	0	0
3/31/2018		NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2018	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8
9/30/2018	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8
12/31/2018	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8
3/31/2019		NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
12/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2020		NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2020	0	0	0	0	0
9/30/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
4/30/2018	0	0	0.045	0	0
4/30/2019	0	0	0	0	0
4/30/2020	0	0	0	0	0

CHELSEA SANDWICH
Receiving Water Name: Chelsea River
Quarterly-to-Yearly Whole Effluent Toxicity Monitoring

Parameter	**TRC**	**Salinity**	**pH**	**Total Solids**	**TSS**	**Ammonia**	**TOC**	**Cadmium**	**Copper**	**Nickel**	**Zinc**	**Lead**
	Daily Max	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
Units	**mg/L**	**g/g**	**SU**	**mg/L**	**mg/L**	**mg/L**	**mg/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**	**ug/L**
Effluent Limit	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	**0**	**0.0222**	**6.95**	**14400**	**0**	**0**	**1.8**	**0**	**0**	**0**	**0**	**0**

Maximum	**0.007**	**40.5**	**7.95**	**60600**	**28**	**0.29**	**3.4**	**0**	**110**	**16.1**	**30.5**	**27.9**
Median	**0**	**22**	**7.64**	**26650**	**8.5**	**0**	**2.8**	**0**	**1.35**	**0**	**17.4**	**0**
No. of Violations	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**	**N/A**
Monitoring Period End Date												
12/31/2014	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
3/31/2015	0	20.9	7.3	22900	14	0	2.8	0	0	0	22.9	0
6/30/2015	0	24.4	7.45	24000	0	0	3.4	0	2.7	2.2	17.9	0
9/30/2015	0	23.5	7.69	27300	12.5	0	2.8	0	0	0	30.5	10.5
12/31/2015	0	25.2	6.95	26400	9.8	0.14	3.4	0	0	0	0	10.1
3/31/2016	0	26.5	7.63	22200	0	0	2.5	0	5.9	0	13.1	27.9
6/30/2016	0	23.1	7.63	24000	28	0	3	0	5.2	0	16.9	14.8
9/30/2016	0	40.5	7.65	38400	13.2	0	1.8	0	0	0	20.2	0
12/31/2016	0	0.0399	7.31	30800	5.8	0	2.1	0	0	0	11.6	0
3/31/2017	0	0.0222	7.95	26900	7.6	0	2.1	0	0	0	0	0
6/30/2017	0	12.2	7.79	14400	8.7	0.2	3.3	0	41.9	6.62	28.5	2.3
9/30/2017	0	0.026	7.76	60600	6.8	0.2	2.93	0	83.3	16.1	27	0
12/31/2017	0.007	0.0279	7.95	32500	8.3	0.29	2.14	0	110	0	0	0
12/31/2018	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI
12/31/2019	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI	NODI

Appendix C: 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)[1] 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). For datasets of 10 or more samples, EPA used the upper bound effluent concentration at the 95th percentile of the dataset. For datasets that include one or more non-detect results, EPA used a delta-lognormal distribution to calculate the 95th percentile.

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:

$$(DF - 1) + C_e = C_d(DF)$$

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)

Where there is no available dilution (i.e., DF = 1), the receiving water concentration downstream of the discharge (C_d) is equal to the effluent concentration.

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 C.F.R. § 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 (C_e) using the applicable criterion as the downstream concentration (C_d). *See* 40 C.F.R. § 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 315 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; as required by 314 CMR 4.05(5)(e). The criteria are presented in the following table:

Parameter	Dissolved Acute Criteria (CMC)	Conversion Factors	Total Recoverable Acute Criteria (CMC)
Units	**µg/L**	**—**	**µg/L**
Ammonia (Warm)	1800	—	—
Ammonia (Cold)	9400	—	—
Cyanide	1	—	—
Cadmium	40	0.994	40.2
Chromium (VI)	1100	0.993	1107.8
Copper	4.8	0.830	5.78
Iron	300	—	300
Lead	210	0.951	220.82
Nickel	74	0.990	74.75
Zinc	90	0.946	95.14

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 permitted daily maximum effluent flow and the dilution factor to project the in-stream concentration downstream from the discharge. When this resultant in-stream concentration exceeds the applicable criterion, there is reasonable potential for the discharge to cause, or contribute to an excursion above water quality standards. The results are summarized in the table below.

Summary of Reasonable Potential Results

Parameter	Effluent Concentration[1]	Downstream Concentration[2]	Total Recoverable Acute Criteria	Acute Reasonable Potential[4]
Units	**µg/L**	**µg/L**	**µg/L**	**—**
Ammonia (Warm)	34,020	34,020 7500	1800	**Y**
Ammonia (Cold)	1,720 9.2	1,720 9.2	9400	N
Cyanide	17.00	17.00	1	**Y**
Cadmium	0.0	0.0	40.2	N
Chromium (VI)	3.6	3.6	1107.8	N
Copper	24.7	24.7	5.8	**Y**
Iron	4166.9	4166.9	300	**Y**
Lead	4.5	4.5	220.8	N
Nickel	3.3	3.3	74.7	N
Zinc	141.3	141.3	95.1	**Y**

[1] Values represent the 95th percentile concentration calculated using the monitoring data reported by the Facility (*See* Appendix A).
[2] Values represent the 95th percentile concentration divided by the dilution factor 1:1.
[3] "Y" is indicated if downstream concentration exceeds the acute criterion.

Ammonia (warm weather), cyanide, copper, iron, and zinc have a reasonable potential to cause or contribute to an excursion above water quality standards.

Calculation of Effluent Limitations

EPA calculated the effluent limitations for ammonia, cyanide, total recoverable copper and iron by setting the maximum allowable effluent concentration equal to the applicable criterion, adjusted for available dilution. The results are summarized in the table below.

Summary of Effluent Limitations

Parameter	Acute Criteria	Available Dilution	Daily Max Effluent Limitation
Units	**µg/L**	**---**	**µg/L**
Ammonia (warm)	1800	1:1	1800
Cyanide	1	1:1	1
Copper	4.8	1:1	5.8
Iron	300[1]	1:1	300
Zinc	90.0	1:1	95.1

[1] Value is an organoleptic effect criterion.

Note that when the effluent limitation is calculated to be lower than the applicable criterion, then the effluent limitation is set equal to the criterion. Because 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, effluent limitations are expressed as total recoverable metals. *See* EPA-823-B96-007, *The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion:*1996.

Appendix D: EFH Species and Life Stages and the Habitat Area of Particular Concern

Outfall 001 at Latitude 42º 23’ 7.4898” N Longitude -71º 02’ 40.844” W.
This area is within Boston Harbor, affecting the Chelsea and Mystic Rivers.

Species/Management Unit	Lifestage(s) Found at Location
Atlantic Wolffish	All Life Stages
Winter Flounder	Eggs, Juvenile, Larvae/Adult
Little Skate	Juvenile, Adult
Ocean Pout	Adult, Juvenile
Atlantic Herring	Juvenile, Adult, Larvae
Atlantic Cod	Larvae, Adult, Juvenile, Eggs
Pollock	Juvenile, Eggs, Larvae
Red Hake	Adult, Eggs/Larvae/Juvenile
Silver Hake	Eggs/Larvae, Adult
Yellowtail Flounder	Adult, Juvenile, Larvae, Eggs
White Hake	Larvae, Adult, Eggs, Juvenile
Windowpane Flounder	Adult, Larvae, Eggs, Juvenile
Winter Skate	Adult, Juvenile
American Plaice	Adult, Juvenile, Larvae, Eggs
Thorny Skate	Juvenile
Bluefin Tuna	Adult
Northern Shortfin Squid	Adult
Longfin Inshore Squid	Juvenile, Adult
Atlantic Mackerel	Eggs, Larvae, Juvenile, Adult
Bluefish	Adult, Juvenile
Atlantic Butterfish	Eggs, Larvae, Adult
Spiny Dogfish	Sub-Adult Female, Adult Male, Adult Female
Atlantic Surfclam	Juvenile, Adult
Scup	Juvenile
Summer Flounder	Adult
Black Sea Bass	Adult
Habitat Area of Particular Concern Name	
Inshore 20m Juvenile Cod	

APPENDIX B

Historical Data

Appendix B. Hisotrical Data
MA0003280 - Outfall CS-001 - A - TREATED WASTEWATER MONITORING THROUGH OUTFALL CS-001
Permit Term December 2014 through November 2022

Parameter	Total Solids (mg/L)	TSS (mg/L)	pH (SU)	TRC (mg/L)	Ammonia (mg/L)	Cadmium (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)	Zinc (ug/L)	Salinity (g/g)
Monitoring Period End Date	Report	Report	Report	Report	Report	Report	Report	Report	Report	Report	Report
12/31/2014	--	--	--	--	--	--	--	--	--	--	--
12/31/2015	--	--	--	--	--	--	--	--	--	--	--
12/31/2016	--	--	--	--	--	--	--	--	--	--	--
12/31/2017	--	--	--	--	--	--	--	--	--	--	--
9/30/2018	19000	7.1	7.76	0.007	0.07	0	6.2	1.5	9.4	8	0.0151
9/30/2019	33000	11	7.89	0.02	0.07	0	2.4	0.62	0	11.6	0.0296
9/30/2020	205	3.3	7.97	0.03	0	0	0	0	0	0	0.031
9/30/2021	17100	182	7.66	0.02	0.17	0	7.4	1.4	11.7	15	15.6
9/30/2022	32100	98	7.04	0	0.14	0	8.3	0	16.7	17	25.6

Notes:

--, data field not included in NETDMR form.

Appendix B. Hisotrical Data
MA0003280 - Outfall CS-001 - B - YEARLY TOXICITY TEST THROUGH OUTFALL CS-001 - REPLACES 001T
Permit Term December 2014 through November 2022

Parameter	Total Solids(mg/L	TSS(mg/L	pH(SU	TRC(mg/L	LC50 Acute Menidia(%)	LC50 Mysid. Bahia(%)	Ammonia(mg/L	Cadmium(ug/L	Copper(ug/L	Lead(ug/L	Nickel(ug/L	Zinc(ug/L	TOC(mg/L	Salinity(g/g
Monitoring Period End Date	Daily Max	Daily Max	Daily Max	Daily Max	MO MIN	MO MIN	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
12/31/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/31/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/31/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/31/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--
9/30/2018	145	10.1	7.05	0	100	100	0.18	0	14.4	27.1	4.8	102	2.33	0
9/30/2019	260	0	6.95	0.02	100	100	2.16	0	3	4.5	2	18.2	6.9	0
9/30/2020	31000	18.5	7.46	0.03	100	100	0.41	0	11	16.2	1.4	39	4.4	0
9/30/2021	11	3	6.56	0.03	100	100	0.05	0	2.7	4.1	0	33	3.2	0
9/30/2022	399	9	7.06	0	100	100	0.4	0	6.2	2.5	0	20	6.2	0

Notes:

--, data field not included in NETDMR form.

Appendix B. Hisotrical Data
MA0003280 - Outfall CS-001 - Q - QUARTERLY EFFLUENT POLLUNTANT SCAN THROUGH OUTFALL CS-001
Permit Term December 2014 through November 2022

Parameter	Ammonia (mg/L)	Chromium (ug/L)	Iron (ug/L)	Acenaphthene (ug/L)	Acenaphthylene (ug/L)	Anthracene (ug/L)	Benzene (ug/L)	Benzo(a)anthracene (ug/L)	Benzo(a)pyrene (ug/L)	Benzo(b)fluoranthene (ug/L)	Benzo(ghi)perylene (ug/L)	Benzo(k)fluoranthene (ug/L)	Chrysene (ug/L)	Coliform, fecal, colony forming units (CFU/100mL)	Cyanide, total (as CN) (ug/L)	Dibenzo(a,h)anthracene (ug/L)	Ethylbenzene (ug/L)	Fluoranthene (ug/L)	Fluorene (ug/L)	Indeno(1,2,3 cd)pyrene (ug/L)	Naphthalene (ug/L)	Phenanthrene (ug/L)	Phenol (ug/L)	Phthalates, total (ug/L)	Pyrene (ug/L)	Toluene (ug/L)	Xylene (ug/L)
Monitoring Period End Date	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**	**Daily Max**
12/31/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/31/2015	0.21	0	1760	0	0	0	0	0.16	0.148	0.263	0.205	0.187	0.239	0	7.62	0.062	0	0.393	0.123	0.225	0	0.208	0	0	0.421	0	0
6/30/2015	0.91	0	857	0	0	0	0	0	0	0	0	0	0	4200	0	0	0	0	0	0	0	0	0	0	0	0	0
9/30/2015	0	2.6	499	0	0	0	0	0	0	0	0	0	0	6600	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2015	0	0	2290	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/31/2016	0	4.1	2870	0.15	0.21	0.16	0	0.15	0.25	0.33	0.38	0.27	0.37	4200	23	0	0	0.57	0.32	0.23	0	0.71	0	0	0.79	0	0
6/30/2016	0	0	2160	0	0	0	0	0	0	0	0	0	0	2400	0	0	0	0	0	0.25	0	0	0	0	0	0	0
9/30/2016	1.4	0	2270	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2016	0.67	0	1520	0	0	0	0	0	0	0	0	0	0	780	0	0	0	0	0	0	0	0	0	0	0	0	0
3/31/2017	0.86	0	873	0	0	0	0	0	0.11	0.087	0	0	0	2300	0	0	0	0	0	0.16	0	0.064	0	0	0.16	0	0
6/30/2017	0.005	0	658	0	0	0	0	0	0	0	0	0	0	200	0	0	0	0	0	0	0	0	0	0	0	0	0
9/30/2017	0.001	0	124	0	0	0	0	0	0	0	0	0	0	9900	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2017	0.016	0	3000	0	0	0	0	0	0	0	0	0	0	870	0	0	0	0	0	0	0	0	0	0.676	0	0	0

Notes:

--, data field not included in NETDMR form.

Monitoring descontinued in 2017, replaced with Yearly Toxicity Testing

Appendix B. Hisotrical Data
MA0003280 - Outfall CS-001 - T - QUARTERLY TOXICITY TESTING THROUGH OUTFALL CS-001
Permit Term December 2014 through November 2022

Parameter	Total Solids (mg/L)	TSS (mg/L)	pH (SU)	TRC (mg/L)	LC50 Acute Menidia (%)	LC50 Mysid. Bahia (%)	Ammonia (mg/L)	Cadmium (ug/L)	Copper (ug/L)	Nickel (ug/L)	Zinc (ug/L)	TOC (mg/L)	Salinity (g/g)
Monitoring Period End Date	Daily Max	Daily Max	Daily Max	Daily Max	MO MIN	MO MIN	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
12/31/2014	--	--	--	--	--	--	--	--	--	--	--	--	--
3/31/2015	202	33	7.04	0	100	100	0	0	13.8	0	127	3.87	0
6/30/2015	190	0	7.45	0	100	100	0.91	0	24.4	2.1	17.9	7.7	0
9/30/2015	186	0	7.65	0	100	100	0.19	0	11.3	0	49.1	3.7	0
12/31/2015	62	9.1	7.15	0	100	100	0	0	9.1	0	73.4	4.3	0
3/31/2016	620	35	7.6	0	100	100	0	0	25.9	0	167	5.5	< 2
6/30/2016	198	13.2	8.2	0	100	100	0	0	9.1	0	64.9	2.8	64.9
9/30/2016	79	0	7.35	0	100	100	1.4	0	6.8	0	36.4	6.2	0
12/31/2016	285	4.6	7.75	0	100	100	0.67	0	4	0	63.3	11.7	0.00032
3/31/2017	611	10.4	8.04	0	100	100	0.71	0	8.3	0	56.7	3	0.00065
6/30/2017	104	2.3	7.66	0	100	100	0.22	0	6.76	1.14	50.4	5.22	0
9/30/2017	108	3.2	7.3	0.036	100	100	0.16	0	4.93	0.72	25.7	1.93	0
12/31/2017	612	20	7.47	0.038	100	100	1.87	0.22	16	0	51	10.3	0.00049

Notes:
--, data field not included in NETDMR form.
Monitoring descontinued in 2017, replaced with Yearly Toxicity Testing

Appendix B. Hisotrical Data
MA0003280 - Outfall CS-001 - Y - YEARLY EFFLUENT POLLUTANT SCAN THROUGH OUTFALL CS-001 - CHANGE FROM 001Q
Permit Term December 2014 through November 2022

Parameter	Ammonia (ug/L)	Chromium (ug/L)	Iron (ug/L)	Acenaphthene (ug/L)	Acenaphthylene (ug/L)	Anthracene (ug/L)	Benzene (ug/L)	Benzo(a)anthracene (ug/L)	Benzo(a)pyrene (ug/L)	Benzo(b)fluoranthene (ug/L)	Benzo(ghi)perylene (ug/L)	Benzo(k)fluoranthene (ug/L)	Chrysene (ug/L)	Coliform, fecal, colony forming units (CFU/100mL)	Cyanide, total (as CN) (ug/L)	Dibenzo(a,h)anthracene (ug/L)	Ethylbenzene (ug/L)	Fluoranthene (ug/L)	Fluorene (ug/L)	Indeno(1,2,3 cd)pyrene (ug/L)	Naphthalene (ug/L)	Phenanthrene (ug/L)	Phenol (ug/L)	Phthalates, total (ug/L)	Pyrene (ug/L)	Toluene (ug/L)	Xylene (ug/L)
Monitoring Period End Date	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
12/31/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/31/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/31/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/31/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/30/2018	18.9	2.7	1010	0	0	0	0	0	0	0	0	0	0	300	0	0	0	0	0	0	0	0	0	0	7.759	0	0	0
4/30/2019	3.35	0	868	0	0	0	0	0	0	0	0	0	0	710	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/30/2020	4.3	2.1	366	0	0	0	0	0	0	0.095	0.07	0	0.075	110	0	0	0	0.092	0	0.062	0	0	0	0	0.12	0	0	0
4/30/2021	0.03	2.36	898	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/30/2022	0.0111199	5	1090	0	0	0	0	0.11	0.697	0.147	0.102	0.0576	0.0723	5	0.0723	0	0	0.0782	0	0.0525	0	0.0596	0	0	0.164	0	0

Notes:
--, data field not included in NETDMR form.

Appendix B. Hisotrical Data
MA0003280 - Outfall CS-001 - B - YEARLY TOXICITY TEST RECEIVING WATER THROUGH OUTFALL CS-001 - REPLACES 001T
Permit Term December 2014 through November 2022

Parameter	Total Solids (mg/L)	TSS (mg/L)	pH (SU)	TRC (mg/L)	Ammonia (mg/L)	Cadmium (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)	Zinc (ug/L)	Salinity (g/g)
Monitoring Period End Date	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
12/31/2014	--	--	--	--	--	--	--	--	--	--	--
12/31/2015	--	--	--	--	--	--	--	--	--	--	--
12/31/2016	--	--	--	--	--	--	--	--	--	--	--
12/31/2017	--	--	--	--	--	--	--	--	--	--	--
9/30/2018	19000	7.1	7.76	0.007	0.07	0	6.2	1.5	9.4	8	0.0151
9/30/2019	33000	11	7.89	0.02	0.07	0	2.4	0.62	0	11.6	0.0296
9/30/2020	205	3.3	7.97	0.03	0	0	0	0	0	0	0.031
9/30/2021	17100	182	7.66	0.02	0.17	0	7.4	1.4	11.7	15	15.6
9/30/2022	32100	98	7.04	0	0.14	0	8.3	0	16.7	17	25.6

Notes:

--, data field not included in NETDMR form.

Appendix B. Hisotrical Data
MA0003280 - Outfall CS-001 - P - QUARTERLY RECEIVING WATER POLLUTANT SCAN THROUGH OUTFALL CS-001
Permit Term December 2014 through November 2022

Parameter	Acenaphthene (ug/L)	Acenaphthylene (ug/L)	Anthracene (ug/L)	Benzene (ug/L)	Benzo(a)anthracene (ug/L)	Benzo(a)pyrene (ug/L)	Benzo(b)fluoranthene (ug/L)	Benzo(ghi)perylene (ug/L)	Benzo(k)fluoranthene (ug/L)	Chrysene (ug/L)	Dibenzo(a,h)anthracene (ug/L)	Ethylbenzene (ug/L)	Fluoranthene (ug/L)	Fluorene (ug/L)	Indeno(1,2,3 cd)pyrene (ug/L)	Naphthalene (ug/L)	Phenanthrene (ug/L)	Pyrene (ug/L)	Toluene (ug/L)	Xylene (ug/L)
Monitoring Period End Date	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
12/31/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3/31/2015	0	0	0	0	0.067	0.083	0.085	0.053	0.05	0.069	0	0		0	0.09	0.082	0.134	0.128	0	0
6/30/2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/30/2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/31/2016	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0
6/30/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.25	0	0	0	0	0
9/30/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/31/2017	0	0	0	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0
6/30/2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.055	0	0	0
9/30/2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/31/2018	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9		NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2018	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8
9/30/2018	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8
12/31/2018	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8	NODI: 8
3/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9		NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
12/31/2019	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/30/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
12/31/2020	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
12/31/2021	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
3/31/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
6/30/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9
9/30/2022	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9	NODI: 9

Notes:
--, data field not included in NETDMR form.
NODI: No Data Indicator
9, Conditional monitoring not required this period

Appendix B. Hisotrical Data

MA0003280 - Outfall CS-001 - R - YEARLY RECEIVING WATER POLLUTANT SCAN THROUGH OUTFALL CS-001

Permit Term December 2014 through November 2022

Parameter	Acenaphthene (ug/L)	Acenaphthylene (ug/L)	Anthracene (ug/L)	Benzene (ug/L)	Benzo(a)anthracene (ug/L)	Benzo(a)pyrene (ug/L)	Benzo(b)fluoranthene (ug/L)	Benzo(ghi)perylene (ug/L)	Benzo(k)fluoranthene (ug/L)	Chrysene (ug/L)	Dibenzo(a,h)anthracene (ug/L)	Ethylbenzene (ug/L)	Fluoranthene (ug/L)	Fluorene (ug/L)	Indeno(1,2,3 cd)pyrene (ug/L)	Naphthalene (ug/L)	Phenanthrene (ug/L)	Pyrene (ug/L)	Toluene (ug/L)	Xylene (ug/L)
Monitoring Period End Date	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
12/31/2014	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/31/2015	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/31/2016	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
12/31/2017	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4/30/2018	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.045	0	0	0	0
4/30/2019	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/30/2020	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/30/2021	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Notes:
--, data field not included in NETDMR form.

Appendix B. Hisotrical Data
MA0003280 - Outfall CS-001 - T - QUARTERLY TOXICITY TESTING THROUGH OUTFALL CS-001
Permit Term December 2014 through November 2022

Parameter	Total Solids (mg/L)	TSS (mg/L)	pH (SU)	TRC (mg/L)	Ammonia (mg/L)	Cadmium (ug/L)	Copper (ug/L)	Lead (ug/L)	Nickel (ug/L)	Zinc (ug/L)	TOC (mg/L)	Salinity (g/g)
Monitoring Period End Date	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
12/31/2014	--	--	--	--	--	--	--	--	--	--	--	--
3/31/2015	22900	14	7.3	0	0	0	0	0	0	22.9	2.8	20.9
6/30/2015	24000	0	7.45	0	0	0	2.7	0	2.2	17.9	3.4	24.4
9/30/2015	27300	12.5	7.69	0	0	0	0	10.5	0	30.5	2.8	23.5
12/31/2015	26400	9.8	6.95	0	0.14	0	0	10.1	0	0	3.4	25.2
3/31/2016	22200	0	7.63	0	0	0	5.9	27.9	0	13.1	2.5	26.5
6/30/2016	24000	28	7.63	0	0	0	5.2	14.8	0	16.9	3	23.1
9/30/2016	38400	13.2	7.65	0	0	0	0	0	0	20.2	1.8	40.5
12/31/2016	30800	5.8	7.31	0	0	0	0	0	0	11.6	2.1	0.0399
3/31/2017	26900	7.6	7.95	0	0	0	0	0	0	0	2.1	0.0222
6/30/2017	14400	8.7	7.79	0	0.2	0	41.9	2.3	6.62	28.5	3.3	12.2
9/30/2017	60600	6.8	7.76	0	0.2	0	83.3	0	16.1	27	2.93	0.026
12/31/2017	32500	8.3	7.95	0.007	0.29	0	110	0	0	0	2.14	0.0279

Notes:

--, data field not included in NETDMR form.

Monitoring descontinued in 2017, replaced with Yearly Toxicity Testing

Appendix B. Hisotrical Data
MA0003280 - Outfall CS-002 - A - TREATED WASTEWATER MONITORING THROUGH OUTFALL CS-001
Permit Term December 2014 through November 2022

Parameter	Total Flow (Mgal/mo)	pH (SU)	pH (SU)	Polynuc aromatic HC per Method 610 (ug/L)	Benzene (ug/L)	BTEX (ug/L)	Flow rate (gal/min)	Hydrocarbons, total petroleum (mg/L)	Naphthalene (ug/L)	Polynuc aromatic HC per Method 610 (ug/L)	Polynuc aromatic HC per Method 610 (ug/L)	Polynuc aromatic HC per Method 610 (ug/L)
Monitoring Period End Date	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
12/31/2014	0.05044	7.28	7.28	0	0	0	25	0	0	0	0	0
1/31/2015	0.027276	7.2	7.2	0	0	0	25	0	0	0	0	0
2/28/2015	0.03179	7.35	7.35	0	0	0	25	0	0	0	0	0
3/31/2015	0.033122	7.4	7.4	0	**48.2**	**156.1**	25	0	0	0	0	0
4/30/2015	0.03829	7.35	7.35	0	0	0	25	0	0	0	0	0
5/31/2015	0.026	7.25	7.25	0	0	0	25	0	0	0	0	0
6/30/2015	0.01685	7.45	7.45	0	0	0	7.5	0	0	0	0	0
7/31/2015	0.062744	7.21	7.21	0	0	0	25	0	0	0	0	0
8/31/2015	0.058703	7.32	7.32	0	0	0	25	0	0	0	0	0
9/30/2015	0.058703	7.02	7.02	0	0	0	25	0	0	0	0	0
10/31/2015	0.034843	7.08	7.08	0	0	0	7.5	0	0	0	0	0
11/30/2015	0.047099	6.97	6.97	0	0	0	25	0	0	0	0	0
12/31/2015	0.0643	7.13	7.13	0	0	0	25	0	0	0	0	0
1/31/2016	0.07014	7.11	7.11	0	0	0	25	0	0	0	0	0
2/29/2016	0.113115	7.05	7.05	0	0	0	25	0	0	0	0	0
3/31/2016	0.08735	7.44	7.44	0	0	0	25	0	0	0	0	0
4/30/2016	0.0793	7.15	7.15	0	0	0	25	0	0	0	0	0
5/31/2016	0.0909	6.88	6.88	0	0	0	25	0	0	0	0	0
6/30/2016	0.06157	**6.42**	6.42	0	0	0	25	0	0	0	0	0
7/31/2016	0.073351	7.11	7.11	0	0	0	25	0	0	0	0	0
8/31/2016	0.077	7.39	7.39	0	0	0	25	0	0	0	0	0
9/30/2016	0.047	7.4	7.4	0	0	0	25	0	0	0	0	0
10/31/2016	0.0697	7.36	7.36	0	0	0	25	0	0	0	0	0
11/30/2016	0.081	7.5	7.5	0	0	0	25	0	0	0	0	0
12/31/2016	0.0703	7.12	7.12	0	0	0	25	0	0	0	0	0
1/31/2017	0.113	7.5	7.5	0	0	0	25	0	0	0	0	0
2/28/2017	0.102	7.65	7.65	0	0	0	25	0	0	0	0	0
3/31/2017	0.127	6.98	6.98	0	0	0	25	0.535	0	0	0	0
4/30/2017	0.054	6.97	6.97	0	0	0	25	0	0	0	0	0
5/31/2017	0.08	7.16	7.16	0	0	0	25	0.58	0	0	0	0
6/30/2017	0.129	6.75	6.75	0	0	0	25	0	0	0	0	0
7/31/2017	0.067	7.53	7.53	0	0	0	25	0	0	0	0	0
8/31/2017	0.045	7.05	7.05	0	0	0	25	0	0	0	0	0
9/30/2017	0.051	6.92	6.92	0	0	0	25	0	0	0	0	0
10/31/2017	0.053	6.81	6.81	0	0	0	25	0	0	0	0	0
11/30/2017	0.058	6.6	6.6	0	0	0	25	0	0	0	0	0
12/31/2017	0.035	6.94	6.94	0	0	0	25	0	0	0	0	0
1/31/2018	0.054333	6.9	6.9	0	0	0	25	0	0	0	0	0
2/28/2018	0.095	7.03	7.03	0	0	0	25	0	0	0	0	0
3/31/2018	0.129	6.9	6.9	0	0	0	25	0	0	0	0	0
4/30/2018	0.079	6.92	6.92	0	0	0	25	0	0	0	0	0
5/31/2018	0.0809	7.05	7.05	0	0	0	25	0	0	0	0	0
6/30/2018	0.068	7.06	7.06	0	0	0	25	0	0	0	0	0
7/31/2018	0.069	7.15	7.15	0	0	0	25	0	0	0	0	0
8/31/2018	0.117	7.21	7.21	0	0	0	25	0	0	0	0	0
9/30/2018	0.082	7.2	7.2	0	0	0	25	2.2	0	0	0	0

Appendix B. Hisotrical Data
MA0003280 - Outfall CS-002 - A - TREATED WASTEWATER MONITORING THROUGH OUTFALL CS-001
Permit Term December 2014 through November 2022

Parameter	Total Flow (Mgal/mo)	pH (SU)	pH (SU)	Polynuc aromatic HC per Method 610 (ug/L)	Benzene (ug/L)	BTEX (ug/L)	Flow rate (gal/min)	Hydrocarbons, total petroleum (mg/L)	Naphthalene (ug/L)	Polynuc aromatic HC per Method 610 (ug/L)	Polynuc aromatic HC per Method 610 (ug/L)	Polynuc aromatic HC per Method 610 (ug/L)
Monitoring Period End Date	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
10/31/2018	0.025	7.15	7.15	0	0	0	25	2	0	0	0	0
11/30/2018	0.046	7.39	7.39	0	0	0	25	1.1	0	0	0	0
12/31/2018	0.065	7.15	7.15	0	0	0	25	0	0	0	0.133	0.065
1/31/2019	0.079	7.18	7.18	0	0	0	25	< 1.8	0	0	0	0
2/28/2019	0.06	7.3	7.3	0	0	0	25	0	0	0	0	0
3/31/2019	0.093	7.34	7.34	0	0	0	25	0	0	0	0	0
4/30/2019	0.067	7.64	7.64	0	0	0	25	0	0	0	0	0
5/31/2019	0.035	7.75	7.75	0	0	0	25	< 1.9	0	0	0	0
6/30/2019	0.029	7.76	7.76	0	0	0	25	0	0	0	0	0
7/31/2019	0.032	7.44	7.44	0	0	0	25	0	0	0	0	0
8/31/2019	0.024	7.64	7.64	0	0	0	25	0	0	0	0	0
9/30/2019	0.027	7.75	7.75	0	0	0	25	0	0	0	0	0
10/31/2019	0.025	6.65	6.65	0	0	0	25	0	0	0	0	0
11/30/2019	0.062	7.2	7.2	0	0	0	25	0	0	0	0	0
12/31/2019	0.067	7.3	7.3	0	0	0	25	0	0	0	0	0
1/31/2020	0.081414	7.4	7.4	0	0	0	25	0	0	0	0	0
2/29/2020	0.105	7.3	7.3	0	0	0	25	0	0	0	0	0
3/31/2020	0.109	7.45	7.45	0	0	0	25	0	0	0	0	0
4/30/2020	0.102	7.25	7.25	0	0	0	25	0	0	0	0	0
5/31/2020	0.114811	7.1	7.1	0	0	0	25	0	0	0	0	0
6/30/2020	0.062579	7.4	7.4	0	0	0	25	0	0	0	0	0
7/31/2020	0.083	7.5	7.5	0	0	0	25	0	0	0	0	0
8/31/2020	0.075682	7.3	7.3	0	0	0	25	0	0.082	0	0	0.082
9/30/2020	0.087	7.3	7.3	0	0	0	25	0	0	0	0	0
10/31/2020	0.082	6.8	6.8	0	0	0	25	0	0	0	0	0
11/30/2020	0.017	7	7	0	0	0	25	0	0	0	0	0
12/31/2020	0.019	7.3	7.3	0	0	0	25	0	0	0	0	0
1/31/2021	0.043	7.08	7.08	0	0	0	25	0	0	0	0	0
2/28/2021	0.061	6.92	6.92	0	0	0	25	0	0	0	0	0
3/31/2021	0.079	6.75	6.75	0	0	0	25	0	0	0	0	0
4/30/2021	0.074	6.78	6.78	0	0	0	25	0	0	0	0	0
5/31/2021	0.0998	6.87	6.87	0	0	0	25	0	0	0	0	0
6/30/2021	0.118	6.77	6.77	0	0	0	25	0	0	0	0	0
7/31/2021	0.095	6.64	6.64	0	0	0	25	0	0	0	0	0
8/31/2021	0.0586	6.77	6.77	0	0	0	25	0	0	0	0	0
9/30/2021	0.33	6.88	6.88	0	0	0	25	0	0	0	0	0
10/31/2021	0.080989	6.88	6.88	0	0	0	25	0	0	0	0	0
11/30/2021	0.0724	6.81	6.81	0	0	0	25	0	0	0	0	0
12/31/2021	0.06	6.91	6.91	0	0	0	25	0	0	0	0	0
1/31/2022	0.0078	6.99	6.99	0	0	0	25	0	0	0	0	0
2/28/2022	0.021	7.06	7.06	0	0	0	25	0	0	0	0	0
3/31/2022	0.062186	6.53	6.53	0	0	0	25	0	0	0	0	0
4/30/2022	0.0881	6.54	6.54	0	0	0	25	0	0	0	0	0
5/31/2022	0.34	6.92	6.92	0	0	0	25	0	0	0	0	0
6/30/2022	0.1129	6.91	6.91	0	0	0	25	0	0	0	0	0
7/31/2022	0.1035	6.77	6.77	0	0	0	25	0	0	0	0	0

Appendix B. Hisotrical Data
MA0003280 - Outfall CS-002 - A - TREATED WASTEWATER MONITORING THROUGH OUTFALL CS-001
Permit Term December 2014 through November 2022

Parameter	Total Flow (Mgal/mo)	pH (SU)	pH (SU)	Polynuc aromatic HC per Method 610 (ug/L)	Benzene (ug/L)	BTEX (ug/L)	Flow rate (gal/min)	Hydrocarbons, total petroleum (mg/L)	Naphthalene (ug/L)	Polynuc aromatic HC per Method 610 (ug/L)	Polynuc aromatic HC per Method 610 (ug/L)	Polynuc aromatic HC per Method 610 (ug/L)
Monitoring Period End Date	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
8/31/2022	0.0975	6.78	6.78	0	0	0	25	0	0	0	0	0
9/30/2022	0.101	6.75	6.75	0	0	0	25	0	0	0	0	0
10/31/2022	0.077	6.78	6.78	0	0	0	25	0	0	0	0	0
11/30/2022	0.038	6.73	6.73	0	0	0	25	0	0	0	0	0

Notes:
BOLD, Permit limit exccedance

APPENDIX C

Blank Inspection Forms

MULTI-MEDIA INSPECTION LOG
Monthly Visual Inspection Log

Global personnel conduct a visual inspection of the entire terminal once per month. This inspection will also meet the requirement of the daily inspection for the date conducted. The visual-only inspection shall assess the containers' exterior surfaces checking for leaks, shell distortions, signs of corrosion, paint coating deterioration, and malfunctioning of appurtenances. Facility personnel knowledgeable of facility operations, the container and the characteristics of the product stored shall conduct this inspection. The routine in-service visual inspection is below by placing a check mark in □. Where corrective action(s) is/are required, terminal personnel should check the appropriate box and complete a Corrective Action Form. The inspector should sign and date this log immediately upon completion of the inspection.

_____	_____	_____
Name	*Signature*	*Date*

1.0 DOCK AREA

Corrective Action Form □

- □ Drip pan (size, integrity, cover, clean)
- □ Dock structure (visible structural damage, piles, decking)
- □ Hydrographic conditions (note verbal comments from vessel captains, if any)
- □ Product piping
- □ Manifold, emergency shutdown device, relieve valve settings
- □ Personnel safety devices (life ring)
- □ Fire protection (fire extinguisher, foam hydrant/connection)
- □ Spill containment equipment (boom, sorbents, etc.)
- □ Global Chelsea Terminal ERAP (dock house copy)
- □ Lighting/warning signs

2.0 TRUCK LOADING RACK

Corrective Action Form

- □ Housekeeping (spills, rags, structural sheet, etc.) □
- □ Overfill protection devices
- □ Safety equipment, signage, loading procedures/ emergency stops
- □ Fire extinguishers
- □ Grounding equipment
- □ Leak Inspection of Vapor Control Unit
- □ Truck canopy in good condition

3.0 BULK ABOVEGROUND STORAGE TANKS, PORTABLE BULK STORAGE CONTAINERS, PIPING & CONTAINMENT AREA

Shop-fabricated bulk storage tanks are mounted on leak prevention barriers (e.g., concrete) or are elevated where all sides are visible (i.e., the container has no contact with the ground) to ensure any leaks are immediately detected. The portable bulk storage containers (drums, totes, etc.) must be in dedicated container storage areas. The self-inspection program includes a visual inspection of tanks and any surface impoundments, secondary containment systems and response equipment as required by federal and state regulations (USCG, EPA and MA DEP specifically FRP and SPCC regulations). Please check the Corrective Action Form if actions need to be taken.

TANK NUMBERS:	**101**	**102**	**103**	**104**	**105**	**106**	**107**	**108**	**110**	**111**	**112**	**113**	**116/117**
Exterior Surface: seals, structural integrity, shell distortions, corrosion, cracks, foundation & paint coating deterioration, railing, stairs and/or malfunctioning of the appurtenances.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Check for Leaks: drip marks, discoloration, product spills/leaks (puddles), sheen on stormwater in dike.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐

TANK NUMBERS:	**201**	**202**	**203**	**204**	**205**	**114**	**115**	**A3**	**A4**	**A5**	**A6**	**A7**	**NOTES**
Exterior Surface: seals, structural integrity, shell distortions, corrosion, cracks, foundation & paint coating deterioration, railings, stairs and/or malfunctioning of the appurtenances.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
Check for Leaks: drip marks, discoloration, product spills/leaks (puddles), sheen on stormwater in dike.	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

SECONDARY CONTAINMENT and PIPING includes (Dikes, berms, retention & drainage ponds)	
Check Valves, Flanges, Manways & Pipes for leaks, corrosion, discoloration, damages and seals	☐
Breaches of Containment (holes, pipes, burrow holes)	☐
Check concrete structures for cracks and erosion	☐
Operation status of drainage structures	☐
Precipitation level to allow for proper capacity	☐
Dike area is free of debris and vegetation	☐
Status of pipes, inlets, drainage beneath tanks, etc.	☐
Erosion of earthen dike	☐
Permeability of earthen floor	☐
Tank grounding equipment	☐
Housekeeping Items: General Debris (Trash, rags, etc.) and Proper Warning Signs	☐
Security Items: Existing perimeter fence, Entrance/Exit Gates (operational/locks), Lighting (operational) and Proper Signage	☐

Corrective Action Form ☐ **NOTES:**

7.0 **EQUIPMENT**

DOCK				
Equipment	**Quantity in Plan(s)**	**Quantity at Terminal**	**Operational: Y** (Yes) or N (No)	**Corrective Action Required**
LOADING RACK				
Equipment	**Quantity in Plan(s)**	**Quantity at Terminal**	**Operational:** Y (Yes) or N (No)	**Corrective Action Required**
TERMINAL YARD				
Equipment	**Quantity in Plan(s)**	**Quantity at Terminal**	**Operational:** Y (Yes) or N (No)	**Corrective Action Required**
SPILL RESPONSE MATERIALS				

Speedi-Dry

Desired Inventory: _____ (quantity)

Current Inventory: _____ Additional Needed: ☐ yes ☐ no Quantity Needed: ___

Location: Location Correct: ☐ yes ☐ no Accessible: ☐ yes ☐ no

Operational: ☐ yes ☐ no Tested: ☐ yes ☐ no Actual Use: ☐ yes ☐ no

Accessible:

☐ yes ☐ no

Operational:

☐ yes ☐ no

Testing / Actual Use:

☐ yes ☐ no

Corrective Action Form
☐

E. Heavy Equipment

Inventory (quantity)

____	Pick-Up Truck	Storage Location: _____	Correct Location:	☐ yes ☐ no
____	Fork truck	Storage Location: _____	Correct Location:	☐ yes ☐ no
____	Ladder	Storage Location: _____	Correct Location:	☐ yes ☐ no
____	Skimmer (1)	Storage Location: _____	Correct Location:	☐ yes ☐ no
____	Small Metal Boat	Storage Location: Dock _____		
____	Front End Loader	_____		
____	Vac Truck	Storage Location: _____	Correct Location:	☐ yes ☐ no

All Operational: ☐ yes ☐ no Needs Repairs/Replacements:

All Tested / used: ☐ yes ☐ no Accessible: ☐ yes ☐ no

F. Fire Fighting Equipment

Corrective Action Form
☐

Fire Extinguishers in the Terminal Yard and Office

Sufficient Inventory: ☐ yes ☐ no Additional Needed: ☐ yes ☐ no

Location: _____ Location Correct: ☐ yes ☐ no Accessible: ☐ yes ☐ no

Operational: ☐ yes ☐ no Need Repair: ☐ yes ☐ no Item that need Repair: _____

Tested / Used: ☐ yes ☐ no Needs Testing: ☐ yes ☐ no Item that needs Testing: _____

Foam System and Components:

Sufficient Inventory: ☐ yes ☐ no Additional Needed: ☐ yes ☐ no

Location: _____ Location Correct: ☐ yes ☐ no Accessible: ☐ yes ☐ no

Operational: ☐ yes ☐ no Need Repair: ☐ yes ☐ no Item that need Repair: _____

Tested / Used: ☐ yes ☐ no Needs Testing: ☐ yes ☐ no Item that needs Testing: _____

Water System / Hydrants:

Sufficient Inventory: ☐ yes ☐ no Additional Needed: ☐ yes ☐ no

Location: _____ Location Correct: ☐ yes ☐ no Accessible: ☐ yes ☐ no

Operational: ☐ yes ☐ no Need Repair: ☐ yes ☐ no Item that need Repair: _____

Tested / Used: ☐ yes ☐ no Needs Testing: ☐ yes ☐ no Item that needs Testing: _____

9.0 FIRE PROTECTION RESPONSE Corrective Action Form ☐

☐ Water hydrants

☐ Extinguishers

☐ Boom

☐ Emergency shut down valves/switches

11.0 DRAINAGE SYSTEM/ STORMWATER Corrective Action Form ☐

- ☐ Are vehicle parking areas clear of engine leaks? If necessary, place drip pan placed under leaky vehicles.
- ☐ No significant sediment buildup in paved areas/ truck loading rack?
- ☐ Are all vehicle maintenance and repairs conducted inside the designated garage?
- ☐ Is any excavated contaminated soil properly stockpiled (properly covered with poly or tarp)
- ☐ Is the storm water and treated groundwater collection sump located inside the terminal yards free of sheen/oil?
- ☐ Is discharge from the OWS controlled (Gate valve in the off position unless discharging)
- ☐ Is standing storm water inside the OWS free of sheen and oil?
- ☐ Are dumpster lids secure?
- ☐ Are there any obstructions around catch basins inlet that will prevent storm water entering the collection system?
- ☐ If terminal ground is excavated, are proper erosion control measures in place to prevent sediment reaching the inlet of storm water collection catch basins?
- ☐ Are Discharge records up to date?

Chelsea Sandwich, LLC
Chelsea, MA Terminal

MULTI-MEDIA INSPECTION CORRECTIVE ACTION FORM

This Corrective Action Form should be used in conjunction with the Daily and Monthly Visual Inspection Logs. Where corrective action(s) is/are required as identified during these inspections, Terminal personnel should check the appropriate box on the inspection forms and then complete this form. This form should be used to provide detailed information for item(s) requiring attention and actions taken to correct the item(s).

Item Requiring Repair: _____

Date Identified: _____

Required Action: _____

_____

_____

_____

_____

_____

Date of Correction: _____

Name: _____

Signature: _____

BMP Inspection and Evaluation Form - Quarterly Inspection

Site Name: _____ Date: _____ Time: _____

Site Address: _____ Weather: _____ Temp: _____

Name of Inspector(s): _____

Name of SWPPP Team Member: _____

Section 1 - Hydro-Static Test Water

1. Was there any hydro-static tank tests conducted during the previous quarter? (circle one)

Yes (answer a-d below) No (skip to Section 2)

a. Was hydrostatic test water treated via OWS and flow of hydro-static discharge controlled? (circle one)

Yes No (describe): _____

b. Were water sampling procedures followed as discussed in the Permit? (circle one)

Yes No (describe): _____

c. Were all samples analyzed for the parameters indicated in the Permit? (circle one)

Yes No (describe): _____

d. Was testing reported to the EPA/DEP within 90 days of completion of the test? (circle one)

Yes No (describe): _____

Section 2 - Significant Structural Changes

1. Are there significant structural changes made to the property perimeter that may allow run-on/run-off? (circle one)

No Yes (describe): _____

2. Are there any structural changes made to the stormwater collection system that will impact discharge at the OWS? (circle one)

No Yes (describe): _____

Section 3 - Compliance with Discharge Limits

1. Were any of the discharge limits for the Permit exceeded during the previous quarter? (circle one) Yes No

If yes, identify which parameters exceeded for each outfall (e.g., TSS, O&G) below.

a. Outfall 001: "CS-001" _____

b. Outfall 002: "CS-002" _____

2. What corrective actions were recommended or proposed? Describe.

_____

_____

3. Were corrective action(s) implemented? Describe.

_____

_____

Section 4 - Non-Stormwater Discharges

1. Are non-stormwater discharges managed, as discussed in the SWPPP? (circle one)

Yes No (describe): _____

Section 5 - OWS Operation

1. Is the OWS inlet flow control valve in good operating condition? (circle one)

Yes No (describe): _____

2. Is the OWS interlock system or pump flow control measures in good operating condition? (circle one)

Yes No (describe): _____

3. Is the OWS in good structural condition (visual observation)? (circle one)

Yes No (describe): _____

4. Does the OWS contain sediments in quantities that negatively impact the discharge and/or prevent proper function? (circ

No Yes (describe): _____

Section 6 - Outfalls

1. Are outfalls numbered as designated and in good structural condition? (circle one)

Yes No (describe): _____

2. Is discharge flow meter in good working condition? (circle one)

Yes No (describe): _____

3. Are OWS discharges recorded and readily available? (circle one)

Yes No (describe): _____

4. Is outfall free of tidal influence? (circle one)

Yes No (describe): _____

Section 7 - Visual Assessment of Stormwater Discharge

Collect a sample of stormwater from the outfall in a clear, colorless container within 15 minutes of initiating discharge. Record the following water quality characteristics. Ensure assessment is conducted in a well-lit area.

a. Color (circle one)

Yes Minor Significant Other (describe): _____

b. Odor (circle one)

Yes Minor Significant Other (describe): _____

c. Clarity (circle one)

Yes Minor Significant Other (describe): _____

d. Floating Solids (circle one)

Yes Minor Significant Other (describe): _____

e. Settleable Solids (circle one)

Yes Minor Significant Other (describe): _____

f. Suspended Solids (circle one)

Yes Minor Significant Other (describe): _____

g. Foam (circle one)

Yes Minor Significant Other (describe): _____

h. Oil Sheen (circle one)

Yes Minor Significant Other (describe): _____

i. Other indicators of stormwater pollution (circle one)

Yes Minor Significant Other (describe): _____

Section 8 - Permit Compliance Status

1. Status of the Corrective Action(s) noted during the previous quarterly inspection, if any:

_____

_____

Section 9 - Observation of Drainage System

1. Are drainage system catch basins in good working condition? (E.g., are basins structurally sound and relatively free of sediments?) (circle one)

Yes No (describe): _____

Section 10 - Observation Summary and Recommended Corrective Actions

_____

_____

_____

_____

APPENDIX D

Completed Inspection Forms

APPENDIX E

Special Conditions Reports

QA/QC Practices – Appendix E

The purpose of this section is to satisfy Part C 1.(7)(i-vi) of National Pollutant Discharge Elimination System (NPDES) Permit number MA0003280 (the Permit), which requires documented quality assurance/quality control practices. Specifically, the following is required:

i. A summary of the monitoring requirements specified in the permit;

ii. A map and/or treatment system diagram indicating the location of each sampling location with a geographic identifier (i.e., latitude and longitude coordinates);

iii. Specifications for the number of samples, type of samples, type and number of containers, type of preservation, type and number of quality assurance samples, if applicable, type and number of field samples, if applicable, and sample storage, holding times, and shipping methods, including chain-of-custody procedures;

iv. Specifications for EPA-approved test methods and sufficiently sensitive minimum levels for each required parameter;

v. A schedule for review of sample results; and

vi. A description of data validation and data reporting processes.

Listed below is a summary of sample handling monitoring requirements for each outfall under the Permit. Each section of this appendix is divided into monthly, bimonthly, quarterly, and annual monitoring requirements. Refer to the Site and Drainage Map (**Figure 2** of the SWPPP) for sample locations.

Monthly and Bimonthly Monitoring Requirements:

- The table below describes the monthly and bimonthly (2 times per month) field parameters to be collected at outfalls identified as 001 and 002. All samples are preserved on ice immediately upon collection and prior to transportation to an environmental lab. All methods listed below are approved by EPA 40 CFR Part 136 or required under 40 CFR chapter

Outfall Serial Number 001 Discharge to the Chelsea River					
Parameter (Method)	**Bottle-wear**	**Frequency**	**Method**	**ML**	**Hold time**
pH	Field measurement with probe	1 / month	--	6.5 – 8.5	15 minutes
Total suspended solids	1, 1L plastic, unpreserved	2 / month	2540D	5 mg/L	7 days
Turbidity	1, 500 mL plastic, unpreserved	2 / month	180.1	0.30 NTU	48 hours
Chemical oxygen demand	1, 500 mL, plastic, preserved w/ sulfuric acid	1 / month	360.1	10 mg/L	28 days
Oil and grease	1, 1L amber glass, preserved w/ sulfuric acid	1 / month	1664B	2 mg/L	28 days
Fecal coliform and enterococcus	4, 100mL plastic, preserved w/ sodium thiosulfate	1 / month	121, 9222D	NA	6 hours
(Benzo(a)pyrene, benzo(a)anthracene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, and Chrysene	1, 1L amber glass, unpreserved	1 / month	625.1	0.05 µg/L	7 days
Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene	1, 1L amber glass, unpreserved	1 / month	625.1	0.1 µg/L	7 days
Naphthalene	1, 1L amber glass, unpreserved	1 / month	625.1	5 µg/L	7 days
Benzene	3, 40mL VOA vials, preserved w/ hydrochloric acid	1 / month	624.1 RGP	1 µg/L	14 days
Total copper	1, 500mL plastic, preserved w/ nitric acid	1 / month	200.8	0.00400 mg/L	180 days
Total zinc	1, 500mL plastic, preserved w/ nitric acid	1 / month	200.8	0.0160 mg/L	180 days
Total ammonia as nitrogen (April to October only)	1, 500ml plastic, preserved w/ sulfuric acid	1 / month	350.1	0.05 mg/L	28 days
Cyanide	1, 250mL plastic, preserved w/ sodium hydroxide	1 / month	335	≤ 5 µg/L	6 hours
Total residual chlorine	1, 500mL plastic, unpreserved	1 / month	SM 4500CL	≤30 µg/L	24 hours

Outfall Serial Number 002 Discharge to the Chelsea River					
Parameter (Method)	**Bottle-wear**	**Frequency**	**Method**	**ML**	**Hold Time**
pH	Field measurement with probe	1 / month	--	6.5 – 8.5	15 minutes
Benzene	3, 40mL VOA vials, preserved w/ hydrochloric acid	1 / month	624.1 RGP	1 µg/L	7 days
Benzene, ethylbenzene, toluene, and total xylenes	3, 40mL VOA vials, preserved w/ hydrochloric acid	1 / month	624.1 RGP	1 µg/L	14 days
Naphthalene	1, 1L amber glass, unpreserved	1 / month	625.1	5 µg/L	7 days

Quarterly Monitoring Requirements:

Along with Monthly analysis the following parameters shall be collected on the first month (i.e., January, April, July, October) of each quarter for outfalls 001 and 002.

Outfall Serial Number 001 Discharge to the Chelsea River					
Parameter (Method)	**Bottle-wear**	**Frequency**	**Method**	**ML**	**Hold Time**
Total Phthalates	1, 1L amber glass, unpreserved	1 / Quarter	625	5 µg/L	7 days
Perfluorohexanesulfonic acid (PFHxS), Perfluoroheptanoic acid (PFHpA), Perfluorononanoic acid (PFNA), Perfluorooctanesulfonic acid (PFOS), Perfluorooctanoic acid (PFOA), and Perfluorodecanoic (PFDA)	--	1 / Quarter	1633[1]	--	--
Notes: [1]Monitoring requirement takes effect during the first quarter following six months after receiving written notification of availability of the multi-laboratory validation of analytical test Method 1633 for the analysis of PFAS in wastewater and biosolids.					

Outfall Serial Number 002 Discharge to the Chelsea River					
Parameter (Method)	**Bottle-wear**	**Frequency**	**Method**	**ML**	**Hold Time**
Total Petroleum Hydrocarbons	1, 1L amber glass, preserved w/ sulfuric acid	1 / quater	1664B	2 mg/L	28 days

Annual Monitoring Requirements:

Outfall Serial Number 001 Discharge to the Chelsea River					
Parameter (Method)	**Bottle-wear**	**Frequency**	**Method**	**ML**	**Hold Time**
Outfall					
pH	Field measurement with probe	1 / Year	--	6.5 – 8.5	15 minutes
Salinity	1, 1L plastic, unpreserved	1 / Year	SM 2520	0.5 ppt	28 days
Total suspended solids	1, 1L plastic, unpreserved	1 / Year	2540D	5 mg/L	28 days
Total residual chlorine	1, 500mL plastic, unpreserved	1 / Year	SM 4500CL	≤30 µg/L	24 hours
Total organic carbon	1, 40 mL VOA, w/ phosphoric acid preservative	1 / Year	5310B	1 mg/L	28 days
Ethylbenzene, toluene and total xylenes	3, 40mL VOA vials, preserved w/ hydrochloric acid	1 / year	624.1 RGP	1 µg/L	14 days
Acenaphthene, Acenaphthylene Anthracene, Benzo(g,h,i)perylene Fluoranthene, Fluorene Phenanthrene, Pyrene	1, 1L amber glass, unpreserved	1 / year	625.1	5 µg/L	7 days
Total cadmium, Total copper, Total lead, Total nickel, Total zinc	1, 500mL plastic, preserved w/ nitric acid	1 / Year	200.8	< 0.1 mg/L	180 days
Total ammonia as nitrogen	1, 500ml plastic, preserved w/ sulfuric acid	1 / Year	350.1	0.05 mg/L	28 days
LC50	2.5 gal plastic, unpreserved	1 / Year	--	--	48 hours
Ambient Characteristic or Receiving Water					
pH	Field measurement with probe	1 / Year	--	6.5 – 8.5	15 minutes
Temperature	Field measurement with probe	1 / Year	--	5 mg/L	15 minutes
Salinity	1, 1L plastic, unpreserved	1 / Year	SM 2520	0.5 ppt	28 days
Total ammonia as nitrogen	1, 500ml plastic, preserved w/ sulfuric acid	1 / Year	350.1	0.05 mg/L	28 days
Benzene, ethylbenzene, toluene, total xylenes	3, 40mL VOA vials, preserved w/ hydrochloric acid	1 / Year	624.1 RGP	2 µg/L	14 days
Benzo(a)pyrene, benzo(a)anthracene, Benzo(b)fluoranthene,Benzo(k)fluoranthene, and Chrysene	1, 1L amber glass, unpreserved	1 / Year	625.1	0.05 µg/L	7 days
Dibenzo(a,h)anthracene, Indeno(1,2,3-cd)pyrene	1, 1L amber glass, unpreserved	1 / Year	625.1	1 µg/L	7 days
Acenaphthene, Acenaphthylene, Anthracene, Benzo(g,h,i)perylene, Fluoranthene, Fluorene, Naphthalene, Phenanthrene, and Pyrene	1, 1L amber glass, unpreserved	1 / Year	625.1	5 µg/L	7 days
Total cadmium, Total copper, Total lead, Total nickel, Total zinc	1, 500mL plastic, preserved w/ nitric acid	1 / Year	200.8	< 0.1 mg/L	180 days

Sample Handling/Storage Protocols

- Samples are collected in laboratory provided glassware and labeled in the field.
- All collected samples are immediately placed on ice in a cooler.
- A laboratory chain of custody is utilized and filled out prior to transferring custody of the sample to a lab courier.

Sample Results Review Schedule, Data Validation and Reporting Process

- All sample analytical results are reviewed within one business day of receipt from the laboratory.
- During the review of the sample results, the laboratory Case Narrative is reviewed to determine if there were any nonconformance issues identified by the laboratory.
- The laboratory's QA/QC section of the analytical report is also reviewed to further identify any QA/QC or nonconformance issues.
- All data qualifiers associated with the analytical results are reviewed to again verify there were no QA/QC issues and that the analytical results are suitable for use
- Analytical results are inputted into NetDMR by the 15th of each month. All laboratory analytical reports as well as any other applicable information (i.e., letters, permitee created DMR templates, etc.) are appended to the respective Facility outfalls on NetDMR.

APPENDIX F

Recordkeeping Documentation

APPENDIX G

SWPPP Modification Log

SWPPP Modification Log

Modifications and updates made to this SWPPP as a result of changes in facility layout, changes in facility usage, changes to the facility's stormwater system, or corrective actions taken to meet the effluent limitations set forth in this plan should be tracked in the following table. In the event an effluent limitation is exceeded, an entry must be made even if no modification to the SWPPP is necessary.

No.	Date	Description of Permit Effluent Limitations Exceedance or Facility Change	Modification to SWPPP (Yes/No)	Description of Corrective Action	Signature of Responsible Official
1					
2					
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4					
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12					