

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION I  
1 CONGRESS STREET - SUITE 1100  
BOSTON, MASSACHUSETTS 02114-2023**

FACT SHEET

---

**DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)  
PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES**

NPDES PERMIT NO: **MA0003280**

PUBLIC NOTICE DATE:

NAME AND ADDRESS OF APPLICANT:

**Global Companies, LLC  
11 Broadway  
Chelsea, MA 02150**

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

**Chelsea Sandwich, LLC  
11 Broadway  
Chelsea, MA 02150**

RECEIVING WATER: **Chelsea River/Mystic River Watershed (MA71)**

CLASSIFICATION: **SB**

**I. PROPOSED ACTION**

The above named applicant has applied to the U.S. Environmental Protection Agency (EPA) for the re-issuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge treated storm water and ground water into the designated receiving water. The permit, which was issued to the Chelsea Sandwich, LLC (Chelsea Sandwich) on October 2, 1997 (the Current Permit), became effective on November 1, 1997, and expired on November 1, 2002. EPA received a permit renewal application dated November 7, 2001, from Chelsea Sandwich. Since the permit renewal application was deemed both timely and complete by EPA, the permit has been administratively continued.

## **II. TYPE OF FACILITY**

The Chelsea Sandwich facility, which is located in Chelsea, Massachusetts, is engaged in the receipt, storage, and distribution of petroleum products. The spectrum of fuels handled by this facility consists of distillate (e.g., diesel, kerosene, and No.2 Fuel Oil) and residual products (e.g., No.6 Fuel Oil). Petroleum products are received in bulk quantities at the terminal's marine vessel dock. Product is then transferred to aboveground storage tanks located within the facility's tank farm areas. Final distribution of product is conducted primarily at the facility's truck loading rack and on occasion at the vessel dock when product is shipped off-site. The NPDES discharge consists of: 1) treated storm water runoff from pervious and impervious areas at the facility including the tank farm and loading rack; 2) ground water undergoing treatment as a result of a previous fuel oil spill; 3) a small volume of boiler blow-down water; and 4) occasionally water used for the hydrostatic testing of repaired tanks. The storm water, boiler blow-down, and hydrostatic test water discharges are to the Chelsea River through Outfall 001 (See Figure 1). This permit also establishes an internal waste stream (Outfall 002) which will discharge treated ground water into the storm water conveyance system upstream of Outfall 001.

## **III. SUMMARY OF MONITORING DATA**

A quantitative description of the discharge in terms of significant effluent parameters based on discharge monitoring reports (DMRs) submitted for the Chelsea Sandwich facility during the time period of 1998 through 2003, is included in Attachment A. In addition, Attachment B contains a copy of the monitoring reports submitted by the facility for the ground water recovery and treatment system which has been in operation since November of 2003.

## **IV. PERMIT LIMITATIONS AND CONDITIONS**

The effluent limitations, monitoring requirements, and any implementation schedule, if required, may be found in Part I (Effluent Limitations and Monitoring Requirements) of the draft NPDES permit (Draft Permit). The permit application is part of the administrative file (Permit No. MA0003280).

## **V. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION**

### **A. General Requirements**

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a NPDES permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. This Draft NPDES permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations. During development, EPA considered the most recent technology-based treatment requirements, water quality-based requirements, and all

limitations and requirements in the current/existing permit. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. The general conditions of the Draft Permit are based on 40 CFR §122.41 and consist primarily of management requirements common to all permits. The effluent monitoring requirements have been established to yield data representative of the discharge under authority of Section 308(a) of the CWA in accordance with 40 CFR §122.41(j), §122.44(i) and §122.48.

## 1. Technology-Based Requirements

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

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (See 40 CFR §125 Subpart A) to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines 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 can not be authorized by a NPDES permit.

EPA has not promulgated technology-based National Effluent Guidelines for storm water discharges from petroleum bulk stations and terminals (Standard Industrial Code 5171). In the absence of technology-based effluent guidelines, the permit writer is authorized under Section 402(a)(1)(B) of the CWA to establish effluent limitations on a case-by-case basis using Best Professional Judgement (BPJ).

## 2. Water Quality-Based Requirements

Water quality-based criteria are required in NPDES permits when EPA and the State determine that effluent limits more stringent than technology-based limits are necessary to maintain or achieve state or federal water-quality standards (See Section 301(b) (1)(C) of the CWA). Water quality-based criteria consist of three (3) parts: 1) beneficial designated uses for a water body or a segment of a water body; 2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s) of the water body; and 3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts State Water Quality Standards, found at 314 CMR 4.00, include these elements. The State Water Quality Regulations limit or prohibit discharges of pollutants to surface waters and thereby assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained. These standards also include requirements for the regulation and control of toxic constituents and

require that EPA criteria, established pursuant to Section 304(a) of the CWA, be used unless a site-specific criteria is established. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

Section 101(a)(3) of the CWA specifically prohibits the discharge of toxic pollutants in toxic amounts. The State of Massachusetts has a similar narrative criteria in their water quality regulations that prohibits such discharges [See Massachusetts 314 CMR 4.05(5)(e)]. The effluent limits established in the Draft Permit assure that the surface water quality standards of the receiving water are protected, maintained, and/or attained.

### 3. Anti-Backsliding

EPA's anti-backsliding provision as identified in Section 402(o) of the Clean Water Act and at 40 CFR §122.44(l) prohibits the relaxation of permit limits, standards, and conditions unless the circumstances on which the previous permit was based have materially and substantially changed since the time the permit was issued. Anti-backsliding provisions apply to effluent limits based on technology, water quality, BPJ and State Certification requirements. Relief from anti-backsliding provisions can only be granted under one of the defined exceptions [See 40 CFR §122.44(l)(i)]. Since none of these exceptions apply to this facility, the effluent limits in the Draft Permit must be as stringent as those in the Current Permit.

### 4. Anti-Degradation

The Massachusetts Anti-Degradation Policy is found at Title 314 CMR 4.04. All existing uses of the Chelsea River must be protected. The Chelsea River is classified as a Class SB water body by the State of Massachusetts and as such, is designated as a habitat for fish, other aquatic life and wildlife and for primary (e.g., wading and swimming) and secondary (e.g., fishing and boating) contact recreation. A Class SB water body may also be suitable for shellfish harvesting but there are no areas within the Chelsea River currently approved by the State for such use. This Draft Permit is being reissued with allowable effluent limits as stringent or more stringent than the Current Permit and accordingly will continue to protect the existing uses of the Chelsea River.

## **B. Description of Facility**

Chelsea Sandwich is a bulk petroleum facility with operations consisting of the receipt, storage, and distribution of petroleum products. The terminal, which is located in Chelsea, Massachusetts near the confluence of the Chelsea and Mystic Rivers, covers an area of approximately ten (10) acres. The facility consists of three principal areas: tank farms, terminal yard, and a marine vessel dock.

There are two tank farm areas at the facility. The first area, which is located along the western edge of the property adjacent to the Mystic River, is referred to as the "Terminal Field" (See Figure 2). The Terminal Field has nine (9) tanks located within a concrete secondary containment dike encompassing the entire area. There are also two (2) smaller product additive tanks (15,000

gallon capacity for each) within the Terminal Field that are used to store winter and summer diesel fuel additives. The second tank farm area, which is located in the central portion of the facility, consists of five (5) tanks. Secondary containment for this tank farm area is provided through individual steel dikes surrounding each tank. In total, the facility can store a gross capacity of approximately 670,000 barrels (or 28,000,000 gallons) of product.

All of the individual steel containment dikes are designed to contain the contents of the enclosed tank plus an added volume to hold any fire-extinguishment chemicals, water and/or precipitation (approximately 110 to 130 percent of the circumscribed tank's storage capacity). Similarly, the concrete secondary containment surrounding the Terminal Field is designed to contain the contents of the largest tank plus an additional volume for the storage of fire protection water and precipitation. The dikes prevent any potentially spilled petroleum products from migrating from one tank area to another or into any surrounding waterways.

The Terminal Yard generally consists of the area outside of the tank farm secondary containment structures. The Terminal Yard has an office, a garage/truck wash building, a boiler house, truck loading racks, an office and truck parking area for Heating Oil Partners (a separate business), and an oil/water (O/W) Separator. Operations at the Chelsea Sandwich Terminal also depend on the use of several smaller aboveground storage tanks (ranging in size from several hundred gallons to several thousand gallons). These smaller tanks are primarily used to store fuel additives, heating oil, and diesel fuel for the facilities "own use." The terminal also operates a 15,000 gallon tank which is used to recover usable product from oil/water mixtures which tend to form in the tanks over time. Oil recovered from this tank is pumped back to the tank farm for reuse and the separated water is removed by vacuum truck and disposed of off-site as a regulated Massachusetts waste (MAO1). There are currently no underground storage tanks at the terminal.

The marine vessel dock is located along a rip-rap embankment on the northeast shore of the Mystic River at the confluence of the Chelsea River. The dock is equipped with a manifold area for receipt and distribution of product. Most of the product stored at the facility (with the exception of some limited inventory transported by tanker truck) is received in bulk quantities at the vessel dock by ship or barge. Product off loaded from the ship or barge is piped to the bulk storage tanks. Final distribution of product is completed at the truck loading rack area and/or marine vessel dock. The facility occasionally loads distillate and residual products onto barges for off-site shipment.

The product spectrum stored at the facility consists of diesel, kerosene, No.2 Fuel Oil, and No.6 Fuel Oil. The facility also has the capability of physically blending some of these products together to market products which it does not currently store (e.g., No. 4 Fuel Oil). However, there are no other chemical processes/reactions which occur at the facility.

### C. Description of Discharge

This Draft Permit authorizes the discharge of storm water runoff, hydrostatic test water, and boiler blow-down from one outfall (Outfall 001) at the facility. The Draft Permit also establishes an internal waste stream (Outfall 002) which will discharge treated ground water into the storm water conveyance system upstream of Outfall 001. The internal waste stream, along with its respective effluent limits was established in the Draft Permit to minimize the potential impacts of dilution with storm water in accordance with 40 CFR §122.45(h).

#### 1. Outfall 001

Storm water is primarily collected at the terminal from three (3) areas: the secondary containment surrounding individual tanks, the Terminal Field tank farm, and the Terminal Yard. Three (3) of the steel containment dikes surrounding the individual tanks have earthen floors. Storm water accumulating within these areas either evaporates, infiltrates into the ground, or is drained into the terminal's underground storm water drainage system. For the remaining two (2) tanks with steel floors, accumulated storm water is pumped directly to the terminal's underground storm water drainage system. Valves on the storm water drainage pipes within the steel containment dikes are kept closed for safety considerations and are opened each time a diked area is drained.

Storm water collected within the Terminal Field tank farm is directed either by overland flow or through catch basins to a lift station located in the southern corner. The lift station pump must be manually activated to pump storm water into the terminal's storm water conveyance system.

Storm water runoff within the Terminal Yard is directed toward several low elevation catch basins. At the truck loading rack within the Terminal Yard, the roof directs storm water away from the truck rack equipment and loading operations to perimeter drains and individual catch basins located along the perimeter of the rack. Storm water reaching the perimeter drains and catch basins enters the terminal's underground water collection system and flows by gravity to the O/W Separator.

The vessel loading dock has a drip pan located under each of the manifold areas used for the receipt of product from ships and barges. Storm water as well as any residual product accumulating in the drip pan is pumped back to the facility for treatment and/or recovery.

Chelsea Sandwich operates two (2) boilers which are used to provide steam heat for several buildings and to facilitate the transfer of No. 6 Fuel Oil stored at the facility. 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 blow-down" is needed to prevent the potential build-up of naturally occurring mineral salts which can interfere with the operation of the boilers. Chelsea Sandwich currently discharges approximately one-half gallon per day of boiler blow-down into the storm water conveyance system. In comparison, thousands of gallons of treated ground water flow through the system on a daily basis and hundreds of thousands of gallons of treated storm water flow through the system during a typical rainfall event.

Wastewater from the truck wash facility (attached to the main office building) is routed directly to the Massachusetts Water Resources Authority (MWRA) sewer system. The Draft Permit does not include this non-storm water discharge.

The O/W Separator, which is located at the southern end of the property has an overall capacity of approximately 15,000 gallons. The original separator was an American Petroleum Institute-type structure with a weir/baffle designed to separate floating product and solid material from storm water. The separator was modified in November of 1998 to increase the maximum design flow capacity of the unit. The design capacity was increased through the installation of a coalescer plate retro-fit pack. The coalescer plate packs, which were placed within the confines of the original separator, were designed with sufficient size and plate spacing to increase the maximum design flow rating of the O/W Separator to 700 gallons per minute (gpm). The O/W Separator as well as the catch basins located throughout the facility are cleaned on an annual basis.

Chelsea Sandwich has indicated that the flow through the O/W Separator is controlled through the manual operation of two pumps located within the separator as well as a check valve and gate valve located directly upstream of the separator. Each of the pumps located within the separator are rated for a maximum flow rate of 350 gpm based on the total dynamic head conditions found in the O/W Separator. During an average rainfall event one pump is typically sufficient to handle the storm water run off. Under flooding conditions both pumps can be operated to achieve a maximum pumping rate of approximately 700 gpm. The check valve and gate valve located upstream of the O/W Separator are used to ensure that the flow entering the separator does not exceed the capacity of the two pumps and thereby overflow the unit.

Storm water pumped from the O/W Separator flows a short distance through an above-ground pipe to its discharge point (Outfall 001) located in the Chelsea River. Until recently, storm water pumped from the O/W Separator used to flow into the "Quadricell", a unit which was once used as a polishing step prior to discharge. The Quadricell unit was removed from service in October of 2004. The unit was no longer needed for treatment as a result of the improvements made to the O/W Separator (i.e., installation of the coalescer plate retro-fit pack).

Chelsea Sandwich has indicated that all tank bottom water is consolidated and hauled off-site by a licensed waste hauler(s) for treatment and disposal elsewhere. There have been several hydrostatic test water discharges reported at the facility since the issuance of the Current Permit. Discharge monitoring and reporting were conducted for these testing events in accordance with the procedures described in Part I.A.9 of the Current Permit. Potable water from the local municipal water supply was used as the source of water for these tests. Results from the testing of the hydrostatic test water shows conformance with the requirements and conditions identified in Part I.A.9 of the Current Permit.

## 2. Outfall 002

The MADEP has required the facility to design and operate a ground water recovery and treatment system located within the Terminal Field tank farm. The system was installed in November 2003 and is operated on a yearly basis to recover an unknown quantity of fuel oil released during an earlier spill. The ground water recovery system consists of nine (9) recovery wells which have been installed within and adjacent to the Terminal Field tank farm. Only four (4) recovery wells located within the Terminal Field are currently being used. The average total flow rate generated by the four (4) recovery wells is 7-8 gallons per minute (gpm) and the maximum design flow rate is 10 gpm. However, the treatment system has the potential to be expanded to treat a maximum design flow rate of 25 gpm.

Contaminated ground water is pumped from the recovery wells to a treatment system consisting of a O/W Separator, a cartridge filter bag, and granulated activated carbon (GAC). The treatment train initially included an air stripper but the use of this unit was discontinued due to the low concentrations of volatile organic compounds requiring treatment and a problem with iron fouling. Treated groundwater is discharged into the lift station sump located in the Terminal Field tank farm. From there, treated ground water as well as any accumulated storm water is pumped to the O/W Separator before being discharged to the Chelsea River. The discharge of treated ground water is currently being allowed through a NPDES Permit "Exclusion" letter issued by EPA to the facility (NPDES Exclusion #MA 03I-127) on October 31, 2003. EPA is proposing to incorporate the discharge of treated ground water into the Draft Permit as an internal waste stream (Outfall 002). Additional details are provided in Section V.E.9 of this Fact Sheet.

### **D. Discharge Location**

The receiving water, Chelsea River (Boston Harbor/Mystic River Watershed/Segment MA71-06), is an urban tidal river flowing from the mouth of Mill Creek, between Chelsea and Revere, to Boston's Inner Harbor, between East Boston and Chelsea. For centuries, Chelsea River has been flanked by working industries, many of which used the channel to transport raw materials and finished goods. The river is officially classified as a Designated Port Area: a stretch of waterfront set aside primarily for industrial and commercial use. Chelsea River, which is also locally known as Chelsea Creek, is designated as a Class SB water body by the State of Massachusetts (See Part V.A.4. of this Fact Sheet for additional information).

Under Section 303(d) of the CWA, states are required to develop information on the quality of their water resources and report this information to the EPA, the U. S. Congress, and the public. In Massachusetts, the responsibility for monitoring the waters within the State, identifying those waters that are impaired, and developing a plan to bring them into compliance with the Massachusetts Water Quality Standards (314 CMR 4.0) resides with the MADEP. The MADEP evaluated and developed a comprehensive list of the assessed waters and the most recent list was published in the *Massachusetts Year 2002 Integrated List of Waters* (MADEP, September 2003). The list identifies the Chelsea River as one of the waterways within the State of Massachusetts

that is considered impaired. The impairment, as identified by the MADEP, is related to the presence of the following “pollutants”, which were not considered to be present due to natural causes: priority organics, unionized ammonia, organic enrichment/low dissolved oxygen, pathogens, oil and grease, taste, odor and color, and turbidity.

The MADEP is required under the CWA to develop a Total Maximum Daily Load (TMDL) for a water body once it is identified as impaired. A TMDL is essentially a pollution budget designed to restore the health of a water body. A TMDL typically identifies the source(s) of the pollutant from direct and indirect discharges, determines the maximum amount of pollutant, including a margin of safety, that can be discharged to a specific water body while maintaining water quality standards for designated uses, and outlines a plan to meet the goal. A TMDL has not yet been developed for the Chelsea River. In the interim, EPA is developing the conditions for this permit based on a combination of water quality standards and best professional judgement. Should a TMDL be developed in the future, and if that TMDL identifies that the discharge from the facility is causing or contributing to the non-attainment of surface water quality criteria, then the permit may be re-opened. Additional details are provided below (See Sections V.E.3 and V.E.5 of this Fact Sheet) regarding the basis for the effluent limits established in the Draft Permit and how such limits relate to any of the “pollutants” identified above as impacting the water quality of the Chelsea River.

#### **E. Proposed Permit Effluent Limitations and Conditions**

This Draft Permit is not being considered in isolation, but rather, in the context of all potential direct dischargers (including other petroleum bulk stations and terminals) of light and heavy hydrocarbons, which discharge either directly into Boston Harbor or indirectly (via its tributaries: the Island End, Chelsea, and Mystic Rivers).

Section 402(p) of the Clean Water Act requires that EPA issue NPDES permits for storm water discharges which were permitted prior to February 4, 1987 [See 40 CFR §122.26(a)(1)(i)]. Since the facility had a permitted storm water discharge prior to February 4, 1987, and the activities occurring at the facility do not fall within the description of industrial activities eligible for EPA's Storm Water Multi-Sector General Permit for Industrial Activities [See 40 CFR §122.26(b)(14)(viii)], the facility must continue to be permitted through an individual facility NPDES permit.

The Draft Permit is conditioned to: (1) better regulate plausible non-storm water discharges (e.g., hydrostatic test water and groundwater remediation effluent) alone or in combination with storm water runoff to Boston Harbor, and (2) to better regulate ancillary operations that have the potential to contact storm water (e.g., materials storage, facility site-runoff, product blending, and product loading and unloading).

Storm water discharges from activities associated with petroleum bulk stations and terminals must satisfy best conventional technology (BCT) and best available technology (BAT) requirements and must comply with more stringent water quality standards if BCT and BAT

requirements are not adequate. On September 25, 1992, EPA promulgated through its General Permit for Storm Water Discharge Associated with Industrial Activity, that the minimum BAT/BCT requirement for storm water discharges associated with industrial activity is a Storm Water Pollution Prevention Plan (SWPPP) [57 FR, 44438]. EPA has included SWPPP requirements in the Draft Permit. In addition, EPA has decided to include numeric effluent limitations (e.g., technology-based and water quality-based limits) in the Draft Permit to ensure that petroleum constituents do not contribute to violations of the State's water quality standards.

Thus the Draft Permit for Chelsea Sandwich, authorizing the discharge of storm water, boiler blow-down, hydrostatic test water, and ground water, includes numeric effluent limits and requires the development, implementation, and annual review of the SWPPP prepared for the facility. The effluent parameters in the Draft Permit are discussed in more detail below according to the effluent characteristic(s) being regulated.

#### 1. Flow

The typical treatment technology employed by petroleum bulk storage terminals for storm water runoff is an O/W Separator. This device uses gravity to separate the lower-density oils from water; resulting in an oil phase above the oil/water interface and a heavier particulate phase (sludge) on the bottom of the separator. Accordingly, the sizing of O/W Separators is based on the following design parameters: water-flow rate; density of oil to be separated; desired percentage removal of oil; and the operating temperature range.

To ensure proper operation of installed O/W Separators such that the oil and/or particulate phases are not entrained to the waterway, it is important that the flow through the separator be maintained at or below the maximum design flow rate of the separator. In order to ensure that this criteria was being met, EPA and the MADEP required as part of the Current Permit, that the facility identify both the maximum design flow rating of the O/W Separator and the measures taken by the facility to ensure that the maximum design flow rate would not be exceeded (See Part I.A.4 of the 1997 NPDES permit).

In response to this permit requirement, Chelsea Sandwich identified that the maximum design flow rating for the O/W Separator at the facility is 700 gpm. Chelsea Sandwich also indicated that the flow through the O/W Separator is controlled by limiting the rate at which storm water is pumped out of the O/W Separator. The flow into and out of the O/W Separator, as discussed further in Section V.C. of this Fact Sheet, is controlled through the pumping rate of the two pumps located within the separator. The estimated combined pumping rate of both of these pumps is 700 gpm. Since the pumping rate of both pumps does not exceed the maximum design flow rating of the separator, Chelsea Sandwich has demonstrated that the flow through the O/W Separator is appropriately controlled. The Draft Permit requires that the facility provide written notification and receive approval by EPA and MADEP for any proposed changes which have the potential to cause the maximum design flow rate through the O/W Separator to be exceeded.

EPA and MADEP are using the design flow information submitted by Chelsea Sandwich to identify the maximum daily effluent flow limit for Outfall 001 at the facility in accordance with Part I.A.8 of the Current Permit. The instantaneous flow rate of 700 gpm, which is based upon the pump curve information submitted by the facility, will become the new flow rate limit for Outfall 001 in the Draft Permit. The flow control device or system as described above and the identification of an instantaneous maximum flow rate should ensure compliance with "proper operation" as described at 40 CFR §122.41(e).

## 2. Total Suspended Solids (TSS)

The Draft Permit limit for TSS remains unchanged at 30 mg/l and 100 mg/l for the average monthly and maximum daily values, respectively. The monitoring frequency for this parameter has been reduced in the Draft Permit from semi-monthly to monthly based upon the facility's performance during the previous permit cycle.

The TSS limits in the Draft Permit are based upon the limits established in the Current Permit in accordance with the anti-backsliding requirements found in 40 CFR §122.44(l). Heavy metals and polynuclear aromatic hydrocarbons are readily adsorbed onto particulate matter and the release of these compounds can be to an extent, controlled by regulating the amount of suspended solids released into the environment.

The limits in the Current Permit were developed based upon a BPJ determination. In making this determination, EPA considered the technology guidelines promulgated at 40 CFR Part 423 for the Steam Electric Power Point Source Category for guidance. Steam electric generating facilities, similar to bulk petroleum storage facilities, frequently include the storage of fuel oil on their premises. In developing effluent limits for Steam Electric Source Category, 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 (USEPA, 1982). EPA then considered the level of treatment that could be technologically achieved for TSS using an O/W Separator and set corresponding limits in the guidelines (See 40 CFR Part 423 "low volume waste sources"). Given the similarities between the storage of petroleum products at bulk stations and terminals and the storage of fuel oil at steam electric facilities, EPA is using the same TSS limits established for steam electric facilities for bulk petroleum storage facilities.

There were several instances during the previous permit cycle when TSS limits were exceeded as shown in the summary of the discharge monitoring data submitted by the facility during the time period of 1998 to 2003 (See Attachment A to this Fact Sheet). There does not appear to be any observable trends associated with these sporadic occasions of elevated TSS levels, other than to note that most of the exceedances were for the monthly average TSS limit. However, overall the facility has been able to consistently meet its TSS limits over the last permit cycle through the proper operation of a correctly-sized O/W Separator, appropriate source controls, routine inspections, preventative maintenance, and implementation of best management practices.

### 3. Oil and Grease (O&G)

The Draft Permit limit for Oil and Grease (O&G) remains unchanged at 15 mg/L for the maximum daily value. The monitoring frequency for this parameter has been reduced from semi-monthly to monthly based upon the facility's performance during the previous permit cycle. O&G shall be measured using EPA method 1664. Originally this effluent limit was established by EPA-Headquarters as guidance to, and as a means of establishing a categorization within, the petroleum marketing terminals and oil production-facilities - categories. However, performance data from terminals in Massachusetts and Maine continue to support that this effluent limit can be achieved through the proper operation of a correctly-sized O/W Separator and implementation of best management practices. EPA has made a BPJ determination based upon the technology-based and performance information to continue with an O&G limit of 15 mg/L in the Draft Permit.

As noted in Section V.D. of this Fact Sheet, O&G is one of the pollutants identified by the State of Massachusetts as having contributed to the impairment of Chelsea River. The MADEP uses a narrative description (e.g., waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water) rather than a numeric threshold to identify whether this pollutant is an issue for a water body. The information contained in the *Massachusetts Year 2002 Integrated List of Waters* (MADEP, September 2003) and in the *Boston Harbor Watershed 1999 Water Quality Assessment Report* (MADEP, October 2002) does not clearly identify the basis for why O&G was identified as a problem in Chelsea River. However, the *Boston Harbor Watershed 1999 Water Quality Assessment Report* does mention a small number of historic spills which took place during the transportation and offloading of petroleum products along the Chelsea River. These spills, which would have produced a visible film on the surface of the water, would have likely exceeded the MADEP's criteria for O&G. Such spills are under the jurisdiction of the U.S. Coast Guard (See 33 CFR Part 154) rather than EPA's NPDES program and the results appear unrelated to the performance of any of the storm water treatment systems at the petroleum bulk stations and terminals along Chelsea River.

EPA believes that the controls in place at Chelsea Sandwich (i.e., Draft Permit limit for O&G of 15 mg/L and implementation of best management practices) should ensure that the storm water discharge from the facility does not contribute to the further impairment of Chelsea River. An effluent limit for O&G of 15 mg/L should ensure that the discharge from the facility will be free from oil, grease, and petrochemicals that might produce a visible film on the surface of the water. Best Management Practices being implemented by the facility, which includes a Storm Water Pollution Prevention Plan, ensures that there is a program in place at the facility to limit the amount of pollutants being discharged with storm water runoff. Best Management Practices are fully enforceable permit conditions that serve to prevent pollution, rather than simply treat it. Chelsea Sandwich has demonstrated its ability to meet the O&G permit condition in the Current Permit as shown in the summary of the discharge monitoring data submitted during the time period of 1998 to 2003 (See Attachment A to this Fact Sheet).

#### 4. pH

Massachusetts State Surface Water Quality Standards require the pH of Class SA and Class SB waters to be within the range of 6.5 to 8.5 standard units (S.U.). The pH permit range of 6.5 to 8.5 as identified in the Draft Permit, which is to be monitored on a monthly basis, has been established in accordance with the State Surface Water Quality Standards. The discharge shall not exceed this pH range unless due to natural causes. In addition, there shall be no change from background conditions that would impair any uses assigned to the receiving water class.

A summary of the discharge monitoring data submitted by the facility during the time period of 1998 to 2003 is included as Attachment A to this Fact Sheet. There were several occasions early on in the previous permit cycle when the pH of the discharge was below 6.5. This was not considered a violation since the Current Permit did not contain an effluent limit for pH.

#### 5. Polynuclear Aromatic Hydrocarbons (PAHs)

Polynuclear Aromatic Hydrocarbons (PAHs) are a group of organic compounds which are found throughout the environment. PAHs are primarily introduced into the environment through the incomplete combustion of organic compounds. PAHs are also present in crude oil and some of the heavier petroleum derivatives and residuals (e.g., fuel oil and asphalt). Spillage or discharge of these products can serve to introduce PAHs into the environment. PAHs will strongly adsorb to suspended particulates and biota and can also bio-accumulate in fish and shellfish.

There are sixteen (16) PAH compounds identified as priority pollutants under the CWA (See 40 CFR 423 - Appendix A). Several of these PAHs are well known animal carcinogens, others are not considered carcinogenic alone but can enhance or inhibit the response of the carcinogenic PAHs. Typically, exposure would be to a mixture of PAHs rather than to an individual PAH.

EPA required the permittee to submit a PAH pollutant scan (for the 16 PAH compounds identified as priority pollutants) from the storm water outfall at the facility as part of the permit renewal application process for the Current Permit because of the health concerns discussed above and the potential for PAHs to be present in some of the heavier petroleum distillate and residual products stored at the facility. A similar requirement was put in place for the petroleum bulk stations and terminals located in South Portland, Maine starting in the early 1990's.

The sampling results from this facility did not show the presence of any of the reported 16 PAH compounds confirming a similar trend noted for the majority of the hundreds of quarterly samples obtained from the South Portland facilities. As a result, the Current Permit was issued with a requirement for quarterly monitoring without any limits for the following seven (7) PAH compounds identified as probable human carcinogens:

Benzo(a)anthracene	Benzo(a)pyrene
Benzo(b)fluoranthene	Benzo(k)fluoranthene
Chrysene	Dibenzo(a,h)anthracene

## Indeno(1,2,3-cd)pyrene

All of the petroleum storage terminals and facilities that had a reasonable potential to discharge PAHs into Boston Harbor were required to continue monitoring for PAHs. The seven (7) PAH compounds identified above for monitoring purposes, were selected primarily based on their toxicity and presence in petroleum products. EPA proposed as part of the Current Permit to evaluate the monitoring results to be collected from these facilities and to determine whether there was a need to establish PAH limits.

EPA has reviewed the discharge monitoring data for PAHs submitted by Chelsea Sandwich since the issuance of the Current Permit in 1997. The seven (7) PAHs analyzed for were not detected above their respective reporting limits during any of the quarterly sampling events which occurred since 1997. A majority of the other petroleum bulk stations and terminals located along Chelsea Creek also reported similar results. The reporting limits for each of the seven PAH compounds were typically around 1 µg/L (or 1 part per billion). A summary of the discharge monitoring data submitted by the facility during the time period of 1998 to 2003 is included as Attachment A to this Fact Sheet. A separate summary table providing the monitoring results from 2001 to 2003 for PAHs with their respective detection limits can be found in Attachment C to this Fact Sheet.

Based on EPA's review of the data from this facility as well as the other facilities for which PAH data were collected, EPA has concluded that permit limits for PAH compounds are not required at this time. However, given the potential health concerns related to PAHs, the type of petroleum products stored at the facility, the historical levels of PAHs which have been documented in the sediment of Chelsea River and Boston Harbor, and the fact that priority organics were one of the "pollutants" identified by MADEP contributing to the impairment of Chelsea River, EPA will require the facility to continue to monitor for PAHs without limits on a quarterly basis from the storm water outfall(s) at the facility. Future monitoring will be required to achieve the following Minimum Level (ML) of reporting for each of the PAH compounds identified below:

Benzo(a)anthracene	<0.05 µg/L	Benzo(a)pyrene	<2.0 µg/L
Benzo(b)fluoranthene	<0.1 µg/L	Benzo(k)fluoranthene	<2.0 µg/L
Chrysene	<5.0 µg/L	Dibenzo(a,h)anthracene	<0.1 µg/L
Indeno(1,2,3-cd)pyrene	<0.15 µg/L	Naphthalene	<0.2 µg/L

The ML is defined as the level at which the entire analytical system gives recognizable mass spectra and acceptable calibration points. This level corresponds to the lower points at which the calibration curve is determined based on the analysis of the pollutant of concern in reagent water.

EPA has added naphthalene to the list of PAH compounds to be reported without limits by the facility in the Draft Permit. Naphthalene is considered an important limiting pollutant parameter based upon the prevalence of this compound in petroleum products and its toxicity (i.e., naphthalene has been identified as a possible human carcinogen).

As noted in Section V.D. of this Fact Sheet, “priority organics” were one of the pollutants identified by the State of Massachusetts as having contributed to the impairment of Chelsea River. The information contained in the *Massachusetts Year 2002 Integrated List of Waters* (MADEP, September 2003) and in the *Boston Harbor Watershed 1999 Water Quality Assessment Report* (MADEP, October 2002) does not clearly identify the basis for identifying priority organics as a problem in Chelsea River. However, MADEP personnel indicated during followup conversations that the primary stressor under the priority organics category was believed to be polychlorinated biphenyls (PCBs). The *Boston Harbor Watershed 1999 Water Quality Assessment Report* notes that a health advisory was issued by Massachusetts in 1988 for Boston Harbor based primarily on the presence of elevated levels of PCBs. The data from Boston Harbor was extrapolated to Chelsea River based on the fact that this also is an estuarine environment. PCBs are not typically associated with petroleum products and as such there are no limits or monitoring requirements for these compounds in the Current as well as the Draft Permit.

#### 6. Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX)

Refined petroleum products contain numerous types of hydrocarbons. Individual components partition to environmental media on the basis of their physical/chemical properties (e.g., solubility, vapor pressure). Rather than attempt to establish effluent limits for every compound found in a petroleum release, limits are typically established for the compounds that would be the most difficult to remove as well as demonstrate the greatest degree of toxicity. Generally, the higher the solubility of a volatile organic compound (VOC) in water, the more difficult it is to remove.

VOCs such as benzene, toluene, ethylbenzene, and the three xylene compounds (BTEX) are normally found at relatively high concentrations in gasoline and light distillate products (e.g., diesel fuel). BTEX concentrations typically decrease in the heavier grades of petroleum distillate products (e.g., fuel oils). Since many petroleum spills involve gasoline or diesel fuel, a traditional approach for such spills has been to place limits on the individual BTEX components and/or the sum of total BTEX compounds.

Of these four compounds, benzene has one of the highest solubilities, it is one of the most toxic constituents, and it is found at relatively high concentrations in gasoline and diesel fuel. The concentration of benzene in gasoline is approximately 20,000 parts per million (Potter and Simmons, 1998). Because of the reasons mentioned above, benzene can be considered one of the most important limiting pollutant parameters found in gasoline or diesel fuel. Building on this premise, benzene can be used as an indicator-parameter for regulatory as well as characterization purposes of storm water which comes in contact with gasoline and diesel fuel. The primary advantage of using an indicator-parameter is that it can streamline monitoring efforts while simultaneously maintaining an effective level of environmental protection.

The Current Permit does not include monitoring for BTEX. The decision to not include BTEX in the Current Permit was based on the facility not storing gasoline. However, the facility does store

diesel fuel and the concentration of benzene in diesel fuel, although several orders of magnitude smaller than that found in gasoline, is still significant from an environmental perspective. The average percent by weight of benzene in diesel fuel is approximately 0.03 percent (Potter and Simmons, 1998) which is equivalent to a concentration of benzene of approximately 300 parts per million. This value is well above the recommended Federal Water Quality Criteria of 0.051 parts per million (or 51 parts per billion) for benzene. Based on this, EPA believes that there is a reasonable potential to impact human health and the environment if there was a release of diesel fuel.

To better regulate the “potential” for diesel fuel to come in contact with storm water via ancillary operations at this facility (i.e., such as product spills during loading and unloading operations), EPA has included a quarterly monitoring requirement for BTEX and a maximum daily effluent limit of 51 µg/L for benzene in the Draft Permit. In establishing the effluent limit for VOCs in the Draft Permit, EPA reviewed all appropriate criteria including the most recent recommended Federal Water Quality Criteria and the quarterly monitoring results for BTEX obtained from the discharges of all of the petroleum bulk stations and terminals along Chelsea River. EPA is proposing a maximum daily effluent limit for benzene of 51 µg/L in the Draft Permit. This number represents the current recommended Federal Water Quality Criteria for benzene adopted by the State of Massachusetts (See 314 CMR 4.05(5)(e)). The benzene limit of 51 µg/L is based on the human health criteria associated with the consumption of aquatic organisms (USEPA, 2002). EPA believes that the inclusion of monitoring for BTEX with a limit for benzene is necessary for the protection of human health and to maintain the water quality standards established under Section 303 of the CWA.

The Draft Permit does not include monitoring for methyl tertiary-butyl ether (MTBE), a synthetic compound used as a blending component in gasoline. Gasoline is not one of the products stored at the Chelsea Sandwich facility.

#### 7. Tank-Bottom and Bilge Water

The bottom of many petroleum product storage tanks may contain a layer of water that has separated from the stored petroleum product due to the density difference between the product and water. As this water coalesces and then settles to the bottom of the tank, compounds including BTEX and PAHs found in the product above it are able to partition and dissolve into the water. The partitioning and dissolution allows the concentrations of some of the more soluble and denser petroleum components to reach toxic levels. Facility operators drain this layer of water to prevent transfer with the finished product as well as to free up valuable storage space.

Whereas storm water contacts only those hydrocarbons spilled on the ground and then only for short periods of time; tank bottom and bilge water remains in intimate proximity with petroleum derivatives for prolonged periods of time, allowing toxic pollutants to dissolve into the aqueous phase. EPA Region I considers both tank-bottom and bilge water “process wastewater”, since soluble toxic materials can partition from the petroleum product into the water over time. To protect Boston Harbor from toxic pollutants dissolved in tank-bottom and bilge water, EPA is

prohibiting the permittee from discharging any tank-bottom or bilge water alone or in combination with storm water or other wastewater.

#### 8. Hydrostatic Test Water Discharges

Occasionally repairs are made at the facility to the tanks and the piping used for the storage and conveyance of petroleum products. 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 "gas-free." After completing certain maintenance work, the vessels and/or pipe networks may require hydrostatic testing (e.g., to be filled with water and monitored for changes in water levels) before product replacement. Some of the bulk petroleum storage facilities located along Chelsea River use the river as a source of test water. Thus, hydrostatic test water discharge may contain minimal amounts of foreign matter, trace amounts of hydrocarbons, and other background material found in the river. Other facilities use potable water as a source of test water and as a result there may be some residual chlorine present in the discharge. As a precaution, the hydrostatic test water shall be monitored as described below and treated through the O/W Separator prior to being discharged to the Chelsea River. In addition, the flow of hydrostatic test water into the O/W Separator shall be controlled to prevent it from exceeding the maximum design flow rate of the separator.

At a minimum, four (4) representative samples shall be taken of the hydrostatic test water: one (1) grab sample of the influent test water; and three (3) serial-grab samples of the hydrostatic test water effluent. The influent grab sample shall be taken approximately midway through the fill segment of the hydrostatic test procedure. The three (3) effluent serial-grab samples shall be taken over the duration of the entire discharge segment of the hydrostatic test procedure. The first effluent serial-grab sample shall be taken during the initial phase of discharge; the second around the midpoint; and the third near the end of the discharge. The effluent serial-grab samples shall be obtained before discharge into the O/W Separator and/or mixing with any storm water or other non-storm water flow.

These influent and effluent samples shall be analyzed for the following parameters:

1. Total Suspended Solids (TSS)
2. Oil & Grease (O&G)
3. pH
4. Dissolved Oxygen (DO)
5. Total Residual Chlorine
6. BTEX
7. MTBE
8. PAHs (16 compounds)

Testing for total residual chlorine is only required when potable water or a similar source of water which is likely to contain a residual chlorine concentration is used for hydrostatic testing.

Testing for MTBE is only required if the tank undergoing testing was recently (i.e., within three years of the proposed testing date) used to store gasoline.

During discharge (i.e., approximately at the same time the three effluent grab samples are taken), the flow exiting through the O/W Separator and outfall should be observed in order to prevent the inadvertent release of hydrocarbons to the receiving water(s). 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 permittee shall immediately halt the discharge of hydrostatic test water and take steps to correct the problem.

Sampling of the above parameters is needed to provide adequate characterization of the influent and effluent hydrostatic test water and to identify whether there are any contaminant residuals present in the hydrostatic test water which might require the conditions in the Draft Permit to be modified or reopened.

The permittee shall submit a letter/report to EPA and the MADEP, summarizing the results of the transfer within forty-five (45) days of completion of the test. This report shall contain: the date(s) of hydrostatic test water transfer; the source of the test water; the volume of test water transferred; a copy of the analytical results identifying the detection limits and associated quality assurance/quality control information for all of the discharge monitoring required in the Draft Permit; and a brief discussion of the overall test results and how they relate to the discharge parameters and their respective effluent limits identified in the Draft Permit.

#### 9. Discharge of Treated Ground Water (Outfall 002)

The Draft Permit establishes an internal waste stream (Outfall 002) through which treated ground water is to be discharged into the storm water conveyance system upstream of Outfall 001. The discharge of treated ground water is currently allowed through a NPDES Permit "Exclusion" letter issued by EPA to the facility (NPDES Exclusion #MA 03I-127) on October 31, 2003. The internal waste stream along with its respective effluent limits was established to ensure that monitoring results reflect the true characteristics of the waste stream and not the more dilute storm water with which it is being mixed (See 40 CFR §122.45(h)).

Samples taken in compliance with the monitoring requirements specified in the Draft Permit shall be taken at the outlet of the ground water remediation system, prior to where treated ground water is discharged into the storm water conveyance system. The frequency of sampling of treated ground water has been reduced from monthly to quarterly in the Draft Permit based on the performance of the remediation system since it began operating in November of 2003. Attachment B to this Fact Sheet contains a copy of the monitoring reports submitted by the facility for the ground water remediation system since it became operational.

Ground water in contact with spilled petroleum product for an extended period of time has the potential to be contaminated with compounds found in that product. As a result, compounds, such as BTEX and PAHs, may partition and dissolve into the ground water and potentially reach

toxic levels. Accordingly, more stringent and extensive effluent limits are required for the ground water treatment system before it can discharge wastewater from the facility. The lower limits established for this waste stream also reflect that it is a continuous discharge rather than intermittent discharge (i.e., like storm water). The effluent characteristics identified in Part I.A.2 of the Draft Permit are discussed in more detail below.

a. Flow

The Draft Permit establishes a limit for the maximum daily flow rate of 25 gpm for Outfall 002 based on the maximum design flow rate of the ground water treatment system. The maximum daily value represents the maximum daily flow rate of treated ground water discharged by the facility during the reporting period. The Draft Permit also requires the facility to report total flow, which is the value that represents the total monthly flow rate in millions of gallons for that month. The maximum daily flow rate as well as the total flow rate shall be based upon the totalizer flow results or an approved equivalent flow measuring device.

b. Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX) and Total Petroleum Hydrocarbons (TPH)

Historic information indicates that the spill impacting the ground water at the facility may have involved a fuel oil product. As discussed previously in Part V.E.6 of this Fact Sheet, effluent limits are not typically established for every compound found in a petroleum release. Instead, limits are established for the compounds that would be the most challenging to remove as well as demonstrate the greatest degree of toxicity. Based on this, Outfall 002 includes a maximum daily limit for benzene as well as the aggregate sum of the BTEX compounds. The permit also requires that individual toluene, ethylbenzene, and total xylene concentrations be monitored and reported on a quarterly basis. EPA has made a BPJ determination based upon technology-based criteria to establish effluent limits for benzene and BTEX at 5 µg/L and 100 µg/L, respectively.

The effluent limits for Outfall 002 also include a maximum daily limit of 5 mg/L for Total Petroleum Hydrocarbons (TPH). TPH, measures the total concentration of all petroleum related hydrocarbon compounds within a specified carbon range (Weisman, 1998). The petroleum related compounds included within this analysis range from compounds with 6 carbon (C<sub>6</sub>) atoms to compounds with 25 carbon atoms (C<sub>25</sub>). The use of TPH concentrations to establish target cleanup levels for soil or water is a common approach implemented by regulatory agencies in the United States (Weisman, 1998). EPA has made a BPJ determination based upon the technology-based and performance information to include TPH in this permit. EPA has eliminated the monitoring requirement for MTBE from the Draft Permit based on the facility's assurance that the earlier spill did not involve gasoline. The permittee has also confirmed that gasoline is not one of the products currently stored at the Chelsea Sandwich facility.

## c. Polynuclear Aromatic Hydrocarbons (PAHs)

Effluent limits for Outfall 002 also include limits for PAH compounds. There are sixteen (16) PAH compounds identified as priority pollutants under the CWA. These sixteen PAHs have been divided into two groups in the Draft Permit based upon differences in toxicity/carcinogenicity. The Group I PAH compounds, which are believed to be probable human carcinogens include 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	

The most recent recommended Federal Water Quality Criteria for each of the Group I PAH compounds is 0.018 µg/L based on the human health criteria associated with the consumption of aquatic organisms (USEPA, 2002). EPA has established a maximum daily limit of 0.018 µg/L at Outfall 002 for each of the individual Group I PAH compounds based on this criteria. However, the 0.018 µg/L effluent limit is below the current Minimum Level (ML) of reporting for each individual Group I PAH compound in an aqueous solution. Accordingly, EPA has established, based on approved test methods, a compliance level for each individual Group I PAH compound at its respective ML as identified below:

Benzo(a)anthracene	<0.05 µg/L	Benzo(a)pyrene	<2.0 µg/L
Benzo(b)fluoranthene	<0.1 µg/L	Benzo(k)fluoranthene	<2.0 µg/L
Chrysene	<5.0 µg/L	Dibenzo(a,h)anthracene	<0.1 µg/L
Indeno(1,2,3-cd)pyrene	<0.15 µg/L		

Future monitoring will be required to achieve these MLs. The compliance/non-compliance limit for the aggregate sum of the individual Group I PAH compounds has been set at 10.0 µg/L. This limit reflects the approximate sum of the MLs for each Group I PAH compound. The 10.0 µg/L value reflects a BPJ determination made by EPA based upon technology-based and performance information. For purposes of determining compliance/non-compliance, any value of a Group I PAH compound detected below its ML shall be considered as non-detect.

The toxicity/carcinogenicity of the Group II PAH compounds is considerably less than the Group I PAH compounds. As a result EPA has established a higher technology-based maximum daily effluent limit of 100 µg/L for the sum of the individual Group II compounds. The nine (9) Group II PAH compounds and their respective MLs are:

Acenaphthene	<0.5 µg/L	Acenaphthylene	<0.2 µg/L
Anthracene	<2.0 µg/L	Benzo(ghi)perylene	<0.1 µg/L
Fluoranthene	<0.5 µg/L	Fluorene	<0.1 µg/L
Naphthalene	<0.2 µg/L	Phenanthrene	<0.05 µg/L
Pyrene	<0.05 µg/L		

Future monitoring will be required to achieve these MLs. EPA has also established an individual technology-based maximum daily effluent limit of 20 µg/L for Naphthalene. Naphthalene can be considered one of the important limiting pollutant parameters in this second group of PAH compounds. The basis for identifying naphthalene as this limiting pollutant is similar to the process used for identifying benzene as the limiting pollutant in the BTEX suite of compounds (See Section V.E.6 of this Fact Sheet).

#### 10. Prohibition of Non-Storm Water Discharges

Non-storm water discharges including fire protection foam, either in concentrate form or as a foam diluted with water, are excluded from coverage under this permit. EPA believes that there is a significant potential for these discharges to be contaminated. Thus, the permittee is required to obtain a separate NPDES permit for these non-storm water discharges prior to any such discharge or seek the necessary approval(s) from the appropriate local pretreatment authority to discharge to the sanitary sewer system.

However, this permit authorizes some non-storm water discharges. These discharges potentially include treated effluent from firefighting activities, fire hydrant flushings, boiler blow-down, and potable water sources which may include vehicle, equipment, and surface wash-down waters which do not have chemicals (such as solvents, soaps, emulsifiers and/or detergents) added. To prevent hydrocarbon and/or particulate carry-over through the treatment system, the permittee shall not add chemicals, soaps, detergents, solvents, emulsifiers, etc. to any fresh water wash-down collection and treatment system without prior approval by EPA and the MADEP.

Treated effluent from these activities means that the effluent shall be directed to the O/W Separator either alone or commingled with storm water, prior to discharge from Outfall 001. No additional monitoring requirements, other than those specified in the Draft Permit, are necessary for these types of discharges.

#### 11. Storm Water Pollution Prevention Plan

Pursuant to Section 304(e) of the CWA and 40 CFR §125.103(b), best management practices (BMP) may be expressly incorporated into a permit on a case-by-case basis where necessary to carry out Section 402(a)(1) of the CWA. This facility stores and handles pollutants listed as toxic under Section 307(a)(1) of the CWA or pollutants listed as hazardous under Section 311 of the CWA and has ancillary operations which could result in significant amounts of these pollutants reaching the Chelsea River and Boston Harbor.

To control the activities/operations, which could contribute pollutants to waters of the United States via storm water discharges at this facility, the Current Permit required the facility to develop a Storm Water Pollution Prevention Plan (SWPPP) with site-specific BMPs. The SWPPP requirements and the BMPs identified therein are intended to facilitate a process whereby the permittee thoroughly evaluates potential pollution sources at the terminal and selects and implements appropriate measures to prevent or control the discharge of pollutants in storm

water runoff. The SWPPP, upon implementation, becomes a supporting element to any numerical effluent limitations in the Draft Permit. Consequently, the SWPPP is as equally enforceable as the numerical limits.

The permittee has certified to EPA that a SWPPP was developed and implemented for this facility in accordance with the schedule and requirements identified in the Current Permit. The Draft Permit continues to ensure that the SWPPP is kept current and adhered to, by requiring the permittee to maintain and update the SWPPP as changes occur at the facility. In addition, the Draft Permit requires the permittee to provide annual certification to EPA and the MADEP, documenting that the previous year's inspections and maintenance activities were conducted, results recorded, records maintained, and that the facility is in compliance with its SWPPP. A signed copy of the certification will be sent each year to EPA and MADEP as well as appended to the SWPPP within thirty (30) days of the annual anniversary of the effective date of the Draft Permit. This certification will be signed in accordance with the requirements identified in 40 CFR §122.22. A copy of the most recent SWPPP shall be kept at the facility and be available for inspection by EPA and MADEP.

#### 12. Additional Requirements and Conditions

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

The remaining conditions of the permit are based on the NPDES regulations, Part 122 through 125 and consist primarily of management requirements common to all permits.

## **VI. ENDANGERED SPECIES ACT**

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

EPA has reviewed the federal endangered or threatened species of fish, wildlife, or plants to see if any such listed species might potentially be impacted by the re-issuance of this NPDES permit. The review has focused primarily on marine species and anadromous fish since the discharge is to the Chelsea River (Mystic River Watershed) which ultimately flows into Boston Harbor. Given the urban nature of Chelsea Creek, EPA believes that it is unlikely that there would be any

listed marine species (See Attachment D) or critical habitat present. Furthermore, effluent limitations and other permit conditions which are in place in this Draft Permit should preclude any adverse effects should there be any incidental contact with listed species either in Chelsea Creek and/or Boston Harbor. EPA has discussed the results of its determination with NMFS and a copy of the Draft Permit has been provided to NMFS for review and comment as part of an informal Section 7 consultation.

## VII. ESSENTIAL FISH HABITAT

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Services (NMFS) if EPA's action or proposed actions that it funds, permits, or undertakes, "may adversely impact any essential fish habitat" (EFH). The Amendments define 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 which reduces the quality and/or quantity of EFH (50 C.F.R. § 600.910 (a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. Id.

Essential fish habitat is only designated for species for which federal fisheries management plans exist (16 U.S.C. § 1855(b) (1) (A)). EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999.

A review of the relevant essential fish habitat information provided by NMFS indicates that essential fish habitat has been designated for 15 managed species within the NMFS boundaries encompassing the outfall location. A copy of the managed species within the EFH is included in Attachment E to this Fact Sheet. EPA has concluded that the permitted discharge will not likely adversely impact the EFH and the managed species identified for this general location. This conclusion is based on the amount and frequency of the discharge, as well as effluent limitations and other permit requirements that are identified in this Fact Sheet. These factors are designed to be protective of all aquatic species, including those with EFH designations.

EPA has determined that a formal EFH consultation with NMFS is not required because the proposed discharge will not adversely impact the EFH. If adverse impacts are detected as a result of this permit action, NFMS will be notified and an EFH consultation will promptly be initiated.

## VIII. STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit unless the MADEP certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Surface Water Quality Standards or unless state certification is waived. The staff of the MADEP has reviewed the Draft Permit and advised EPA that the limitations are adequate to

protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR 124.53 and expects that the Draft Permit will be certified.

## **IX. ADMINISTRATIVE RECORD, PUBLIC COMMENT PERIOD, HEARING REQUESTS, AND PROCEDURES FOR FINAL DECISION**

The Administrative Record containing the documents forming the basis of this Draft Permit is on file and may be inspected at the EPA Record Center located in Boston at 1 Congress Street between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays. Individuals interested in reviewing the Administrative Record should contact the Record Center staff at (617) 918-1440 to schedule an appointment.

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the U.S. EPA, Office of Ecosystem Protection Attn: Neil Handler, 1 Congress Street, Suite 1100 (CIP), Boston, Massachusetts 02114-2023 or via email to [handler.neil@epa.gov](mailto:handler.neil@epa.gov). **The comments should reference the name and permit number of the facility for which they are being provided.**

A public hearing will be held after at least thirty (30) days public notice, since the Regional Administrator has determined that significant public interest exists regarding this Draft Permit. In reaching a final decision on the Draft Permit the Regional Administrator will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after a public hearing, if such hearing is held, the Regional Administrator will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within thirty (30) days following the notice of final permit decision, any interested person may submit a request for a formal evidentiary hearing to reconsider or contest the final decision. Requests for a formal evidentiary hearing must satisfy the Requirements of 40 CFR § 124.74. In general, the reader should reference 40 CFR 124–PROCEDURES FOR DECISION MAKING, Subparts A, D, E and F for specifics relative to this section.

## **X. EPA & MADEP CONTACTS**

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

Neil Handler, EPA New England - Region I  
1 Congress Street, Suite 1100 (CIP)  
Boston, MA 02114-2023  
Telephone: (617) 918-1334 FAX: (617) 918-0334  
email: [handler.neil@epa.gov](mailto:handler.neil@epa.gov)

Paul Hogan, Massachusetts Department of Environmental Protection  
Division of Watershed Management, Surface Water Discharge Permit Program  
627 Main Street, 2nd Floor Worcester, Massachusetts 01608  
Telephone: (508) 767-2796 FAX: (508) 791-4131  
email: [paul.hogan@state.ma.us](mailto:paul.hogan@state.ma.us)

\_\_\_\_\_  
Date

Linda M. Murphy, Director  
Office of Ecosystem Protection  
U.S. Environmental Protection Agency

## REFERENCES

- ES&T. 2002. *MTBE Ambient Water Quality Criteria Development: A Public/Private Partnership*. Mancini, E.R., et al., Environmental Science & Technology, Vol. 36, No. 2. 2002.
- Global. 2004. *Chelsea Sandwich, LLC - NPDES Permit No. MA0003280, Responses to EPA Information Request Dated May 19, 2004*. Global Companies, LLC, Chelsea, MA. June 2004.
- MADEP. 2002. *Boston Harbor 1999 Water Quality Assessment Report*. Massachusetts Department of Environmental Protection, Division of Watershed Management, Worcester, MA. October 2002 (70-AC-1)
- MADEP. 2003. *Massachusetts Year 2002 Integrated List of Waters, Part 2 - Final Listing of Individual Categories of Waters*. Commonwealth of Massachusetts Executive Office of Environmental Affairs, September, 2003 (CN:125.2)
- Potter, Thomas L. and Kathleen E. Simmons, 1998. *Composition of Petroleum Mixtures, Volume 2*. Total Petroleum Hydrocarbon Criteria Working Group Series, May 1998.
- Triton, Inc. 2000. *NPDES Permit Amendment Application, Chelsea Sandwich, LLC - 11 Broadway, Chelsea, MA, NPDES Permit No. MA 0003280*. Triton Environmental, Inc., New Haven, CT. June 2000.
- USEPA. 1982. *Development Document for Effluent Limitations Guidelines and Standards and Pretreatment Standards for the Steam Electric Point Source Category*. United States Environmental Protection Agency, Office of Water and Waste Management, Washington, D.C. EPA-440/1-82/029, November 1982.
- USEPA. 2002. *National Recommended Water Quality Criteria:2002*. United States Environmental Protection Agency, Office of Water, Washington, D.C. EPA-822-R-02-047, November 2002.
- Weisman, Wade, 1998. *Analysis of Hydrocarbons in Environmental Media, Volume 1*. Total Petroleum Hydrocarbon Criteria Working Group Series, March 1998.

## **FIGURES**

**ATTACHMENT A**

**SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS**

**(1998 TO 2003)**

**CHELSEA SANDWICH, LLC**

**NPDES PERMIT NO. MA0003280**

**ATTACHMENT B**

**SUMMARY OF GROUND WATER MONITORING DATA**

**(2003 TO 2004)**

**CHELSEA SANDWICH, LLC**

**NPDES PERMIT NO. MA0003280**

**ATTACHMENT C**

**SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS**

**(2001 TO 2003)**

**FOR POLYNUCLEAR AROMATIC COMPOUNDS**

**CHELSEA SANDWICH, LLC**

**NPDES PERMIT NO. MA0003280**

**ATTACHMENT D**  
**ENDANGERED SPECIES LIST**

**ATTACHMENT E**

**ESSENTIAL FISH HABITAT DESIGNATION**