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: **MA0001929**

PUBLIC NOTICE DATE:

NAME AND ADDRESS OF APPLICANT:

Irving Oil Terminals, Inc.
700 Maine Avenue
Bangor, ME 04401

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Irving Oil Terminal - Revere
41 Lee Burbank Highway
Revere, MA 02151

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 into the designated receiving water. The permit, which was issued to Irving Oil Terminals, Inc. for the Revere, Massachusetts facility (Irving Oil) on October 2, 1997 (the Current Permit), became effective on November 1, 1997, and expired on November 1, 2002. A permit renewal application was not submitted to EPA by the facility until May 10, 2004. As a result the permit could not be administratively continued. In August of 2004, EPA brought an enforcement action against Irving Oil Terminals, Inc. over the company's discharge of storm

water without a permit. Irving Oil agreed to settle the action by paying the Government a $50,000 penalty.

II. TYPE OF FACILITY

The Irving Oil facility is engaged in the receipt, storage, and distribution of petroleum products. The spectrum of fuels handled by this facility consists of gasoline, distillate products (e.g., diesel fuel and No.2 Fuel Oil), ethanol, and various product additives. Petroleum products are received in bulk quantities at the terminal's marine vessel dock located along the Chelsea River on the west side of Lee Burbank Highway (Route 1A). Product is then transferred underneath Lee Burbank Highway to the facility's tank farm located on the east side of the highway. Final distribution of product is conducted primarily at the facility's truck loading rack and on occasion at the marine vessel dock when product is shipped off-site. The NPDES discharge consists of: treated storm water runoff from pervious and impervious areas at the facility including the tank farm, loading rack, property leased by Thrifty car rental agency, and the marine vessel dock. Occasionally, the NPDES discharge also includes treated water from the hydrostatic testing of repaired tanks. The storm water and hydrostatic test water discharges are to the Chelsea River through Outfall 001 (See Figure 1).

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 Irving Oil facility during the time period of 1998 through 2003, is included in Attachment A.

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. MA0001929).

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

Irving Oil is a bulk petroleum facility with operations consisting of the receipt, storage, and distribution of petroleum products. The terminal is located along the eastern shore of the Chelsea River, approximately two and one-half (2.5) miles northeast of the confluence of the Mystic and Chelsea Rivers (See Figure 1). The facility, which comprises approximately twenty-five (25) acres, consists of a tank farm, a terminal yard, a car rental business, and a marine vessel dock (See Figure 2). The Thrifty car rental agency currently leases the dock side of the property (40 Lee Burbank Highway). Rental vehicles are stored, fueled, and maintained on this property.

Most of the product stored at the facility (with the exception of some limited inventory transported by tanker truck) is delivered in bulk quantities by ship or barge to the marine vessel dock located along the Chelsea River. The dock is jointly owned by Irving Oil and Global Petroleum Corporation (NPDES Permit No. MA0003425). The marine vessel dock is equipped with two (2) manifold areas for receipt and distribution of product. One manifold can handle ships or barges, the other barges only. Each manifold area has a steel drip pan located beneath it to recover any potentially spilled product. Product off-loaded from the ship or barge is piped to the tank farm located on the opposite side of Lee Burbank Highway (41 Lee Burbank Highway).

The tank farm generally consists of aboveground steel storage tanks and product piping. There are eleven (11) aboveground bulk product storage tanks located within the tank farm. These tanks have a total gross storage capacity of approximately 752,500 barrels (or approximately 32 million gallons). Ten (10) of the tanks are used to store petroleum products and the remaining tank contains ethanol. The tank farm also contains four smaller aboveground tanks used to store fuel additives. The fuel additive tanks have a total storage capacity of approximately 49,000 gallons.

Secondary containment for the tank farm is provided through the use of earthen berms surrounding each of the bulk storage tanks. The secondary containment has been sized to hold at least 110 to 130 percent of the largest tank's storage capacity plus an added volume to hold any fire-extinguishment chemicals, water and/or precipitation. The berms are used to help prevent any potentially spilled petroleum products from migrating from one containment area to another or into any surrounding waterways. There is a valve located within each bermed area which can be manually opened or closed to either allow the storm water to drain into the main storm water conveyance system or be retained within that bermed area.

Operations at the Irving Oil Terminal also depend on the use of a number of smaller above-ground and underground storage tanks which are located throughout the facility. These tanks range in size from several hundred gallons to several thousand gallons and are used for: the facility fire protection system, product recovery, and storing of heating oil and diesel fuel for the facility's "own use."

The Terminal Yard generally consists of the area outside of the tank farm secondary containment structures. The Terminal Yard has an office building, workshop trailer, equipment storage building, fire foam system house, truck loading rack, BOL (Bill of Lading) House, testing shed (contains equipment for testing product), electrical house, and fork lift shed (contains fork lift and 55-gallon drums of glycol). There is also a 10,000 gallon Balance Return Tank located within the terminal yard. This underground fiberglass storage tank contains residual petroleum product which is collected from truck loading operations. Oil/Water Separators for the handling of storm water are located on both the terminal yard/tank farm side and the dock side of the property.

Final distribution of product is primarily completed at the truck loading rack area. The facility occasionally loads distillate products onto barges for off-site shipment. The product spectrum

stored at the facility consists of gasoline (high and low octane grades), diesel, No.2 Fuel Oil, and ethanol. The facility is capable of blending some petroleum products at the truck loading rack (e.g., high and low octane grades of gasoline to produce a mid range grade). There are no other chemical processes/reactions which occur at the facility.

C. Description of Discharge

Storm water is primarily collected at the facility from within the following areas: the terminal yard, the secondary containment area of the tank farm, the car rental agency, and the marine vessel dock. The tank farm and terminal yard are located on the east side of Lee Burbank Highway and as such have their own storm water collection and treatment system. Similarly, the property leased by the car rental agency and the marine vessel dock, which are located on the west side of the highway, have their own storm water collection and treatment system. However, the discharge from all areas of the facility is through one outfall (Outfall 001) into the Chelsea River. A more detailed description of the discharge is provided below.

As mentioned in the previous section, the bulk storage tanks at the facility are located within earthen berms to control the runoff of any storm water and/or potentially spilled product. Storm water accumulating within these areas either evaporates, infiltrates into the ground, or is drained into the terminal's underground storm water conveyance system. Accumulated water which is to be drained, is directed to low elevation catch basins. The water is visually inspected by facility staff and as long as it is free of petroleum products (i.e., there is no visible sheen) a series of valves are opened and the water is allowed to drain by gravity into the bermed area surrounding Tank #3.

Storm water runoff within the terminal yard is directed toward several low elevation catch basins. At the truck loading rack, the roof over this area directs storm water away from the truck rack equipment and loading operations to perimeter drains and individual catch basins. Storm water from this portion of the terminal yard is directed to an underground concrete holding tank located south of the Office Building. This 3,000 gallon holding tank is equipped with two 10-horsepower pumps that automatically pump the water into the secondary containment surrounding Tank #3 whenever the water level in the tank is sufficiently high.

The storm water accumulating in the containment area around Tank #3 (i.e., from the tank farm and terminal yard) drains into a concrete sump located in the western corner of this bermed area. The sump is equipped with two 3-horsepower pumps, each with a reported pumping capacity of approximately 375 gallons per minute (gpm). Only one pump can be manually activated at a time as a result of an electrical interlock system installed in August of 2004. Water is pumped from the sump to the main Oil/Water (O/W) Separator (O/W Separator 1) whenever one of the pumps has been activated.

Runoff which enters the trench drains beneath the roof surrounding the truck loading racks flows into a concrete holding tank located northwest of the rack. This tank is designed to act as a small

O/W Separator for any petroleum product spilled during truck loading operations. Water is siphoned off the bottom of the tank into a nearby 1,000 gallon lift station sump (leaving any accumulated petroleum product on the surface). A 5-horsepower pump is used to convey water from the lift station to O/W Separator 1. The pump is rated for a flow rate of approximately 250 gpm. The facility installed an orifice plate into the discharge line of the lift station in October of 2004 to reduce the flow rate into O/W Separator 1. The orifice plate reduces the size of the discharge opening in the pipe from 8 inches to 2 inches.

O/W Separator 1, the main separator for the facility (i.e., handling the runoff from the terminal yard and tank farm) is located southeast of the Office Building nearby the Vapor Recovery Unit (VRU). The separator is an in-ground baffle/weir type unit with a storage capacity of approximately 25,000 gallons. The facility has identified that O/W Separator 1 has a maximum design flow rate of 615 gpm. The discharge from O/W Separator 1 flows by gravity underneath Lee Burbank Highway to the facility's permitted NPDES outfall (Outfall 001) located on the eastern bank of the Chelsea River.

Flow rates through O/W Separators are not to exceed the design capacity of the separator (thereby minimizing the potential for carry-over). Irving Oil has indicated that the flow rate through O/W Separator 1 is controlled through two mechanisms. First, the flow rate of storm water from the tank farm area and a portion of the terminal yard (i.e., water conveyed through the sump located nearby Tank #3) is limited through the installation of an electrical interlock system. The interlock system prevents both pumps in the sump from operating at the same time thereby limiting the flow rate from this portion of the facility into O/W Separator 1 to approximately 375 gpm. Secondly, a flow restriction device (i.e., orifice plate) was installed in the line conveying runoff from beneath the truck loading rack canopy to O/W Separator 1. The orifice plate reduces the flow into the separator to approximately 180 gpm. With the controls provided by both of these mechanisms, the storm water entering O/W Separator 1 is limited to a maximum flow rate of approximately 555 gpm.

Storm water runoff from the car rental agency on the west side of the highway flows across paved portions of the site to a single catch basin located adjacent to another O/W Separator (O/W Separator 2). The separator is an in-ground baffle/weir unit located northwest of the car rental agency building. The facility has identified that O/W Separator 2 has a maximum design flow rate of 390 gpm. The discharge from O/W Separator 2 flows by gravity and intercepts the pipe conveying runoff from the tank farm and terminal yard side of operations to the nearby outfall into Chelsea River.

The eight (8) inch pipe leading to O/W Separator 2 has been equipped with a flow restriction device (i.e., orifice plate) which reduces the size of the opening in the pipe to two (2) inches. Based on the calculations provided by Irving Oil, the orifice plate reduces the flow into O/W Separator 2 to approximately 147 gpm**.**

Domestic sanitary sewage from the building leased to the car rental agency is discharged to a septic system located between the building and the Chelsea River. The car wash facility at the rental car agency is connected to a self-contained water recycling system.

The marine vessel dock has a steel drip pan located beneath each of the manifold areas to recover any potentially spilled product. Storm water as well as any residual product accumulating in the drip pan is pumped through existing product pipelines under the highway to one of the terminal's above ground storage tanks for off-site disposal.

Irving Oil 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. The Chelsea River was used as the source of water for these tests. Discharge monitoring and reporting were conducted for these testing events in accordance with the procedures described in Part I.A.8 of the Current Permit. Results from the testing of the hydrostatic test water shows conformance with the requirements and conditions identified in Part I.A.8 of the Current Permit. There is no groundwater remediation system presently in operation at the facility. A permit modification or issuance of a separate NPDES permit would be needed should the facility initiate any discharge from a groundwater remediation system.

This Draft Permit authorizes the discharge of storm water runoff and hydrostatic test water from one outfall (Outfall 001) at the facility.

D. Discharge Location

The receiving water, Chelsea River (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) 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 Irving Oil, authorizing the discharge of storm water and hydrostatic test 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 Current Permit).

In response to this permit requirement, Irving Oil identified that the maximum design flow rating of O/W Separator 1, which is used to treat the runoff from the tank farm and terminal yard, is 615 gpm. Irving Oil also indicated that the flow rate into O/W Separator 1 is controlled through the use of a an electrical interlock system and a flow restriction device (See Section V.C of this Fact Sheet). The total flow rate entering O/W Separator 1 is limited through the use of both mechanisms to approximately 555 gpm which is below the maximum design flow rate of the separator.

There is also a second O/W Separator located west of the highway which is used to treat the runoff from the portion of the property leased to the car rental agency. Irving Oil has identified a maximum design flow rate of approximately 390 gpm for O/W Separator 2. Irving Oil also indicated that the flow rate into O/W Separator 2 is controlled through the use of a flow

restriction device (i.e., orifice plate). The orifice plate limits the flow into this O/W Separator to approximately 147 gpm

Since the flow into both of the facility's O/W Separators does not exceed the maximum design flow rating of each unit, Irving Oil has demonstrated their compliance with Part I.A.4 of the Current Permit. 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(s) to be exceeded.

EPA and MADEP are using the design flow information submitted by Irving Oil for each O/W Separator to identify the maximum daily effluent limit for the Flow Rate from Outfall 001 in the Current Permit. An instantaneous flow rate of 615 gpm for the main O/W Separator (O/W Separator 001) and 390 gpm for the second O/W Separator (O/W Separator 002), will become the Flow Rate limits 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 to an extent, be 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 elevated levels, which were for the monthly average TSS limit, occurred early on in the permit cycle. Overall, the facility has been able to 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 Irving Oil (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. Irving Oil has consistently 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). The one exception being February of 2000, when the monitoring results for O&G (i.e., 15.3 mg/L) slightly exceeded the effluent limit for this parameter.

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 during 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.

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 for PAHs with their respective detection limits during the time period of 1998 to 2003 can be found in Attachment B to this Fact Sheet. The reporting limits for each of the seven (7) PAH compounds were typically around 1 µg/L (or 1 part per billion).

EPA has reviewed the discharge monitoring data submitted for PAHs by Irving Oil and other nearby Chelsea Creek petroleum storage terminals since the issuance of their Current Permits (since approximately 1997 - 1998). PAHs were not detected in the storm water discharge from the Irving Oil facility during a majority of the twenty-three (23) quarterly sampling events. In the four (4) sampling events where PAHs were detected, the concentrations identified for most compounds were very close to the laboratory's minimum level of reporting (i.e., approximately 1 µg/L). On one occasion (i.e., during the first quarter of 2001), the facility reported a total PAH concentration of 12.8 µg/L. A majority of the petroleum storage terminals located along Chelsea Creek did not detect the presence of any PAHs in the monitoring data submitted by them since the issuance of their respective Current Permits.

EPA is not imposing effluent limits for PAHs in the Draft Permit for this facility at this time given the overall low levels detected. However, EPA will require the Irving Oil facility to implement additional steps as part of the Best Management Practices used by the facility to control and reduce the concentration of PAHs in their discharge. EPA believes that the PAH

concentrations found in the discharge from this facility can be further reduced as evidenced by the monitoring results obtained from the other petroleum storage terminals located along Chelsea Creek. The additional requirements to be implemented by the permittee are discussed further in Section V.E.11 of this Fact Sheet and Part I.B.2 of the Draft Permit.

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.

To better regulate the "potential" for gasoline and/or light distillates 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 included a quarterly monitoring requirement for BTEX and a maximum daily effluent limit of 500 µg/L for benzene in the Current Permit. The effluent limit of 500 µg/L established in the Current Permit was based on Best Professional Judgement and was derived from the demonstrated level of performance of Oil/Water Separators at a dozen oil terminals located along the East Coast and Southern States.

In establishing the effluent limit for VOCs in the Draft Permit, EPA reviewed all appropriate criteria including the most recent 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. 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 for BTEX with respective detection limits during the time period of 2001 to 2003 can be found in Attachment C to this Fact Sheet. Benzene

concentrations identified in the discharge from the facility were typically non-detect (i.e., below the laboratory reporting limit of 5.0 µg/L). On the few occasions where benzene was detected in the discharge from the facility, it was reported at one to two orders of magnitude below the effluent limit in the Current Permit (i.e., 500 µg/L). Similarly, a majority of the quarterly sampling events did not detect the presence of toluene, ethylbenzene, and total xylenes in the discharge from the facility. On the few occasions where any of these compounds were detected, they were typically reported at very low concentrations (i.e., in the low parts per billion range).

EPA continues to believe that the approach taken in the Current Permit (i.e., quarterly monitoring for BTEX and the establishment of an effluent limit for benzene) is an effective way of monitoring and controlling the quality of the storm water discharge at the facility and as such has incorporated similar requirements into the Draft Permit. However, EPA has chosen to change the maximum daily effluent limit for benzene in the Draft Permit from 500 µg/L to 51 µg/L. The benzene limit of 51 µg/L represents the current Federal Water Quality Criteria for benzene which has been adopted by the State of Massachusetts (See 314 CMR 4.05(5)(e)). The new limit is based on the human health criteria associated with the consumption of aquatic organisms (USEPA, 2002). EPA believes that this more stringent limit is necessary for the protection of human health and to maintain the water quality standards established under Section 303 of the CWA.

7. Methyl Tertiary-Butyl Ether (MTBE)

Another potential contaminant of concern found in gasoline is methyl tertiary-butyl ether (MTBE). MTBE is a synthetic compound used as a blending component in gasolines (e.g., oxygenated fuels, reformulated gasolines, and conventional gasolines). Since 1979 it has been used at low levels in gasoline (e.g., concentrations of 2-4 percent by volume) as a replacement to lead to enhance octane levels. MTBE has been used at higher concentrations (e.g, concentrations of 11-15 percent by volume) in some gasoline since 1992 to fulfill the oxygenate requirements established in the 1990 Clean Air Act Amendments. Due to its small molecular size and solubility in water, MTBE moves rapidly into the ground water, faster than do other constituents of gasoline. Because of these physical properties, MTBE has been detected in ground water in a growing number of studies conducted throughout the country. In some instances, these contaminated waters are a source of drinking water.

Most of the research conducted on MTBE to date has focused on human-health, specifically the health effects associated with the inhalation of the chemical. Independent expert review by groups who have assessed MTBE inhalation health risks have not concluded that the use of MTBE in gasoline poses an imminent threat to public health. However, there is limited data available concerning what the health effects may be for the most likely potential route of exposure - a person swallowing (ingesting) MTBE. As a result, EPA has not set a national drinking water standard for MTBE. However, some states have established their own limit for drinking water standards. Within the New England area, the states of New Hampshire and

Massachusetts have established a drinking water standard for MTBE of 13 µg/L and 70 µg/L, respectively.

A more limited amount of information is available regarding the aquatic toxicity of MTBE. A public/private partnership was established in 1997 to help review the available information and to develop aquatic toxicity data sufficient to calculate ambient water quality criteria for MTBE. The public/private partnership consisted of representatives from private companies, trade associations, and EPA. Existing aquatic toxicity data were evaluated for acceptability, consistent with EPA guidance, and additional freshwater and marine tests were conducted to satisfy the federal criteria database requirements. Through their efforts, the public/private partnership was able to develop proposed freshwater and marine water quality criteria for MTBE (ES&T, 2002). The preliminary freshwater criteria for acute and chronic exposure effects developed through this workgroup are 151 and 51 milligrams MTBE/Liter of water (or 151,000 µg/L and 51,000 µg/L), respectively. The preliminary marine criteria for acute and chronic exposure effects are 53 and 18 milligrams MTBE/Liter of water (or 53,000 µg/L and 18,000 µg/L), respectively.

Spillage and leaks from above-ground gasoline storage tanks and/or truck loading rack areas can transport quantities of MTBE to surface waters via the storm water drainage system. Discharges of MTBE via the storm water system have the potential to impact the water quality of Chelsea River. Thus, EPA included discharge monitoring requirements for MTBE (without limitations) as part of Current Permit issued to this facility in 1997. EPA required this monitoring in order to determine if any limitations on MTBE discharges from the terminal was warranted.

EPA has reviewed the discharge monitoring data submitted by the facility for MTBE and compared the results with available benchmarks. In identifying the most appropriate benchmark for petroleum bulk stations and terminals, EPA considered the type of discharge (e.g., intermittent) and location of the discharge (e.g., the Chelsea River is designated by the State of Massachusetts for the uses of protection of aquatic life and wildlife, and for primary and secondary contact recreation but not as a drinking water source). Based on the above information EPA used the preliminary marine water quality criteria for acute toxicity of MTBE (e.g., 53,000 µg/L) as its benchmark. As can be seen, from a review of the discharge monitoring data submitted by the facility (See Attachments A and C to this Fact Sheet), the concentrations of MTBE found in the outfall from this facility are typically several orders of magnitude smaller than the preliminary water quality criteria benchmark of 53,000 µg/L.

Based on EPA's review of the data from this facility as well as the other petroleum bulk stations and terminals which collected MTBE data, EPA has concluded that effluent limits for MTBE are not required at this time. However, given the potential health concerns, the type of petroleum products stored at the facility, and the physical properties of this compound, EPA will require the facility to continue to monitor for MTBE on a quarterly basis from the storm water outfall(s).

8. 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.

9. 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 O/W Separator 1 prior to being discharged to the Chelsea River. In addition, the flow of hydrostatic test water into O/W Separator 1 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 O/W Separator 1 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 O/W Separator 1 and the 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.

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(s) 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.

As mentioned in Section V.E.5 of this Fact Sheet, PAH compounds were detected in the discharge from this facility in the low parts per billion range. Although these concentrations are considered fairly low, EPA believes their presence warrants some additional action on the part of the permittee. Therefore, the permittee shall be required to identify in the SWPPP what additional steps the facility will take (e.g., spill prevention, operation and maintenance, training) to further reduce the concentration of PAHs detected in their discharge. The facility will also identify as part of the annual certification discussed below, the effectiveness of these steps in further reducing the PAH concentrations detected in their discharge. In the event that these actions prove ineffective in further reducing the PAH concentrations, the permit may be subject to modification pursuant to 40 CFR §122.62.

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 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. **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 the public hearing, 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
One Congress Street, Suite 1100 (CIP)
Boston, MA 02114-2023
Telephone: (617) 918-1334 FAX: (617) 918-0334
email: 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

_____
Date

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

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FIGURES

ATTACHMENT A

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(1998 TO 2003)

IRVING OIL

NPDES PERMIT NO. MA0001929

ATTACHMENT B

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(1998 TO 2003)

FOR POLYNUCLEAR AROMATIC COMPOUNDS

IRVING OIL

NPDES PERMIT NO. MA0001929

ATTACHMENT C

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(2001 TO 2003)

FOR VOLATILE ORGANIC COMPOUNDS

IRVING OIL

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ATTACHMENT D

ENDANGERED SPECIES LIST

ATTACHMENT E

ESSENTIAL FISH HABITAT DESIGNATION