AUTHORIZATION TO DISCHARGE UNDER
THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of the Federal Clean Water Act as amended, (33 U.S.C. §§1251 et seq.; the "CWA"), and the Massachusetts Clean Waters Act, as amended, (M.G.L. Chap. 21, §§26-53),

Chelsea Sandwich, LLC

is authorized to discharge from a facility located at

Chelsea Sandwich Terminal
11 Broadway
Chelsea, MA 02150

to receiving water named

Chelsea River (MA71-06)
Mystic River Watershed

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

This permit shall become effective on the first day of the calendar month following 60 days after signature. If no comments are received, this permit shall become effective upon the date of signature.

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

This permit supersedes the permit issued on June 30, 2005.

This permit consists of 24 pages in Part I including effluent limitations, monitoring requirements, 10 pages in Attachment A – Marine Acute Toxicity Test Procedure and Protocol (2012), and 25 pages in Part II, the Standard Conditions.

Signed this day of

Ken Moraff, Director
Office of Ecosystem Protection
Environmental Protection Agency
Region 1
Boston, MA

David Ferris, Director
Massachusetts Wastewater Management Program
Department of Environmental Protection
Commonwealth of Massachusetts
Boston, MA

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through the expiration date, the Permittee is authorized to discharge treated stormwater, hydrostatic test water, treated groundwater from internal Outfall 002, and boiler blowdown from **Outfall Serial Number 001** to the Chelsea River. The discharge shall be limited and monitored by the Permittee as specified below:

Effluent Characteristic	**Discharge Limitation**		**Monitoring Requirements[1]**	
Parameter	**Average Monthly**	**Maximum Daily**	**Measurement Frequency[2]**	**Sample Type[3]**
FLOW RATE OIL/WATER SEPARATOR[4]	---	700 GPM	When Discharging	Meter
TOTAL FLOW[5]	---	Report MGal/Mo	When Discharging	Meter
NUMBER OF EVENTS	---	Report #	When Discharging	Meter
pH RANGE[6,7]	6.5 – 8.5 SU		Monthly	Grab
TOTAL SUSPENDED SOLIDS	30 mg/l	100 mg/L	2/Month	Grab
OIL AND GREASE	---	15 mg/L	Monthly	Grab
VOLATILE ORGANIC COMPOUNDS (VOCs)[8]				
Benzene	51 µg/L	Report µg/L	Monthly	Grab
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)[9]				
Benzo(a)pyrene	0.018 µg/L	Report µg/L	Monthly	Grab
Naphthalene[10]	100 µg/L	Report µg/L	Monthly	Grab

POLLUTANT SCAN, EFFLUENT[11]				
Benzene	---	Report µg/L	1/Year	Grab
Ethylbenzene	---	Report µg/L	1/Year	Grab
Toluene	---	Report µg/L	1/Year	Grab
Total Xylenes	---	Report µg/L	1/Year	Grab
Benzo(a)anthracene	---	Report µg/L	1/Year	Grab
Benzo(a)pyrene	---	Report µg/L	1/Year	Grab
Benzo(b)fluoranthene	---	Report µg/L	1/Year	Grab
Benzo(k)fluoranthene	---	Report µg/L	1/Year	Grab
Chrysene	---	Report µg/L	1/Year	Grab
Dibenzo(a,h,)anthracene	---	Report µg/L	1/Year	Grab
Indeno(1,2,3-cd)pyrene	---	Report µg/L	1/Year	Grab
Acenaphthene	---	Report µg/L	1/Year	Grab
Acenaphthylene	---	Report µg/L	1/Year	Grab
Anthracene	---	Report µg/L	1/Year	Grab
Benzo(g,h,i)perylene	---	Report µg/L	1/Year	Grab
Fluoranthene	---	Report µg/L	1/Year	Grab
Fluorene	---	Report µg/L	1/Year	Grab
Naphthalene[10]	---	Report µg/L	1/Year	Grab

Phenanthrene	---	Report µg/L	1/Year	Grab
Pyrene	---	Report µg/L	1/Year	Grab
Chromium	---	Report µg/L	1/Year	Grab
Iron	---	Report µg/L	1/Year	Grab
Cyanide	---	Report µg/L	1/Year	Grab
Phenol	---	Report µg/L	1/Year	Grab
Phthalates	---	Report µg/L	1/Year	Grab
Ammonia	---	Report mg/L	1/Year	Grab
Fecal coliform	---	Report cfu/100mL	1/Year	Grab
POLLUTANT SCAN, RECEIVING WATER[12]				
Benzene	---	Report µg/L	1/Year	Grab
Ethylbenzene	---	Report µg/L	1/Year	Grab
Toluene	---	Report µg/L	1/Year	Grab
Total Xylenes	---	Report µg/L	1/Year	Grab
Benzo(a)anthracene	---	Report µg/L	1/Year	Grab
Benzo(a)pyrene	---	Report µg/L	1/Year	Grab
Benzo(b)fluoranthene	---	Report µg/L	1/Year	Grab
Benzo(k)fluoranthene	---	Report µg/L	1/Year	Grab
Chrysene	---	Report µg/L	1/Year	Grab

Dibenzo(a,h,)anthracene	---	Report µg/L	1/Year	Grab
Indeno(1,2,3-cd)pyrene	---	Report µg/L	1/Year	Grab
Acenaphthene	---	Report µg/L	1/Year	Grab
Acenaphthylene	---	Report µg/L	1/Year	Grab
Anthracene	---	Report µg/L	1/Year	Grab
Benzo(g,h,i)perylene	---	Report µg/L	1/Year	Grab
Fluoranthene	---	Report µg/L	1/Year	Grab
Fluorene	---	Report µg/L	1/Year	Grab
Naphthalene[10]	---	Report µg/L	1/Year	Grab
Phenanthrene	---	Report µg/L	1/Year	Grab
Pyrene	---	Report µg/L	1/Year	Grab
WHOLE EFFLUENT TOXICITY[13, 14, 15, 16]				
LC_{50}	---	Report LC_{50} %	1/Year	Grab
Total Residual Chlorine	---	Report mg/L	1/Year	Grab
Salinity	---	Report g/kg	1/Year	Grab
pH	---	Report SU	1/Year	Grab
Total Solids	---	Report mg/L	1/Year	Grab
Total Suspended Solids	---	Report mg/L	1/Year	Grab
Ammonia	---	Report mg/L	1/Year	Grab

Total Organic Carbon	---	Report mg/L	1/Year	Grab
Cadmium	---	Report mg/L	1/Year	Grab
Copper	---	Report mg/L	1/Year	Grab
Lead	---	Report mg/L	1/Year	Grab
Nickel	---	Report mg/L	1/Year	Grab
Zinc	---	Report mg/L	1/Year	Grab
WHOLE EFFLUENT TOXICITY TEST, RECEIVING WATER CHEMICAL ANALYSIS[16]				
Total Residual Chlorine	---	Report mg/L	1/Year	Grab
Salinity	---	Report g/kg	1/Year	Grab
pH	---	Report SU	1/Year	Grab
Total Solids	---	Report mg/L	1/Year	Grab
Total Suspended Solids	---	Report mg/L	1/Year	Grab
Ammonia	---	Report mg/L	1/Year	Grab
Total Organic Carbon	---	Report mg/L	1/Year	Grab
Cadmium	---	Report mg/L	1/Year	Grab
Copper	---	Report mg/L	1/Year	Grab
Lead	---	Report mg/L	1/Year	Grab
Nickel	---	Report mg/L	1/Year	Grab
Zinc	---	Report mg/L	1/Year	Grab

Footnotes:

[1]The effluent samples for Outfall 001 shall be collected at the discharge point to the Chelsea River, after treatment through the stormwater treatment system, free from tidal influence. Changes in sampling location must be approved in writing by the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP). Sampling of discharges from the Terminal must yield data representative of the discharge under authority of Section 308(a) in accordance with 40 Code of Federal Regulations (CFR) §122.41(j), §122.44(i), and §122.48.

[2]Sampling frequency of twice monthly and monthly is defined as the sampling of two and one discharge events in each calendar month, respectively. Sampling frequency of quarterly is defined as the sampling of one discharge event in each quarter. Quarters are defined as the interval of time between the months of: January through March, inclusive; April through June, inclusive; July through September, inclusive; and October through December, inclusive. The results of sampling for any parameter above its required frequency must also be reported to EPA, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR §122.41(1)(4)(ii). Pollutant Scan 1/Year samples shall be conducted in May each calendar year. Whole Effluent Toxicity 1/Year samples shall be conducted in September each calendar year. Quarterly and 1/Year sampling shall be performed concurrently with the monthly monitoring event. If no qualifying event occurs in the 1/Year month defined above, samples shall be collected during the next qualifying event and the Permittee must report a No Data Indicator Code (e.g., "C" for "No Discharge") found in Attachment E of *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, available on the EPA Region 1 web site at http://www.epa.gov/region1/enforcement/water/dmr.html.

[3]All samples shall be grab samples taken within 15 minutes of the initiation of a discharge from the outfall where practicable, but in no case later than within the first hour of discharge from the outfall. All samples shall be tested in accordance with the procedures in 40 CFR §136, unless specified elsewhere in the permit. The practical quantitation limit (PQL) for each analyte must be recorded. When an analyte is not detected above the PQL, the Permittee must report using the data qualifier signifying less than the PQL for that analyte (i.e. <0.1 µg/L, if the PQL for an analyte is 0.1 µg/L). If no discharge occurs during a monitoring period, the Permittee shall follow the No Data Indicator Code guidelines as noted above.

[4]For Flow Rate, the maximum daily value represents the maximum instantaneous flow rate measured by the Terminal as passing through the oil/water separator (OWS) for each day that a discharge occurs during the reported period. The maximum instantaneous flow rate, which is to be reported in units of gallons per minute (GPM), shall be measured using a totalizer or similar device.

[5]For Total Flow, the value reported represents the sum of the recorded discharge volume for each day that effluent is discharged during that month, measured after treatment through the OWS, including effluent discharged through internal Outfall 002. Total Flow shall be reported in the units of millions of gallons per month. The Permittee shall also report the total number of days during the reporting period discharges from the outfall occurred (i.e., a measurable volume of effluent passes through the totalizer or similar device), noted on the discharge monitoring report (DMR) form under "Event Total" parameter.

[6]Requirement for State Certification.

[7]The pH of the effluent shall be in the range of 6.5 to 8.5 standard units and not more than 0.2 standard units outside of the natural background range. There shall be no change from natural background conditions that would impair any use assigned to the class of the receiving water.

[8]The minimum level (ML) for analysis for the Volatile Organic Compound (VOC) benzene shall be no greater than 2 µg/L. When reporting sample data at or below the ML, see the latest EPA Region 1 *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)* for guidance. Analysis must be completed using an EPA approved method in 40 CFR §136, Table IC – Non-Pesticide Organic Compounds.

[9]The ML for analysis for the Polycyclic Aromatic Hydrocarbons (PAHs) shall be no greater than the following: 0.1 µg/L for benzo(a)pyrene and 5 µg/L for naphthalene. The ML is not the minimum level of detection, but rather the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for an analyte, representative of the lowest concentration at which an analyte can be measured with a known level of confidence. The ML for benzo(a)pyrene, 0.1 µg/L, shall represent the compliance level for that compound. When reporting sample data at or below the ML, see the latest EPA Region 1 *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)* for guidance. Analysis must be completed using an EPA approved method in 40 CFR §136, Table IC – Non-Pesticide Organic Compounds.

[10]The Permittee shall sample and analyze for naphthalene using analytical methods for semi-volatile organic compounds and volatile organic compounds. MassDEP methods may not be used.

[11]The Permittee shall conduct a pollutant scan once per year for Outfall 001 during May, for the following compounds: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-cd)pyrene, acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene, benzene, toluene, ethylbenzene, total xylenes, total recoverable chromium, total recoverable iron, total cyanide, total phenol, total phthalates, ammonia, and fecal coliform. The ML for analysis shall be no greater than the following: 0.1 µg/L for Group I PAHs, 5 µg/L for Group II PAHs and vinyl chloride, 2 µg/L for benzene, ethylbenzene, toluene and total xylenes, 1 µg/L for total recoverable chromium, and 5 µg/L for total cyanide and total phenol. PAH and VOC analyses conducted for the pollutant scan may also be used to satisfy the monthly sampling requirements for those parameters as long as the timing of sampling for the remaining parameters in Part I.A.1. coincides with the 1/year sampling of selected pollutants.

[13]The Permittee shall conduct a pollutant scan once per year for the receiving water during May, for the following compounds: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, indeno(1,2,3-

cd)pyrene, acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene, benzene, toluene, ethylbenzene, and total xylenes. The ML for analysis shall be no greater than the following: 0.1 µg/L for Group I PAHs, 5 µg/L for Group II PAHs, and 2 µg/L for benzene, ethylbenzene, toluene and total xylenes. The receiving water sample for the pollutant scan shall be collected from the Chelsea River at a point immediately outside of Outfall 001's zone of influence at a reasonably accessible location.

[14]The Permittee shall conduct acute whole effluent toxicity (WET) tests once per year following the effective date of the permit. The Permittee shall test the Mysid Shrimp, *Americamysis bahia*, and the Inland Silverside, *Menidia beryllina*. Toxicity test samples shall be collected for Outfall 001 during September. The test results shall be submitted by the last day of the month following the completion of the test. The tests must be performed in accordance with test procedures and protocols specified in Attachment A of this permit. These samples, taken in accordance with the WET testing requirements, may be used to satisfy other sampling requirements specified in the table above.

[15]The LC_{50} (Lethal Concentration 50 Percent) is the concentration of effluent which causes mortality to 50% of the test organisms.

[16]The dilution water sample for the WET test shall be collected from the Chelsea River at a point immediately outside of Outfall 001's zone of influence at a reasonably accessible location. If the 1/year toxicity test using receiving water as diluent shows the receiving water to be toxic or unreliable, the Permittee shall either follow procedures outlined in Attachment A – Marine Acute Toxicity Test Procedure and Protocol) Section IV., DILUTION WATER in order to obtain an individual approval for use of an alternate dilution water, or the Permittee shall follow the Self-Implementing Alternative Dilution Water Guidance which may be used to obtain automatic approval of an alternate dilution water, including the appropriate species for use with that water. This guidance is found in Attachment G of *NPDES Program Instructions for the Discharge Monitoring Report Forms (DMRs)*, which may be found on the EPA Region 1 web site at http://www.epa.gov/Region1/enforcementandassistance/dmr.html. If this guidance is revoked, the Permittee shall revert to obtaining individual approval as outlined in Attachment A. Any modification or revocation to this guidance will be transmitted to the Permittee. However, at any time, the Permittee may choose to contact EPA Region 1 directly using the approach outlined in Attachment A. For each WET test, the Permittee shall report the concentrations of the parameters listed above in DMRs submitted to EPA and MassDEP. Even where alternate dilution water has been agreed upon, the results of the receiving water control (0% effluent) analyses must be reported.

[17]In conjunction with each WET test, the Permittee shall report the concentrations of total residual chlorine, salinity, pH, total solids, total suspended solids, ammonia, total organic carbon, total recoverable cadmium, total recoverable copper, total recoverable lead, total recoverable nickel, and total recoverable zinc found in the 100% effluent and receiving water control (0% effluent) samples in DMRs submitted to EPA and MassDEP, noted above as Whole Effluent Toxicity and Whole Effluent Toxicity Test, Receiving Water Chemical Analysis, respectively. The ML for analysis shall be no greater than the following: 0.2 µg/L for total recoverable cadmium, total recoverable lead, and total recoverable nickel, 0.5 µg/L for total recoverable copper, and 5 µg/L for total recoverable zinc.

2. During the period beginning on the effective date and lasting through expiration, the Permittee is authorized to discharge treated groundwater through internal waste stream **Outfall Serial Number 002** to the Chelsea River via Outfall 001. Such discharge shall be limited and monitored by the Permittee as specified below:

Effluent Characteristic	**Discharge Limitation**		**Monitoring Requirements**[1]	
Parameter	**Average Monthly**	**Maximum Daily**	**Measurement Frequency**[2]	**Sample Type**[3]
FLOW RATE[4]	---	25 GPM	When Discharging	Meter
TOTAL FLOW[5]	---	Report Mgal/Mo	When Discharging	Meter
pH RANGE[6,7]	6.5 - 8.5 SU		Monthly	Grab
VOLATILE ORGANIC COMPOUNDS (VOCs)[8]				
Benzene	---	5 µg/L	Monthly	Grab
Total BTEX	---	100 µg/L	Monthly	Grab
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs)[9]				
Group I PAHs	0.018 µg/L	Report µg/L	Monthly	Grab
Sum of Group I PAHs		10 µg/L		
Sum of Group II PAHs	---	100 µg/L	Monthly	Grab
Naphthalene[10]	---	20 µg/L	Monthly	Grab
TOTAL PETROLEUM HYDROCARBONS	---	5 mg/L	Monthly	Grab

Footnotes:

[1]The effluent samples for Outfall 002 shall be collected at the discharge point to the stormwater conveyance system after treatment through the groundwater treatment system. Changes in sampling location must be approved in writing by EPA and MassDEP. Sampling of discharges from Outfall 002 must yield data representative of the remediation waste stream and not the more dilute stormwater with which it is being mixed consistent with 40 CFR § 122.45(h).

[2]Sampling frequency of monthly is defined as the sampling of one discharge event in each calendar month. The Permittee shall submit the results to EPA of any additional testing done in addition to that required herein, if it is conducted in accordance with EPA approved methods consistent with the provisions of 40 CFR §122.41(1)(4)(ii).

[3]See Part I.A.1., Footnote 3, Page 7.

[4]For Flow Rate, the maximum daily value represents the maximum instantaneous flow rate measured by the Terminal as passing through the groundwater treatment system for each day that a discharge occurs during the reported period. The maximum instantaneous flow rate, which is to be reported in units of GPM, shall be measured using a totalizer or similar device.

[5]For Total Flow, the value reported represents the maximum of each day's discharge volume for each day that effluent is discharged during that month. Total Flow shall be reported in the units of Mgal/Mo. The Permittee shall at no time exceed the design flow rate of the groundwater treatment system.

[6]See Part I.A.1., Footnote 6, Page 8.

[7]See Part I.A.1., Footnote 7, Page 8.

[8]See Part I.A.1., Footnote 8, Page 8.

[9]See Part I.A.1., Footnote 9, Page 8. Group I PAHs consist of the following seven compounds: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene. The daily maximum effluent limitation 0.018 µg/L applies to each individual Group I PAH compound. The ML for Group I PAH compounds, 0.1 µg/L, shall represent the compliance level for each compound. Group II PAHs consist of the following nine compounds: acenaphthene, acenaphthylene, anthracene, benzo(ghi)perylene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene.

[10]See Part I.A.1., Footnote 10, Page 8.

PART I.A. (continued)

3. The discharge shall not cause a violation of the Massachusetts water quality standards of the receiving water.
4. The effluent shall not impart taste, odor, turbidity, toxicity, radioactivity, or other properties which cause those waters to be unsuitable for the designated uses and characteristics ascribed to their use.
5. The effluent shall not cause objectionable discoloration of the receiving waters.
6. The effluent shall contain neither a visible oil sheen, foam, nor floating or settleable solids at any time.
7. The effluent shall not contain materials in concentrations or in combinations which would impair the uses designated by the classification of the receiving water or which would cause or contribute to alterations that adversely affect the physical or chemical nature of the bottom.
8. The effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.
9. The Permittee shall report immediately the appearance of any size sheen attributable to the discharge from the Terminal to the appropriate U.S. Coast Guard Officer in accordance with Section 311 of the Clean Water Act (CWA). This requirement is in addition to any reporting requirements contained in the permit.
10. The Permittee shall inspect, operate, and maintain the stormwater and groundwater treatment systems at the Terminal to ensure that the Effluent Limitations and permit conditions are met. The Permittee shall ensure that all components of the Terminal's Stormwater Pollution Prevention Plan (SWPPP), including those Best Management Practices (BMPs) which specifically address the operation and maintenance of the oil/water separators (OWSs), pumps and other components of the stormwater and groundwater collection and treatment systems, are complied with.
11. The Permittee shall not use or manufacture as an intermediate or final product or byproduct any toxic pollutant or material including, but not limited to, chemicals (e.g., surfactants, disinfectant agents, detergents, emulsifiers, alcohol-resistant foam), chemical additives, or bioremedial agents, including microbes, which was not reported in the permit application. Pollutants which are not limited by this permit, but which have been specifically disclosed in the permit application, may be discharged up to the frequency and level disclosed in the application, provided that such discharge does not violate Section 307 or 311 of the CWA or applicable state water quality standards.
12. The Permittee shall notify EPA and MassDEP at the addresses in Part I.E. when it proposes to add or replace any chemicals, chemical additives, or bioremedial agents that have the potential to come into contact with stormwater or enter the collection and treatment system.
13. The Permittee shall notify EPA and MassDEP in writing within to the addresses listed in Part I.E. 10 days of becoming aware of any changes, planned or otherwise, in the operations at the Terminal that may have an effect on the permitted discharge.

14. The Permittee shall attach a copy of the laboratory case narrative to each DMR submitted to EPA and MassDEP for each reporting period. The laboratory case narrative shall include a copy of the laboratory data sheets for each analysis (identifying the test method, the analytical results, and the detection limits for each analyte) and provide a brief discussion of whether all appropriate QA/QC procedures were met and were within acceptable limits.
15. Written notification and approval by EPA and the MassDEP shall be required, should the Permittee propose changes to the stormwater or groundwater collection or treatment systems which have the potential to cause the maximum design flow rate through any component of the stormwater or groundwater systems to be exceeded.
16. Hydrostatic test water shall be monitored as described below and treated through the stormwater treatment system, subject to the Effluent Limitations and Monitoring Requirements in Part I.A.1., above, prior to being discharged through Outfall 001 to the Chelsea River.
    a. The flow of hydrostatic test water into the stormwater treatment system shall be controlled to prevent it from exceeding the maximum design flow rate of the system (i.e., 700 GPM at the OWS).
    b. The Permittee shall take a minimum of five representative samples of the hydrostatic test water:
        i. For Tanks, the Permittee shall take:
            1) one grab sample of the influent (fill source) water during the first 10% of the estimated fill segment time at the intake;
            2) one grab sample of the tank water (at the effluent point of the tank), following testing but before draining;
            3) two grab samples of the effluent (one sample of the discharge water during the first 10% of discharge and one sample during the last 10% of discharge) before treatment through the stormwater treatment system; and
            4) one grab sample of the effluent (at the discharge point for the treatment system) during the first 10% of discharge after treatment.
        ii. For Pipelines, the Permittee shall take:
            1) one grab sample of the influent (fill source) water during the first 10% of the estimated fill segment time at the intake;
            2) one grab sample of the pipeline water following depressurization (in-process);
            3) two grab samples of the effluent (one sample of the discharge water during the first 10% of discharge and one sample during the last 10% of discharge) before treatment through the stormwater treatment system; and
            4) one grab sample of the effluent (at the discharge point for the treatment system) during the first 10% of discharge after treatment.

c. The grab sample required in Part I.A.16.b.i.2) shall be analyzed as noted below and results evaluated prior to discharge to the stormwater collection system. The hydrostatic test water shall only be discharged if such analysis of the in-process sample indicates that after appropriate management and treatment, all permit conditions shall be met. If at any time the analyses at any point in the hydrostatic testing process demonstrate that the discharge water quality is not consistent with the effluent limitations and requirements established in this permit, the Permittee shall immediately halt the transfer of hydrostatic test water and take steps to remedy the situation. These influent, in-process, and effluent samples shall each be analyzed for the parameters indicated below:
    i. Total Flow;
    ii. Flow Rate;
    iii. Total Suspended Solids (TSS);
    iv. Oil & Grease (O&G);
    v. pH;
    vi. Chemical Oxygen Demand (COD);
    vii. Dissolved Oxygen (DO);
    viii. Total Surfactants;
    ix. VOCs (benzene, toluene, ethylbenzene, and total xylenes);
    x. PAHs (Group I and II PAHs listed in Part I.A.1., Pollutant Scan, Effluent, benzo(a)anthracene through pyrene);
    xi. Metals (total recoverable iron, total recoverable chromium and total recoverable metals listed in Part I.A.1., Whole Effluent Toxicity, cadmium through zinc); and
    xii. Total Residual Chlorine, if potable water or a similar source of water which is likely to contain residual chlorine concentrations is used for hydrostatic testing.

d. The hydrostatic test waters released from the tank(s) and/or pipelines and treated through the stormwater treatment system shall satisfy all conditions of this permit, including meeting all discharge limitations, analytical method requirements and detection limits. The samples required in Part I.A.16.b.i.4) and ii.4) may be used to satisfy the requirements in Part I.A.1. for the parameters required in both parts for the monitoring period in which hydrostatic testing occurs, as long as the timing of sampling for the remaining parameters in Part I.A.1. coincides with the sampling of hydrostatic test water effluent.

e. The Permittee shall submit a letter/report to EPA and the MassDEP, summarizing the results of the hydrostatic test **within 90 days of completion of the test**. This report shall contain:
    i. The date(s) during which the hydrostatic testing occurred;
    ii. The volume of hydrostatic test water discharged;

iii. A copy of the laboratory data sheets for each analysis, providing the test method, the detection limits for each analyte, and a brief discussion of whether all appropriate QA/QC procedures were met and were within acceptable limits; and

iv. A brief discussion of the overall test results and how they relate to the Effluent Limitations in this permit.

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

g. Discharge of additives are prohibited, including, but not limited to: glutaraldehyde, ethylene glycol, butoxyethanol, alkylacrelate nitrito styrene polymer, coco alkylamine, 1,2,3 and 4-trimethylbenzene, 1,3,5-trimethylbenzene and methyl isobutyl ketone.

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

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

i. 100 micrograms per liter (µg/L);

ii. 200 µg/L for acrolein and acrylonitrite; 500 µg/L for 2,4-dinitrophenol; and one milligram per liter (mg/L) for antimony;

iii. Five times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or

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

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

i. 500 micrograms per liter (µg/L);

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

iii. 10 times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 CFR §122.21(g)(7); or

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

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

18. Numerical Effluent Limitations for Toxicants

a. EPA or MassDEP may use the results of the chemical analyses conducted pursuant to this permit, as well as national water quality criteria developed pursuant to Section

304(a)(1) of the CWA, state water quality criteria, and any other appropriate information or data, to develop numerical effluent limitations for any pollutants, including, but not limited to, those pollutants listed in Appendix D of 40 CFR §122.

19. Toxics Control
    a. The Permittee shall not discharge any pollutant or combination of pollutants in toxic amounts.
    b. Any toxic components of the effluent shall not result in any demonstrable harm to aquatic life or violate any state or federal water quality standard which has been or may be promulgated. Upon promulgation of any such standard, this permit may be revised or amended in accordance with such standards.

B. UNAUTHORIZED DISCHARGES

1. This permit authorizes the Permittee to discharge only in accordance with the terms and conditions of this permit and only from the outfalls listed in Part I.A.1. and 2. of this permit. Discharges of wastewater from any other point sources which are not authorized by this permit or other NPDES permits shall be reported in accordance with Part D.1.e.(1) of the Standard Conditions of this permit (twenty-four hour reporting).
2. The Permittee is authorized to discharge only the effluent types listed in Part I.A.1. and 2. with the exception of the following discharges allowable under this permit, provided these discharges meet all effluent limitations in the permit:
    a. Discharges from fire-fighting activities.
    b. Fire hydrant flushings.
    c. Potable water (e.g., water line flushings) unless associated with hydrostatic testing.
    d. Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids.
    e. Irrigation drainage.
    f. Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling.
    g. Pavement wash waters where no detergents are used and no spills or leaks of toxic or hazardous materials have occurred or could occur.
    h. Routine external building washdown that does not use detergents;
    i. Uncontaminated ground water.
    j. Foundation or footing drains where flows are not contaminated with process materials.
    k. Incidental windblown mist from boilers and/or cooling towers that collects on rooftops or adjacent portions of the Terminal, but not intentional discharges from these structures (e.g., blowdown or drains).
3. The following discharges are expressly prohibited:
    a. Tank bottom water and/or bilge water alone or in combination with stormwater discharge or other wastewater.

b. Any sludge and/or bottom deposits from any storage tank(s), basin(s), and/or containment area(s) to the receiving water. Examples of storage tanks and/or basins include, but are not limited to: primary catch basins, oil/water separators, petroleum product storage tanks, baffled storage tanks collecting spills, and tank truck loading rack sumps.
c. Wastewater from truck washing activities.
d. Untreated stormwater runoff from the marine vessel dock.
e. Any effluent containing fire protection foam, either in concentrate form or as foam diluted with water.
f. The bypass of the stormwater treatment system of stormwater runoff or hydrostatic test water is prohibited except where necessary to avoid loss of life, personal injury, or severe property damage. Each bypass shall be sampled for all the effluent characteristics identified in Part I.A.1. of this permit (i.e. monthly and quarterly) and the results reported to EPA within 45 days of the initiation of the bypass. These bypass reporting requirements are in addition to those already identified in 40 CFR §122.41(m) and Part II.B.4. of the Standard Conditions of this permit.
g. Runoff resulting from accidental spill or release, excepting conditions that meet the requirements defined in Part II., the Standard Conditions.

C. STORMWATER POLLUTION PREVENTION PLAN

1. The Permittee shall develop, implement and maintain a SWPPP designed to reduce or prevent the discharge of pollutants to waters of the United States. The SWPPP shall be a written document that is consistent with the terms of the permit and identifies and describes the BMPs employed by the Terminal for all structural and/or operational controls used to control discharges from Outfall 001.
    a. The SWPPP shall be updated and certified by the Permittee **within 90 days of the effective date of this permit**. The Permittee shall certify that the SWPPP has been prepared, that it meets the requirements of this permit, and that it reduces the pollutants in the discharge to the extent practicable. The SWPPP and certification shall be signed in accordance with the requirements identified in 40 CFR §122.22. A copy of the SWPPP and certification shall be maintained at the Terminal and made available to EPA, MassDEP and/or the City of Chelsea upon request.
    b. The SWPPP shall be prepared in accordance with good engineering practices and shall be consistent with the general provisions for SWPPPs included in the most current version of the MSGP. In the current MSGP (effective May 27, 2009), the general SWPPP provisions are included in Part 5 and Part 8.P and AD Specifically, the SWPPP shall document the selection, design, and installation of control measures and contain the elements listed below:

i. A pollution prevention team with collective and individual responsibilities for developing, implementing, maintaining, revising and ensuring compliance with the SWPPP;
ii. A site description which includes the activities at the Terminal; a general location map showing the Terminal, receiving waters, and outfall locations; and a site map showing the extent of significant structures and impervious surfaces, directions of stormwater flows, and locations of all existing structural control measures, stormwater conveyances, pollutant sources (identified in Part c.iii., below), stormwater monitoring points, stormwater inlets and outlets, and industrial activities exposed to precipitation such as, storage, disposal, and material handling;
iii. A summary of all pollutant sources which includes a list of activities exposed to stormwater, the pollutants associated with these activities, a description of where spills have occurred or could occur, a description of non-stormwater discharges, and a summary of any existing stormwater or non-stormwater discharge sampling data;
iv. A description of all stormwater controls, both structural and non-structural;
v. A schedule and procedure for implementation and maintenance of the control measures, quarterly inspections and BMPs described below; and
vi. Sector specific SWPPP provisions included in Sector P – Land Transportation and Warehousing and Sector AD – Non-Classified Facilities.

c. The SWPPP shall document the appropriate BMPs implemented or to be implemented at the Terminal to minimize the discharge of pollutants in stormwater to waters of the United States. At a minimum, these BMPs shall be consistent with the control measures described in the most current version of the MSGP. Specifically, BMPs must be selected and implemented to satisfy the following non-numeric technology-based effluent limitations:
    i. Minimization of exposure of manufacturing, processing, and material storage areas to stormwater discharges;
    ii. Good housekeeping and/or control measures designed to maintain areas that are potential sources of pollutants, including, but not limited to, contaminated soil and groundwater, and petroleum product blending and dispensing appurtenances;
    iii. Preventative maintenance programs to avoid leaks, spills, and other releases of pollutants in stormwater discharged to receiving waters;
    iv. Spill prevention and response procedures to ensure effective response to spills and leaks if or when they occur including proper procedures for cleanup water segregation;

v. Erosion and sediment controls designed to stabilize exposed areas and contain runoff using structural and/or non-structural control measures to minimize onsite erosion and sedimentation, and the resulting discharge of pollutants;
vi. Runoff and run-on management practices to divert, infiltrate, reuse, contain, or otherwise reduce stormwater runoff;
vii. Proper protocols for hydrostatic testing;
viii. Proper handling procedures for tank bottom water;
ix. Proper handling procedures for salt or materials containing chlorides that are used for snow and ice control;
x. Appropriate application practices for any herbicide used to control nuisance vegetation;
i. Proper handling procedures for biodiesel storage and response procedures for releases of biodiesel.
xi. Sector specific BMPs included in Sector P – Land Transportation and Warehousing and Sector AD – Non-Classified Facilities.

d. The SWPPP must include a discharge practices BMP that minimizes the extent to which discharges from the Terminal occur under worst-case conditions in the receiving water, and limits the runoff, run-on and re-entrainment of pollutants. This BMP must include, to the maximum extent practicable:
   i. A detailed process for the initiation of discharge which identifies the conditions under which discharges should occur (i.e., outgoing tide, no visible sheen), and the methods for avoiding worst-case conditions (i.e., immediately before and after slack tides, receiving water low flow conditions and/or site-specific factors).;
   ii. An assessment of the site-specific factors that increase the potential to contribute pollutants to stormwater (e.g., recent spills, contaminated soil or groundwater, flooding or otherwise elevated water table, Terminal construction and/or maintenance);
   iii. The examination of alternate procedures or improvements to current procedures that increase the efficiency of pollutant removal prior to the wastewater discharge to surface waters, reduce the potential to contribute pollutants to stormwater by incorporating practices including, but not limited to, 2/year sweeping of paved surfaces, and yield data representative of discharges from the Terminal and the receiving water required in Part I.A.1.; and
   iv. To the extent the Permittee determines any portion of this BMP is impracticable, the SWPPP must provide an evaluation and explanation to support this determination.
e. The SWPPP must include a spill control BMP which prevents, to the maximum extent achievable, discharges of accidentally released petroleum products to the Chelsea River through Outfall 001. This BMP may cross-reference any applicable component

of the Terminal's Spill Prevention Control and Countermeasure Plan, where appropriate, and shall include, at a minimum:

i. The specific response actions taken as a result of a spill of reportable quantities at the Terminal;
ii. The process for notifying EPA, MassDEP, the U.S. Coast Guard, and/or the City of Chelsea, as required; and
iii. A list of significant spills (i.e., reportable quantities) and significant leaks of toxic or hazardous pollutants that occurred at the Terminal **as of the effective date of this Permit to the present** and is maintained to include up-to-date information. This list shall be provided to EPA and/or MassDEP upon request.

f. The SWPPP must include a stormwater system BMP that provides confirmation of the integrity of stormwater system components and assesses the level of infiltration of contaminated groundwater into stormwater or components that convey stormwater. This must include, to the maximum degree practicable:
   i. Identification of stormwater system components potentially located below the annual high groundwater table;
   ii. Confirmation of stormwater system integrity provided with the first annual SWPPP certification following implementation of this BMP; data gathered through appropriate measures that confirms the level of groundwater infiltration, if any, must be documented in the SWPPP and should include, as appropriate:
      1) Visual or video inspection of the readily accessible portions of the stormwater system installed below grade;
      2) Direct measurement of the flow rate, direction and pollutant concentrations for the pollutants listed in Part I.A.1., Pollutant Scan, Effluent, at five separate existing groundwater monitoring points representative of groundwater conditions at the Terminal, including known areas of contamination;
      3) Direct measurement of the flow rate and pollutant concentrations for the pollutants listed in Part I.A.1., Pollutant Scan, Effluent, at a minimum of five separate accumulation points within the stormwater system that are likely susceptible to groundwater infiltration collected during dry weather absent of tidal influence; and
      4) Direct measurement of the flow rate and pollutant concentrations for the pollutants listed in Part I.A.1., Pollutant Scan, Effluent, of stormwater runoff into the stormwater system at a minimum of five separate accumulation points within the stormwater system that are likely attributable to overland flow of precipitation collected during wet weather absent of tidal influence.

g. All areas with industrial materials or activities exposed to stormwater and all structural control used to comply with effluent limits in this permit shall be inspected, at least once per quarter, by qualified personnel with one or more members of the stormwater pollution prevention team. Inspections shall begin during the first full calendar quarter after the effective date of this permit. EPA considers quarters as follows: January to March; April to June; July to September; and October to December. Each inspection must include a visual assessment of stormwater samples (from the outfall), which shall be collected within the first 15 minutes of discharge, stored in a clean, clear glass or plastic container, and examined in a well-lit area for the following water quality characteristics: color, odor, clarity, floating solids, settled solids, suspended solids, foam, oil sheen, and other obvious indicators of pollution. The Permittee shall document the following information for each inspection and maintain the records along with the SWPPP:
   i. The date and time of the inspection and at which any samples were collected;
   ii. The name(s) and signature(s) of the inspector(s)/sample collector(s);
   iii. If applicable, why it was not possible to take samples within the first 15 minutes;
   iv. Weather information and a description of any discharges occurring at the time of the inspection;
   v. Results of observations of discharges, including any observed discharges of pollutants and the probable sources of those pollutants;
   vi. Any control measures and/or treatment system components needing maintenance, repairs or replacement; and
   vii. Any additional control measures needed to comply with the permit requirements.

h. The Permittee shall amend and update the SWPPP **within 14 days** for any changes at the Terminal that result in a significant effect on the potential for the discharge of pollutants to the waters of the United States or that affect the SWPPP. Such changes may include, but are not limited to: a change in design, construction, operation, or maintenance, materials storage, or activities at the Terminal; a release of a reportable quantity of pollutants as described in 40 CFR §302; new data that confirms the integrity of the stormwater system and level of groundwater infiltration into the stormwater system; or a determination by the Permittee or EPA that the BMPs included in the SWPPP appear to be ineffective in achieving the general objectives of controlling pollutants in discharges associated with industrial activity. Any amended, modified, or new versions of the SWPPP shall be re-certified and signed by the Permittee in accordance with the requirements identified in Part. I.C.1.a. above.

i. The Permittee shall certify **at least annually** that the Terminal is in compliance with the SWPPP. If the Terminal is not in compliance with any aspect of the SWPPP, including implementation of BMPs required in Part I.C.1.c. through f., above, the

annual certification shall state the non-compliance and the remedies which are being undertaken. Such annual certifications also shall be signed in accordance with the requirements identified in Part. I.C.1.a. above.

j. The Permittee shall also certify, at least annually, that the previous year's inspections and maintenance activities were conducted, results recorded, records maintained, and that the Terminal is in compliance with this permit. Such annual certifications also shall be signed in accordance with the requirements identified in Part. I.C.1.a. above. If the Terminal is not in compliance with any aspect of this permit, the annual certification shall state the non-compliance and the remedies which are being undertaken. The Permittee shall document in the SWPPP any violation of numeric or non-numeric effluent limitations with a date and description of the corrective actions taken.

k. The Permittee shall keep a copy of the current SWPPP and all SWPPP certifications (the initial certification, recertification, and annual certifications) signed during the effective period of this permit at the Terminal and shall make it available for inspection by EPA and/or MassDEP.

l. The SWPPP must be consistent with the terms of this permit, similar plans, and requirements of Section 311 of the CWA.

D. REOPENER CLAUSE

1. This permit may be modified, or revoked and reissued in accordance with 40 CFR §122.62. The reason for modification or revocation may include, but is not limited to:
    a. Material and substantial alterations or additions to the Terminal or activity have occurred.
    b. New information is received which was not available at the time of permit issuance and that would have justified the application of different permit conditions at the time of issuance.
    c. An applicable effluent standard or limitation is issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, which:
        i. Contains different conditions or is otherwise more stringent than any effluent limitation in this permit; or
        ii. Controls any pollutant not limited by this permit.
2. If the permit is modified or reissued, it shall be revised to reflect all currently applicable requirements of the CWA.

E. MONITORING AND REPORTING

1. The Permittee shall submit monitoring data and all other NPDES permit required reports to EPA electronically using NetDMR, a web-based tool that allows permittees to electronically

submit DMRs and other required reports via a secure internet connection. Specific requirements regarding submittal of data and reports in hard copy form and for submittal using NetDMR are described below:

a. Submittal of Reports Using NetDMR
   i. NetDMR is accessed from: http://www.epa.gov/netdmr. DMRs shall be submitted electronically to EPA **no later than the 15th day of the month** following the completed reporting period. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR. A permittee submitting reports using NetDMR is no longer required to submit hard copies of DMRs or other reports to EPA, with the exception of a duplicate copy of the hydrostatic test summary letter/report noted below, and no longer required to submit hard copies of DMRs to MassDEP. However, permittees shall continue to send hard copies of reports other than DMRs (including Hydrostatic Test Summary Letter/Report, and Toxicity Test Results) to MassDEP until further notice from MassDEP.

b. Submittal of Reports in Hard Copy Form:
   i. Signed and dated originals of **any notifications provided in hard copy** shall be submitted to the Director at the following address:

      U.S. Environmental Protection Agency
      Water Technical Unit (OES04-SMR)
      5 Post Office Square - Suite 100
      Boston, MA 02109-3912

   ii. A duplicate signed copy of each **hydrostatic test summary letter/report** required in Part I.A.16.e., to EPA at the following address:

      U.S. Environmental Protection Agency
      Industrial Permits Section (OEP06-1)
      5 Post Office Square - Suite 100
      Boston, MA 02109-3912

   iii. Duplicate signed copies of **all reports or notifications** required above, shall be submitted to the State at the following address:

      Massachusetts Department of Environmental Protection
      Bureau of Resource Protection
      Northeast Regional Office
      205B Lowell Street
      Wilmington, Massachusetts 01887

iv. And, **WET Test reports ONLY**, to the State at the following address:

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

c. Any verbal reports, if required in Parts I and/or II of this permit, shall be made to both EPA Region 1 and to MassDEP.

F. STATE PERMIT CONDITIONS

1. This authorization to discharge includes two separate and independent permit authorizations. The two permit authorizations are (i) a federal National Pollutant Discharge Elimination System permit issued by the U.S. Environmental Protection Agency (EPA) pursuant to the Federal Clean Water Act, 33 U.S.C. §§1251 et seq.; and (ii) an identical state surface water discharge permit issued by the Commissioner of the Massachusetts Department of Environmental Protection (MassDEP) pursuant to the Massachusetts Clean Waters Act, M.G.L. c. 21, §§26-53, and 314 CMR 3.00. All of the requirements contained in this authorization, as well as the standard conditions contained in 314 CMR 3.19, are hereby incorporated by reference into this state surface water discharge permit.

2. This authorization also incorporates the state water quality certification issued by MassDEP under §401(a) of the Federal Clean Water Act, 40 C.F.R. 124.53, M.G.L. c. 21, §27 and 314 CMR 3.07. All of the requirements (if any) contained in MassDEP's water quality certification for the permit are hereby incorporated by reference into this state surface water discharge permit as special conditions pursuant to 314 CMR 3.11.

3. Each Agency shall have the independent right to enforce the terms and conditions of this permit. Any modification, suspension or revocation of this permit shall be effective only with respect to the Agency taking such action, and shall not affect the validity or status of this permit as issued by the other Agency, unless and until each Agency has concurred in writing with such modification, suspension or revocation. In the event any portion of this permit is declared, invalid, illegal or otherwise issued in violation of State law such permit shall remain in full force and effect under Federal law as an NPDES permit issued by the U.S. Environmental Protection Agency. In the event this permit is declared invalid, illegal or otherwise issued in violation of Federal law, this permit shall remain in full force and effect under State law as a permit issued by the Commonwealth of Massachusetts.

ATTACHMENT A

MARINE ACUTE
TOXICITY TEST PROCEDURE AND PROTOCOL

I. GENERAL REQUIREMENTS

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

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

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

II. METHODS

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

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

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

III. SAMPLE COLLECTION

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

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

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

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

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

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

IV. DILUTION WATER

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

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

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

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

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

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

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

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

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

and

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

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

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

V. TEST CONDITIONS AND TEST ACCEPTABILITY CRITERIA

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

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

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

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

Footnotes:

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

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

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

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

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

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

Footnotes:

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

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

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

V.1. Test Acceptability Criteria

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

V.2. Use of Reference Toxicity Testing

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

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

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

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

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

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

VI. CHEMICAL ANALYSIS

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

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

Superscript:

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

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

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

VII. TOXICITY TEST DATA ANALYSIS

LC50 Median Lethal Concentration

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

Methods of Estimation:

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

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

No Observed Acute Effect Level (NOAEL)

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

VIII. TOXICITY TEST REPORTING

A report of results must include the following:

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

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

In addition to the summary sheets the report must include:

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

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

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

a. The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirements.

b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA or any permit condition or limitation implementing any of such sections in a permit issued under Section 402, or any requirement imposed in a pretreatment program approved under Section 402 (a)(3) or 402 (b)(8) of the CWA is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who negligently violates such requirements is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than 1 year, or both. Any person who knowingly violates such requirements is subject to a fine of not less than $5,000 nor more than $50,000 per day of violation, or by imprisonment for not more than 3 years, or both.

c. Any person may be assessed an administrative penalty by the Administrator for violating Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000.

Note: See 40 CFR §122.41(a)(2) for complete "Duty to Comply" regulations.

2. Permit Actions

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

3. Duty to Provide Information

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

4. Reopener Clause

The Regional Administrator reserves the right to make appropriate revisions to this permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA in order to bring all discharges into compliance with the CWA.

For any permit issued to a treatment works treating domestic sewage (including "sludge-only facilities"), the Regional Administrator or Director shall include a reopener clause to incorporate any applicable standard for sewage sludge use or disposal promulgated under Section 405 (d) of the CWA. The Regional Administrator or Director may promptly modify or revoke and reissue any permit containing the reopener clause required by this paragraph if the standard for sewage sludge use or disposal is more stringent than any requirements for sludge use or disposal in the permit, or contains a pollutant or practice not limited in the permit.

Federal regulations pertaining to permit modification, revocation and reissuance, and termination are found at 40 CFR §122.62, 122.63, 122.64, and 124.5.

5. Oil and Hazardous Substance Liability

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

6. Property Rights

The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges.

7. Confidentiality of Information

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

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

(1) The name and address of any permit applicant or permittee;
(2) Permit applications, permits, and effluent data as defined in 40 CFR §2.302(a)(2).

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

8. Duty to Reapply

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

9. State Authorities

Nothing in Part 122, 123, or 124 precludes more stringent State regulation of any activity covered by these regulations, whether or not under an approved State program.

10. Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, or local laws and regulations.

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

b. Bypass not exceeding limitations

The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of Paragraphs B.4.c. and 4.d. of this section.

c. Notice

(1) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten days before the date of the bypass.
(2) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in paragraph D.1.e. of this part (Twenty-four hour reporting).

d. Prohibition of bypass

Bypass is prohibited, and the Regional Administrator may take enforcement action against a permittee for bypass, unless:

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage;
(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and
(3) i) The permittee submitted notices as required under Paragraph 4.c. of this section.
ii) The Regional Administrator may approve an anticipated bypass, after considering its adverse effects, if the Regional Administrator determines that it will meet the three conditions listed above in paragraph 4.d. of this section.

5. Upset

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

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph B.5.c. of this section are met. No determination made during

administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.

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

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

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

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

b. Except for records for monitoring information required by this permit related to the permittee's sewage sludge use and disposal activities, which shall be retained for a period of at least five years (or longer as required by 40 CFR Part 503), the permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 3 years from the date of the sample, measurement, report or application except for the information concerning storm water discharges which must be retained for a total of 6 years. This retention period may be extended by request of the Regional Administrator at any time.

c. Records of monitoring information shall include:

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

d. Monitoring results must be conducted according to test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, unless other test procedures have been specified in the permit.

e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by

imprisonment for not more than 2 years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than 4 years, or both.

2. Inspection and Entry

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

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

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

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

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

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

(1) The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR§122.29(b); or
(2) The alteration or addition could significantly change the nature or increase the quantities of the pollutants discharged. This notification applies to pollutants which are subject neither to the effluent limitations in the permit, nor to the notification requirements at 40 CFR§122.42(a)(1).
(3) The alteration or addition results in a significant change in the permittee's sludge use or disposal practices, and such alteration, addition or change may justify the application of permit conditions different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan.

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

c. Transfers. This permit is not transferable to any person except after notice to the Regional Administrator. The Regional Administrator may require modification or revocation and reissuance of the permit to change the name of the permittee and

incorporate such other requirements as may be necessary under the CWA. (See 40 CFR Part 122.61; in some cases, modification or revocation and reissuance is mandatory.)

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

(1) Monitoring results must be reported on a Discharge Monitoring Report (DMR) or forms provided or specified by the Director for reporting results of monitoring of sludge use or disposal practices.

(2) If the permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or, in the case of sludge use or disposal, approved under 40 CFR Part 136 unless otherwise specified in 40 CFR Part 503, or as specified in the permit, the results of the monitoring shall be included in the calculation and reporting of the data submitted in the DMR or sludge reporting form specified by the Director.

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

e. Twenty-four hour reporting.

(1) The permittee shall report any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances.

A written submission shall also be provided within 5 days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

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

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

(3) The Regional Administrator may waive the written report on a case-by-case basis for reports under Paragraph D.1.e. if the oral report has been received within 24 hours.

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

g. Other noncompliance. The permittee shall report all instances of noncompliance not reported under Paragraphs D.1.d., D.1.e., and D.1.f. of this section, at the time monitoring reports are submitted. The reports shall contain the information listed in Paragraph D.1.e. of this section.

h. Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Regional Administrator, it shall promptly submit such facts or information.

2. Signatory Requirement

a. All applications, reports, or information submitted to the Regional Administrator shall be signed and certified. (See 40 CFR §122.22)

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than 2 years per violation, or by both.

3. Availability of Reports.

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

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

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

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

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

Average means the arithmetic mean of values taken at the frequency required for each parameter over the specified period. For total and/or fecal coliforms and Escherichia coli, the average shall be the geometric mean.

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

Average weekly discharge limitation means the highest allowable average of "daily discharges" measured during the calendar week divided by the number of "daily discharges" measured during the week.

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

Best Professional Judgment (BPJ) means a case-by-case determination of Best Practicable Treatment (BPT), Best Available Treatment (BAT), or other appropriate technology-based standard based on an evaluation of the available technology to achieve a particular pollutant reduction and other factors set forth in 40 CFR §125.3 (d).

Coal Pile Runoff means the rainfall runoff from or through any coal storage pile.

Composite Sample means a sample consisting of a minimum of eight grab samples of equal volume collected at equal intervals during a 24-hour period (or lesser period as specified in the section on Monitoring and Reporting) and combined proportional to flow, or a sample consisting of the same number of grab samples, or greater, collected proportionally to flow over that same time period.

Construction Activities - The following definitions apply to construction activities:

(a) Commencement of Construction is the initial disturbance of soils associated with clearing, grading, or excavating activities or other construction activities.

(b) Dedicated portable asphalt plant is a portable asphalt plant located on or contiguous to a construction site and that provides asphalt only to the construction site that the plant is located on or adjacent to. The term dedicated portable asphalt plant does not include facilities that are subject to the asphalt emulsion effluent limitation guideline at 40 CFR Part 443.

(c) Dedicated portable concrete plant is a portable concrete plant located on or contiguous to a construction site and that provides concrete only to the construction site that the plant is located on or adjacent to.

(d) Final Stabilization means that all soil disturbing activities at the site have been complete, and that a uniform perennial vegetative cover with a density of 70% of the cover for unpaved areas and areas not covered by permanent structures has been established or equivalent permanent stabilization measures (such as the use of riprap, gabions, or geotextiles) have been employed.

(e) Runoff coefficient means the fraction of total rainfall that will appear at the conveyance as runoff.

Contiguous zone means the entire zone established by the United States under Article 24 of the Convention on the Territorial Sea and the Contiguous Zone.

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

CWA means the Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972) Pub. L. 92-500, as amended by Pub. L. 95-217, Pub. L. 95-576, Pub. L. 96-483, and Pub. L. 97-117; 33 USC §§1251 et seq.

Daily Discharge means the discharge of a pollutant measured during the calendar day or any other 24-hour period that reasonably represents the calendar day for purposes of sampling. For pollutants with limitations expressed in units of mass, the "daily discharge" is calculated as the total mass of the pollutant discharged over the day. For pollutants with limitations expressed in other units of measurements, the "daily discharge" is calculated as the average measurement of the pollutant over the day.

Director normally means the person authorized to sign NPDES permits by EPA or the State or an authorized representative. Conversely, it also could mean the Regional Administrator or the State Director as the context requires.

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

Discharge of a pollutant means:

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

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

This definition includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead

to a treatment works; and discharges through pipes, sewers, or other conveyances leading into privately owned treatment works.

This term does not include an addition of pollutants by any "indirect discharger."

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

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

EPA means the United States "Environmental Protection Agency".

Flow-weighted composite sample means a composite sample consisting of a mixture of aliquots where the volume of each aliquot is proportional to the flow rate of the discharge.

Grab Sample – An individual sample collected in a period of less than 15 minutes.

Hazardous Substance means any substance designated under 40 CFR Part 116 pursuant to Section 311 of the CWA.

Indirect Discharger means a non-domestic discharger introducing pollutants to a publicly owned treatment works.

Interference means a discharge which, alone or in conjunction with a discharge or discharges from other sources, both:

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

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

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

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

Large and Medium municipal separate storm sewer system means all municipal separate storm sewers that are either: (i) located in an incorporated place (city) with a population of 100,000 or more as determined by the latest Decennial Census by the Bureau of Census (these cities are listed in Appendices F and 40 CFR Part 122); or (ii) located in the counties with unincorporated urbanized

populations of 100,000 or more, except municipal separate storm sewers that are located in the incorporated places, townships, or towns within such counties (these counties are listed in Appendices H and I of 40 CFR 122); or (iii) owned or operated by a municipality other than those described in Paragraph (i) or (ii) and that are designated by the Regional Administrator as part of the large or medium municipal separate storm sewer system.

Maximum daily discharge limitation means the highest allowable "daily discharge" concentration that occurs only during a normal day (24-hour duration).

Maximum daily discharge limitation (as defined for the Steam Electric Power Plants only) when applied to Total Residual Chlorine (TRC) or Total Residual Oxidant (TRO) is defined as "maximum concentration" or "Instantaneous Maximum Concentration" during the two hours of a chlorination cycle (or fraction thereof) prescribed in the Steam Electric Guidelines, 40 CFR Part 423. These three synonymous terms all mean "a value that shall not be exceeded" during the two-hour chlorination cycle. This interpretation differs from the specified NPDES Permit requirement, 40 CFR § 122.2, where the two terms of "Maximum Daily Discharge" and "Average Daily Discharge" concentrations are specifically limited to the daily (24-hour duration) values.

Municipality means a city, town, borough, county, parish, district, association, or other public body created by or under State law and having jurisdiction over disposal of sewage, industrial wastes, or other wastes, or an Indian tribe or an authorized Indian tribe organization, or a designated and approved management agency under Section 208 of the CWA.

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

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

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

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

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

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

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

An offshore or coastal mobile exploratory drilling rig or coastal mobile developmental drilling rig will be considered a "new discharger" only for the duration of its discharge in an area of biological concern.

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

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

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

NPDES means "National Pollutant Discharge Elimination System".

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

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

Permit means an authorization, license, or equivalent control document issued by EPA or an "approved" State.

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

Point Source means any discernible, confined, and discrete conveyance, including but not limited to any pipe ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff (see 40 CFR §122.2).

Pollutant means dredged spoil, solid waste, incinerator residue, filter backwash, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 U.S.C. §§2011 et seq.)), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water. It does not mean:

(a) Sewage from vessels; or

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

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

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

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

Publicly Owned Treatment Works (POTW) means any facility or system used in the treatment (including recycling and reclamation) of municipal sewage or industrial wastes of a liquid nature which is owned by a "State" or "municipality".

This definition includes sewers, pipes, or other conveyances only if they convey wastewater to a POTW providing treatment.

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

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

Section 313 water priority chemical means a chemical or chemical category which:

(1) is listed at 40 CFR §372.65 pursuant to Section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) (also known as Title III of the Superfund Amendments and Reauthorization Act (SARA) of 1986);

(2) is present at or above threshold levels at a facility subject to EPCRA Section 313 reporting requirements; and

(3) satisfies at least one of the following criteria:

(i) are listed in Appendix D of 40 CFR Part 122 on either Table II (organic priority pollutants), Table III (certain metals, cyanides, and phenols), or Table V (certain toxic pollutants and hazardous substances);
(ii) are listed as a hazardous substance pursuant to Section 311(b)(2)(A) of the CWA at 40 CFR §116.4; or
(iii) are pollutants for which EPA has published acute or chronic water quality criteria.

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

Sewage Sludge means any solid, semisolid, or liquid residue removed during the treatment of municipal wastewater or domestic sewage. Sewage sludge includes, but is not limited to, solids removed during primary, secondary, or advanced wastewater treatment, scum, septage, portable toilet pumpings, Type III Marine Sanitation Device pumpings (33 CFR Part 159), and sewage sludge products. Sewage sludge does not include grit or screenings, or ash generated during the incineration of sewage sludge.

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

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

Significant spills includes, but is not limited to, releases of oil or hazardous substances in excess of reportable quantities under Section 311 of the CWA (see 40 CFR §110.10 and §117.21) or Section 102 of CERCLA (see 40 CFR § 302.4).

Sludge-only facility means any "treatment works treating domestic sewage" whose methods of sewage sludge use or disposal are subject to regulations promulgated pursuant to Section 405(d) of the CWA, and is required to obtain a permit under 40 CFR §122.1(b)(3).

State means any of the 50 States, the District of Columbia, Guam, the Commonwealth of Puerto Rico, the Virgin Islands, American Samoa, the Trust Territory of the Pacific Islands.

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

Storm water discharge associated with industrial activity means the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing, or raw materials storage areas at an industrial plant. (See 40 CFR §122.26 (b)(14) for specifics of this definition.

Time-weighted composite means a composite sample consisting of a mixture of equal volume aliquots collected at a constant time interval.

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

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

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

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

Waters of the United States means:

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

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

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

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

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

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

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

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

(f) The territorial sea; and

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

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of the CWA (other than cooling ponds as defined in 40 CFR §423.11(m) which also meet the criteria of this definition) are not waters of the United States.

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

Whole Effluent Toxicity (WET) means the aggregate toxic effect of an effluent measured directly by a toxicity test. (See Abbreviations Section, following, for additional information.)

2. Definitions for NPDES Permit Sludge Use and Disposal Requirements.

Active sewage sludge unit is a sewage sludge unit that has not closed.

Aerobic Digestion is the biochemical decomposition of organic matter in sewage sludge into carbon dioxide and water by microorganisms in the presence of air.

Agricultural Land is land on which a food crop, a feed crop, or a fiber crop is grown. This includes range land and land used as pasture.

Agronomic rate is the whole sludge application rate (dry weight basis) designed:

(1) To provide the amount of nitrogen needed by the food crop, feed crop, fiber crop, cover crop, or vegetation grown on the land; and

(2) To minimize the amount of nitrogen in the sewage sludge that passes below the root zone of the crop or vegetation grown on the land to the ground water.

Air pollution control device is one or more processes used to treat the exit gas from a sewage sludge incinerator stack.

Anaerobic digestion is the biochemical decomposition of organic matter in sewage sludge into methane gas and carbon dioxide by microorganisms in the absence of air.

Annual pollutant loading rate is the maximum amount of a pollutant that can be applied to a unit area of land during a 365 day period.

Annual whole sludge application rate is the maximum amount of sewage sludge (dry weight basis) that can be applied to a unit area of land during a 365 day period.

Apply sewage sludge or sewage sludge applied to the land means land application of sewage sludge.

Aquifer is a geologic formation, group of geologic formations, or a portion of a geologic formation capable of yielding ground water to wells or springs.

Auxiliary fuel is fuel used to augment the fuel value of sewage sludge. This includes, but is not limited to, natural gas, fuel oil, coal, gas generated during anaerobic digestion of sewage sludge, and municipal solid waste (not to exceed 30 percent of the dry weight of the sewage sludge and auxiliary fuel together). Hazardous wastes are not auxiliary fuel.

Base flood is a flood that has a one percent chance of occurring in any given year (i.e. a flood with a magnitude equaled once in 100 years).

Bulk sewage sludge is sewage sludge that is not sold or given away in a bag or other container for application to the land.

Contaminate an aquifer means to introduce a substance that causes the maximum contaminant level for nitrate in 40 CFR §141.11 to be exceeded in ground water or that causes the existing concentration of nitrate in the ground water to increase when the existing concentration of nitrate in the ground water exceeds the maximum contaminant level for nitrate in 40 CFR §141.11.

Class I sludge management facility is any publicly owned treatment works (POTW), as defined in 40 CFR §501.2, required to have an approved pretreatment program under 40 CFR §403.8 (a) (including any POTW located in a state that has elected to assume local program responsibilities pursuant to 40 CFR §403.10 (e) and any treatment works treating domestic sewage, as defined in 40 CFR § 122.2,

classified as a Class I sludge management facility by the EPA Regional Administrator, or, in the case of approved state programs, the Regional Administrator in conjunction with the State Director, because of the potential for sewage sludge use or disposal practice to affect public health and the environment adversely.

Control efficiency is the mass of a pollutant in the sewage sludge fed to an incinerator minus the mass of that pollutant in the exit gas from the incinerator stack divided by the mass of the pollutant in the sewage sludge fed to the incinerator.

Cover is soil or other material used to cover sewage sludge placed on an active sewage sludge unit.

Cover crop is a small grain crop, such as oats, wheat, or barley, not grown for harvest.

Cumulative pollutant loading rate is the maximum amount of inorganic pollutant that can be applied to an area of land.

Density of microorganisms is the number of microorganisms per unit mass of total solids (dry weight) in the sewage sludge.

Dispersion factor is the ratio of the increase in the ground level ambient air concentration for a pollutant at or beyond the property line of the site where the sewage sludge incinerator is located to the mass emission rate for the pollutant from the incinerator stack.

Displacement is the relative movement of any two sides of a fault measured in any direction.

Domestic septage is either liquid or solid material removed from a septic tank, cesspool, portable toilet, Type III marine sanitation device, or similar treatment works that receives only domestic sewage. Domestic septage does not include liquid or solid material removed from a septic tank, cesspool, or similar treatment works that receives either commercial wastewater or industrial wastewater and does not include grease removed from a grease trap at a restaurant.

Domestic sewage is waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works.

Dry weight basis means calculated on the basis of having been dried at 105 degrees Celsius (°C) until reaching a constant mass (i.e. essentially 100 percent solids content).

Fault is a fracture or zone of fractures in any materials along which strata on one side are displaced with respect to the strata on the other side.

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

Final cover is the last layer of soil or other material placed on a sewage sludge unit at closure.

Fluidized bed incinerator is an enclosed device in which organic matter and inorganic matter in sewage sludge are combusted in a bed of particles suspended in the combustion chamber gas.

Food crops are crops consumed by humans. These include, but are not limited to, fruits, vegetables, and tobacco.

Forest is a tract of land thick with trees and underbrush.

Ground water is water below the land surface in the saturated zone.

Holocene time is the most recent epoch of the Quaternary period, extending from the end of the Pleistocene epoch to the present.

Hourly average is the arithmetic mean of all the measurements taken during an hour. At least two measurements must be taken during the hour.

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

Industrial wastewater is wastewater generated in a commercial or industrial process.

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

Land with a high potential for public exposure is land that the public uses frequently. This includes, but is not limited to, a public contact site and reclamation site located in a populated area (e.g., a construction site located in a city).

Land with low potential for public exposure is land that the public uses infrequently. This includes, but is not limited to, agricultural land, forest and a reclamation site located in an unpopulated area (e.g., a strip mine located in a rural area).

Leachate collection system is a system or device installed immediately above a liner that is designed, constructed, maintained, and operated to collect and remove leachate from a sewage sludge unit.

Liner is soil or synthetic material that has a hydraulic conductivity of 1×10^{-7} centimeters per second or less.

Lower explosive limit for methane gas is the lowest percentage of methane gas in air, by volume, that propagates a flame at 25 degrees Celsius and atmospheric pressure.

Monthly average (Incineration) is the arithmetic mean of the hourly averages for the hours a sewage sludge incinerator operates during the month.

Monthly average (Land Application) is the arithmetic mean of all measurements taken during the month.

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

Other container is either an open or closed receptacle. This includes, but is not limited to, a bucket, a box, a carton, and a vehicle or trailer with a load capacity of one metric ton or less.

Pasture is land on which animals feed directly on feed crops such as legumes, grasses, grain stubble, or stover.

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

Permitting authority is either EPA or a State with an EPA-approved sludge management program.

Person is an individual, association, partnership, corporation, municipality, State or Federal Agency, or an agent or employee thereof.

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

pH means the logarithm of the reciprocal of the hydrogen ion concentration; a measure of the acidity or alkalinity of a liquid or solid material.

Place sewage sludge or sewage sludge placed means disposal of sewage sludge on a surface disposal site.

Pollutant (as defined in sludge disposal requirements) is an organic substance, an inorganic substance, a combination or organic and inorganic substances, or pathogenic organism that, after discharge and upon exposure, ingestion, inhalation, or assimilation into an organism either directly from the environment or indirectly by ingestion through the food chain, could on the basis on information available to the Administrator of EPA, cause death, disease, behavioral abnormalities, cancer, genetic mutations, physiological malfunctions (including malfunction in reproduction) or physical deformations in either organisms or offspring of the organisms.

Pollutant limit (for sludge disposal requirements) is a numerical value that describes the amount of a pollutant allowed per unit amount of sewage sludge (e.g., milligrams per kilogram of total solids); the amount of pollutant that can be applied to a unit of land (e.g., kilograms per hectare); or the volume of the material that can be applied to the land (e.g., gallons per acre).

Public contact site is a land with a high potential for contact by the public. This includes, but is not limited to, public parks, ball fields, cemeteries, plant nurseries, turf farms, and golf courses.

Qualified ground water scientist is an individual with a baccalaureate or post-graduate degree in the natural sciences or engineering who has sufficient training and experience in ground water hydrology and related fields, as may be demonstrated by State registration, professional certification, or completion of accredited university programs, to make sound professional judgments regarding ground water monitoring, pollutant fate and transport, and corrective action.

Range land is open land with indigenous vegetation.

Reclamation site is drastically disturbed land that is reclaimed using sewage sludge. This includes, but is not limited to, strip mines and construction sites.

Risk specific concentration is the allowable increase in the average daily ground level ambient air concentration for a pollutant from the incineration of sewage sludge at or beyond the property line of a site where the sewage sludge incinerator is located.

Runoff is rainwater, leachate, or other liquid that drains overland on any part of a land surface and runs off the land surface.

Seismic impact zone is an area that has 10 percent or greater probability that the horizontal ground level acceleration to the rock in the area exceeds 0.10 gravity once in 250 years.

Sewage sludge is a solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to:, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage sludge incinerator or grit and screening generated during preliminary treatment of domestic sewage in treatment works.

Sewage sludge feed rate is either the average daily amount of sewage sludge fired in all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located for the number of days in a 365 day period that each sewage sludge incinerator operates, or the average daily design capacity for all sewage sludge incinerators within the property line of the site where the sewage sludge incinerators are located.

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

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

Sewage sludge unit boundary is the outermost perimeter of an active sewage sludge unit.

Specific oxygen uptake rate (SOUR) is the mass of oxygen consumed per unit time per unit mass of total solids (dry weight basis) in sewage sludge.

Stack height is the difference between the elevation of the top of a sewage sludge incinerator stack and the elevation of the ground at the base of the stack when the difference is equal to or less than 65 meters. When the difference is greater than 65 meters, stack height is the creditable stack height determined in accordance with 40 CFR §51.100 (ii).

State is one of the United States of America, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, the Trust Territory of the Pacific Islands, the Commonwealth of the Northern Mariana Islands, and an Indian tribe eligible for treatment as a State pursuant to regulations promulgated under the authority of section 518(e) of the CWA.

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

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

Total hydrocarbons means the organic compounds in the exit gas from a sewage sludge incinerator stack measured using a flame ionization detection instrument referenced to propane.

Total solids are the materials in sewage sludge that remain as residue when the sewage sludge is dried at 103 to 105 degrees Celsius.

Treat or treatment of sewage sludge is the preparation of sewage sludge for final use or disposal. This includes, but is not limited to, thickening, stabilization, and dewatering of sewage sludge. This does not include storage of sewage sludge.

Treatment works is either a federally owned, publicly owned, or privately owned device or system used to treat (including recycle and reclaim) either domestic sewage or a combination of domestic sewage and industrial waste of a liquid nature.

Unstable area is land subject to natural or human-induced forces that may damage the structural components of an active sewage sludge unit. This includes, but is not limited to, land on which the soils are subject to mass movement.

Unstabilized solids are organic materials in sewage sludge that have not been treated in either an aerobic or anaerobic treatment process.

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

Volatile solids is the amount of the total solids in sewage sludge lost when the sewage sludge is combusted at 550 degrees Celsius in the presence of excess air.

Wet electrostatic precipitator is an air pollution control device that uses both electrical forces and water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. Commonly Used Abbreviations

BOD	Five-day biochemical oxygen demand unless otherwise specified
CBOD	Carbonaceous BOD
CFS	Cubic feet per second
COD	Chemical oxygen demand
Chlorine	
Cl_2	Total residual chlorine
TRC	Total residual chlorine which is a combination of free available chlorine (FAC, see below) and combined chlorine (chloramines, etc.)

TRO	Total residual chlorine in marine waters where halogen compounds are present
FAC	Free available chlorine (aqueous molecular chlorine, hypochlorous acid, and hypochlorite ion)
Coliform	
Coliform, Fecal	Total fecal coliform bacteria
Coliform, Total	Total coliform bacteria
Cont. (Continuous)	Continuous recording of the parameter being monitored, i.e. flow, temperature, pH, etc.
Cu. M/day or M^3/day	Cubic meters per day
DO	Dissolved oxygen
kg/day	Kilograms per day
lbs/day	Pounds per day
mg/l	Milligram(s) per liter
ml/l	Milliliters per liter
MGD	Million gallons per day
Nitrogen	
Total N	Total nitrogen
NH_3-N	Ammonia nitrogen as nitrogen
NO_3-N	Nitrate as nitrogen
NO_2-N	Nitrite as nitrogen
NO_3-NO_2	Combined nitrate and nitrite nitrogen as nitrogen
TKN	Total Kjeldahl nitrogen as nitrogen
Oil & Grease	Freon extractable material
PCB	Polychlorinated biphenyl
pH	A measure of the hydrogen ion concentration. A measure of the acidity or alkalinity of a liquid or material
Surfactant	Surface-active agent

Temp. °C	Temperature in degrees Centigrade
Temp. °F	Temperature in degrees Fahrenheit
TOC	Total organic carbon
Total P	Total phosphorus
TSS or NFR	Total suspended solids or total nonfilterable residue
Turb. or Turbidity	Turbidity measured by the Nephelometric Method (NTU)
ug/l	Microgram(s) per liter
WET	"Whole effluent toxicity" is the total effect of an effluent measured directly with a toxicity test.
C-NOEC	"Chronic (Long-term Exposure Test) – No Observed Effect Concentration". The highest tested concentration of an effluent or a toxicant at which no adverse effects are observed on the aquatic test organisms at a specified time of observation.
A-NOEC	"Acute (Short-term Exposure Test) – No Observed Effect Concentration" (see C-NOEC definition).
LC_{50}	LC_{50} is the concentration of a sample that causes mortality of 50% of the test population at a specific time of observation. The LC_{50} = 100% is defined as a sample of undiluted effluent.
ZID	Zone of Initial Dilution means the region of initial mixing surrounding or adjacent to the end of the outfall pipe or diffuser ports.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE TO WATERS OF THE UNITED STATES PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: MA0003280

PUBLIC NOTICE START AND END DATES: March 14, 2014-May 12, 2014

NAME AND MAILING ADDRESS OF APPLICANT:

Chelsea Sandwich LLC
11 Broadway
Chelsea, MA 02150

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Chelsea Sandwich Terminal
11 Broadway
Chelsea, MA 02150

RECEIVING WATER: Chelsea River (MA71-06)
Mystic River Watershed

RECEIVING WATER CLASSIFICATION: SB (CSO)

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

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Attachment 1: Chelsea Sandwich Terminal Location Map
Attachment 2: Chelsea Sandwich Terminal Site Plan
Attachment 3: Discharge Monitoring Data
Attachment 4: Chelsea Sandwich Terminal Flow Diagram
Attachment 5: Summary of Essential Fish Habitat Designations

1. Proposed Action, Type of Facility, and Discharge Location

1.1 Proposed Action

The above applicant has applied to the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) for re-issuance of a National Pollutant Discharge Elimination System (NPDES) permit to discharge treated stormwater runoff, hydrostatic test water, treated groundwater remediation effluent, and boiler blowdown into the designated receiving water. The current permit ("2005 Permit"), issued on June 30, 2005, expired on August 30, 2010. EPA received a completed permit renewal application from Chelsea Sandwich, LLC ("Chelsea Sandwich") dated February 23, 2010. Since the permit renewal application was deemed timely and complete by EPA, the permit has been administratively continued pursuant to 40 CFR §122.6 and §122.21(d). The Draft Permit is based on, in part, the information provided in the application.

1.2 Type of Facility

The Chelsea Sandwich terminal (the "Terminal"), located in Chelsea, Massachusetts, receives, stores and distributes petroleum products. The Terminal handles distillate products (i.e., diesel, No. 2 fuel oil, and No.6 fuel oil). In addition to these petroleum products, the Terminal handles and stores fuel additives. The Terminal also has the capability of physically blending some of these products to distribute additional products (e.g., No.4 fuel oil, bio-diesel and bio-heating oil).The Terminal receives bulk quantities of petroleum products via ship or barge at the Terminal marine vessel dock. Product is then transferred to aboveground storage tanks located within the Terminal tank farm areas. Final distribution of product is conducted primarily at the Terminal truck loading rack. Some product distribution also occurs at the marine vessel dock either via ship or barge, or via fueling stations located at the marine vessel dock. Attachment 1 shows the location of the Terminal.

1.3 Discharge Location

The Terminal is located on an approximately 10-acre site in Chelsea, Massachusetts between the Chelsea River and Broadway and Front Street. The Terminal is located along the northern bank of the Chelsea River at the approximate confluence of the Mystic and Chelsea Rivers (see Attachment 1). Outfall 001 is located at Latitude 42º 23' 7.4898" N Longitude -71º 02' 40.844" W. Outfall 002 is an internal outfall located at Latitude 42º 23' 8.9154" N Longitude -71º 02' 42.681" W. Attachment 2 shows the site plan for the Terminal, and the locations of Outfall 001 and internal Outfall 002.

2. Description of Discharge

The NPDES permitted discharge to the Chelsea River via Outfall 001 consists of treated: 1) stormwater runoff; 2) hydrostatic test water; 3) treated groundwater remediation effluent; and 4) boiler blowdown. Outfall 002, an internal outfall established in the 2005 Permit, was established to limit and monitor treated groundwater remediation effluent. The stormwater, hydrostatic test water, groundwater and boiler blowdown is collected and processed through the Terminal's treatment system prior to discharge to the Chelsea River through Outfall 001. Discharge monitoring data from the previous five years (i.e., January 1, 2009 through December 31, 2013) for Outfalls 001 and 002 are included in Attachment 3.

3. Receiving Water Description

The Terminal discharges its effluent through Outfall 001 to Chelsea River Segment MA71-06, which flows from the north or south along the eastern edge of a portion of the Terminal site, depending on the tidal stage. This segment is 0.38 square miles between the confluence with Mill Creek, in Chelsea/Revere to the confluence with the Boston Inner Harbor, in Chelsea/East Boston/Charlestown. The Terminal is located at the approximate inlet to Chelsea River at the confluence with the Mystic River and Boston Inner Harbor. MassDEP classifies this segment of the Chelsea River as Class SB (CSO).[1] Class SB waters are described in the Commonwealth of Massachusetts Surface Water Quality Standards (WQSs) (314 CMR 4.05(4)(b)) as follows: *"These waters are designated as a habitat for fish, other aquatic life and wildlife, including for their reproduction, migration, growth and other critical functions, and for primary and secondary contact recreation. In certain waters, habitat for fish, other aquatic life and wildlife may include, but is not limited to, seagrass…These waters shall have consistently good aesthetic value."* The Chelsea River is one of eleven Designated Port Areas (DPAs) established by the Massachusetts Office of Coastal Zone Management to promote and protect water-dependent industrial uses. The Chelsea River is part of the Mystic River Basin and the Boston Harbor Drainage Area.

The Chelsea River segment MA71-06 is listed as a Category 5 "Waters Requiring a TMDL" on the Final Massachusetts Year 2012 Integrated List of Waters (CWA Sections 303d and 305b)[2]. The pollutants and conditions requiring a Total Maximum Daily Load (TMDL) are ammonia (un-ionized), fecal coliform, dissolved oxygen, polychlorinated biphenyls (PCBs) in fish tissue, petroleum hydrocarbons, sediment screening value, taste and odor, and turbidity. This segment is also impaired for debris/floatables/trash, which is considered a non-pollutant and does not require a TMDL. The status of each designated use described in the Mystic River Watershed and Coastal Drainage Area 2004-2008 Water Quality Assessment Report (WQAR)[3] is presented in Table 1.

Table 1: Summary of Designated Uses for Chelsea River Segment MA71-06

Designated Use	**Status**
Aquatic Life	Impaired
Aesthetics	Impaired
Primary Contact	Impaired
Secondary Contact	Impaired
Fish Consumption	Impaired
Shellfishing	Impaired

The Aquatic Life, Aesthetics, Primary Contact and Secondary Contact uses are assessed as impaired given the frequent oil spills in the Chelsea River and in the instance of the Aquatic Life use,

[1] http://www.mass.gov/eea/docs/dep/water/laws/i-thru-z/tblfig.pdf
[2] Massachusetts Year 2012 Integrated List of Waters (Final). MassDEP Division of Watershed Management Watershed Planning Program, Worcester, Massachusetts; March 2013. http://www.mass.gov/eea/docs/dep/water/resources/07v5/12list2.pdf
[3] *Mystic River Watershed and Coastal Drainage Area 2004-2008 Water Quality Assessment Report*. MassDEP Division of Watershed Management, Worcester, Massachusetts; March 2010, Report Number: 71-AC-2. http://www.mass.gov/eea/docs/dep/water/resources/71wqar09/71wqar09.pdf

contaminated sediments. The WQAR identified the sources of these impairments as aboveground storage tank leaks (from tank farms), accidental releases/spills and/or cargo loading/unloading associated with bulk petroleum terminals, and municipal sources (i.e., an urbanized high-density area). In the instance of the Aquatic Life and Aesthetics uses, the WQAR additionally notes contamination of groundwater as a result of petroleum releases as a source. Petroleum is explicitly listed as the cause of these impairments. Regarding contaminated sediments as an additional cause of the Aquatic Life impairment, a 2005 United States Geological Survey study identified chemicals present in sufficiently high concentrations in Chelsea River sediment to pose a threat to benthic organisms.[4]

The Fish Consumption and Shellfishing Designated Uses are listed as impaired as a result of PCBs in fish tissue and fecal coliform, respectively. The WQAR also notes "other contaminants in fish and shellfish". The source of these impairments is listed as unknown.

4. Permit Limitations and Conditions

The effluent limitations and all other requirements are found in the Draft Permit. The basis for the limits and other permit requirements are described below.

5. Permit Basis: Statutory and Regulatory Authority

5.1 General Requirements

The Clean Water Act (CWA) prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. The NPDES Draft Permit was developed in accordance with various statutory and regulatory requirements established pursuant to the CWA and applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. In this permit, EPA considered (a) technology-based requirements, (b) water quality-based requirements, and (c) all limitations and requirements in the current/existing permit, when developing the permit limits. Section 402(p) of the CWA requires that EPA issue NPDES permits for stormwater discharges which were permitted prior to February 4, 1987, 40 CFR §122.26(a)(1)(i).

5.2 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

[4] Breault, R.F., Durant, J.L., and Robbat, A, 2005. *Sediment quality of lakes, rivers, and estuaries in the Mystic River Basin, Eastern Massachusetts, 2001–03*. U.S. Geological Survey Scientific Investigations Report: 2005-5191, 110 p.

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)). A NPDES permit cannot authorize compliance schedules and deadlines which are not in accordance with the statutory provisions of the CWA.

Technology-based National Effluent Limitation Guidelines (ELGs) were promulgated in 2000 for discharges from washing activities at marine cargo handling facilities (40 CFR 442, Subpart C., Standard Industrial Code 4491). However, these ELGs do not apply because Chelsea Sandwich does not engage in washing the interiors of tank barges or sea tankers at the Terminal. In 2003, EPA selected discharges from the petroleum refining category (Standard Industrial Code 2911) for further review for the technology-based ELGs to determine if a new subcategory for petroleum bulk stations and terminals category (SIC 5171) was necessary. EPA determined in its *Technical Support Document for the 2004 Effluent Guidelines Program Plan*[5] ("ELG Document") that these facilities were better regulated on a case-by-case basis using Best Professional Judgment (BPJ).

The Terminal is ineligible for EPA's 2008 Multi-Sector General Permit (MSGP) for stormwater associated with industrial activity because discharges from the Terminal are already covered under an individual industrial permit issued before February 4, 1987. The Permittee does not have separate coverage for discharges of hydrostatic test line water through EPA Region 1's 2010 Remediation General Permit (RGP).

In the absence of technology-based ELGs, the permit writer is authorized under Section 402(a)(1)(B) of the CWA to establish technology-based effluent limitations (TBELs) on a case-by-case basis using BPJ. The NPDES regulations in 40 CFR §125.3(c)(2) state that permits developed on a case-by-case basis under Section 402 (a)(1) of the CWA must consider 1) the appropriate technology for the category class of point sources of which the applicant is a member, based on available information, and 2) any unique factors relating to the applicant.

Where appropriate, EPA evaluated the ELG Document, MSGP, RGP and ELGs for industrial sectors with similar operations, pollutants, and/or treatment technologies in its case-by-case evaluation of technology-based effluent limitations.

5.3 Water Quality-Based Requirements

Section 301(b)(1)(C) of the CWA requires that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when technology-based limitations would interfere with the attainment or maintenance of water quality in the receiving water.

[5] EPA Office of Science and Technology. *Technical Support Document for the 2004 Effluent Guidelines Program Plan* (EPA-821-R-04-014: August 2004, Section 7.12, P 72-127.

Under Section 301(b)(1)(C) of the CWA and EPA regulations, NPDES permits must contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal water quality standards. Water quality standards consist of three 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); and (3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts Surface Water Quality Standards (WQSs), found at 314 CMR 4.00, include these elements. The State will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless site specific criteria are established.

The Draft Permit must limit any pollutant or pollutant parameter (conventional, non-conventional, and toxic) that is or may be discharged at a level that causes or has the "reasonable potential" to cause or contribute to an excursion above any water quality standard (40 CFR §122.44(d)). An excursion occurs if the projected or actual in-stream concentration exceeds an applicable water quality criterion. In determining "reasonable potential", EPA considers: (1) existing controls on point and non-point sources of pollution; (2) pollutant concentration and variability in the effluent and receiving water as determined from the permit's re-issuance application, monthly discharge monitoring reports (DMRs), and State and Federal Water Quality Reports; (3) sensitivity of the indicator species used in toxicity testing; (4) known water quality impacts of processes on waste waters; and (5) where appropriate, dilution of the effluent in the receiving water.

5.4 Anti-Backsliding

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

All proposed limitations in the Draft Permit are at least as stringent as limitations included in the 2005 Permit. Therefore, the Draft Permit complies with the anti-backsliding requirements of the CWA.

5.5 Anti-Degradation

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

believe that the MassDEP is required to conduct an anti-degradation review regarding this permit reissuance.

5.6 State Certification

Under Section 401 of the CWA, EPA is required to obtain certification from the state in which the discharge is located that all water quality standards or other applicable requirements of state law, in accordance with Section 301(b)(1)(C) of the CWA, are satisfied. EPA permits are to include any conditions required in the state's certification as being necessary to ensure compliance with state water quality standards or other applicable requirements of state law. See CWA Section 401(a) and 40 CFR §124.53(e). Regulations governing state certification are set out at 40 CFR §124.53 and §124.55. EPA regulations pertaining to permit limits based upon water quality standards and state requirements are contained in 40 CFR §122.44(d).

6. Explanation of the Permit's Effluent Limitations

6.1 Facility Information

The Terminal consists of a marine vessel dock, a terminal yard with tank farm and truck loading rack, and a terminal field. Chelsea Sandwich receives most of the petroleum products stored at the Terminal (with the exception of some limited inventory transported by tanker truck) in bulk quantities delivered by ship or barge to the marine vessel dock located along the Chelsea River. The marine vessel dock is located along a rip-rap embankment at the confluence of the Mystic and Chelsea Rivers. The dock is equipped with a manifold area for receipt and distribution of product. The bulk of the product received at the Terminal is off-loaded at the dock from ship or barge. Petroleum products are transferred to the bulk storage tanks via above ground dock lines. Stored fuel oil products are distributed either via the truck loading rack, or via fueling stations located at the marine vessel dock.

The terminal yard consists of a tank farm within secondary containment and areas outside of secondary containment. The areas outside of secondary containment include paved access ways, a parking lot, an administrative building, a truck maintenance garage, a boiler house, a foam house, a blending house (product blending units and a regenerative thermal oxidizer), a truck loading rack, seven truck pump-off stations, and an oil/water separator (OWS). There are five bulk ASTs located in a three and one half acre section of the terminal yard. Each AST has dedicated secondary containment structures consisting of interconnected steel secondary containment dikes. The steel walled containment dikes are designed to hold the contents of the largest bulk storage tank and sufficient freeboard for precipitation (10 percent of the volume of the largest tank or the volume of a 24 hour – 25-year storm event). One bulk AST is currently used to store biodiesel. The terminal yard also has 14 smaller ASTs (ranging in size from several hundred gallons to several thousand gallons), two of which are not in use. These smaller tanks are primarily used to store fuel additives, heating oil, kerosene, and diesel fuel for the Terminal's own use. The Terminal uses a 15,000-gallon AST to decant tank bottom water. Oil recovered from this tank is pumped back to the storage tanks for reuse and the contact water is disposed of off-site. The truck loading rack is located along Broadway at the street entrance to the Terminal. It consists of a total of 17 loading locations of which 15 are top loading positions and two are bottom loading positions. The terminal operates seven pump off

stations to off load product from tanker trucks. Two are actively used and are constructed with secondary containment.

The terminal field is located along the western edge of the Terminal property adjacent to the Chelsea River. The terminal field contains 11 bulk ASTs, one of which is not in use, two additive tanks, one of which is not in use, and one truck pump-off station. One bulk AST in the terminal field is used to store biodiesel. The terminal field encompasses approximately 2 acres and is surrounded by a concrete secondary containment wall. The terminal field has a capacity to hold the contents of the largest bulk storage tank and sufficient freeboard for precipitation (10 percent of the volume of the largest tank or the volume of a 24 hour - 25 year storm event). There are no underground storage tanks (USTs) at the terminal. The Terminal can store a gross capacity of approximately 670,000 barrels (or 28,000,000 gallons) of product.

6.2 Permitted Outfalls

The Draft Permit authorizes discharges to the Chelsea River via Outfall 001 consisting of: 1) treated stormwater runoff; 2) hydrostatic test water; 3) groundwater remediation effluent from internal Outfall 002; and 4) boiler blowdown. Discharges of groundwater remediation effluent are limited and monitored at internal Outfall 002 prior to mixing with any other waste stream. A schematic showing flow contributions to Outfall 001 is presented in Attachment 4.

6.2.1 Stormwater

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

The marine vessel dock is equipped with a drip pan that collects any fuel leaked from overhead fuel transfer hose(s). Contents of the drip pan are frequently disposed of in accordance with applicable regulations. The floor of the vessel dock is shaped like a shallow cone. A floor drain equipped with a plug is located in the center of the depressed floor. The dock drain is kept closed during normal operations, specifically during fuel transfers. Currently, stormwater that accumulates along the floor of the marine vessel dock is visually inspected for sheen and, if no sheen is observed, discharged to the Chelsea River through the dock drain. The Draft Permit prohibits discharges of stormwater through the dock drain, as the dock drain is not a permitted outfall. Stormwater that accumulates at the marine vessel dock must meet the effluent limitations in this permit.

The tank farm area of the terminal yard is located within secondary containment, constructed of steel or concrete walls supported by concrete foundations. Stormwater collection sumps are located within the secondary contaminant of three of the five ASTs in the tank farm. Accumulated stormwater within these containment areas is either transferred to a concrete dike containment area or discharged directly into adjacent stormwater catch basins. Stormwater accumulated within the earthen floor containment dikes for the two additional tanks either evaporates and/or infiltrates into the ground

and/or is drained through removable flow control plugs into the stormwater conveyance system via nearby catch basins. Four additional tanks in the terminal yard are constructed with individual concrete containment structures. Each is equipped with a floor drain plug or control valve that are manually operated to gravity drain stormwater to the OWS.

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

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

6.2.2 Hydrostatic Test Water

The aboveground storage tanks are subject to annual external inspections (502 CMR 5.00) and their integrity is certified annually by a licensed tank inspector. Internal inspections of the above ground storage tanks are conducted every 10 years. The testing procedures followed are detailed in API 653 Standard. In addition, repairs are occasionally made at the Terminal to tanks and piping used for the storage and conveyance of petroleum products and additives. To ensure safe working conditions during this maintenance work, storage tanks and/or pipe networks are rigorously cleaned (e.g. “Poly Brushed”, “Squeegee Pigged”) and certified as being product-free. After completing certain maintenance work, the vessels and/or pipe networks may be hydrostatically tested for leaks. Hydrostatic testing involves filling the vessel or pipe with water under pressure and monitoring pressure drops over time. If the system maintains a constant pressure, there are no leaks. River water or potable water may be used as a source of hydrostatic test water. Thus, hydrostatic test water

discharge may contain minimal amounts of foreign matter, trace amounts of hydrocarbons, background material found in the river, or residual chlorine. There have not been hydrostatic test water discharges reported at the Terminal in the previous five years.

6.2.3 Groundwater Remediation Effluent

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

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

6.2.4 Boiler Blowdown

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

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

6.2.5 Other Non-Stormwater Discharges

Additional non-stormwater discharges are authorized under this permit, provided the additional non-stormwater discharges meet all effluent limitations in the Draft Permit. These discharges, listed below, are based on non-stormwater discharges allowable under EPA's MSGP.

- Discharges from fire-fighting activities;
- Fire hydrant flushings;
- Potable water (e.g., water line flushings) unless associated with hydrostatic testing;
- Uncontaminated condensate from air conditioners, coolers, and other compressors and from the outside storage of refrigerated gases or liquids;
- Irrigation drainage;
- Landscape watering provided all pesticides, herbicides, and fertilizer have been applied in accordance with the approved labeling;
- Pavement wash waters where no detergents are used and no spills or leaks of toxic or hazardous materials have occurred;
- Routine external building washdown that does not use detergents;
- Uncontaminated groundwater;
- Foundation or footing drains where flows are not contaminated with process materials; and
- Incidental windblown mist from boilers and/or cooling towers that collects on rooftops or adjacent portions of the Terminal, unless associated with intentional discharges from these structures (e.g., boiler blowdown).

7. Derivation of Effluent Limits under the Federal CWA and the Commonwealth of Massachusetts' Water Quality Standards

7.1 Flow

From January 1, 2009 through December 31, 2013, the total monthly flow reported for Outfall 001 ranged from 0.30975 to 5.1555 million gallons (Mgal) and the total monthly flow reported for Outfall 002 ranged from 0.011547 to 0.144304 Mgal. The daily maximum flow rate reported for this period was 175 GPM for Outfall 001 for each month in which flow was recorded. The daily maximum flow rate reported for this period was 25 GPM for Outfall 002 each month.

OWSs are the typical minimum treatment technology employed by petroleum bulk storage terminals for treatment of stormwater runoff. This device uses gravity to separate lower-density oils from water, resulting in an oil phase above the oil/water interface and a heavier particulate phase on the bottom of the separator. The sizing of an OWS is based upon the flow rate, density of oil to be separated, desired percent removal of oil, and the operating temperature range. The Terminal's OWS has a design flow capacity of 700 GPM. Stormwater runoff, hydrostatic test water, groundwater and boiler blowdown discharges to the Chelsea River through Outfall 001 after treatment. Groundwater discharged via Outfall 002 is controlled by the design flow capacity of the recovery well system. The treatment system can be used to treat to a maximum design flow of 25 GPM. The Permittee reported that currently, the average total flow rate generated by the four recovery wells is seven to eight GPM.

The OWS has an overall capacity of approximately 15,000 gallons and is equipped with a coalescer plate retro-fit pack. Flow through the OWS 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; therefore, the combined pumping rate of these pumps is 700 GPM. During an

average rainfall event one pump is typically sufficient to handle the volume of stormwater runoff at the Terminal. However during heavy rainfall, both pumps are operated. The check valve and gate valve located upstream of the 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. Treated effluent pumped from the separator flows a short distance through an aboveground pipe to Outfall 001 located in the Chelsea River. The OWS and catch basins located throughout the Terminal are cleaned a minimum of once per year. The sediment removed is disposed of offsite.

The 2005 Permit required estimating the flow rate at the OWS. During the 2005 Permit term, a flow meter was installed to record the volume of treated effluent discharged via Outfall 001. The Draft Permit has added a requirement that the flow rate and total flow continues to be measured using such a device. The 2005 Permit also required that the Permittee notify EPA and MassDEP of any proposed changes to either the stormwater collection or treatment systems that could cause the maximum design flow rate through the any component of the stormwater treatment system to be exceeded. To ensure that the flow through the OWS and/or groundwater treatment system be maintained at or below the maximum design flow rate, such that the oil and/or particulate phases potentially present in the OWS and/or recovery wells are not entrained to the waterway, EPA has maintained the daily maximum flow rate limit at 700 GPM for Outfall 001 and 25 GPM for Outfall 002 in the Draft Permit. The Draft Permit continues to require reporting of total flow for Outfall 001 and Outfall 002 and reporting of the total number of discharge events for Outfall 001.

The 2005 Permit required effluent sampling during certain sized precipitation events. However, effluent discharged from the OWS does not necessarily correlate to specific rainfall events due to storage of stormwater and detention time in the OWS prior to discharge. In addition, samples collected only in association with a precipitation event may not provide data representative of discharges from the Terminal since the effluent includes non-stormwater discharges. Therefore, the Draft Permit requires effluent sampling during periods of discharge from the OWS and not necessarily during periods associated with a specific precipitation event. The Permittee must document the measures and methods used to control flow through the stormwater treatment system in its Stormwater Pollution Prevention Plan (SWPPP) (see requirements below).

7.2 Conventional Pollutants

7.2.1 pH

The 2005 Permit required that the pH of the effluent must be no less than 6.5 standard units (SU), and no greater than 8.5 SU. From January 1, 2009 through December 31, 2013, pH levels have ranged from 6.59 SU to 8.1 SU for Outfall 001 and 6.65 SU to 7.4 SU for Outfall 002. The Massachusetts Surface WQSs, 314 CMR 4.05(4)(b)3, for Class SB waters require pH to be within the range of 6.5 to 8.5 SU and prohibit discharges that cause the in-stream pH to change more than 0.2 SU outside of the background range. The Draft Permit maintains a pH range of 6.5 to 8.5 SU, and specifies that the pH cannot be more than 0.2 standard units outside of the natural background range, consistent with Massachusetts WQSs.

7.2.2 Total Suspended Solids (TSS)

Heavy metals and polycyclic aromatic hydrocarbons (PAHs) are readily adsorbed onto particulate matter and the release of these compounds into the environment can be reduced by regulating the amount of suspended solids discharged. The 2005 Permit included a daily maximum effluent limit of 100 mg/L and a monthly average effluent limit of 30 mg/L for TSS, monitored twice monthly. From January 1, 2009 through December 31, 2013, daily maximum TSS levels have ranged from below laboratory practical quantitation limits (PQLs) to 41 mg/L at Outfall 001 and from below PQLs to 31 mg/L for Outfall 002.

In establishing the technology-based limits in the 2005 permit, EPA considered similar facilities and the Terminal's use of an OWS. In the technology guidelines promulgated at 40 CFR §423 for the Steam Electric Power Point Source Category, the storage of fuel oil at steam electric facilities at the time the technology guidelines were promulgated was similar to the storage of petroleum products at bulk stations and terminals. In developing effluent limits for the Steam Electric Power Point Source Category, EPA 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.[6] EPA then considered the level of treatment that could be technologically achieved for TSS using an OWS and set corresponding limits in the guidelines (see 40 CFR §423.12 (b)(3)). In reviewing the technology-based limits for TSS for the Draft Permit, EPA determined that operations at the Terminal remain consistent with the conditions under which the technology guidelines promulgated at 40 CFR §423 can be achieved. Furthermore, EPA determined that the TSS limits in the Draft Permit are similar to technology-based limits established for other facilities in Region 1 and similar facilities in other regions, as described in the ELG Document.

Therefore, the Draft Permit maintains the maximum daily limit of 100 mg/L, and an average monthly limit of 30 mg/L, monitored twice monthly, consistent with anti-backsliding requirements found in 40 CFR §122.44(l).

7.2.3 Oil and Grease (O&G)

The Massachusetts Surface WQSs, 314 CMR 4.05(4)(b)(7), state "*These waters shall be free from oil, grease and petrochemicals that produce a visible film on the surface of the water, impart an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or bottom of the water course, or are deleterious or become toxic to aquatic life.*" From January 1, 2009 through December 31, 2013, O&G levels have ranged from below the laboratory PQLs to 12.3 mg/L.

A concentration of 15 mg/L is recognized as the level at which many oils produce a visible sheen and/or cause an undesirable taste in fish.[7] As described above, the Chelsea River is listed as impaired for taste and odor. The 2005 permit limit of 15 mg/L is based on the benchmark level from EPA-Headquarters guidance to, and as a means of establishing a categorization within, the petroleum

[6]See *Development Document for Effluent Limitations Guidelines and Standards and Pretreatment Standards for the Steam Electric Point Source Category*. EPA-440-1-82-029. Washington, DC. (November, 1982).
[7] USEPA. 1976. *The Red Book – Quality Criteria for Water.* July 1976.

marketing terminals and oil production-facilities categories.[8] Maintaining O&G levels at or below this benchmark level will demonstrate compliance with Massachusetts WQSs. 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 OWS and properly implemented best management practices (BMPs).

Given water quality concerns regarding taste and odor in the Chelsea River, and to ensure compliance with Massachusetts WQSs and anti-backsliding requirements found in 40 CFR §122.44(l), the Draft Permit maintains the maximum daily limit for O&G of 15 mg/L, monitored monthly.

7.3 Toxic & Non-Conventional Pollutants

7.3.1 Volatile Organic Compounds (VOCs)

Refined petroleum products contain numerous types of hydrocarbons. Individual components partition to environmental media based on physical and chemical properties including solubility and vapor pressure. Rather than establishing effluent limits for every compound found in petroleum products, limits are typically established for the compounds that would be the most difficult to remove from the environment and demonstrate the greatest degree of toxicity. Generally, the higher the solubility of a VOC in water, the more difficult it is to remove. VOCs such as benzene, toluene, ethyl benzene, and the three xylene compounds (i.e., total xylenes) (BTEX) are found at relatively high concentrations in gasoline and light distillates including diesel fuel. BTEX concentrations decrease in the heavier grades of petroleum distillate products such as fuel oils.

As described in Section 3, the Chelsea River listing in the Final Massachusetts Year 2012 Integrated List of Waters includes petroleum hydrocarbons (i.e., a class of compounds that includes BTEX) as a pollutant requiring a TMDL. The bulk petroleum storage facilities that discharge to the Chelsea River, including the Terminal, are explicitly noted as one of the sources of these pollutants. In reviewing this impairment, EPA received information from MassDEP confirming that the impairments related to this pollutant are to the Aquatic Life, Aesthetics, Primary Contact and Secondary Contact Uses.[9] In addition, MassDEP has not determined which individual compounds in the pollutant class, petroleum hydrocarbons, cause or contribute to the impairment. As a result, EPA considered the petroleum hydrocarbon compounds that are more likely to be present in the effluent based on monitoring data for the Terminal and similar facilities, and information documented in EPA's ELG Document for the industrial category. Further, EPA assumed the receiving water does not have available assimilative capacity for petroleum hydrocarbons given the toxic potential of the compounds and the impairment status of the receiving water.

EPA reviewed all appropriate criteria including the most recent *National Recommended Water Quality Criteria*, quarterly monitoring results for BTEX obtained from the discharges of the Terminal

[8] See *Additional Guidance for Petroleum Marketing Terminals and Oil Production Facilities.* N-74-1. Washington, D.C. (July, 1974).
[9] Correspondence to Shauna Little dated January 13, 2014 from Laurie Kennedy, MassDEP Division of Watershed Management, Watershed Planning Program.

and similar facilities along the Chelsea and Mystic Rivers,[10] information relevant to the types of petroleum products stored at the Terminal,[11] and available ambient monitoring data.[12] These data show that concentrations of BTEX and other petroleum hydrocarbons are typical in the effluent and may be present in surface water and/or sediment in the Chelsea River. EPA also reviewed the Massachusetts Waste Site/Reportable Releases Lookup for the Terminal to determine sources of VOCs.[13] Release Tracking Number (RTN) listings indicate that 31 reportable conditions occurred since the 2005 Permit was issued. At least 20 of the reportable conditions that have been present at the Terminal since 2005 involve reportable conditions related to diesel and/or No. 2 fuel oil. These petroleum products contain BTEX in varying concentrations.

The 2005 Permit included a daily maximum effluent limit of 51 µg/L for benzene at Outfall 001, a daily maximum effluent limit of 5 µg/L for benzene at Outfall 002, and a daily maximum effluent limit of 100 µg/L for BTEX at Outfall 002. Quarterly monitoring of toluene, ethylbenzene and total xylenes was also required. From January 1, 2009 through December 31, 2013, benzene, ethylbenzene, toluene, and total xylenes were detected on one occasion each above the laboratory PQL at Outfall 001. The concentration of benzene detected did not exceed the permit limit. BTEX was not detected above the PQLs at Outfall 002 during this period.

In determining reasonable potential for concentrations of BTEX in the effluent to cause or contribute to an excursion above WQC, EPA often uses projected concentrations based on available effluent data in a steady state mixing equation. However, the 95th and 99th percentile projected effluent concentrations could not be determined given the insufficiency of the effluent data for the previous five years. Where effluent data contains a high proportion of non-detect values, current scientific literature and technical guidance[14] does not recommend statistical analysis as the uncertainty in the effluent variability and the degree of bias reduces the confidence in calculated upper concentration limits. In the absence of effluent data, EPA's *Technical Support Document for Water Quality Based Toxics Control* (TSD)[15] provides methodology for determining whether a pollutant has reasonable potential to cause or contribute to an excursion above WQC using a variety of factors and information in accordance with 40 CFR §122.44(d)(1)(ii). This may include dilution, the type of industry, existing data on toxic pollutants, history of compliance problems and toxic impact, and/or type of receiving water and designated use (see TSD page 50-51).

Based on the impairments to the Chelsea River, the presence of BTEX in discharges from the Terminal, the types of petroleum products stored at the Terminal that contain BTEX, and the presence of BTEX in available ambient monitoring data, the effluent has a reasonable potential to

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[10] See effluent and/or ambient monitoring data for NPDES permit numbers MA0004006, MA0003425, MA0003298, MA0003280, MA0001091, and MA0000825.
[11] See Agency for Toxic Substances and Disease Registry Toxic Substances Portal entries for benzene at http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=14
[12] See "Sediment Quality of Lakes, Rivers, and Estuaries in the Mystic River Basin, Eastern Massachusetts, 2001–03." United States Geological Survey, Scientific Investigations Report 2005-5191; and Massachusetts Water Resources Authority Boston Harbor & Tributary Rivers Water Quality Monitoring Program, sampling location 027, Chelsea River.
[13] Available at http://public.dep.state.ma.us/SearchableSites2/Search.aspx.
[14] See *ProUCL Version 5.0.00 Technical Guide*, USEPA Regional Science Program, Technical Support Center available at http://www.epa.gov/osp/hstl/tsc/software.htm.
[15] See EPA's *Technical Support Document for Water Quality-based Toxics Control:* EPA/505/2-90-001, 1991.

cause or contribute to an excursion above WQC with respect to BTEX. A limit continues to be necessary for the protection of human health (i.e., primary and secondary contact) and to meet water quality standards established under Section 303 of the CWA as well as Massachusetts' WQSs (e.g., 314 CMR 4.05(5)(e)).

Further, EPA continues to limit benzene as the indicator parameter for BTEX. Benzene was selected because of the BTEX compounds, benzene has the highest solubility, is one of the most toxic constituents, and is found at relatively high concentrations in the light distillates. The concentration of benzene in gasoline is approximately 20,000 parts per million.[16] The concentration in diesel fuel, although several orders of magnitude smaller than that found in gasoline, is still environmentally significant. The average percent by weight of benzene in diesel fuel is approximately 0.03 percent which is equivalent to a concentration of benzene of approximately 300 parts per million. This value exceeds the EPA "organism only" human health WQC for benzene, 51 µg/L (or 51 parts per billion).[17] As a result, benzene is considered one of the most important limiting parameters found in gasoline and light distillates. Benzene is also used as an indicator parameter for regulatory and characterization purposes of stormwater that is exposed to light distillate products.

The Draft Permit maintains the effluent limit of 51 µg/L for benzene at Outfall 001 to ensure compliance with Massachusetts WQSs and anti-backsliding requirements found in 40 CFR §122.44(l). Because this limit is based on the "organism only" human health WQC, the limit is expressed in the Draft Permit as a monthly average limit, rather than a daily maximum, as expressed in the 2005 Permit. This correction was made in accordance with recommendations in EPA's TSD, given the exposure expected over a lifetime. The Draft Permit requires monitoring, without limits for the daily maximum concentration.

The 2005 Permit limitation of 5 µg/L for benzene at Outfall 002 was a TBEL based on the type of treatment applied to the effluent, typically applied through EPA's RGP for Category I, Subcategory A – Gasoline Only Sites. While the Terminal does not store gasoline, the Terminal has demonstrated an ability to consistently meet this limitation for Outfall 002. Therefore, EPA maintains the benzene TBEL of 5 µg/L and the BTEX limitation of 100 µg/L at Outfall 002 based on performance data from the Terminal and to ensure compliance with Massachusetts WQSs and anti-backsliding requirements found in 40 CFR §122.44(l). These limits are expressed in the Draft Permit as a daily maximum limit.

To confirm that the use of benzene as an indicator parameter for BTEX is sufficient to meet WQSs, and to better quantify the variability of the pollutant in the effluent, the Draft Permit has increased the frequency of monitoring for benzene to monthly. To further support the use of benzene as the indicator parameter, the Draft Permit also includes monitoring for benzene, toluene, ethylbenzene and total xylenes once per year for both the effluent and the receiving water. If monitoring data for these compounds indicate any are present at concentrations that may cause or contribute to an impairment in the Chelsea River or that indicate benzene is insufficient as an indicator parameter, the Draft Permit includes a reopener clause in Part I.D.

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[16] See "Composition of Petroleum Mixtures," Total Petroleum Hydrocarbon Criteria Working Group Series, T.L. Potter and K.E. Simmons, Vol. 2, p. 52 (May 1998).
[17] see *National Recommended Water Quality Criteria*: http://water.epa.gov/scitech/swguidance/standards/current/index.cfm

In addition, the Draft Permit requires that the quantitative methodology used for BTEX analysis must achieve the minimum level for analysis ("ML") less than or equal to 2 µg/L. The ML is not the minimum level of detection, but rather the lowest level at which the test equipment produces a recognizable signal and acceptable calibration point for an analyte, representative of the lowest concentration at which an analyte can be measured with a known level of confidence. Sample results for an individual compound that is at or below the ML should be reported according to the latest EPA Region 1 *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs).* The Permittee is also required to report the PQL for analysis for each compound using a data qualifier in the instance an analyte is not detected above the PQL.

It is important to note that MassDEP's alternative methods for analysis known as the Volatile Petroleum Hydrocarbon (VPH) and Extractable Petroleum Hydrocarbon (EPH), which are required by MassDEP for measuring petroleum hydrocarbons at sites being cleaned up under the Massachusetts Contingency Plan (MCP), are not approved under 40 CFR §136. EPA does not currently have a means to evaluate carbon range data supplied under these methods nor are the data comparable when evaluating compliance with chemical specific numerical limits for toxics related to specific water quality criteria developed for specific pollutants in NPDES permits. These methods may not be used for sampling required in the Draft Permit.

7.3.2 Polycyclic Aromatic Hydrocarbons (PAHs)

PAHs are a group of organic compounds that form through the incomplete combustion of hydrocarbons and are present in petroleum derivatives and residuals. Discharge of these products can introduce PAHs into surface water where they may volatilize, photolyze, oxidize, biodegrade, bind to suspended particles or sediments, or accumulate in aquatic organisms (with bioconcentration factors often in the 10-10,000 range). In soils, PAHs may also undergo degradation, accumulation in plants, or transport via groundwater. In an estuarine environment such as the Chelsea River, volatilization and adsorption to suspended sediments with subsequent deposition are the primary removal processes for medium and high molecular weight PAHs. Several PAHs are well known animal carcinogens, while others can enhance the response of the carcinogenic PAHs.

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

As described above, Chelsea River is impaired for the Aquatic Life, Aesthetics, Primary Contact and Secondary Contact Uses because of petroleum hydrocarbons. The bulk petroleum storage facilities that discharge to the Chelsea River, including the Terminal, are explicitly noted as one of the sources of these pollutants. Therefore, EPA followed the same approach used in evaluating BTEX to evaluate PAHs. As referenced above, EPA reviewed all appropriate criteria including the most recent *National Recommended Water Quality Criteria,* quarterly monitoring results for PAHs obtained from the

discharges of the Terminal and similar facilities along the Chelsea River, information relevant to the types of petroleum products stored at the Terminal,[18] and available ambient monitoring data. These data show that concentrations of PAHs and other petroleum hydrocarbons are occasionally present in the effluent and may be present in surface water and/or sediment in the Chelsea River. In addition, the PQL for PAH analysis in available data for surface water and wastewater is typically two to six times the WQC for Group I PAHs. EPA also reviewed the Massachusetts Waste Site/Reportable Releases Lookup for the Terminal to determine possible sources of PAHs. RTN listings indicate that seven of the reportable conditions that have been present at the Terminal since 2005 are related to No. 6 fuel oil, and 20 of the reportable conditions are related to diesel or No. 2 fuel oil. These petroleum products contain PAHs in varying concentrations. Additionally, RTN listings include one reportable condition related to elevated concentrations of petroleum hydrocarbon fractions in soil.

The 2005 Permit established quarterly monitoring at Outfall 001 for naphthalene and the seven Group I PAHs and included limits for individual Group I PAH compounds at 0.018 µg/L at Outfall 002 as listed below:

- Benzo(a)anthracene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(k)fluoranthene
- Chrysene
- Dibenzo(a,h)anthracene
- Indeno(1,2,3-cd)pyrene

The 2005 Permit also included limits for the sum of individual Group II PAH compounds as listed below at 100 µg/L and a daily maximum limit for naphthalene at 20 µg/L at Outfall 002:

- Acenaphthene
- Acenaphthylene
- Anthracene
- Benzo(g,h,i)perylene
- Fluoranthene
- Fluorene
- Naphthalene (analytical method requirements also established)
- Phenanthrene
- Pyrene

From January 1, 2009 through December 31, 2013, for Outfall 001, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, and indeno(1,2,3-cd)pyrene were not detected above the laboratory PQLs; benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene and naphthalene were detected on one occasion each above the laboratory PQLs. Individual Group I and II PAH compounds were not

[18] See Agency for Toxic Substances and Disease Registry Toxic Substances Portal entries for PAHs at http://www.atsdr.cdc.gov/substances/toxsubstance.asp?toxid=25

detected above the laboratory PQLs for Outfall 002 during this time period, with the exception of naphthalene, which was detected on one occasion.

Similar to the data usability issues identified for BTEX, in determining reasonable potential for concentrations of PAHs in the effluent to cause or contribute to an excursion above WQC, EPA was unable to use the 95th and 99th percentile projected effluent concentrations given the insufficiency of the effluent data for the previous five years (i.e., a high proportion of non-detect values). As noted above, the PQL for analysis was typically two to five times the WQC for Group I PAHs. These non-detect data are not representative of concentrations of PAHs in the effluent when calculating reasonable potential, since PAHs may be present above the WQC but below the PQL. EPA cannot assume PAHs are not present above WQC where a sample is non-detect but the PQL is insufficient.

Therefore, EPA also followed guidance in the TSD for determining whether a pollutant has reasonable potential to cause or contribute to an excursion above WQC using a variety of factors and information in accordance with 40 CFR §122.44(d)(1)(ii). Based on the impairment and cause of impairment in the Chelsea River, the type of petroleum products stored at the Terminal that contain PAHs, the historical levels of PAHs that have been documented in effluent, soil and/or groundwater at the Terminal and in the Chelsea River, the potential health concerns associated with PAHs, and absent an approved mixing zone in accordance with 314 CMR 4.03(2), the effluent has a reasonable potential to cause or contribute to an excursion above WQC with respect to PAHs. A limit is required for the protection of human health (i.e., primary and secondary contact) and to meet water quality standards established under Section 303 of the CWA as well as Massachusetts' WQSs (e.g., 314 CMR 4.05(5)(e)).

Further, EPA has selected to limit one Group I PAH, benzo(a)pyrene and one Group II PAH, naphthalene, as the indicator parameters for PAHs at Outfall 001. While the distillation process removes a greater proportion of Group I PAHs by weight, these compounds can still be present in low concentrations, particularly benzo(a)pyrene. Benzo(a)pyrene has been used extensively as a model carcinogen and as a positive control in a variety of risk assessment tests and has been detected in discharges from the Terminal. EPA has designated this compound as a known animal carcinogen and probable human carcinogen. Relative to the other Group I PAHs, it is strongly carcinogenic. Of Group II PAHs, naphthalene, like benzo(a)pyrene poses high calculable risk relative to other PAHs and has been detected in discharges from the Terminal. It is included as a priority pollutant under the CWA and is classified as a possible human carcinogen. In middle and heavy distillates, naphthalene is one of the most commonly found compounds, present in diesel fuel and No. 2 fuel oil at up to approximately 0.8 and 0.4 percent by weight, respectively.[19] Naphthalene is only slightly soluble in water, but is highly soluble in benzene and other solvents.

Therefore, the Draft Permit establishes an effluent limit of 0.018 µg/L for benzo(a)pyrene and 100 µg/L for naphthalene at Outfall 001 to ensure compliance with Massachusetts WQSs. The limit for benzo(a)pyrene is based on the "organism only" human health WQC, selected because of the uses designated for Class SB waters. Naphthalene does not currently have applicable aquatic life or human health WQC. Therefore, the limit for naphthalene at Outfall 001 is based on EPA's lifetime health

[19] See Agency for Toxic Substances and Disease Registry Toxic Substances Portal entries for naphthalene at http://www.atsdr.cdc.gov/toxprofiles/tp.asp?id=240&tid=43

advisory value for naphthalene, 100 µg/L. The limits are expressed in the Draft Permit as monthly average limits, established in accordance with recommendations in EPA's TSD, given the exposure expected over a lifetime. The Draft Permit requires monitoring, without limits for the daily maximum concentrations.

The Draft Permit also maintains the limits for PAHs at Outfall 002 (0.018 µg/L for any individual PAH, 100 µg/L for the sum of Group II PAHs, and 20 µg/L for naphthalene). Since the limits for Group I PAHs are based on the "organism only" human health WQC, the limits are expressed in the Draft Permit as monthly average limits, rather than daily maximum, as expressed in the 2005 Permit. This correction was made in accordance with recommendations in EPA's TSD, given the exposure expected over a lifetime. The Draft Permit requires monitoring, without limits for the daily maximum concentration. To be consistent with EPA's RGP for Category I, Subcategory B – Fuel Oil and Other Oils Sites and Category IV, the Draft Permit establishes a limit for the sum of Group I PAHs at 10 µg/L for Outfall 002. These TBELs were selected given the type of discharges from the Terminal, and performance data from the Terminal and similar facilities discharging to the Chelsea River. Through implementation of the BAT/BCT for stormwater associated with industrial activity, the SWPPP, and with proper operation and maintenance of the Terminal's OWS, concentrations of benzo(a)pyrene and naphthalene in discharges from the Terminal are expected to consistently meet the effluent limitations. The establishment of PAH limits ensures compliance with Massachusetts WQSs. Compliance with these limits for the indicator PAHs for Group I and Group II PAHs at Outfall 001 will demonstrate compliance with Massachusetts' WQSs for all PAHs.

To confirm that the use of benzo(a)pyrene and naphthalene as indicator parameters for PAHs is sufficient to meet WQSs, and to better quantify the variability of the pollutants in the effluent, the Draft Permit has increased the frequency of monitoring for these pollutants to monthly. To further support the use of benzo(a)pyrene and naphthalene as the indicator parameters, the Draft Permit also includes monitoring for the seven Group I PAHs and nine Group II PAHs (listed above) once per year for both the effluent and the receiving water. Should monitoring data indicate the persistence of PAHs in concentrations that may cause or contribute to an excursion above water quality criteria, the permit may be modified, reissued or revoked pursuant to 40 CFR §122.62. In the event monitoring data indicate benzo(a)pyrene and/or naphthalene are insufficient as indicator parameters for PAHs, the Draft Permit includes a reopener clause, as required, in Part I.D.

The human health criteria for benzo(a)pyrene as expressed in nanograms per liter, is many times lower than the current PQLs for determining PAH concentrations in aqueous solutions. Where effluent limits have been established in NPDES permits but compliance cannot be determined using currently approved analytical methods (e.g. if WQBELs are less than the analytical capability of the methods), EPA has considered establishing National Quantitation Limits (NQLs) under 40 CFR §136. In the absence of NQLs, EPA's Federal Advisory Committee on Detection and Quantitation report[20] recommends setting compliance limits at the lowest concentration possible using approved analytical methods. This report further recommends permits contain a condition that the PQL be at or below the ML and that permits should further specify reporting requirements for results below the

[20] *Report of the Federal Advisory Committee on Detection and Quantitation Approaches and Uses in Clean Water Act Programs*. EPA Office of Science and Technology Final Report: December 2007, 176 p.

ML, or above the PQL but below the ML, typically noted on a laboratory report as an "estimated value".

Therefore, the Draft Permit requires that the quantitative methodology used for PAH analysis must achieve the ML of ≤0.1 µg/L for each Group I PAH compound and ≤5 µg/L for each Group II PAH compound. The ML will serve as the compliance level for benzo(a)pyrene. These MLs are based on those listed in Appendix VI of EPA's Remediation General Permit and similar facilities in the region. This approach is also consistent with EPA's TSD, page 111, which recommends, "the compliance level be defined in the permit as the minimum level (ML)." The Permittee may use any approved analytical method in CFR §136 for which the PQL is at or below the ML. As described in 7.3.1 above, MassDEP's VPH and/or EPH methods may not be used for sampling required in the Draft Permit.

Naphthalene is commonly measured using test methods for both VOCs and semi-volatile organic compounds (SVOCs). Therefore, the Draft Permit also maintains the requirement that naphthalene be monitored using both SVOC and VOC analytical methods. The other 15 priority pollutant PAHs are only analyzed using SVOC methods. Any non-detect or estimated results for an individual compound should be reported according to the latest EPA Region 1 *NPDES Permit Program Instructions for the Discharge Monitoring Report Forms (DMRs)*. The Permittee is also required to report the PQL for analysis for each compound using a data qualifier in the instance an analyte is not detected above the PQL. These values may be reduced by modification pursuant to 40 CFR §122.62 as more sensitive tests become available or are approved by EPA and MassDEP.

7.3.3 Total Petroleum Hydrocarbons

O&G has been the primary petroleum related parameter used in many of EPA's individual NPDES permits and is a common parameter in many of EPA's promulgated industrial effluent guidelines. A total O&G analysis includes petroleum-related O&G but may also capture other non-petroleum fats and greases in the result. Similarly, due to the sheer number of chemicals contained in refined petroleum products, measurement of all of the component chemicals is not practical, cost effective, or needed for adequate attainment of water quality standards. TPH measures the total concentration of all petroleum related hydrocarbon within a specified carbon range and is often applied to wastewater generated during remediation activities. The petroleum related hydrocarbons included within this analysis range from compounds with six carbon atoms (C_6) to compounds with 25 carbon atoms (C_{25}). The use of TPH testing is a common approach implemented by regulatory agencies in the United States to establish target cleanup levels for contaminated soil or water.[21] An aggregate measurement of the hydrocarbon compounds can also serve as an indicator of overall relative pollutant concentration and as an indicator for assessing water quality impacts.

Therefore, the hydrocarbon fraction of the O&G parameter, or TPH, was included in the 2005 Permit with a maximum daily limit of 5 mg/l at Outfall 002. EPA established this limit as a technology-based limit using BPJ based upon performance information for the type of treatment the Terminal applies to discharges of groundwater. From January 1, 2009 through December 31, 2013, total

[21] See Weisman, W. (1998) *Analysis of Petroleum Hydrocarbons in Environmental Media* . Total Petroleum Hydrocarbons Criteria Working Group Series. Volume 1.

recoverable petroleum hydrocarbons were detected on six occasions ranging from 0.217 µg/L to 0.992 µg/L.

The hydrocarbon makeup in the environment can change after the product has been released through leaks, spills, or other releases due to processes including volatilization, biodegradation, and sorption. This process occurs over a period of many years in soil and groundwater, sometimes referred to as "weathering". Based on the recent indication of TPH in soil, which may come into contact with groundwater and/or stormwater at the Terminal, the Draft Permit maintains the maximum daily limit of 5 mg/l at Outfall 002. The Permittee is required to monitor quarterly. Individual analytes of TPH, such as BTEX and PAHs, which are also parameters in the Draft Permit, provide additional chemical specific controls on the discharge.

There are several EPA approved methods (and modifications allowed) which may be used to quantify TPH such as Modified Method 8100 and Method 1664. EPA Method 1664 replaced EPA Method 418.1 to eliminate the use of Freon. As described in 7.3.1 above, MassDEP's VPH and/or EPH methods may not be used for sampling required in the Draft Permit.

7.4 Pollutant Scan

The industrial property on which the Chelsea Sandwich Terminal operates has been utilized for industrial operations since the late 1800's and bulk petroleum storage since the early to mid-1900's. Prior to petroleum storage and distribution, portions of the Terminal have been used for coal storage and distribution and/or were a coal power station. Historical impacts related to operations at the Terminal site have been documented and addressed by the MCP since at least 1989. The effluent contains a small volume of groundwater remediation effluent. In addition, stormwater at the Terminal has the potential to come into contact with materials stored at the Terminal or contamination in soil or groundwater from activities that took place at the Terminal historically or continue to take place currently. The Terminal also periodically discharges hydrostatic test water and small volumes of boiler blowdown.

In EPA's evaluation of historical releases at the Terminal, RTN listings indicate that at least 63 reportable conditions have been documented at the Terminal since 1989, 31 of which have occurred since the 2005 Permit was issued. These events have involved releases of diesel, No. 2 and No. 6 fuel oils, and concentrations of pollutants in soil. Many of the pollutants associated with the releases of these fuels are listed as priority pollutants in Appendix A to 40 CFR §423 or are non-conventional pollutants that have not otherwise been addressed in the Draft Permit.

Section 308 of the CWA allows EPA to require the Permittee to report information necessary for the establishment of appropriate permit limits and conditions or monitoring requirements. To protect the Chelsea River and the integrity of the stormwater, the Draft Permit includes the requirement to conduct annual sampling at Outfall 001 for a portion of the 126 EPA Priority Pollutants and selected non-conventional pollutants related to impairments in the Chelsea River, as listed below.

- BTEX: benzene, toluene, ethylbenzene, total xylenes
- Group I PAHs: benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene,

indeno(1,2,3-cd)pyrene
- Group II PAHs: acenaphthene, acenaphthylene, anthracene, benzo(g,h,i)perylene, fluoranthene, fluorene, naphthalene, phenanthrene, pyrene
- Metals: chromium, iron
- Cyanide
- Phenol
- Phthalates
- Ammonia
- Fecal coliform

In addition, the Draft Permit requires testing for BTEX, Group I PAHs and Group II PAHs as listed above for the receiving water once per year. The effluent and ambient testing of petroleum hydrocarbons is further required to confirm that the effluent meets WQSs through limitation of an indicator pollutant in accordance with 40 CFR §122.44(d)(1)(vi)(C).

These pollutants were selected on a site-specific basis, given the types of discharges at the Terminal, impairments in the Chelsea River, and pollutants that have the potential to comingle with effluent directly or through contact with contaminated groundwater or soil given the operational and/or release history. The partial list of pollutants is derived primarily from requirements for these pollutants described in EPA's ELG Document, which lists pollutants typically found at similar facilities in similar types of discharges, which are limited or monitored by regulatory agencies throughout the United States (e.g., phenol). EPA also reviewed Category IV of Appendix III of the RGP, Sub-Category C – Hydrostatic Testing of Pipelines and Tanks, and additional monitoring requirements in EPA's MSGP for discharges to an impaired water.

The Draft Permit contains limitations or requirements for certain pollutants noted above, namely, BTEX, and PAHs, as described in Sections 7.3.1, and 7.3.2, respectively. Monitoring results from the testing of these parameters where required at least annually in the Draft Permit, can be used to satisfy the requirements for the annual pollutant scan, as long as the timing of sampling coincides with the sampling for other parameters of the pollutant scan. The other parameters, chromium, iron, cyanide, phenol, phthalates, ammonia, and fecal coliform, are further described below.

The permit may be reopened to include chemical specific limitations for any of the pollutants described if the sampling data demonstrates that the effluent has a reasonable potential to cause or contribute to an excursion above State Water Quality Standards (see 40 CFR §122.44(d)(1)(iii)).

7.4.1 Chromium

Many types of metals occur in ground and surface waters around New England. Concentrations of metals vary widely depending on the geology and types of activities that have occurred at an industrial site. Certain metals like copper, lead, and zinc can be toxic to aquatic life, and are potentially harmful to plant and other animal species. Sources of metals in discharges from the Terminal may include petroleum products, which contain *de minimis* quantities of metals by weight, depending upon the type of fuel. Additional sources potentially include the municipal water supply, process piping, and historical releases. The Draft Permit requires the Permittee test for a limited number of metals once per year at Outfall 001 as part of the WET testing requirements (see below).

The list of metals required for WET testing was revised pursuant to a new testing protocol in 2012 such that testing for chromium was removed.

In many instances, metals like chromium build up to toxic concentrations through small releases that occur repeatedly over time, resulting in industrial contamination. Chromium has been found in groundwater at remediation and construction de-watering sites in Region 1, particularly in urban areas that have had long histories of industrial and municipal activity. While chromium is actually required by the human body in small amounts, it can also be toxic in larger doses. Water organisms are often more sensitive than humans to metals. Because monitoring data are not available for chromium for discharges from the Terminal, EPA has included monitoring requirements to ensure the metal is not present in quantities that could cause or contribute to an excursion above WQC. The Draft Permit requires that total recoverable chromium be analyzed. EPA is required by 40 CFR Section 122.45(c) to express NPDES permit limitations as "total recoverable metal". See EPA's *National Recommended Water Quality Criteria* (822-R-02-047), November 2002, for applicable conversion factors.

7.4.2 Iron

Given the impairment in the Chelsea River for turbidity and taste and odor, EPA considered metals known to cause an organoleptic effect (i.e., taste and odor), which are potentially present at the Terminal, but are not currently monitored. Of those metals listed in EPA's *National Recommended Water Quality Criteria*, EPA has noted high levels of naturally occurring iron in groundwater in New England, such as that discharged from Outfall 002. Iron in groundwater (ferrous Fe^{+2}) will oxidize to insoluble ferric hydroxide (Fe^{+3}) upon mixing and exposure to air. As Fe^{+3}, it can foul treatment systems, cause growth of iron bacteria in systems, and may discolor the effluent or cause localized sediment deposits in stormwater conveyance infrastructure or the receiving waters. Excessive amounts may cause or contribute to violations of WQSs including those related to color, turbidity, solids, and odor, as well as fouling of the discharge treatment systems. These situations denote reasonable potential to violate WQS. Therefore, the Draft Permit has included iron in the pollutant scan at Outfall 001, to determine if iron is present in discharges of groundwater from the site in quantities that violate WQSs. The Draft Permit requires that total recoverable iron be analyzed and specifies an ML for analysis.

7.4.3 Cyanide

Compounds containing the cyanide group (CN) are used and readily formed in many industrial processes and can be found in a variety of effluents, such as those from coal, steel, petroleum, plastics, synthetic fibers, metal plating, and chemical industries. Cyanide occurs in water in many forms, including: hydrogen cyanide (HCN), the cyanide ion (CN^-), simple cyanides, metallocyanide complexes, and as organic compounds. Both HCN and CN^- are toxic to aquatic life. Since CN^- readily converts to HCN at pH values that commonly exist in surface waters (i.e., less than 7.0 SU), the majority of cyanide consists of the more toxic HCN. EPA's cyanide criteria are stated in terms of free cyanide, defined as the sum of the cyanide present as HCN and CN^-. The relative concentrations of these forms depend mainly on pH and temperature. Currently, EPA approved analytical methods are available for total cyanide and available cyanide in water. Total cyanide includes all the forms of cyanide. Available cyanide includes free cyanide plus those cyanide species that can readily disassociate to release free cyanide.

The requirement for total cyanide has been included in pollutant scan because of historical operations at the Terminal that have included handling, storage of and/or power generation with coal.

7.4.4 Phenol

Phenol and phenolic compounds are widely used chemical intermediates and occur in the environment as a result of manufacturing, use of products containing phenols, from combustion sources, coal gas, and natural decay of organic matter. Phenol may also be present in *de minimis* quantities in gasoline, diesel and kerosene. Phenol and a number of other compounds including nitro-phenols and chlorinated phenols are listed as priority pollutants that have been evaluated for the establishment of water quality criteria. Phenol and a number of other phenolic compounds are included in EPA's WQC as having organoleptic (i.e., taste and odor) effects in water at low levels. The threshold at which phenol has an effect on taste and odor in water is 300 µg/L.

The occurrence of phenol or phenol compounds is generally infrequent in discharges, possibly due to rapid biodegradation of phenol in the environment. However, due to its wide use, distribution in the environment, the types of materials stored at the Terminal, and its potential effect on taste and odor and turbidity in the Chelsea River, total phenol has been included in the requirement for the pollutant scan to ensure the pollutant is not present in quantities that could cause or contribute to an excursion above WQC.

7.4.5 Phthalates

There are many phthalate compounds that are widely used as plasticizers, resin solvents, wetting agents, and insect repellants among other uses. EPA has included a number of specific phthalate compounds on the CWA priority pollutant list including diethyl and dimethyl phthalate, and butylbenzyl phthalate. One widely used phthalate compound, bis(2-ethylhexyl)phthalate (DEHP) is one of the most widely produced and used phthalate compound. This compound may be used as a plasticizer for polyvinyl chloride (PVC), in repellants, cosmetics, soaps, detergents, synthetic rubber, in boilers and/or cooling towers, and as a replacement for PCBs in transformers. It is one of the more toxic phthalate compounds and is listed as a class B2 probable carcinogen.

Due to its wide use and distribution in the environment, the discharge of boiler blowdown effluent, and the potential for the compound to come into contact with stormwater, a total phthalates requirement has been included in the pollutant scan to ensure it is not present in discharges from the Terminal at concentrations that could cause or contribute to an excursion above WQC.

7.4.6 Ammonia

As described above, the Chelsea River is impaired and requires a TMDL for ammonia (un-ionized). EPA's recommended criteria for ammonia in saltwater are based on temperature, pH and salinity in the receiving water. Information available through the Massachusetts Water Resources Authority's monitoring program for sampling location 027, located near the Terminal on Chelsea River[22] indicates that from 1989 to 2011, the surface water temperature in the Chelsea River has ranged from

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

1.41°C to 23.6 °C, the pH has ranged from 4.51 SU to 9.5 SU and the salinity has ranged from 0.6 grams per kilogram (g/kg) (or parts per thousand (ppt)) to 33.02 g/kg(ppt). EPA utilized the median values for temperature, pH and salinity for determination of applicable criteria, 15^{o}C, 7.8 SU and 30 g/kg (ppt), respectively.

According to the 1989 *Ambient Aquatic Life Water Quality Criteria for Ammonia (Saltwater*[23]*)*, when the receiving water temperature is 15°C (59^{o}F), the pH of the receiving water is 7.8 SU and the receiving water salinity is 30 g/kg, the recommended acute criterion value is 16 mg/L and the recommended chronic criterion value is 2.4 mg/L. Ammonia has not been monitored at the Terminal. However, one sample collected in support of the Permittee's permit renewal application indicated the concentration for total ammonia was 1.19 mg/L.

Based on the types of discharges at the Terminal, the presence of ammonia in the effluent and the impairment for ammonia in the Chelsea River, the Draft Permit includes a requirement for ammonia (as N) in the pollutant scan to ensure ammonia is not present in discharges from the Terminal at concentrations that could cause or contribute to an excursion above WQC.

7.4.7 Fecal coliform

While the Terminal does not engage in activities that would be expected to generate large sources of bacteria, stormwater runoff can readily transport bacteria from surfaces susceptible to the waste products of warm-blooded animals or pathogens, which attach to organic and inorganic particles. Many bacteria can survive in freshwater and saltwater environments, posing health risk to humans fish/shellfish, and water quality. As described above, the Chelsea River is listed in the Massachusetts Year 2012 Integrated List of Waters as impaired for its designated uses and fecal coliform is listed as a pollutant requiring a TMDL. The Massachusetts WQSs at 314 CMR 4.05(4)(b)4 limit fecal coliform in Class SB waters designated for shellfishing. EPA does not currently have information regarding bacteria in discharges from the Terminal. Therefore, the Draft Permit includes a requirement for fecal coliform in the pollutant scan to ensure bacteria are not present in discharges from the Terminal at concentrations that could cause or contribute to an excursion above WQSs. Inclusion of monitoring for a pollutant for which the receiving water is impaired is consistent with EPA's MSGP.

7.5 Whole Effluent Toxicity

Sections 402(a)(2) and 308(a) of the CWA provide EPA and States with the authority to require toxicity testing. Section 308 specifically describes biological monitoring methods as techniques that may be used to carry out objectives of the CWA. Under certain State narrative WQSs, and Sections 301, 303 and 402 of the CWA, EPA and the States may establish toxicity-based limits to implement the narrative "no toxics in toxic amounts". Massachusetts has narrative criteria in their water quality regulations (see Massachusetts 314 CMR 4.05(5)(e)) that prohibit toxic discharges in toxic amounts. The Draft Permit prohibits the addition of toxic materials or chemicals to the discharges and prohibits the discharge of pollutants in amounts that would be toxic to aquatic life.

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

To meet Massachusetts' narrative criteria found at 314 CMR 4.05(5)(e), the Draft Permit prohibits the discharge of pollutants in amounts that would be toxic to aquatic life. WET testing is conducted to determine whether certain effluents, often containing potentially toxic pollutants, are discharged in a combination that produces a toxic amount of pollutants in the receiving water. Therefore, toxicity testing is used in conjunction with pollutant-specific control procedures to minimize the discharge of toxic pollutants.

The regulations at 40 CFR §122.44(d)(ii) state, "*When determining whether a discharge causes, has the reasonable potential to cause, or contributes to an in-stream excursion above a narrative or numeric criteria within a State water quality standard, the permitting authority shall use procedures which account for existing controls on point and non-point sources of pollution...(including) the sensitivity of the species to toxicity testing...*" MassDEP in its "Implementation Policy for the Control of Toxic Pollutants in Surface Waters" (February 23, 1990) ("Toxics Policy") sets forth toxicity limits according to dilution factors based on perceived risk.

Based on the impairment to aquatic life in the Chelsea River, and given the potential for the additive and/or synergistic effect of several pollutants of concern for discharges from the Terminal, the Draft Permit contains acute testing requirements for **effluent and** chemical analysis requirements for **receiving water** once per year. The Draft Permit requires that testing be conducted for both the Mysid Shrimp (*Americamysis bahia*) and Inland Silverside (*Menidia beryllina*). The requirements included in the Draft Permit are consistent with the Toxics Policy for dilution in the low risk category except that the frequency of testing normally required in the Toxics Policy has been reduced because the discharge is intermittent and consists almost entirely of stormwater runoff.

The Permittee must collect the required receiving water sample (i.e., diluent) from the Chelsea River at a point immediately outside of the permitted discharge's zone of influence at a reasonably accessible location. A receiving water control (0% effluent) must be tested once per year for the chemical parameters in Attachment A, Marine Acute Toxicity Test Procedure and Protocol (July 2012). If toxicity is indicated, the Permittee is allowed use of alternate dilution water in accordance with the provisions in the Draft Permit. To clarify the requirements for effluent and receiving water for this testing, EPA has included WET parameters on the DMRs. Results of these toxicity tests will demonstrate compliance with the Massachusetts WQSs.

7.6 Hydrostatic Testing

The tanks and/or pipe networks used for the storage and conveyance of petroleum products at the Terminal sometimes require maintenance or repair. To ensure safe working conditions during this maintenance work, storage tanks and/or pipe networks are rigorously cleaned (e.g., "Poly Brushed", "Squeegee Pigged") and certified as being product-free. After completing maintenance work, the vessels and/or pipe networks may be hydrostatically tested for leaks. Hydrostatic testing involves filling the vessel or pipe with fluid under pressure and monitoring pressure drops over time. If the system maintains a constant pressure, there are no leaks. River water or potable water may be used as a source of hydrostatic test water. Thus, hydrostatic test water discharge may contain minimal amounts of foreign matter, trace amounts of hydrocarbons, background material found in the river or residual chlorine.

As a precaution, the Draft Permit requires any hydrostatic test water to be monitored (as further described below) and treated through the stormwater treatment system prior to being discharged to the Chelsea River. In addition, the Draft Permit requires control of the flow of hydrostatic test water to prevent exceeding the maximum design flow rate of 700 GPM at the OWS.

The Draft Permit requires collection of a minimum of five representative samples of the hydrostatic test water:

For tanks, new or existing, the Draft Permit requires the Permittee to take:

- one grab sample of the influent (one grab sample of the fill water during the first 10% of the estimated fill segment time (source at intake));
- one grab sample of the tank water (at the effluent point of the tank), following testing but before draining (in-process);
- two grab samples of the effluent (one sample of the discharge water during the first 10% of discharge and one sample during the last 10% of discharge) before treatment through the stormwater treatment system; and
- one grab sample of the effluent (one sample of the discharge water during the first 10% of discharge) following treatment through the stormwater treatment system through Outfall 001.

For pipelines, new or existing the Draft Permit requires the Permittee to take:

- one grab sample of the influent (one grab sample of the fill water during the first 10% of the estimated fill segment time (source at intake));
- one grab sample of the pipeline water following depressurization (in-process);
- two grab samples of the effluent (one sample of the discharge water during the first 10% of discharge and one sample during the last 10% of discharge) before treatment through the stormwater treatment system; and
- one grab sample of the effluent (one sample of the discharge water during the first 10% of discharge) following treatment through the stormwater treatment system through Outfall 001.

All samples are required to be analyzed for the pollutants limited in the Draft Permit for Outfall 001 (e.g., flow rate, TSS, O&G, pH, benzene, benzo(a)pyrene, naphthalene) and the additional parameters noted below, based on requirements for this type of discharge surveyed in EPA's ELG Document and/or included in EPA's RGP, Category IV, Subcategory C – Hydrostatic Testing of Pipelines and Tanks:

- Total Flow;
- Chemical Oxygen Demand (COD);
- Dissolved Oxygen (DO);
- Total Surfactants;
- VOCs (Toluene, Ethylbenzene, and Total Xylenes);
- PAHs (listed in Part I.A.1 of the Draft Permit for Pollutant Scan, Effluent, benzo(a)anthracene through pyrene);
- Total Recoverable Metals (iron, chromium, and those listed in Part I.A.1 of the Draft Permit for Whole Effluent Toxicity, cadmium through zinc); and

- Total Residual Chlorine, when potable water or a previously chlorinated source of water is used for hydrostatic testing.

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

These requirements are intended to provide adequate characterization of the influent, in-process, and effluent hydrostatic test water and are similar to requirements for similar facilities that discharge hydrostatic test water to Massachusetts receiving waters under EPA's RGP. Sampling of the above parameters is necessary to identify whether there are any residual contaminants present in the hydrostatic test water that might require the permit to be modified or reopened. **Within 90 days of completion of the hydrostatic test**, the Permittee is required to submit a letter or report summarizing the results of such test to EPA and MassDEP at the addresses provided in Part I. E.1. of the Draft Permit. This report shall include the following information:

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

All discharges of hydrostatic test water are subject to the numeric and non-numeric effluent limitations in the Draft Permit.

7.7 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. Terminal operators drain this layer of water to prevent transfer with the finished product as well as to free up valuable storage space.

Whereas stormwater primarily contacts only those hydrocarbons present at the ground surface and then generally only for short periods of time, tank bottom and bilge water remains in intimate proximity with petroleum derivatives for prolonged periods, allowing toxic pollutants to dissolve into the aqueous phase. EPA 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 the Chelsea River 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 stormwater or other wastewater unless specifically approved by EPA and MassDEP. 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 off-site.

7.8 Stormwater Pollution Prevention Plan

On September 25, 1992, EPA promulgated through its General Permit for Stormwater Discharge Associated with Industrial Activity, that the minimum BAT/BCT requirement for stormwater discharges associated with industrial activity is a Stormwater Pollution Prevention Plan (SWPPP) [57 FR, 44438]. EPA has included SWPPP requirements in the Draft Permit because the majority of wastewater discharged from the Terminal consists of stormwater. While the Terminal is ineligible for the MSGP, the Terminal engages in activities that could result in the discharge of pollutants to waters of the United States either directly or indirectly through stormwater runoff. These operations include at least one of the following in an area potentially exposed to precipitation or stormwater: material storage, in-facility transfer, material processing, material handling, or loading and unloading. Specifically, at this Terminal, distribution at the truck loading rack and routine maintenance and cleaning of the OWS are examples of material storage, processing and handling operations that must be included in the SWPPP.

To control activities/operations that could contribute pollutants to waters of the United States and potentially violate Massachusetts WQSs, the Draft Permit requires the Terminal to continue to implement, and maintain a SWPPP. This process involves the following four main steps:

- Forming a team of qualified Terminal personnel who will be responsible for developing and updating the SWPPP and assisting the Terminal manager in its implementation;
- Assessing the potential stormwater pollution sources;
- Selecting and implementing appropriate management practices and controls for these potential pollution sources; and
- Periodically re-evaluating the effectiveness of the SWPPP in preventing stormwater contamination and overall compliance with the various terms and conditions of the Draft Permit.

The goal of the SWPPP is to reduce, or prevent, the discharge of pollutants through the stormwater system. The SWPPP serves to document the selection, design and installation of control measures, including BMPs. Additionally, the SWPPP requirements in the Draft Permit are intended to facilitate a systematic approach for the Permittee to properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used to achieve compliance with the conditions of this permit. The SWPPP shall be prepared in accordance with good engineering practices and identify potential sources of pollutants, which may reasonably be expected to affect the quality of stormwater discharges associated with industrial activity from the Terminal. The SWPPP documents measures implemented at the Terminal to satisfy the non-numeric technology-based effluent limitations included in the Draft Permit. These non-numeric effluent

limitations support, and are equally enforceable as, the numeric effluent limitations included in the Draft Permit.

Pursuant to Section 304(a) of the Act and 40 CFR 125.103(b), BMPs may be expressly incorporated into a permit on a case-by-case basis where it is determined they are necessary to carry out the provision of the CWA under Section 402(a)(1). These conditions apply to the Terminal because Chelsea Sandwich stores and handles products containing pollutants listed as toxic under Section 307(a)(1) of the CWA or pollutants listed as hazardous under Section 311 of the CWA and have ancillary operations that could result in significant amounts of these pollutants reaching waters of the United States. BMPs have been selected based on those appropriate for this specific facility (see Sections 304(e) and 402(a)(1) of the CWA and 40 CFR §122.44(k)).

In essence, the SWPPP requirement directs the Permittee to review the physical equipment, the operational procedures, and the operator training for the Terminal. The objective of this review is to protect the local waterway by minimizing the pollutants discharged through inadequate facility design, through human error, or through equipment malfunction. In concert with the EPA requirements, the Commonwealth of Massachusetts has also addressed BMPs in their regulations at 314 CMR 3.00.

EPA reviewed BMPs in the ELG Document, and BMPs selected for similar facilities that satisfy non-numeric effluent limitations including minimizing exposure, implementing control measures, preventative maintenance programs, and spill prevention and response procedures, and developing management and handling protocols for sediment, runoff and run-on, hydrostatic testing, tank bottom water, snow and ice control, nuisance vegetation control and biodiesel storage. The Permittee may select and implement BMPs as appropriate to meet the requirements in the Draft Permit. However, the Draft Permit also includes the following site-specific BMPs:

- The discharge practices BMP requires, to the greatest extent practicable, the Permittee describe the procedure for initiating discharge in order to minimize runoff, run-on and re-entrainment of pollutants. This BMP also requires the Permittee avoid worst-case conditions, generally identified as the period of time immediately before and after slack tide and periods of lowest receiving water flow, when discharging. The BMP requires Chelsea Sandwich to identify other site-specific factors that may contribute to worst-case conditions, determine if additional controls are necessary that reduce the potential to contribute pollutants to stormwater, and establish a minimum frequency for sweeping of paved surfaces. Discharge practices also include those necessary to yield data representative of discharges from the Terminal and the receiving water, where ambient sampling is required (e.g., operator protocols, sampling location, sample collection, data quality assessment).
- The spill control BMP requires the Permittee to document methods and measures intended to reduce, minimize or eliminate the occurrence and impact of spills, document the procedure for informing the appropriate entity of accidental releases at the Terminal, and maintain a record of reportable releases at the Terminal.[24] The Draft Permit does not authorize the discharge of

[24] The Permittee may reference appropriate portions of the Terminal's Spill Prevention, Control, and Countermeasure (SPCC) Plan.

reportable quantities of petroleum products as a result of accidental release from the portions of the Terminal covered by this permit through Outfall 001. Specific exceptions are described in Part II to the Draft Permit, entitled "Standard Conditions". MassDEP assumes responsibility for reportable conditions required for certain spills under the MCP.

- The stormwater system BMP requires the Permittee to evaluate the integrity of the stormwater collection system, to determine the relative contribution of pollutants, if any, from contact with potentially contaminated groundwater and soil. This BMP requires the Permittee to document any stormwater system components that are potentially located below the annual high groundwater table that are susceptible to groundwater infiltration. The Permittee must assess through appropriate measures the level of infiltration that occurs (e.g., conduct a visual inspection of the readily accessible portions of the stormwater collection system, and/or measurement of groundwater and stormwater accumulation points as verification of segregation). The Permittee is not required to evaluate components of the stormwater collection system that are installed above grade for this BMP.

The Draft Permit directs the Permittee to incorporate BMPs directly into the SWPPP. BMPs become enforceable elements of the permit upon submittal of a SWPPP certification within 90 days of the effective date of the permit. Therefore, BMPs are permit conditions comparable to the numerical effluent limitations and are required to minimize the discharge of any pollutants through the proper operation of the Terminal.

8. Essential Fish Habitat (EFH)

Under the 1996 Amendments (PL 104-267) to the Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. §1801 et seq. (1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's actions or proposed actions that it funds, permits, or undertakes, may adversely impact any essential fish habitat, such as waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity (16 U.S.C. §1802(10)). "Adversely impact" means any impact which reduces the quality and/or quantity of EFH (50 CFR §600.910(a)). Adverse effects may include direct (e.g., contamination or physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions. 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.

EPA has determined that the Chelsea River is covered by the EFH designation for estuarine systems at Latitude 42º 23' 7.4898" N Longitude -71º 02' 40.844" W as determined by the NOAA EFH Mapper.[25] A copy of the managed species within the EFH is included in Attachment 5. EPA also noted that the documentation in support of the Boston Harbor Inner Harbor Maintenance Dredging Project identified a "potential winter flounder spawning area" near the confluence of the Chelsea and Mystic rivers.[26] Winter flounder is covered under Essential Fish Habitat regulations. This species is a

[25] NOAA EFH Mapper available at http://www.nero.noaa.gov/hcd/index2a.htm
[26] See *Final Summary Report Plume Monitoring, Boston Harbor Inner Harbor Maintenance Dredging Project*. June 2009 *for* U.S. Army Corps of Engineers New England District.

commercially fished, federally managed, bottom dwelling fish. Winter flounder eggs and larvae are typically found near the bottom in shallow areas. However, since winter flounder spawn on clean sand, the deep navigation channel, with more silt by composition, in general, would not be expected to be high quality spawning habitat for winter flounder.

EPA has concluded that the limits and conditions contained in this draft permit minimize adverse effects to the EFH and managed species, if present, for the following reasons:

- The frequency of discharge from the Terminal is limited (intermittent resulting almost entirely from accumulation of stormwater);
- The effluent limitations and other permit requirements identified in this Fact Sheet are designed to be protective of all aquatic species, including those with EFH designations; and
- The permit prohibits any violation of Massachusetts WQSs.

EPA believes that the conditions and limitations contained within the draft permit adequately protect all aquatic life, including those species with EFH designation in Boston Harbor. Impacts associated with issuance of this permit to the EFH species, their habitat and forage, have been minimized to the extent that no significant adverse impacts are expected. Further mitigation is not warranted. If adverse impacts to EFH are detected because of this permit action, or if new information is received that changes the basis for EPA's conclusion, NMFS will be notified and an EFH consultation will be initiated.

9. Endangered Species Act (ESA)

Under Section 7(a) of the Endangered Species Act, every federal agency is required to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize federally listed endangered or threatened species of fish, wildlife, or plants, or result in the adverse modification of critical habitat of such species. EPA initiates consultation concerning listed species under their purviews with the United States Fish and Wildlife Service (USFWS) for freshwater species, and the NMFS for marine species and anadromous fish.

No federally listed threatened or endangered species have been identified for the City of Chelsea.[27] In addition, EPA has reviewed the federal endangered or threatened species of fish, wildlife, and plants in Suffolk County to determine if the re-issuance of this NPDES permit could potentially impact any such listed species. No threatened species were identified for Suffolk County.[28]

The known distribution of two endangered species of anadromous fish which occur in Massachusetts, shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (*Acipenser oxyrinchus*), include the Merrimack and Connecticut Rivers, and the Merrimack and Taunton Rivers, respectively.[29]

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[27]See listing for Suffolk County in "Federally Listed Endangered and Threatened Species in Massachusetts." Massachusetts Natural Heritage and Endangered Species Program, October 7, 2011.
[28]See listings for Suffolk County in *Federally Listed Endangered and Threatened Species in Massachusetts* at http://www.fws.gov/newengland/EndangeredSpec-Consultation_Project_Review.htm
[29]See documents for shortnose sturgeon and Atlantic sturgeon at http://www.mass.gov/eea/docs/dfg/nhesp/species-and-conservation/nhfacts/acipenser-brevirostrum.pdf

However, adults may occur in estuarine and coastal habitats in Massachusetts. In addition, threatened and endangered species of whale and sea turtle may be present in Boston Harbor.

The Terminal is located along a highly urbanized, tidally influenced river near the confluence with the Mystic River. EPA received guidance from NMFS for the action area in this Draft Permit, which stated that NMFS is "…not aware of any listed species that may be present within Chelsea Creek or be affected by activities occurring in that area."[30] Based on this assessment, EPA has determined that no federally protected species are likely to be present in the action area. Therefore, consultation with NMFS or the USF&WS under Section 7 of the ESA is not required.

10. Environmental Justice (EJ)

Executive Order 12898 entitled "Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations" states in relevant part that "each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations...." The order also provides that federal agencies are required to implement the order consistent with and to the extent permitted by existing law. In addition, EPA adopted its "Proposed Regional Actions to Promote Public Participation in the Permitting Process" in June 2012 (see 77 FR 3805). EPA implemented a robust outreach and involvement process consistent with the Executive Order and EPA policy that is described in detail in the Environmental Justice Analysis (EJA), which was prepared in conjunction with the Draft Permit.

The Draft Permit implements existing water pollution prevention and control requirements, including applicable technology-based and water quality-based limits, standards, and practices to ensure compliance with applicable CWA requirements, and meet Massachusetts WQSs. As discussed in detail in the EJA, EPA evaluated the potential for significant adverse effects within the Draft Permit's area of coverage and surrounding communities. The EJA describes the evaluation of the vulnerability of these surrounding communities to the effects of the Terminal's discharges. The EJA evaluates the potential for disproportionately high and adverse human health or environmental effects, which might be unreasonable in relation to the benefits derived from the discharges.

In conjunction with EPA's evaluation, several additional special conditions were included in the Draft Permit to ensure adverse impacts do not occur because of discharges from the Terminal alone or in combination with other discharges from similar facilities to Chelsea River. The Draft Permit imposes a monitoring program to gather relevant information about potential effects of the discharges to Chelsea River. Additionally, EPA has the authority to modify a permit if the threat of adverse environmental impact from the discharges were to occur, that is, a discharge which violates WQSs or causes or contributes to an excursion above WQC. The monitoring program is designed to obtain additional information, which can be used in ongoing surveillance of permitted activities and in future permit decisions.

[30]Correspondence from Christine Vaccaro, NMFS, to John Nagle, EPA Region 1, August 5, 2013 regarding discharges to Chelsea River segment (MA71-06).

EPA carefully considered the potential EJ impacts related to the Draft Permits' authorized discharges, especially the potential for disproportionate effects on communities and residents that reside in close proximity to the Terminal or Chelsea River. EPA has determined that discharges authorized by the Draft Permit will not violate WQSs. Where EPA determined that a pollutant has a reasonable potential to cause or contribute to an excursion above WQC, EPA has maintained or added numeric WQBELs. EPA therefore determined that there will not be disproportionately high and adverse human health or environmental effects with respect to these discharges on minority or low-income populations residing in the Chelsea, Revere and East Boston areas of evaluation.

EPA's evaluation and determinations are discussed in more detail in the EJA, which is included in the administrative record associated with this permit (MA0003280).

11. Monitoring

The permit limitations and conditions have been established to yield data representative of the discharges under the authority of Section 308(a) of the CWA, according to regulations set forth at 40 CFR §122.41(j), 122.44(i) and 122.48. The monitoring program in the permit specifies routine sampling and analysis, which will provide continuous information on the reliability and effectiveness of the installed pollution abatement equipment. The approved analytical procedures found in 40 CFR Part 136 are required unless other procedures are explicitly required in the permit. The Permittee is obligated to monitor and report sampling results to EPA and the MassDEP within the time specified within the permit. Timely reporting is essential for the regulatory agencies to expeditiously assess compliance with permit conditions.

NetDMR is a national web-based tool for regulated Clean Water Act permittees to submit discharge monitoring reports (DMRs) electronically via a secure Internet application to EPA through the Environmental Information Exchange Network. NetDMR allows participants to discontinue mailing in hard copy forms under 40 CFR §122.41 and §403.12. NetDMR is accessed from the following url: http://www.epa.gov/netdmr. Further information about NetDMR, including contacts for EPA Region 1, is provided on this website.

Chelsea Sandwich has been using NetDMR since 2010; therefore, the Draft Permit does not contain a compliance schedule for NetDMR adoption. The Draft Permit requires the Permittee to report monitoring results obtained during each calendar month using NetDMR, **no later than the 15th day of the month following the completed reporting period**. All reports required under the permit shall be submitted to EPA as an electronic attachment to the DMR, with the exception of the results of hydrostatic testing, which are required in duplicate in hard copy form. When a permittee submits reports using NetDMR, it is not required that hard copies of DMRs or other reports be submitted to EPA (the results of hydrostatic testing) and hard copies of DMRs be submitted to MassDEP. However, permittees must continue to send hard copies of reports other than DMRs to MassDEP until further notice from MassDEP.

12. State Certification Requirements

EPA may not issue a permit unless the MassDEP 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. MassDEP staff have reviewed the draft permit and advised EPA that the limitations are adequate to protect water quality. EPA has requested permit certification by the State pursuant to 40 CFR §124.53 and expects that the draft permit will be certified.

13. Comment Period, Hearing Requests, and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the Draft Permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to Shauna Little, U.S. EPA, Office of Ecosystem Protection, Industrial Permits Section, 5 Post Office Square, OEP06-1, Boston, Massachusetts 02109-3912. Any person may submit oral or written comments to EPA and the State Agency at the public hearing, scheduled for April 17, 2014. In reaching a final decision on the Draft Permit, the EPA 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 EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 CFR §124.19.

14. EPA and MassDEP Contacts

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

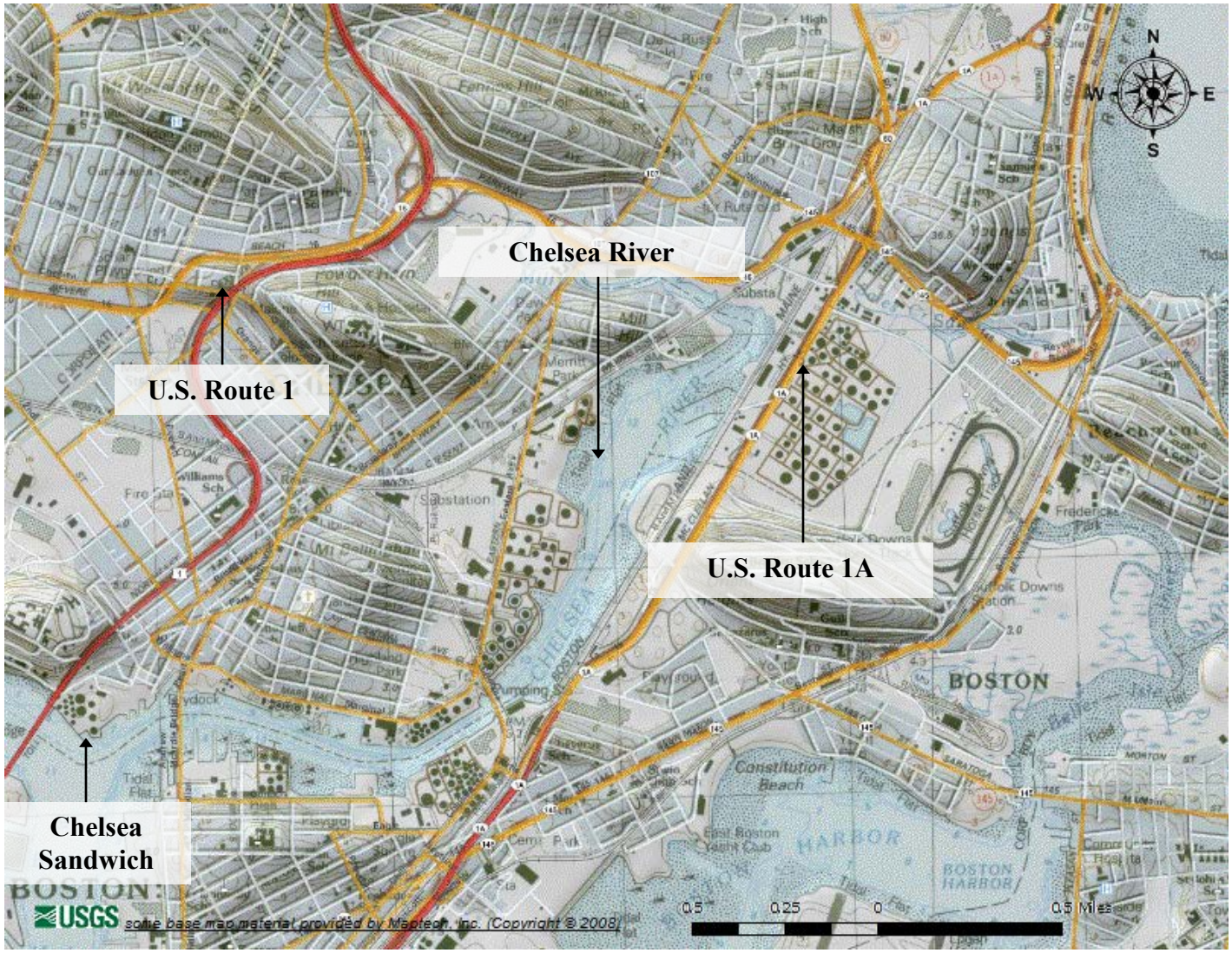
Shauna Little, EPA– Region 1
5 Post Office Square, Suite 100 (OEP06-1)
Boston, Massachusetts 02109-3912
Telephone: (617) 918-1989
FAX: (617) 918-0989
Email: little.shauna@epa.gov

Cathy Vakalopoulos, MassDEP
Division of Wastewater Management
Surface Water Discharge Permit Program
1 Winter Street, 5th Floor
Boston, Massachusetts 02108
Telephone: (617) 348-4026
FAX: (617) 292-5696
Email: catherine.vakalopoulos@state.ma.us

3/10/14

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

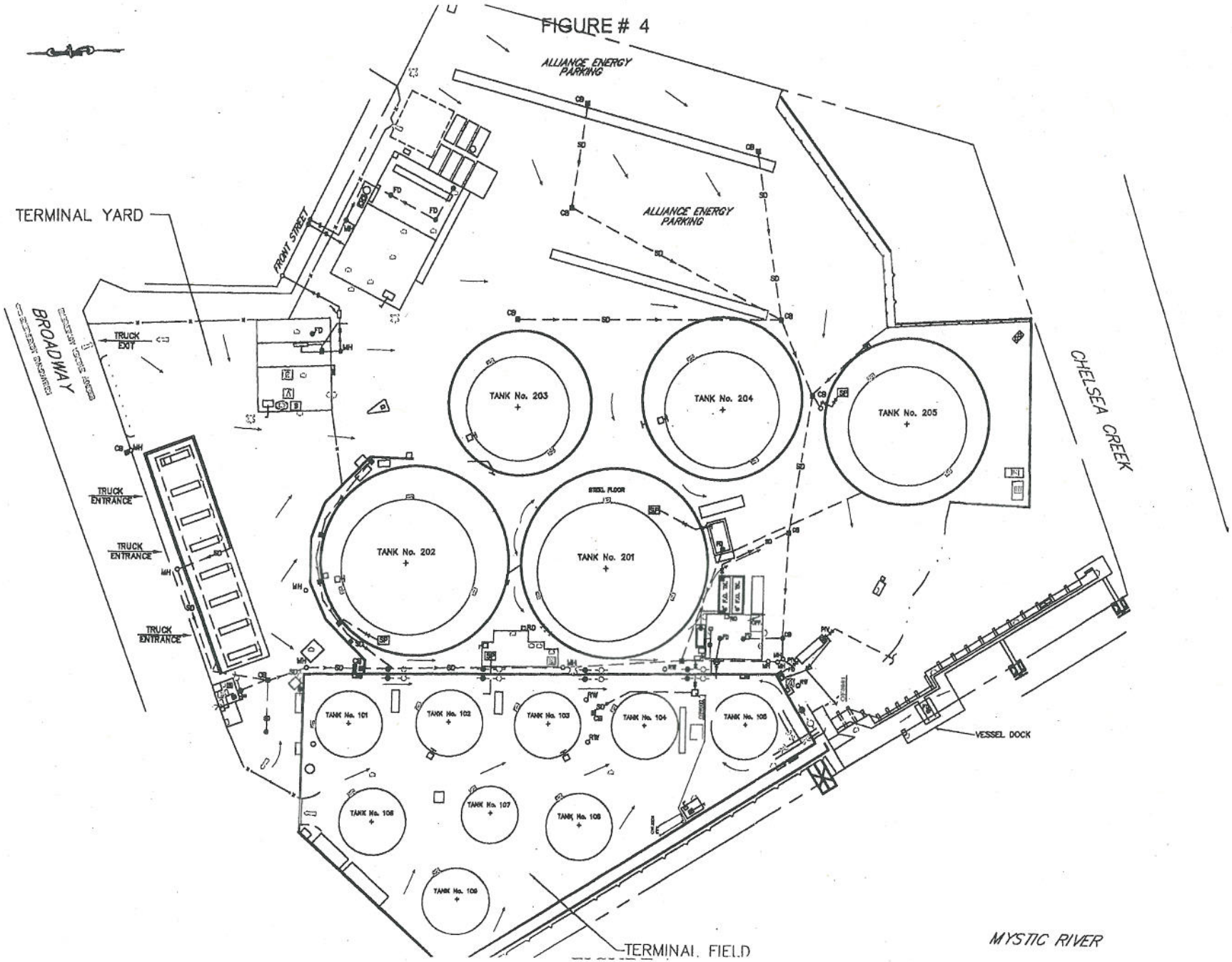
Attachment 1: Chelsea Sandwich Terminal Location Map



Source: http://water.usgs.gov/osw/streamstats/massachusetts.html

Attachment 2: Chelsea Sandwich Terminal Site Plan

FIGURE # 4


TERMINAL YARD
ALLIANCE ENERGY PARKING
ALLIANCE ENERGY PARKING
FRONT STREET
BROADWAY
CHELSEA CREEK
TRUCK EXIT
TRUCK ENTRANCE
TRUCK ENTRANCE
TRUCK ENTRANCE
TANK No. 203
TANK No. 204
TANK No. 205
TANK No. 202
TANK No. 201
STEEL FLOOR
TANK No. 101
TANK No. 102
TANK No. 103
TANK No. 104
TANK No. 105
TANK No. 106
TANK No. 107
TANK No. 108
TANK No. 109
VESSEL DOCK
TERMINAL FIELD
MYSTIC RIVER

Attachment 3: Discharge Monitoring Data

CHELSEA SANDWICH - MA0003280
Outfall Serial Number 001
Monthly Reporting

Monitoring Period End Date	Flow (Mgal/mo)	Flow Rate (GPM)	Oil & Grease (mg/L)	pH (SU)		TSS (mg/L)	
	Total	Daily Max	Daily Max	Minimum	Maximum	Monthly Avg	Daily Max
Jan-09	2.835	175.	6.02	7.46	7.46	4.5	9.
Feb-09	4.2892	175.	.	7.25	7.25	.	.
Mar-09	1.7272	175.	6.24	8.1	8.1	14.	28.
Apr-09	2.9977	175.	5.88	7.8	8.01	.	.
May-09	2.9179	175.	.	7.12	7.12	4.5	5.
Jun-09	2.867	175.	6.33	7.35	7.35	5.	10.
Jul-09	2.859	175.	.	7.65	7.65	.	.
Aug-09	.958	175.	.	6.72	6.72	.	.
Sep-09	1.186	175.	.	7.21	7.21	7.	8.
Oct-09	3.418	175.	7.5	7.8	7.8	3.	6.
Nov-09	3.502	175.	9.57	7.66	7.66	20.5	41.
Dec-09	3.628	175.	5.05	6.59	6.59	7.	14.
Jan-10	3.36	175.	.	7.	7.34	9.	15.
Feb-10	1.911	175.	5.08	7.55	7.55	10.5	15.
Mar-10	4.993	175.	.	6.7	7.94	3.5	7.
Apr-10	2.515	175.	10.2	7.29	7.29	.	.
May-10	.798	175.	.	7.36	7.36	.	.
Jun-10	1.937	175.	6.08	7.77	7.77	7.5	15.
Jul-10	.746	175.	.	6.95	7.05	2.5	5.
Aug-10	2.94	175.	.	7.32	7.32	8.5	13.
Sep-10	2.291	175.	.	7.01	7.01	7.	14.
Oct-10	3.113	175.	.	6.89	6.89	11.5	18.
Nov-10	2.625	175.	.	7.01	7.01	.	.
Dec-10	2.037	175.	.	6.94	6.94	.	.
Jan-11	2.552	175.	5.14	6.71	6.71	7.	14.
Feb-11	3.764	175.	7.56	7.09	7.09	33.5	34.
Mar-11	4.205	175.	12.3	7.5	7.5	3.	6.
Apr-11	3.644	175.	5.57	7.81	7.81	2.5	5.
May-11	2.567	175.	.	7.18	7.18	.	.
Jun-11	1.922	175.	.	7.51	7.51	9.5	19.
July-11	.415	175.	.	7.23	7.23	.	.
Aug-11	3.728	175.	.	7.45	7.45	7.5	15.
Sep-11	2.646	175.	.	6.65	6.65	.	.
Oct-11	3.701	175.	.	7.08	7.08	.	.
Nov-11	3.003	175.	.	6.84	6.84	5.5	11.
Dec-11	2.268	175.	.	6.89	6.89	20.	24.
Jan-12	2.614	175.	.	6.99	6.99	15.	22.
Feb-12	.30975	175.	<5	7.37	7.37	<4	<4
Mar-12	1.59075	175.	<5	7.19	7.19	6.	6.

Apr-12	.693	175.	.	7.23	7.23	.	.
May-12	2.49375	175.	.	7.24	7.24	4.	8.
Jun-12	2.268	175.	.	7.29	7.29	.	.
Jul-12	.64575	175.	.	7.05	7.05	10.5	12.
Aug-12	1.2075	175.	.	6.9	6.9	.	.
Sep-12	1.76925	175.	.	6.89	6.89	.	.
Oct-12	1.24425	175.	.	6.88	6.88	5.5	11.
Nov-12	.5775	175.	.	7.04	7.04	18.	18.
Dec-12	1.1655	175.	.	6.97	6.97	12.5	15.
Jan-13	1.3125	175.	8.59	7.41	7.41	38.	38.
Feb-13	3.696	175.	.	7.3	7.3	.	.
Mar-13	5.1555	175.	.	7.21	7.21	3.5	7.
Apr-13	.819	175.	.	7.47	7.47	3.5	7
May-13	.64575	175.	.	7.37	7.37	7.5	8
Jun-13	3.418275	175.	.	7.32	7.32	.	.
Jul-13	.9765	175.	.	7.18	7.18	7	14
Aug-13	.777	175.	.	7.23	7.23	.	.
Sep-13	1.12875	175.	.	7.18	7.18	23	23
Oct-13							
Nov-13	1.09725	175.	.	7.05	7.05	.	.
Dec-13							
2005 Permit Limits	**Report**	**700**	**15**	**6.5**	**8.5**	**30**	**100**
Minimum	0.30975	175	5.05	6.59	6.59	2.5	5
Maximum	5.1555	175	12.3	8.1	8.1	38	41
Average	2.284	175	7.141	7.210	7.243	9.946	14.595
Standard Deviation	1.222	0	2.152	0.319	0.331	8.185	9.051
# of measurements	58	58	15	58	58	37	37

. = Pollutant not detected above laboratory practical quantitation limits (PQLs); when provided in Discharge Monitoring Reports (DMRs), the PQLs are noted as <PQL for the analyte for the date of analysis
Average calculated using only detected values

CHELSEA SANDWICH - MA0003280
Outfall Serial Number 001
Quarterly Reporting – Group I PAHs + Naphthalene

Monitoring Period End Date	Benzo(a) anthracene (µg/L)	Benzo(a) pyrene (µg/L)	Benzo(b) fluoranthene (µg/L)	Benzo(k) fluoranthene (µg/L)	Chrysene (µg/L)	Dibenzo (a,h) anthracene (µg/L)	Indeno (1,2,3-c,d) pyrene (µg/L)	Naphtalene (µg/L)
Mar-09	0.341	0.835	1.34	.	.	.	.	.
Jun-09	.	.	.	.	.	.	.	.
Sep-09	.	.	.	.	.	.	.	.
Dec-09	.	.	.	.	.	.	.	.
Mar-10	.	.	.	.	.	.	.	.
Jun-10	.	.	.	.	.	.	.	.
Sep-10	.	.	.	.	.	.	.	.
Dec-10	.	.	.	.	.	.	.	2.5
Mar-11	.	.	.	.	.	.	.	.
Jun-11	.	.	.	.	.	.	.	.
Sep-11	.	.	.	.	.	.	.	.
Dec-11	.	.	.	.	.	.	.	.
Mar-12	<0.202	<0.101	<0.505	<0.505	<1.01	<0.303	<0.303	<1.01
Jun-12	.	.	.	.	.	.	.	.
Sep-12	.	.	.	.	.	.	.	.
Dec-12	.	.	.	.	.	.	.	.
Mar-13	.	.	.	.	.	.	.	.
Jun-13	.	.	.	.	.	.	.	.
Sep-13	.	.	.	.	.	.	.	.
Dec-13								
2005 Permit Limits	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**	**Report**
Minimum	.	.	.	.	.	.	.	.
Maximum	0.341	0.835	1.34	.	.	.	.	2.5
Average	NA	NA	NA	NA	NA	NA	NA	NA
# of measurements	20	20	20	20	20	20	20	20

. = Pollutant not detected above laboratory PQLs; the PQLs are noted for the analyte for the date of analysis as <PQL
NA = not applicable

CHELSEA SANDWICH - MA0003280 Outfall Serial Number 001 Quarterly Reporting – VOCs				
Monitoring Period End Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)
Mar-09	.	.	.	.
Jun-09	.	45.3	8.97	51.4
Sep-09	.	.	.	.
Dec-09	.	.	.	.
Mar-10	.	.	.	.
Jun-10	.	.	.	.
Sep-10	.	.	.	.
Dec-10	.	.	.	.
Mar-11	.	.	.	.
Jun-11	.	.	.	.
Sep-11	.	.	.	.
Dec-11	.	.	.	.
Mar-12	<2	<2	<2	<2
Jun-12	.	.	.	.
Sep-12	.	.	.	.
Dec-12	.	.	.	.
Mar-13	.	.	.	.
Jun-13	.	.	.	.
Sep-13	.	.	.	.
Dec-13	5.26	.	.	.
2005 Permit Limits	**51**	**Report**	**Report**	**Report**
Minimum	.	.	.	.
Maximum	5.26	45.3	8.97	51.4
	NA	NA	NA	NA
# of measurements	20	20	20	20

. = Pollutant not detected above PQLs; when provided in DMRs, the PQLs are noted as <PQL for the analyte for the date of analysis
NA = not applicable

CHELSEA SANDWICH - MA0003280 Outfall Serial Number 002 Quarterly Reporting – VOCs					
Monitoring Period End Date	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	BTEX (µg/L)
	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Mar-09	.	.	.	.	.
Jun-09	.	.	.	.	.
Sep-09	.	.	.	.	.
Dec-09	.	.	.	.	.
Mar-10	.	.	.	.	.
Jun-10	.	.	.	.	.
Sep-10	.	.	.	---	.
Dec-10	.	.	.	.	.
Mar-11	.	.	.	.	.
Jun-11	.	.	.	.	.
Sep-11	.	.	.	.	.
Dec-11	.	.	.	.	.
Mar-12	.	.	.	.	.
Jun-12	.	.	.	.	.
Sep-12	.	.	.	.	.
Dec-12	.	.	.	.	.
Mar-13	.	.	.	.	.
Jun-13	.	.	.	.	.
Sep-13	.	.	.	.	.
Dec-13	.	.	.	.	.
2005 Permit Limits	**5**	**Report**	**Report**	**Report**	**100**
Minimum	.	.	.	.	.
Maximum	.	.	.	.	.
Average	NA	NA	NA	NA	NA
# of measurements	20	20	20	19	20

. = Pollutant not detected above PQLs; when provided in DMRs, the PQLs are noted as <PQL for the analyte for the date of analysis
--- = Data not available
NA= not applicable

CHELSEA SANDWICH - MA0003280
Outfall Serial Number 002
Quarterly Reporting – pH + TSS + Petroleum Hydrocarbons

Monitoring Period End Date	pH (SU)		TSS (mg/L)		Total Recoverable Petroleum Hydrocarbons (mg/L)	PAHs (µg/L)	Sum of PAHs	Naphthalene (µg/L)
	Minimum	Maximum	Monthly Avg	Daily Max	Daily Max	Daily Max	Daily Max	Daily Max
Jun-08	6.71	6.71	.	.	.	.	.	.
Sep-08	6.91	6.91	17.	17.	.	.	.	.
Dec-08	6.7	6.7	10.	10.	.	.	.	.
Mar-09	6.85	6.85	8.	8.	.	.	.	.
Jun-09	7.11	7.11	21.5	31.	.	.	.	.
Sep-09	6.84	6.84	.	.	.	.	.	1.82
Dec-09	6.95	6.95	.	.	.	.	.	.
Mar-10	6.7	7.2	.	.	.	.	.	.
Jun-10	6.97	6.97	.	.	.	.	.	.
Sep-10	7.09	7.09	19.	19.	.377	.	.	.
Dec-10	6.83	6.83	.	.	.	.	.	.
Mar-11	6.92	6.92	8.	8.	.	.	.	.
Jun-11	6.9	6.9	12.	12.	.	.	.	.
Sep-11	6.9	6.9	7.	7.	.229	.	.	.
Dec-11	6.65	6.65	4.	4.	.	.	.	.
Mar-12	6.75	6.75	8.	8.	.	.	.	.
Jun-12	6.82	6.82	7.	7.	.	.	.	.
Sep-12	6.88	6.88	.	.	.	.	.	.
Dec-12	7.1	7.1	.	.	.217	.	.	.
Mar-13	7.4	7.4	.	.	.534	.	.	.
Jun-13	7.15	7.15	6	6	.992	.	.	.
Sep-13	7.05	7.05	7	7	.931	.	.	.
Dec-13								
2005 Permit Limits	**6.5**	**8.5**	**30**	**100**	**5**	**0.018**	**100**	**20**
Minimum	6.65	6.65	4	4	0.217	.	.	.
Maximum	7.4	7.4	21.5	31	0.992	.	.	1.82
Average	6.9	7.0	9.8	10.6	0.5	NA	NA	NA
Standard Deviation	0.18	0.18	5.55	7.83	0.34	NA	NA	NA
# of measurements	19	19	11	11	6	23	23	23

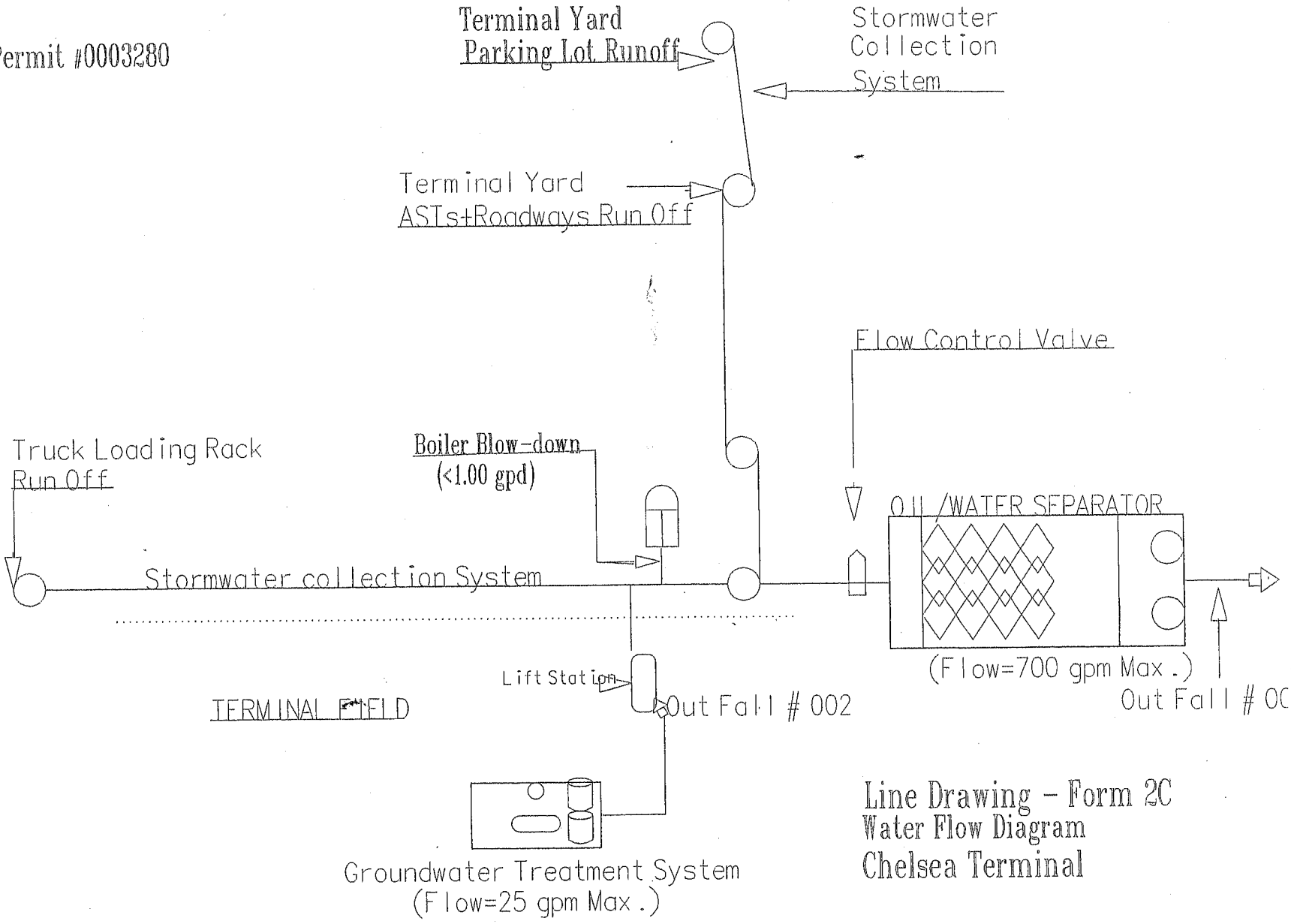
. = Pollutant not detected above PQLs; when provided in DMRs, the PQLs are noted as <PQL for the analyte for the date of analysis
Average calculated using only detected values
NA = not applicable

CHELSEA SANDWICH - MA0003280 Outfall Serial Number 002 Monthly Reporting		
Monitoring Period End Date	Flow (Mgal/mo)	Flow Rate (GPM)
	Total	Daily Max
Jan-09	.05277	25.
Feb-09	.03002	25.
Mar-09	.05183	25.
Apr-09	.07074	25.
May-09	.1278	25.
Jun-09	.059	25.
Jul-09	.07	25.
Aug-09	.04	25.
Sep-09	.018	25.
Oct-09	.026	25.
Nov-09	.041	25.
Dec-09	.067	25.
Jan-10	.04	25.
Feb-10	.022	25.
Mar-10	.053	25.
Apr-10	.031	25.
May-10	.015	25.
Jun-10	.018	25.
Jul-10	.063	25.
Aug-10	.068	25.
Sep-10	.07	25.
Oct-10	.052	25.
Nov-10	.077	25.
Dec-10	.066	25.
Jan-11	.094	25.
Feb-11	.077	25.
Mar-11	.06	25.
Apr-11	.108	25.
May-11	.089	25.
Jun-11	.059	25.
July-11	.059	25.
Aug-11	.049	25.
Sep-11	.058	25.
Oct-11	.046	25.
Nov-11	.072	25.
Dec-11	.044	25.
Jan-12	.014	25.
Feb-12	.011547	25.
Mar-12	.029478	25.

Apr-12	.082256	25.
May-12	.1123	25.
Jun-12	.144304	25.
Jul-12	.026892	25.
Aug-12	.033597	25.
Sep-12	.023203	25.
Oct-12	.039849	25.
Nov-12	.032681	25.
Dec-12	.036672	25.
Jan-13	.053385	25.
Feb-13	.06047	25.
Mar-13	.104912	25.
Apr-13	.089065	25.
May-13	.10709	25.
Jun-13	.078436	25.
Jul-13	.066407	25.
Aug-13	.052542	25.
Sep-13	.054916	25.
Oct-13	.044025	25.
Nov-13	.022849	25.
Dec-13		
2005 Permit Limits	**Report**	**25**
Minimum	0.011547	25
Maximum	0.144304	25
Average	0.057	25
Standard Deviation	0.029	0.000
# of measurements	59	59

Attachment 4: Chelsea Sandwich Terminal Process Flow Diagram

NPDES Permit #0003280



Line Drawing – Form 2C
Water Flow Diagram
Chelsea Terminal

Attachment 5: Summary of Essential Fish Habitat Designations

Name of Estuary/ Bay/ River: Boston Harbor, Massachusetts

10' x 10' Square Coordinates:

Boundary	North	East	South	West
Coordinate	42°30.0' N	71°00.0' W	42°20.0' N	71°10.0' W

Square Description (i.e. habitat, landmarks, coastline markers):

Waters within the Atlantic Ocean within the square within Massachusetts Bay and within Boston Harbor affecting the following: South Boston, MA., Boston, MA., Chelsea River, Mystic River, Charles River, East Boston, MA., Chelsea, MA., Orient Heights, and most of Logan Airport.

Species	Eggs	Larvae	Juveniles	Adults
Atlantic cod *(Gadus morhua)*	X	X	X	X
haddock *(Melanogrammus aeglefinus)*	X	X		
pollock *(Pollachius virens)*	X	X	X	X
whiting *(Merluccius bilinearis)*	X	X	X	X
offshore hake *(Merluccius albidus)*				
red hake *(Urophycis chuss)*	X	X	X	X
white hake *(Urophycis tenuis)*	X	X	X	X
redfish *(Sebastes fasciatus)*	n/a			
witch flounder *(Glyptocephalus cynoglossus)*				
winter flounder *(Pseudopleuronectes americanus)*	X	X	X	X
yellowtail flounder *(Limanda ferruginea)*	X	X	X	X
windowpane flounder *(Scophthalmus aquosus)*	X	X	X	X
American plaice *(Hippoglossoides platessoides)*	X	X	X	X
ocean pout *(Macrozoarces americanus)*	X	X	X	X
Atlantic halibut *(Hippoglossus hippoglossus)*	X	X	X	X
Atlantic sea scallop *(Placopecten magellanicus)*	X	X	X	X
Atlantic sea herring *(Clupea harengus)*		X	X	X
monkfish *(Lophius americanus)*				
bluefish *(Pomatomus saltatrix)*				
long finned squid *(Loligo pealeii)*	n/a	n/a	X	X
short finned squid *(Illex illecebrosus)*	n/a	n/a	X	X
Atlantic butterfish *(Peprilus triacanthus)*	X	X	X	X
Atlantic mackerel *(Scomber scombrus)*	X	X	X	X
summer flounder *(Paralichthys dentatus)*				X

scup *(Stenotomus chrysops)*	n/a	n/a	X	X
black sea bass *(Centropristis striata)*	n/a		X	X
surf clam *(Spisula solidissima)*	n/a	n/a	X	X
ocean quahog *(Artica islandica)*	n/a	n/a		
spiny dogfish *(Squalus acanthias)*	n/a	n/a		
tilefish *(Lopholatilus chamaeleonticeps)*				
bluefin tuna *(Thunnus thynnus)*			X	X

n/a = The species does not have this lifestage in its life history, or has no EFH designation for this lifestage.

Source: http://www.nero.noaa.gov/hcd/webintro.html

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION
COMMONWEALTH OF MASSACHUSETTS
1 WINTER STREET
BOSTON, MASSACHUSETTS 02108

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ECOSYSTEM PROTECTION
REGION 1
BOSTON, MASSACHUSETTS 02109

JOINT PUBLIC NOTICE OF DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMITS TO DISCHARGE INTO THE WATERS OF THE UNITED STATES UNDER SECTIONS 301 AND 402 OF THE CLEAN WATER ACT, AS AMENDED, AND UNDER SECTIONS 27 AND 43 OF THE MASSACHUSETTS CLEAN WATERS ACT, AS AMENDED, REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE CLEAN WATER ACT, PUBLIC HEARING, AND ENVIRONMENTAL JUSTICE ANALYSIS.

DATE OF NOTICE: March 14, 2014

PUBLIC NOTICE NUMBER: MA-009-14

PERMIT NUMBER, NAME AND MAILING ADDRESS OF APPLICANT, AND NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

MA0004006
Sunoco Partners Marketing and Terminals L.P.
467 Chelsea Street
East Boston, MA 02128
for
Sunoco Logistics Terminal
467 Chelsea Street
East Boston, MA 02128

MA0003425
Global Petroleum Corporation
140 Lee Burbank Highway
Revere, MA 02151
for
Global Petroleum Terminal
71/140 Lee Burbank Highway
Revere, MA 02151

MA0003298
Global REVCO Terminal, LLC
140 Lee Burbank Highway
Revere, MA 02151
for
Global REVCO Terminal
101/186 Lee Burbank Highway
Revere, MA 02151

MA0003280
Chelsea Sandwich, LLC
11 Broadway
Chelsea, MA 02150
for
Chelsea Sandwich Terminal
11 Broadway
Chelsea, MA 02150

MA0001929
Irving Oil Terminals, Inc.
41 Lee Burbank Highway
Revere, MA 02151
for
Irving Oil Terminal
40/41 Lee Burbank Highway
Revere, MA 02151

MA0001091
Gulf Oil Limited Partnership
100 Crossing Boulevard
Framingham, MA 01702
for
Gulf Oil Terminal
281 Eastern Avenue
Chelsea, MA 02150

MA0000825
Global South Terminal, LLC
140 Lee Burbank Highway
Revere, MA 02151
for
Global South Terminal
49/96 Lee Burbank Highway
Revere, MA 02151

RECEIVING WATERS: Chelsea River and Sales Creek

RECEIVING WATERS CLASSIFICATION: Class SB (Chelsea River) and SA (Sales Creek)

PREPARATION OF THE DRAFT PERMITS:

The U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) have cooperated in the development of permits for the above identified facilities. The effluent limits and permit conditions imposed have been drafted to assure compliance with the Clean Water Act, 33 U.S.C. sections 1251 et seq., the Massachusetts Clean Waters Act, G.L. c. 21, §§ 26-53, 314 CMR 3.00 and State Surface Water Quality Standards at 314 CMR 4.00. EPA has formally requested that the State certify these

draft permits pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMITS:

Fact sheets (describing the type of facility; type and quantities of wastes; a brief summary of the basis for the draft permit conditions; and significant factual, legal and policy questions considered in preparing this draft permit) and draft permits may be obtained at no cost at http://www.epa.gov/region1/npdes/draft_permits_listing_ma.html or by writing or calling EPA's contact person named below:

Shauna Little
U.S. Environmental Protection Agency – Region 1
5 Post Office Square, Suite 100 (OEP06-1)
Boston, MA 02109-3912
Telephone: (617) 918-1989

The administrative record containing all documents relating to these draft permits is on file and may be inspected at the EPA Boston office mentioned above between 9:00 a.m. and 5:00 p.m., Monday through Friday, except holidays.

PUBLIC HEARING:

The Regional Administrator has determined, pursuant to 40 CFR §124.12, that a significant degree of public interest exists in this proposed permit and that a public hearing should be held in Chelsea, Massachusetts to consider this permit. This notice serves to announce that a public hearing will be held at least thirty days after this public notice. Accordingly, a public meeting and hearing will be held on the following date and time:

DATE:	Thursday, April 17, 2014
TIME:	**Public Informational Meeting: 6:30pm – 7:00pm** **Public Hearing: 7:15pm**
LOCATION:	Chelsea City Hall (City Council Chambers Room) 500 Broadway Chelsea, MA 02150

The following is a summary of the procedures that will be followed at the public meeting:

a. The Presiding Chairperson will have the authority to open and conclude the meeting and to maintain order.
b. EPA will make a short presentation describing the NPDES permit process and the draft permit conditions, and then accept questions from the audience.
c. Formal oral comments concerning the draft permit will not be accepted at the public meeting. Formal oral comments will be accepted at the subsequent public hearing.

The following is a summary of the procedures that will be followed at the public hearing:

a. The Presiding Chairperson will have the authority to open and conclude the hearing and to maintain order.
b. Any person appearing at such a hearing may submit oral or written statements concerning the draft permit.

PUBLIC COMMENT PERIOD:

All persons, including applicants, who believe any condition of this draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by **May 12, 2014** to the address above. In reaching a final decision on this draft permit the Regional Administrator will respond to all significant comments and make the responses available to the public at EPA's Boston office.

FINAL PERMIT DECISION:

Following the close of the comment period, and after a 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.

ENVIRONMENTAL JUSTICE ANALYSIS:

The EPA and MassDEP cooperated in development of an Environmental Justice Analysis (EJA) for the NPDES permitting actions for these facilities in Chelsea, East Boston and Revere. The EPA is accepting comments on the EJA during the same time period as accepting comments on the draft permits. All persons wishing to submit comments on the EJA must submit comments as noted above, with an indication that the comment(s) pertain to the EJA.

DAVID FERRIS, DIRECTOR
MASSACHUSETTS WASTEWATER
MANAGEMENT PROGRAM
MASSACHUSETTS DEPARTMENT OF
ENVIRONMENTAL PROTECTION

KEN MORAFF, DIRECTOR
OFFICE OF ECOSYSTEM PROTECTION
ENVIRONMENTAL PROTECTION
AGENCY – REGION 1