NPDES PART II STANDARD CONDITIONS
(January, 2007)

TABLE OF CONTENTS

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
REGION I
1 CONGRESS STREET - SUITE 1100
BOSTON, MASSACHUSETTS 02114-2023

FACT SHEET

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

NPDES PERMIT NO: **MA0003280**

PUBLIC NOTICE DATE:

NAME AND ADDRESS OF APPLICANT:

Global Companies, LLC
11 Broadway
Chelsea, MA 02150

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Chelsea Sandwich, LLC
11 Broadway
Chelsea, MA 02150

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

CLASSIFICATION: **SB**

I. PROPOSED ACTION

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

II. TYPE OF FACILITY

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

III. SUMMARY OF MONITORING DATA

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

IV. PERMIT LIMITATIONS AND CONDITIONS

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

V. PERMIT BASIS AND EXPLANATION OF EFFLUENT LIMITATION DERIVATION

A. General Requirements

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

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

1. Technology-Based Requirements

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

Technology-based treatment requirements represent the minimum level of control that must be imposed under Sections 301(b) and 402 of the CWA (See 40 CFR §125 Subpart A) to meet best practicable control technology currently available (BPT) for conventional pollutants and some metals, best conventional control technology (BCT) for conventional pollutants, and best available technology economically achievable (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines for non-POTW facilities must be complied with as expeditiously as practicable but in no case later than three years after the date such limitations are established and in no case later than March 31, 1989 [See 40 CFR §125.3(a)(2)]. Compliance schedules and deadlines not in accordance with the statutory provisions of the CWA can not be authorized by a NPDES permit.

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

2. Water Quality-Based Requirements

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

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

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

3. Anti-Backsliding

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

4. Anti-Degradation

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

B. Description of Facility

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

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

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

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

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

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

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

C. Description of Discharge

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

1. Outfall 001

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

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

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

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

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

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

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

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

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

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

2. Outfall 002

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

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

D. Discharge Location

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

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

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

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

E. Proposed Permit Effluent Limitations and Conditions

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

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

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

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

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

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

1. Flow

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

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

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

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

2. Total Suspended Solids (TSS)

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

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

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

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

3. Oil and Grease (O&G)

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

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

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

4. pH

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

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

5. Polynuclear Aromatic Hydrocarbons (PAHs)

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

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

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

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

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

Indeno(1,2,3-cd)pyrene

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

7. Tank-Bottom and Bilge Water

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

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

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

8. Hydrostatic Test Water Discharges

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

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

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

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

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

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

During discharge (i.e., approximately at the same time the three effluent grab samples are taken), the flow exiting through the O/W Separator and outfall should be observed in order to prevent the inadvertent release of hydrocarbons to the receiving water(s). In the event that there is evidence of such a release (e.g., visible oil sheen and/or noticeable increase in turbidity of discharge water), the permittee shall immediately halt the discharge of hydrostatic test water and take steps to correct the problem.

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

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

9. Discharge of Treated Ground Water (Outfall 002)

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

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

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

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

a. Flow

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

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

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

The effluent limits for Outfall 002 also include a maximum daily limit of 5 mg/L for Total Petroleum Hydrocarbons (TPH). TPH, measures the total concentration of all petroleum related hydrocarbon compounds within a specified carbon range (Weisman, 1998). The petroleum related compounds included within this analysis range from compounds with 6 carbon (C_6) atoms to compounds with 25 carbon atoms (C_{25}). The use of TPH concentrations to establish target cleanup levels for soil or water is a common approach implemented by regulatory agencies in the United States (Weisman, 1998). EPA has made a BPJ determination based upon the technology-based and performance information to include TPH in this permit. EPA has eliminated the monitoring requirement for MTBE from the Draft Permit based on the facility's assurance that the earlier spill did not involve gasoline. The permittee has also confirmed that gasoline is not one of the products currently stored at the Chelsea Sandwich facility.

c. Polynuclear Aromatic Hydrocarbons (PAHs)

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

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

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

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

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

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

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

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

10. Prohibition of Non-Storm Water Discharges

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

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

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

11. Storm Water Pollution Prevention Plan

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

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

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

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

12. Additional Requirements and Conditions

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

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

VI. ENDANGERED SPECIES ACT

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

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

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

VII. ESSENTIAL FISH HABITAT

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

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

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

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

VIII. STATE CERTIFICATION REQUIREMENTS

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

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

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

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

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

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

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

X. EPA & MADEP CONTACTS

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

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

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

_____
Date

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

REFERENCES

ES&T. 2002. *MTBE Ambient Water Quality Criteria Development: A Public/Private Partnership.* Mancini, E.R., et al., Environmental Science & Technology, Vol. 36, No. 2. 2002.

Global. 2004. *Chelsea Sandwich, LLC - NPDES Permit No. MA0003280, Responses to EPA Information Request Dated May 19, 2004.* Global Companies, LLC, Chelsea, MA. June 2004.

MADEP. 2002. *Boston Harbor 1999 Water Quality Assessment Report.* Massachusetts Department of Environmental Protection, Division of Watershed Management, Worcester, MA. October 2002 (70-AC-1)

MADEP. 2003. *Massachusetts Year 2002 Integrated List of Waters, Part 2 - Final Listing of Individual Categories of Waters.* Commonwealth of Massachusetts Executive Office of Environmental Affairs, September, 2003 (CN:125.2)

Potter, Thomas L. and Kathleen E. Simmons, 1998. *Composition of Petroleum Mixtures, Volume 2.* Total Petroleum Hydrocarbon Criteria Working Group Series, May 1998.

Triton, Inc. 2000. *NPDES Permit Amendment Application, Chelsea Sandwich, LLC - 11 Broadway, Chelsea, MA, NPDES Permit No. MA 0003280.* Triton Environmental, Inc., New Haven, CT. June 2000.

USEPA. 1982. *Development Document for Effluent Limitations Guidelines and Standards and Pretreatment Standards for the Steam Electric Point Source Category.* United States Environmental Protection Agency, Office of Water and Waste Management, Washington, D.C. EPA-440/1-82/029, November 1982.

USEPA. 2002. *National Recommended Water Quality Criteria:2002.* United States Environmental Protection Agency, Office of Water, Washington, D.C. EPA-822-R-02-047, November 2002.

Weisman, Wade, 1998. *Analysis of Hydrocarbons in Environmental Media, Volume 1.* Total Petroleum Hydrocarbon Criteria Working Group Series, March 1998.

FIGURES

ATTACHMENT A

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(1998 TO 2003)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

ATTACHMENT B

SUMMARY OF GROUND WATER MONITORING DATA

(2003 TO 2004)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

ATTACHMENT C

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(2001 TO 2003)

FOR POLYNUCLEAR AROMATIC COMPOUNDS

CHELSEA SANDWICH, LLC

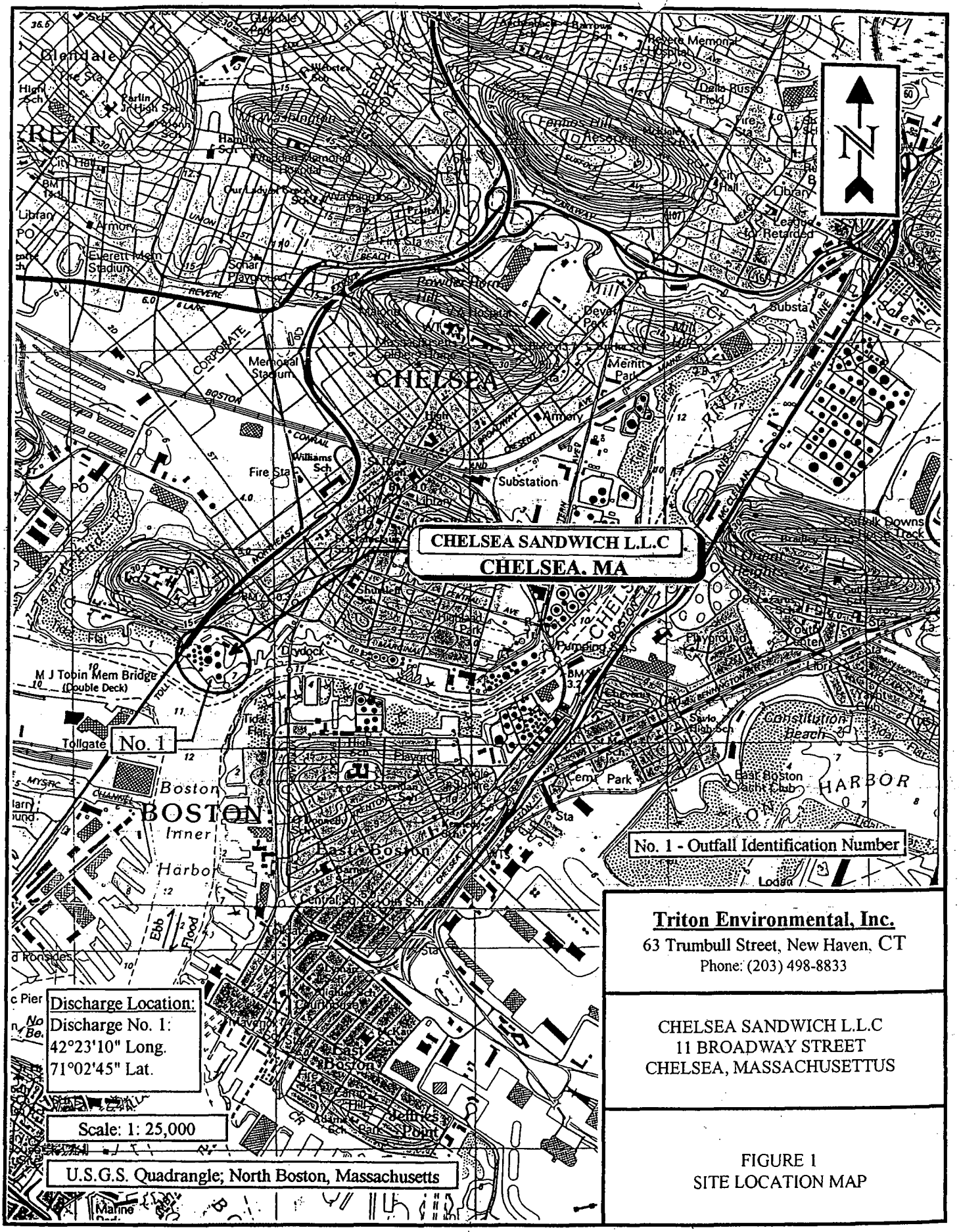
NPDES PERMIT NO. MA0003280

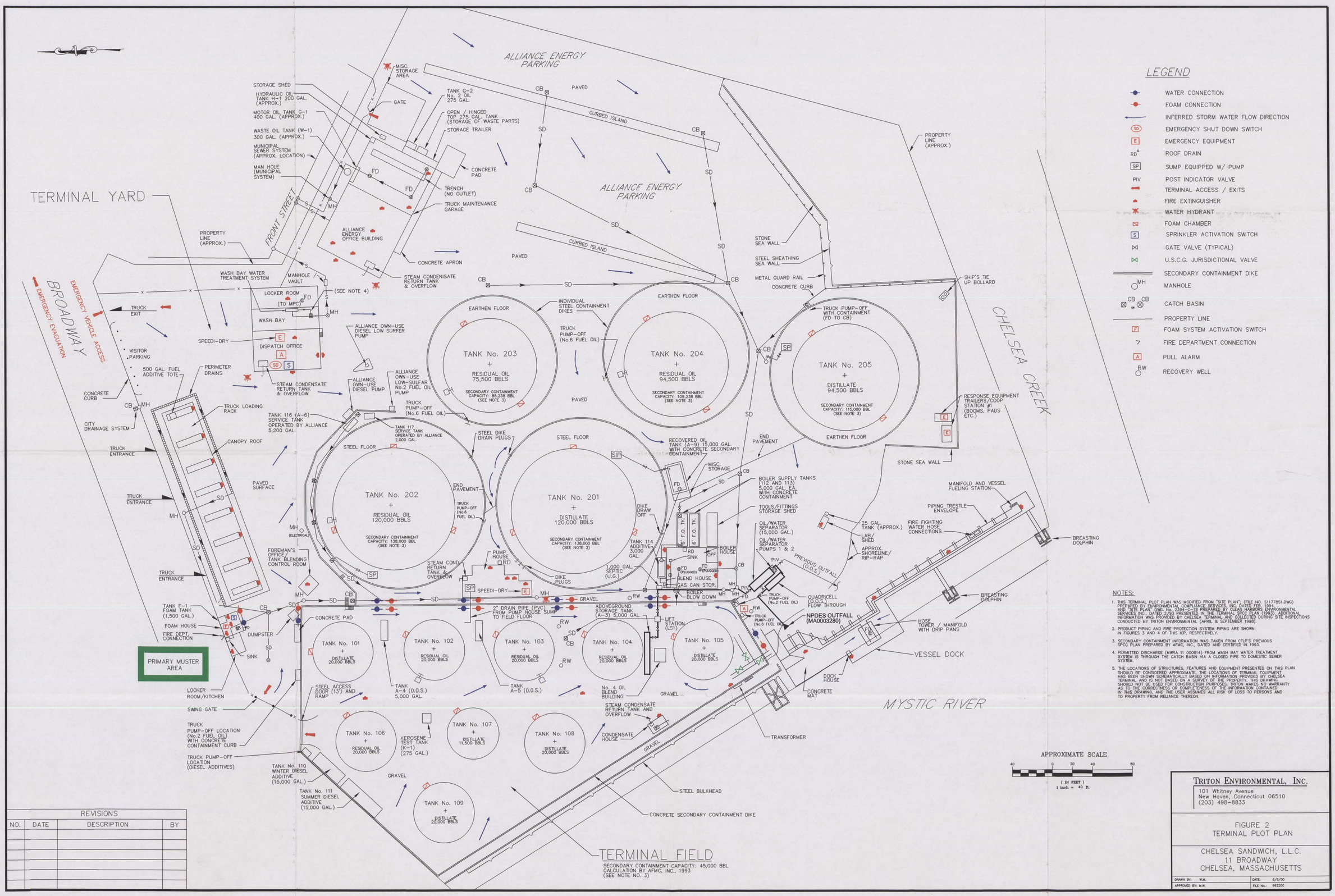
ATTACHMENT D

ENDANGERED SPECIES LIST

ATTACHMENT E

ESSENTIAL FISH HABITAT DESIGNATION


CHELSEA SANDWICH L.L.C
CHELSEA, MA
No. 1
No. 1 - Outfall Identification Number
Discharge Location:
Discharge No. 1:
42°23'10" Long.
71°02'45" Lat.
Scale: 1: 25,000
U.S.G.S. Quadrangle; North Boston, Massachusetts
Triton Environmental, Inc.
63 Trumbull Street, New Haven, CT
Phone: (203) 498-8833
CHELSEA SANDWICH L.L.C
11 BROADWAY STREET
CHELSEA, MASSACHUSETTUS
FIGURE 1
SITE LOCATION MAP



LEGEND

- WATER CONNECTION
- FOAM CONNECTION
- INFERRED STORM WATER FLOW DIRECTION
- SD — EMERGENCY SHUT DOWN SWITCH
- E — EMERGENCY EQUIPMENT
- RD — ROOF DRAIN
- SP — SUMP EQUIPPED W/ PUMP
- PIV — POST INDICATOR VALVE
- TERMINAL ACCESS / EXITS
- FIRE EXTINGUISHER
- WATER HYDRANT
- FOAM CHAMBER
- S — SPRINKLER ACTIVATION SWITCH
- GATE VALVE (TYPICAL)
- U.S.C.G. JURISDICTIONAL VALVE
- SECONDARY CONTAINMENT DIKE
- MH — MANHOLE
- CB — CATCH BASIN
- PROPERTY LINE
- F — FOAM SYSTEM ACTIVATION SWITCH
- FIRE DEPARTMENT CONNECTION
- A — PULL ALARM
- RW — RECOVERY WELL

NOTES:

1. THIS TERMINAL PLOT PLAN WAS MODIFIED FROM "SITE PLAN", (FILE NO. S11778S1.DWG) PREPARED BY ENVIRONMENTAL COMPLIANCE SERVICES, INC. DATED FEB. 1994 AND "SITE PLAN" DWG. No. 2304-C-18 PREPARED BY CLEAN HARBORS ENVIRONMENTAL SERVICES INC., DATED 2/93 PRESENTED IN THE TERMINAL SPCC PLAN (1993). ADDITIONAL INFORMATION WAS PROVIDED BY CHELSEA TERMINAL AND COLLECTED DURING SITE INSPECTIONS CONDUCTED BY TRITON ENVIRONMENTAL (APRIL & SEPTEMBER 1998).
2. PRODUCT PIPING AND FIRE PROTECTION SYSTEM PIPING ARE SHOWN IN FIGURES 3 AND 4 OF THIS ICP, RESPECTIVELY.
3. SECONDARY CONTAINMENT INFORMATION WAS TAKEN FROM CTLP'S PREVIOUS SPCC PLAN PREPARED BY AFMC, INC., DATED AND CERTIFIED IN 1993.
4. PERMITTED DISCHARGE (MWRA 11 000614) FROM WASH BAY WATER TREATMENT SYSTEM IS THROUGH THE CATCH BASIN VIA A CLOSED PIPE TO DOMESTIC SEWER SYSTEM.
5. THE LOCATIONS OF STRUCTURES, FEATURES AND EQUIPMENT PRESENTED ON THIS PLAN SHOULD BE CONSIDERED APPROXIMATE. THE LOCATIONS OF TERMINAL EQUIPMENT HAS BEEN SHOWN SCHEMATICALLY BASED ON INFORMATION PROVIDED BY CHELSEA TERMINAL AND IS NOT BASED ON A SURVEY OF THE PROPERTY. THIS DRAWING SHOULD NOT BE USED FOR CONSTRUCTION PURPOSES. TRITON MAKES NO WARRANTY AS TO THE CORRECTNESS OR COMPLETENESS OF THE INFORMATION CONTAINED IN THIS DRAWING, AND THE USER ASSUMES ALL RISK OF LOSS TO PERSONS AND TO PROPERTY FROM RELIANCE THEREON.

APPROXIMATE SCALE

40 0 20 40 80

(IN FEET)
1 inch = 40 ft.

REVISIONS			
NO.	DATE	DESCRIPTION	BY

TRITON ENVIRONMENTAL, INC.
101 Whitney Avenue
New Haven, Connecticut 06510
(203) 498-8833

FIGURE 2
TERMINAL PLOT PLAN

CHELSEA SANDWICH, L.L.C.
11 BROADWAY
CHELSEA, MASSACHUSETTS

DRAWN BY: W.M.	DATE: 6/9/00
APPROVED BY: M.W.	FILE No.: 9922DC

ATTACHMENT A

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(1998 TO 2003)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

CHELSEA SANDWICH, LLC DMR RESULTS (1998 - 2003)
NPDES PERMIT NO. MA0003280

QL ********** QL

001A OIL/WATER SEPARATOR
Monitoring Parameter: Flow Rate (gal/min)
Permit Limit: Report Only
Monitoring Frequency: Once/Rain Event
Sample Type: Curve

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
01/31/98			320		0
02/28/98			220		0
03/31/98			220		0
04/30/98			220		0
05/31/98			220		0
06/30/98			220		0
07/31/98			220		0
08/31/98			220		0
09/30/98			220		0
10/31/98			220		0
11/30/98			220		0
12/31/98			220		0
01/31/99			220		0
02/28/99			220		0
03/31/99			200		0
04/30/99			200		0
05/31/99			200		0
06/30/99			200		0
07/31/99			200		0
08/31/99			200		0
09/30/99			200		0
10/31/99			200		0
11/30/99			200		0
12/31/99			299		0
01/31/00			200		0
02/29/00			200		0
03/31/00			200		0
04/30/00			200		0
05/31/00			200		0
06/30/00			200		0
07/31/00			200		0
08/31/00			200		0
09/30/00			200		0
10/31/00			200		0
11/30/00			200		0
12/31/00			200		0
01/31/01			200		0
02/28/01			200		0
03/31/01			200		0
04/30/01			200		0
05/31/01			200		0
06/30/01	8				
07/31/01			200		0
08/31/01			200		0
09/30/01			200		0
10/31/01			200		0
11/30/01			200		0
12/31/01			200		0
01/31/02			200		0
02/28/02			200		0
03/31/02			200		0
04/30/02			200		0
05/31/02			200		0
06/30/02			200		0

07/31/02			200		0
08/31/02			200		0
09/30/02			200		0
10/31/02			200		0
11/30/02			200		0
12/31/02			200		0
01/31/03			175		0
02/28/03			175		0
03/31/03			175		0
04/30/03			175		0
05/31/03			175		0
06/30/03			175		0
07/31/03			175		0
08/31/03			175		0
09/30/03			175		0
10/31/03			175		0
11/30/03			175		0
12/31/03			175		0

001A OIL/WATER SEPARATOR
Monitoring Parameter: pH (S.U.)
Permit Limit: Report Only
Monitoring Frequency: Once/Month
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
01/31/98			6.4		0
02/28/98			6.74		0
03/31/98			6.68		0
04/30/98			6.39		0
05/31/98			6.51		0
06/30/98			6.08		0
07/31/98			6.88		0
08/31/98			5.39		0
09/30/98			6.74		0
10/31/98			6.28		0
11/30/98			6.66		0
12/31/98			6.71		0
01/31/99			6.38		0
02/28/99			6.6		0
03/31/99			6.76		0
04/30/99	E				
05/31/99			6.97		0
06/30/99			6.78		0
07/31/99			6.58		0
08/31/99			6.44		0
09/30/99			6.95		0
10/31/99			7.08		0
11/30/99			6.85		0
12/31/99			6.66		0
01/31/00			6.70		0
02/29/00			6.76		0
03/31/00			7.00		0
04/30/00			6.98		0
05/31/00			7.59		0
06/30/00			7.37		0
07/31/00			6.90		0
08/31/00	E				
09/30/00			6.88		0
10/31/00			7.39		0
11/30/00			7.10		0
12/31/00			7.28		0
01/31/01			7.6		0
02/28/01			6.91		0
03/31/01			7.71		0

04/30/01	7.25	0
05/31/01	7.16	0
06/30/01 8		
07/31/01	7.05	0
08/31/01	7.22	0
09/30/01	7.75	0
10/31/01	8.38	0
11/30/01	7.56	0
12/31/01	7.31	0
01/31/02	7.06	0
02/28/02	6.89	0
03/31/02	6.57	0
04/30/02	7.10	0
05/31/02	7.30	0
06/30/02	7.19	0
07/31/02	7.23	0
08/31/02	7.27	0
09/30/02	7.12	0
10/31/02	6.8	0
11/30/02	6.47	0
12/31/02	7.45	0
01/31/03	7.15	0
02/28/03	7.10	0
03/31/03	7.12	0
04/30/03	7.07	0
05/31/03	7.10	0
06/30/03	6.85	0
07/31/03	7.38	0
08/31/03	7.40	0
09/30/03	7.37	0
10/31/03	8.04	0
11/30/03	8.36	0
12/31/03	7.37	0

001A OIL/WATER SEPARATOR
Monitoring Parameter: Total Supended Solids (mg/L)
Permit Limit: Monthly Avg. 30 mg/L; Daily Max. 100 mg/L
Monitoring Frequency: Twice/Month
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
01/31/98		6.35	8	0	0
02/28/98		45.9	93.2	53	0
03/31/98		5.0	5.0	0	0
04/30/98		14.75	20.5	0	0
05/31/98		62.6	65.6	109	0
06/30/98		2.8	5.6	0	0
07/31/98		17.75	18.00	0	0
08/31/98		21.9	23.0	0	0
09/30/98		36.5	60.5	22	0
10/31/98		5.5	5.5	0	0
11/30/98		5.75	6.0	0	0
12/31/98		16.5	17.5	0	0
01/31/99		0.0	0.0	0	0
03/31/99		21.0	21.0	0	0
04/30/99		9.0	9.0	0	0
05/31/99		15.5	15.5	0	0
06/30/99		17.0	17.0	0	0
07/31/99		6.25	6.5	0	0
08/31/99		7.5	7.5	0	0
09/30/99		36.87	71.0	23	0
10/31/99		7.0	14.0	0	0
11/30/99		8.55	11.6	0	0
12/31/99		13.25	19.5	0	0
01/31/00		6.25	12.5	0	0

02/29/00		43.0	68.0	43	0
03/31/00		8.25	16.5	0	0
04/30/00		6.75	7.0	0	0
05/31/00		14.5	43.5	0	0
06/30/00		5.8	11.6	0	0
07/31/00		6.5	13.0	0	0
08/31/00		0.0	0.0	0	0
09/30/00		32.6	58.7	9	0
10/31/00		7.9	9.0	0	0
11/30/00		0.0	0.0	0	0
12/31/00		5.2	5.2	0	0
01/31/01		133	207	343	107
02/28/01		0.0	0.0	0	0
03/31/01		28.0	32.4	0	0
04/30/01		8.0	8.0	0	0
05/31/01		5.6	34.2	0	0
06/30/01	8				
07/31/01		5.2	15.6	0	0
08/31/01		7.2	14.4	0	0
09/30/01		29.0	36.8	0	0
10/31/01		5.2	11.6	0	0
11/30/01		3.8	7.6	0	0
12/31/01		0.0	0.0	0	0
01/31/02		0.0	0.0	0	0
02/28/02	D				
03/31/02		17.1	51.3	0	0
04/30/02	D				
05/31/02		21.2	42.4	0	0
06/30/02		3.5	7.0	0	0
07/31/02		0.0	0.0	0	0
08/31/02		44.0	62.0	47	0
09/30/02		0.0	0.0	0	0
10/31/02		4.6	9.2	0	0
11/30/02		5.8	6.0	0	0
12/31/02		5.0	10.0	0	0
01/31/03		7.6	15.2	0	0
02/28/03		8.8	20	0	0
03/31/03		61	108	103	8
04/30/03		0.0	0.0	0	0
05/31/03		0.0	0.0	0	0
06/30/03		2.8	5.6	0	0
07/31/03		8.0	8.0	0	0
08/31/03		0.0	0.0	0	0
09/30/03		14	14	0	0
10/31/03		0.0	0.0	0	0
11/30/03		0.0	0.0	0	0
12/31/03		0.0	0.0	0	0

001A OIL/WATER SEPARATOR
Monitoring Parameter: Oil & Grease (mg/L)
Permit Limit: Daily Max. 15 mg/L
Monitoring Frequency: Twice/Month
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
01/31/98			3.0		0
02/28/98			5.7		0
03/31/98			5.0		0
04/30/98			0.0		0
05/31/98			6.9		0
06/30/98			0.0		0
07/31/98			8.9		0
08/31/98			5.0		0
09/30/98			5.3		0
10/31/98			0.0		0

11/30/98		0.0	0
12/31/98		0.0	0
01/31/99		0.0	0
02/28/99		85.0	467
03/31/99		0.0	0
04/30/99		0.0	0
05/31/99		0.0	0
06/30/99		0.0	0
07/31/99		0.0	0
08/31/99		0.0	0
09/30/99		0.0	0
10/31/99		0.0	0
11/30/99		0.0	0
12/31/99		0.0	0
01/31/00		0.0	0
02/29/00		5.9	0
03/31/00		0.0	0
04/30/00		0.0	0
05/31/00		0.0	0
06/30/00		0.0	0
07/31/00		0.0	0
08/31/00		0.0	0
09/30/00		5.1	0
10/31/00		0.0	0
11/30/00		0.0	0
12/31/00		0.0	0
01/31/01		21.1	41
02/28/01		0.0	0
03/31/01		0.0	0
04/30/01		0.0	0
05/31/01		0.0	0
06/30/01	8		
07/31/01		0.0	0
08/31/01		0.0	0
09/30/01		0.0	0
10/31/01		0.0	0
11/30/01		0.0	0
12/31/01		0.0	0
01/31/02		0.0	0
02/28/02		0.0	0
03/31/02		5.2	0
04/30/02		0.0	0
05/31/02		0.0	0
06/30/02		0.0	0
07/31/02		0.0	0
08/31/02		0.0	0
09/30/02		0.0	0
10/31/02		0.0	0
11/30/02		0.0	0
12/31/02		0.0	0
01/31/03		0.0	0
02/28/03		10.7	0
03/31/03		5.0	0
04/30/03		0.0	0
05/31/03		0.0	0
06/30/03		0.0	0
07/31/03		0.0	0
08/31/03		0.0	0
09/30/03		0.0	0
10/31/03		0.0	0
11/30/03		0.0	0
12/31/03		0.0	0

001A OIL/WATER SEPARATOR
Monitoring Parameter: Total Flow (Mgal/month)
Permit Limit: Report Only
Monitoring Frequency: Once/Rain Event
Sample Type: Estimate

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
01/31/98		237.6		0	
02/28/98		415.8		0	
03/31/98		118.8		0	
04/30/98		118.8		0	
05/31/98		138.6		0	
06/30/98		198.0		0	
07/31/98		171.6		0	
08/31/98		184.8		0	
09/30/98		204.6		0	
10/31/98		316.8		0	
11/30/98		277.2		0	
12/31/98		105.6		0	
01/31/99		211.2		0	
02/28/99		300.0		0	
03/31/99		158.4		0	
04/30/99		156.0		0	
05/31/99		192.0		0	
06/30/99		120.0		0	
07/31/99		45.0		0	
08/31/99		24.0		0	
09/30/99		120.0		0	
10/31/99		152.0		0	
11/30/99		192.0		0	
12/31/99		132.0		0	
01/31/00		168.0		0	
02/29/00		204.0		0	
03/31/00		180.0		0	
04/30/00		162.0		0	
05/31/00		116.0		0	
06/30/00		264.0		0	
07/31/00		210.0		0	
08/31/00		72.0		0	
09/30/00		138.0		0	
10/31/00		138.0		0	
11/30/00		156.0		0	
12/31/00		204.0		0	
01/31/01		180.0		0	
02/28/01		48.0		0	
03/31/01		174.0		0	
04/30/01		216.0		0	
05/31/01		216.0		0	
06/30/01	8				
07/31/01		60.0		0	
08/31/01		48.0		0	
09/30/01		42.0		0	
10/31/01		66.0		0	
11/30/01		66.0		0	
12/31/01		198.0		0	
01/31/02		102.0		0	
02/28/02		120.0		0	
03/31/02		76.0		0	
04/30/02		64.0		0	
05/31/02		84.0		0	
06/30/02		60.0		0	
07/31/02		84.0		0	
08/31/02		123.0		0	
09/30/02		234.0		0	
10/31/02		138.0		0	
11/30/02		180.0		0	

	12/31/02	204.0	0
***	01/31/03	0.14	0
	02/28/03	0.35	0
	03/31/03	0.32	0
	04/30/03	0.43	0
	05/31/03	0.44	0
	06/30/03	0.27	0
	07/31/03	0.16	0
	08/31/03	0.30	0
	09/30/03	0.36	0
	10/31/03	0.24	0
	11/30/03	0.18	0
	12/31/03	0.4	0

*** For the reporting periods prior to January 31, 2003, Total Flow was reported on the DMRs in the units of thousand of gallons/month. Starting with the reporting period ending January 31, 2003, Total Flow was reported in the units of millions of gallons/month (Mgal/month).

001A OIL/WATER SEPARATOR
Monitoring Parameter: Methyl Tertiary-Butyl Ether (ug/L)
Permit Limit: No Gasoline Product at Facility - No Analysis Required
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Percent Violations Daily Max.
06/30/98	9				
09/30/98	9				
12/31/98	9				
03/31/99	9				
06/30/99	9				
09/30/99	9				
12/31/99	9				
03/31/00	9				
06/30/00	9				
09/30/00	9				
12/31/00	9				
03/31/01	9				
06/30/01	9				
09/30/01	9				
12/31/01	9				
03/31/02	9				
06/30/02	9				
09/30/02	9				
12/31/02	9				
03/31/03	9				
06/30/03	9				
09/30/03	9				
12/31/03	9				

001A OIL/WATER SEPARATOR
Monitoring Parameter: Toluene (ug/L)
Permit Limit: No Gasoline Product at Facility - No Analysis Required
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Percent Violations Daily Max.
06/30/98	9				
09/30/98	9				
12/31/98	9				

03/31/99	9
06/30/99	9
09/30/99	9
12/31/99	9
03/31/00	9
06/30/00	9
09/30/00	9
12/31/00	9
03/31/01	9
06/30/01	9
09/30/01	9
12/31/01	9
03/31/02	9
06/30/02	9
09/30/02	9
12/31/02	9
03/31/03	9
06/30/03	9
09/30/03	9
12/31/03	9

001A OIL/WATER SEPARATOR
Monitoring Parameter: Benzene (ug/L)
Permit Limit: No Gasoline Product at Facility - No Analysis Required
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
06/30/98	9				
09/30/98	9				
12/31/98	9				
03/31/99	9				
06/30/99	9				
09/30/99	9				
12/31/99	9				
03/31/00	9				
06/30/00	9				
09/30/00	9				
12/31/00	9				
03/31/01	9				
06/30/01	9				
09/30/01	9				
12/31/01	9				
03/31/02	9				
06/30/02	9				
09/30/02	9				
12/31/02	9				
03/31/03	9				
06/30/03	9				
09/30/03	9				
12/31/03	9				

001A OIL/WATER SEPARATOR
Monitoring Parameter: Benzo(b)fluoranthene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98			0.0		0
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0
12/31/02			0.0		0
03/31/03			0.0		0
06/30/03			0.0		0
09/30/03			0.0		0
12/31/03			0.0		0

001A OIL/WATER SEPARATOR
Monitoring Parameter: Benzo(k)fluoranthene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			0.0		0
09/30/98			0.0		0
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0
12/31/02			0.0		0
03/31/03			0.0		0
06/30/03			0.0		0
09/30/03			0.0		0

12/31/03		0.0		0

001A OIL/WATER SEPARATOR
Monitoring Parameter: Benzo(a)pyrene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98			0.0		0
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0
12/31/02			0.0		0
03/31/03			0.0		0
06/30/03			0.0		0
09/30/03			0.0		0
12/31/03			0.0		0

001A OIL/WATER SEPARATOR
Monitoring Parameter: Chrysene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98			0.0		0
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0

12/31/02	0.0	0
03/31/03	0.0	0
06/30/03	0.0	0
09/30/03	0.0	0
12/31/03	0.0	0

001A OIL/WATER SEPARATOR
Monitoring Parameter: Ethylbenzene (ug/L)
Permit Limit: No Gasoline Product at Facility - No Analysis Required
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
06/30/98	9				
09/30/98	9				
12/31/98	9				
03/31/99	9				
06/30/99	9				
09/30/99	9				
12/31/99	9				
03/31/00	9				
06/30/00	9				
09/30/00	9				
12/31/00	9				
03/31/01	9				
06/30/01	9				
09/30/01	9				
12/31/01	9				
03/31/02	9				
06/30/02	9				
09/30/02	9				
12/31/02	9				
03/31/03	9				
06/30/03	9				
09/30/03	9				
12/31/03	9				

001A OIL/WATER SEPARATOR
Monitoring Parameter: Indeno (1,2,3-cd)pyrene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98			0.0		0
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0

03/31/02		0.0		0
06/30/02		0.0		0
09/30/02		0.0		0
12/31/02		0.0		0
03/31/03		0.0		0
06/30/03		0.0		0
09/30/03		0.0		0
12/31/03		0.0		0

001A OIL/WATER SEPARATOR
Monitoring Parameter: Benzo(a)anthracene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98			0.0		0
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0
03/31/01			0.0		0
06/30/01			0.0		0
09/30/01			0.0		0
12/31/01			0.0		0
03/31/02			0.0		0
06/30/02			0.0		0
09/30/02			0.0		0
12/31/02			0.0		0
03/31/03			0.0		0
06/30/03			0.0		0
09/30/03			0.0		0
12/31/03			0.0		0

001A OIL/WATER SEPARATOR
Monitoring Parameter: Dibenzo(a,h)anthracene (ug/L)
Permit Limit: Report Only
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Daily Max.
03/31/98			0.0		0
06/30/98			0.0		0
09/30/98			0.0		0
12/31/98			0.0		0
03/31/99			0.0		0
06/30/99			0.0		0
09/30/99			0.0		0
12/31/99			0.0		0
03/31/00			0.0		0
06/30/00			0.0		0
09/30/00			0.0		0
12/31/00			0.0		0

06/30/01	0.0	0
09/30/01	0.0	0
12/31/01	0.0	0
03/31/02	0.0	0
06/30/02	0.0	0
09/30/02	0.0	0
12/31/02	0.0	0
03/31/03	0.0	0
06/30/03	0.0	0
09/30/03	0.0	0
12/31/03	0.0	0

001A OIL/WATER SEPARATOR
Monitoring Parameter: Total Xylenes (ug/L)
Permit Limit: No Gasoline Product at Facility - No Analysis Required
Monitoring Frequency: Quarterly
Sample Type: Grab

Monitoring Period Ending	No Disch. Code	Reported Monthly Avg.	Reported Daily Max.	Percent Violations Monthly Avg.	Percent Violations Daily Max.
03/31/98	9				
06/30/98	9				
09/30/98	9				
12/31/98	9				
03/31/99	9				
06/30/99	9				
09/30/99	9				
12/31/99	9				
03/31/00	9				
06/30/00	9				
09/30/00	9				
12/31/00	9				
03/31/01	9				
06/30/01	9				
09/30/01	9				
12/31/01	9				
03/31/02	9				
06/30/02	9				
09/30/02	9				
12/31/02	9				
06/30/03	9				
09/30/03	9				
12/31/03	9				

490 NO DISCHARGE INDICATOR CODES

NODI	DESCRIPTION
A	GENERAL PERMIT EXEMPTION
B	BELOW DETECT LIMIT/NO DETECT
C	NO DISCHARGE
D	LOST SAMPLE
E	ANALYSIS NOT CONDUCTED
F	INSUFFICIENT FLOW FOR SAMPLING
G	SAMPLING EQUIPMENT FAILURE
H	INVALID TEST
I	LAND APPLIED WASTE WATER
J	RECYCLED, WATER-CLOSED SYSTEM
K	FLOOD DISASTER
L	DMR RECEIVED BUT NOT ENTERED
M	NOT APPLIC DURING SLDGE MONITOR PERIOD
N	NOT TRACKED IN PCS FOR THIS PERIOD
Q	NOT QUANTIFIABLE
1	WRONG FLOW
2	OPERATIONS SHUTDOWN
3	LOW LEVEL PRODUCTION
4	LAGOON PROCESSING
5	FROZEN CONDITIONS
6	PRODUCTION BASED LIMITS DONT APPLY TO MP
7	DMR RECEIVED, PRODUCTION OR FLOW RELATED
8	OTHER
9	MONITORING IS CONDITIONAL/NOT REQ THIS MP

ATTACHMENT B

SUMMARY OF GROUND WATER MONITORING DATA

(2003 TO 2004)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: Tighe & Bond

Address: 4 Barlows Landing Road
Pocasset, MA 02559

Attn: Mr. Rich Geisler

Project Number: 3233494

Site: GLOBAL CHELSEA

Laboratory Job Number: L0311674

Date Received: 14-NOV-2003

Date Reported: 17-NOV-2003

Delivery Method: Client

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0311674-01	INFLUENT	CHELSEA, MA
L0311674-02	EFFLUENT	CHELSEA, MA
L0311674-03	TRIP BLANK	CHELSEA, MA

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized by: Ellen M. Collins
This document electronically signed

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0311674

Volatile Organics

L0311674-02 was re-analyzed on dilution in order to quantitate the sample within the range of the calibration. The result is reported as a greater than value for the compound that exceeded the calibration on the initial analysis. The re-analysis was performed only for the compound which exceeded the range of the calibration.

PAH-Low

The surrogate % recovery for 2-Fluorobiphenyl at 41% on the associated Method Blank is below the acceptance criteria required for the method.

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0311674-01
INFLUENT
Sample Matrix: WATER

Date Collected: 14-NOV-2003 14:30
Date Received : 14-NOV-2003
Date Reported : 17-NOV-2003

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 4-Amber,2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Turbidity	82.	NTU	0.20	30 2130B		1114 20:00	LK
Color, Apparent	240	A.P.C.U.	100	30 2120B		1114 19:00	LK
Solids, Total Suspended	27.	mg/l	10.	30 2540D		1116 11:20	DT
Volatile Organics by GC/MS 8260				1 8260B		1117 12:50	RY
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	21.	ug/l	0.50				
Toluene	1.7	ug/l	0.75				
Ethylbenzene	0.71	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				

Comments: Complete list of References and Glossary of Terms found in Addendum I

CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0311674-01
INFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260 continued				1 8260B		1117 12:50	RY
p/m-Xylene	5.3	ug/l	0.50				
o-Xylene	1.5	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	18.	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	81.	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	1.2	ug/l	0.50				
sec-Butylbenzene	1.1	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	3.7	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	3.0	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	6.1	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				

Surrogate(s)	Recovery		QC Criteria
1,2-Dichloroethane-d4	99.0	%	
Toluene-d8	100.	%	
4-Bromofluorobenzene	101.	%	
Dibromofluoromethane	95.0	%	

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0311674-01
INFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
PAH by GC/MS SIM 8270M				1 8270C-M	1114 20:25	1117 10:57	HL
Acenaphthene	6.3	ug/l	0.20				
2-Chloronaphthalene	ND	ug/l	0.20				
Fluoranthene	2.3	ug/l	0.20				
Naphthalene	1.3	ug/l	0.20				
Benzo(a)anthracene	ND	ug/l	0.20				
Benzo(a)pyrene	ND	ug/l	0.20				
Benzo(b)fluoranthene	ND	ug/l	0.20				
Benzo(k)fluoranthene	ND	ug/l	0.20				
Chrysene	ND	ug/l	0.20				
Acenaphthylene	0.29	ug/l	0.20				
Anthracene	2.5	ug/l	0.20				
Benzo(ghi)perylene	ND	ug/l	0.20				
Fluorene	4.1	ug/l	0.20				
Phenanthrene	10.	ug/l	0.20				
Dibenzo(a,h)anthracene	ND	ug/l	0.20				
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20				
Pyrene	1.8	ug/l	0.20				
1-Methylnaphthalene	47.	ug/l	0.20				
2-Methylnaphthalene	13.	ug/l	0.20				
Perylene	ND	ug/l	0.20				
Biphenyl	ND	ug/l	0.20				
Benzo(e)Pyrene	ND	ug/l	0.20				
Surrogate(s)	Recovery		QC Criteria				
Nitrobenzene-d5	57.0	%	23-120				
2-Fluorobiphenyl	58.0	%	43-120				
4-Terphenyl-d14	62.0	%	33-120				
Hydrocarbon Scan by GC 8100M				1 8100M	1114 20:25	1117 13:09	JB
Mineral Spirits	ND	mg/l	0.10				
Gasoline	ND	mg/l	0.10				
Fuel Oil #2/Diesel	ND	mg/l	0.10				
Fuel Oil #4	ND	mg/l	0.10				
Fuel Oil #6	ND	mg/l	0.10				
Motor Oil	ND	mg/l	0.10				
Kerosene	ND	mg/l	0.10				
Transformer Oil	ND	mg/l	0.10				
Unknown Hydrocarbon	4.5	mg/l	0.10				
Surrogate(s)	Recovery		QC Criteria				
o-Terphenyl	81.0	%	40-140				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0311674-02
EFFLUENT
Sample Matrix: WATER

Date Collected: 14-NOV-2003 14:30
Date Received : 14-NOV-2003
Date Reported : 17-NOV-2003

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 4-Amber,2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Turbidity	0.23	NTU	0.20	30 2130B		1114 20:00	LK
Color, Apparent	7.0	A.P.C.U.	5.0	30 2120B		1114 19:00	LK
Solids, Total Suspended	ND	mg/l	5.0	30 2540D		1116 11:20	DT
Volatile Organics by GC/MS 8260				1 8260B		1117 12:15	RY
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0311674-02
EFFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260 continued				1, 8260B		1117 12:15	RY
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	37.	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	>100	ug/l	10				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				

Surrogate(s)	Recovery		QC Criteria
1,2-Dichloroethane-d4	101.	%	
Toluene-d8	99.0	%	
4-Bromofluorobenzene	106.	%	
Dibromofluoromethane	99.0	%	

Comments: Complete list of References and Glossary of Terms found in Addendum I

CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0311674-02
EFFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260				1 8260B		1117 14:07	RY
Tetrahydrofuran	230	ug/l	40.				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	101.	%					
Toluene-d8	101.	%					
4-Bromofluorobenzene	104.	%					
Dibromofluoromethane	98.0	%					
PAH by GC/MS SIM 8270M				1 8270C-M	1114 20:25	1117 11:36	HL
Acenaphthene	ND	ug/l	0.20				
2-Chloronaphthalene	ND	ug/l	0.20				
Fluoranthene	ND	ug/l	0.20				
Naphthalene	ND	ug/l	0.20				
Benzo(a)anthracene	ND	ug/l	0.20				
Benzo(a)pyrene	ND	ug/l	0.20				
Benzo(b)fluoranthene	ND	ug/l	0.20				
Benzo(k)fluoranthene	ND	ug/l	0.20				
Chrysene	ND	ug/l	0.20				
Acenaphthylene	ND	ug/l	0.20				
Anthracene	ND	ug/l	0.20				
Benzo(ghi)perylene	ND	ug/l	0.20				
Fluorene	ND	ug/l	0.20				
Phenanthrene	ND	ug/l	0.20				
Dibenzo(a,h)anthracene	ND	ug/l	0.20				
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20				
Pyrene	ND	ug/l	0.20				
1-Methylnaphthalene	ND	ug/l	0.20				
2-Methylnaphthalene	ND	ug/l	0.20				
Perylene	ND	ug/l	0.20				
Biphenyl	ND	ug/l	0.20				
Benzo(e)Pyrene	ND	ug/l	0.20				
Surrogate(s)	Recovery		QC Criteria				
Nitrobenzene-d5	49.0	%	23-120				
2-Fluorobiphenyl	49.0	%	43-120				
4-Terphenyl-d14	60.0	%	33-120				
Hydrocarbon Scan by GC 8100M				1 8100M	1114 20:25	1117 12:06	JB
Mineral Spirits	ND	mg/l	0.10				
Gasoline	ND	mg/l	0.10				
Fuel Oil #2/Diesel	ND	mg/l	0.10				
Fuel Oil #4	ND	mg/l	0.10				
Fuel Oil #6	ND	mg/l	0.10				
Motor Oil	ND	mg/l	0.10				
Kerosene	ND	mg/l	0.10				
Transformer Oil	ND	mg/l	0.10				
Unknown Hydrocarbon	0.18	mg/l	0.10				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0311674-02
EFFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Hydrocarbon Scan by GC 8100M continued				1 8100M	1114 20:25	1117 12:06	JB
Surrogate(s)	Recovery		QC Criteria				
o-Terphenyl	81.0	%	40-140				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0311674-03 TRIP BLANK
Sample Matrix: WATER
Condition of Sample: Satisfactory
Number & Type of Containers: 1-Vial

Date Collected: 14-NOV-2003 12:50
Date Received : 14-NOV-2003
Date Reported : 17-NOV-2003
Field Prep: None

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260				1 8260B		1117 11:40 RY	
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0311674-03
TRIP BLANK

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260 continued				1 8260B		1117 11:40	RY
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				

Surrogate(s)	Recovery		QC Criteria
1,2-Dichloroethane-d4	102.	%	
Toluene-d8	100.	%	
4-Bromofluorobenzene	105.	%	
Dibromofluoromethane	100.	%	

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0311674

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Turbidity for sample(s) 01-02 (L0311674-01, WG156403)					
Turbidity	82.	82.	NTU	0	
Color, Apparent for sample(s) 01-02 (L0311674-01, WG156400)					
Color, Apparent	240	300	A.P.C.U.	22	
Solids, Total Suspended for sample(s) 01-02 (L0311674-01, WG156411)					
Solids, Total Suspended	27.	31.	mg/l	14	32
Hydrocarbon Scan by GC 8100M for sample(s) 01-02 (L0311674-02, WG156490)					
Mineral Spirits	ND	ND	mg/l	NC	40
Gasoline	ND	ND	mg/l	NC	40
Fuel Oil #2/Diesel	ND	ND	mg/l	NC	40
Fuel Oil #4	ND	ND	mg/l	NC	40
Fuel Oil #6	ND	ND	mg/l	NC	40
Motor Oil	ND	ND	mg/l	NC	40
Kerosene	ND	ND	mg/l	NC	40
Transformer Oil	ND	ND	mg/l	NC	40
Unknown Hydrocarbon	0.18	ND	mg/l	NC	40
Surrogate(s)	Recovery				QC Criteria
o-Terphenyl	81.0	74.0	%	9	40-140

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0311674

Parameter	% Recovery	QC Criteria
Turbidity LCS for sample(s) 01-02 (WG156403)		
Turbidity	93	
Volatile Organics by GC/MS 8260 LCS for sample(s) 01-03 (WG156126)		
Chlorobenzene	100	
Benzene	106	
Toluene	105	
1,1-Dichloroethene	100	
Trichloroethene	105	
Surrogate(s)		
1,2-Dichloroethane-d4	98	
Toluene-d8	102	
4-Bromofluorobenzene	102	
Dibromofluoromethane	100	
PAH by GC/MS SIM 8270M LCS for sample(s) 01-02 (WG156442)		
Acenaphthene	62	46-118
2-Chloronaphthalene	56	
Fluoranthene	82	
Anthracene	76	
Pyrene	83	26-127
Surrogate(s)		
Nitrobenzene-d5	48	23-120
2-Fluorobiphenyl	54	43-120
4-Terphenyl-d14	75	33-120
Hydrocarbon Scan by GC 8100M LCS for sample(s) 01-02 (WG156490)		
Petroleum Spike	98	40-140
Surrogate(s)		
o-Terphenyl	92	40-140

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L0311674

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
Volatile Organics by GC/MS 8260 for sample(s) 01-03 (L0311414-04, WG156126)					
Chlorobenzene	98	97	1		
Benzene	98	99	1		
Toluene	100	100	0		
1,1-Dichloroethene	93	95	2		
Trichloroethene	0	0	NC		
Surrogate(s)					
1,2-Dichloroethane-d4	100	106	6		
Toluene-d8	101	99	2		
4-Bromofluorobenzene	100	98	2		
Dibromofluoromethane	99	102	3		
PAH by GC/MS SIM 8270M for sample(s) 01-02 (L0311132-09, WG156442)					
Acenaphthene	59	59	0	40	46-118
2-Chloronaphthalene	54	52	4	40	
Fluoranthene	78	80	3	40	
Anthracene	76	78	3	40	
Pyrene	78	80	3	40	26-127
Surrogate(s)					
Nitrobenzene-d5	46	46	0		23-120
2-Fluorobiphenyl	51	52	2		43-120
4-Terphenyl-d14	67	71	6		33-120

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0311674

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-02 (WG156403-2)							
Turbidity	ND	NTU	0.20	30 2130B		1114 20:00	LK
Blank Analysis for sample(s) 01-02 (WG156411-1)							
Solids, Total Suspended	ND	mg/l	5.0	30 2540D		1116 11:20	DT
Blank Analysis for sample(s) 01-03 (WG156126-8)							
Volatile Organics by GC/MS 8260				1 8260B		1117 10:57	RY
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0311674

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-03 (WG156126-8)							
Volatile Organics by GC/MS 8260 continued				1 8260B		1117 10:57	RY
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	103.	%					
Toluene-d8	100.	%					
4-Bromofluorobenzene	105.	%					
Dibromofluoromethane	101.	%					
Blank Analysis for sample(s) 01-02 (WG156442-1)							
PAH by GC/MS SIM 8270M				1 8270C-M	1114 20:25	1117 10:45	HL
Acenaphthene	ND	ug/l	0.20				
2-Chloronaphthalene	ND	ug/l	0.20				
Fluoranthene	ND	ug/l	0.20				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0311674

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-02 (WG156442-1)							
PAH by GC/MS SIM 8270M continued				1 8270C-M	1114 20:28	1117 10:45	ML
Naphthalene	ND	ug/l	0.20				
Benzo(a)anthracene	ND	ug/l	0.20				
Benzo(a)pyrene	ND	ug/l	0.20				
Benzo(b)fluoranthene	ND	ug/l	0.20				
Benzo(k)fluoranthene	ND	ug/l	0.20				
Chrysene	ND	ug/l	0.20				
Acenaphthylene	ND	ug/l	0.20				
Anthracene	ND	ug/l	0.20				
Benzo(ghi)perylene	ND	ug/l	0.20				
Fluorene	ND	ug/l	0.20				
Phenanthrene	ND	ug/l	0.20				
Dibenzo(a,h)anthracene	ND	ug/l	0.20				
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20				
Pyrene	ND	ug/l	0.20				
1-Methylnaphthalene	ND	ug/l	0.20				
2-Methylnaphthalene	ND	ug/l	0.20				
Perylene	ND	ug/l	0.20				
Biphenyl	ND	ug/l	0.20				
Benzo(e)Pyrene	ND	ug/l	0.20				
Surrogate(s)	Recovery		QC Criteria				
Nitrobenzene-d5	36.0	%	23-120				
2-Fluorobiphenyl	41.0	%	43-120				
4-Terphenyl-d14	67.0	%	33-120				
Blank Analysis for sample(s) 01-02 (WG156490-1)							
Hydrocarbon Scan by GC 8100M				1 8100M	1114 20:25	1117 11:03	JB
Mineral Spirits	ND	mg/l	0.10				
Gasoline	ND	mg/l	0.10				
Fuel Oil #2/Diesel	ND	mg/l	0.10				
Fuel Oil #4	ND	mg/l	0.10				
Fuel Oil #6	ND	mg/l	0.10				
Motor Oil	ND	mg/l	0.10				
Kerosene	ND	mg/l	0.10				
Transformer Oil	ND	mg/l	0.10				
Unknown Hydrocarbon	ND	mg/l	0.10				
Surrogate(s)	Recovery		QC Criteria				
o-Terphenyl	82.0	%	40-140				

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30. Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.
METHOD Method number by which analysis was performed.
ID Initials of the analyst.
ND Not detected in comparison to the reported detection limit.

Please note that all solid samples are reported on dry weight basis unless noted otherwise.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

CHAIN OF CUSTODY

PAGE ____ OF ____

Date Rec'd In Lab: 11/14/03

ALPHA Job #: L031167

Eight Walkup Drive Westborough, MA 01581
TEL: 508-898-9220 FAX: 508-898-9193

Client Information

Client: Tighe + Bond
Address: 324 Grove St
Worcester MA
Phone: 508 754 2201
Fax:
Email:

These samples have been previously analyzed by Alpha

Project Information

Project Name: Global Chelsea
Project Location: Chelsea MA
Project #: 32 33494
Project Manager: Rich Geisler
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved!)
Date Due: 11/17/03 Time: 72 Hr

Report Information - Data Deliverables

☒ FAX ☐ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria
MA MCP	GW-1

MCP PRESUMPTIVE CERTAINTY - THESE QUESTIONS MUST BE ANSWERED

☐ Yes ☒ No Are MCP Analytical Methods Required?
☐ Yes ☒ No Are Drinking Water Samples Submitted?
☒ Yes ☐ No Have you met minimum field QC requirements?

Other Project Specific Requirements/Comments/Detection Limits:

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TSS	Chloride	TPH 8100	MAH 8260	VOC 8260	Sample Specific Comments	
L031167-1	Influent	11/14/03	2:30	GW	JPB	X	X	X	X	X		8
-2	Effluent	11/14/03	2:30	GW	JPB	X	X	X	X	X		8
-3	Trip Blank	11/14/03	12:00							X		1

Container Type	P	P	G	G	V
Preservative	A	A	A	A	B

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP?

Relinquished By:	Date/Time	Received By:	Date/Time
			11/14/03 1700

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. See reverse side.

07-03.std

ATTACHMENT B

SUMMARY OF GROUND WATER MONITORING DATA

(2003 TO 2004)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: Tighe & Bond

Address: 4 Barlows Landing Road
Pocasset, MA 02559

Attn: Mr. Rich Geisler

Project Number: 32-33494

Site: GLOBAL CHELSEA

Laboratory Job Number: L0311730

Date Received: 17-NOV-2003

Date Reported: 20-NOV-2003

Delivery Method: Client

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0311730-01	INFLUENT	CHELSEA, MA
L0311730-02	EFFLUENT	CHELSEA, MA
L0311730-03	TRIP BLANK	CHELSEA, MA

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized by: Scott McLean
This document electronically signed

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0311730

PAH

L0311730-01 has elevated limits of detection due to the 10x dilution required by the elevated concentrations of target compounds in the sample.

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0311730-01
INFLUENT
Sample Matrix: WATER

Date Collected: 17-NOV-2003 12:40
Date Received : 17-NOV-2003
Date Reported : 20-NOV-2003

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 4-Amber,2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Turbidity	140	NTU	0.20	30 2130B		1117 17:00	LK
Color, Apparent	360	A.P.C.U.	100	30 2120B		1117 17:00	LK
Solids, Total Suspended	36.	mg/l	5.0	30 2540D		1119 13:50	DT
Volatile Organics by GC/MS 8260				1 8260B		1118 12:28	RY
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	24.	ug/l	0.50				
Toluene	1.7	ug/l	0.75				
Ethylbenzene	0.74	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				

mments: Complete list of References and Glossary of Terms found in Addendum I

CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0311730-01
INFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260 continued				1 8260B		1118 12:28	RY
p/m-Xylene	6.2	ug/l	0.50				
o-Xylene	1.8	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	26.	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	50.	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	1.3	ug/l	0.50				
sec-Butylbenzene	1.7	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	6.3	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	4.5	ug/l	2.5				
n-Propylbenzene	4.1	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				

Surrogate(s)	Recovery		QC Criteria
1,2-Dichloroethane-d4	93.0	%	
Toluene-d8	100.	%	
4-Bromofluorobenzene	103.	%	
Dibromofluoromethane	90.0	%	

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0311730-01
INFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
PAH by GC/MS SIM 8270M				1 8270C-M	1119 14:10	1120 10:38	HL
Acenaphthene	25.	ug/l	2.0				
2-Chloronaphthalene	ND	ug/l	2.0				
Fluoranthene	7.7	ug/l	2.0				
Naphthalene	ND	ug/l	2.0				
Benzo(a)anthracene	ND	ug/l	2.0				
Benzo(a)pyrene	ND	ug/l	2.0				
Benzo(b)fluoranthene	ND	ug/l	2.0				
Benzo(k)fluoranthene	ND	ug/l	2.0				
Chrysene	ND	ug/l	2.0				
Acenaphthylene	ND	ug/l	2.0				
Anthracene	4.7	ug/l	2.0				
Benzo(ghi)perylene	ND	ug/l	2.0				
Fluorene	10.	ug/l	2.0				
Phenanthrene	2.8	ug/l	2.0				
Dibenzo(a,h)anthracene	ND	ug/l	2.0				
Indeno(1,2,3-cd)Pyrene	ND	ug/l	2.0				
Pyrene	6.0	ug/l	2.0				
1-Methylnaphthalene	34.	ug/l	2.0				
2-Methylnaphthalene	ND	ug/l	2.0				
Perylene	ND	ug/l	2.0				
Biphenyl	ND	ug/l	2.0				
Benzo(e)Pyrene	ND	ug/l	2.0				
Surrogate(s)	Recovery		QC Criteria				
Nitrobenzene-d5	89.0	%	23-120				
2-Fluorobiphenyl	97.0	%	43-120				
4-Terphenyl-d14	96.0	%	33-120				
Hydrocarbon Scan by GC 8100M				1 8100M	1118 14:45	1119 22:20	JB
Mineral Spirits	ND	mg/l	0.10				
Gasoline	ND	mg/l	0.10				
Fuel Oil #2/Diesel	ND	mg/l	0.10				
Fuel Oil #4	ND	mg/l	0.10				
Fuel Oil #6	ND	mg/l	0.10				
Motor Oil	ND	mg/l	0.10				
Kerosene	ND	mg/l	0.10				
Transformer Oil	ND	mg/l	0.10				
Unknown Hydrocarbon	5.2	mg/l	0.10				
Surrogate(s)	Recovery		QC Criteria				
o-Terphenyl	78.0	%	40-140				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0311730-02 EFFLUENT
Sample Matrix: WATER
Date Collected: 17-NOV-2003 13:00
Date Received : 17-NOV-2003
Date Reported : 20-NOV-2003

Condition of Sample: Satisfactory
Field Prep: None

Number & Type of Containers: 4-Amber,2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Turbidity	ND	NTU	0.20	30 2130B		1117 17:00	LK
Color, Apparent	6.0	A.P.C.U.	5.0	30 2120B		1117 17:00	LK
Solids, Total Suspended	ND	mg/l	5.0	30 2540D		1119 13:50	DT
Volatile Organics by GC/MS 8260				1 8260B		1119 10:54	RY
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				

Comments: Complete list of References and Glossary of Terms found in Addendum I

Laboratory Sample Number: L0311730-02
EFFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260 continued				1 8260B		1119 10:54	RY
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				

Surrogate(s)	Recovery		QC Criteria
1,2-Dichloroethane-d4	102.	%	
Toluene-d8	101.	%	
4-Bromofluorobenzene	108.	%	
Dibromofluoromethane	99.0	%	

Comments: Complete list of References and Glossary of Terms found in Addendum I

Laboratory Sample Number: L0311730-02
EFFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
PAH by GC/MS SIM 8270M				1 8270C-M	1119 14:10	1120 11:23	HL
Acenaphthene	ND	ug/l	0.20				
2-Chloronaphthalene	ND	ug/l	0.20				
Fluoranthene	ND	ug/l	0.20				
Naphthalene	ND	ug/l	0.20				
Benzo(a)anthracene	ND	ug/l	0.20				
Benzo(a)pyrene	ND	ug/l	0.20				
Benzo(b)fluoranthene	ND	ug/l	0.20				
Benzo(k)fluoranthene	ND	ug/l	0.20				
Chrysene	ND	ug/l	0.20				
Acenaphthylene	ND	ug/l	0.20				
Anthracene	ND	ug/l	0.20				
Benzo(ghi)perylene	ND	ug/l	0.20				
Fluorene	ND	ug/l	0.20				
Phenanthrene	ND	ug/l	0.20				
Dibenzo(a,h)anthracene	ND	ug/l	0.20				
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20				
Pyrene	ND	ug/l	0.20				
1-Methylnaphthalene	ND	ug/l	0.20				
2-Methylnaphthalene	ND	ug/l	0.20				
Perylene	ND	ug/l	0.20				
Biphenyl	ND	ug/l	0.20				
Benzo(e)Pyrene	ND	ug/l	0.20				
Surrogate(s)	Recovery		QC Criteria				
Nitrobenzene-d5	55.0	%	23-120				
2-Fluorobiphenyl	55.0	%	43-120				
4-Terphenyl-d14	67.0	%	33-120				
Hydrocarbon Scan by GC 8100M				1 8100M	1118 14:45	1119 23:24	JB
Mineral Spirits	ND	mg/l	0.10				
Gasoline	ND	mg/l	0.10				
Fuel Oil #2/Diesel	ND	mg/l	0.10				
Fuel Oil #4	ND	mg/l	0.10				
Fuel Oil #6	ND	mg/l	0.10				
Motor Oil	ND	mg/l	0.10				
Kerosene	ND	mg/l	0.10				
Transformer Oil	ND	mg/l	0.10				
Unknown Hydrocarbon	ND	mg/l	0.10				
Surrogate(s)	Recovery		QC Criteria				
o-Terphenyl	81.0	%	40-140				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0311730-03
TRIP BLANK
Sample Matrix: WATER

Date Collected: 17-NOV-2003 08:00
Date Received : 17-NOV-2003
Date Reported : 20-NOV-2003

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 1-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260				1 8260B		1118 11:52	RT
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				

Comments: Complete list of References and Glossary of Terms found in Addendum I

CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0311730-03
TRIP BLANK

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260 continued				1 8260B		1118 11:52	RY
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				

Surrogate(s)	Recovery		QC Criteria
1,2-Dichloroethane-d4	100.	%	
Toluene-d8	98.0	%	
4-Bromofluorobenzene	104.	%	
Dibromofluoromethane	98.0	%	

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0311730

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Turbidity for sample(s) 01-02 (L0311730-01, WG156562)					
Turbidity	140	140	NTU	0	
Color, Apparent for sample(s) 01-02 (L0311730-01, WG156559)					
Color, Apparent	360	360	A.P.C.U.	0	
Hydrocarbon Scan by GC 8100M for sample(s) 01-02 (L0311730-01, WG156636)					
Mineral Spirits	ND	ND	mg/l	NC	40
Gasoline	ND	ND	mg/l	NC	40
Fuel Oil #2/Diesel	ND	ND	mg/l	NC	40
Fuel Oil #4	ND	ND	mg/l	NC	40
Fuel Oil #6	ND	ND	mg/l	NC	40
Motor Oil	ND	ND	mg/l	NC	40
Kerosene	ND	ND	mg/l	NC	40
Transformer Oil	ND	ND	mg/l	NC	40
Unknown Hydrocarbon	5.2	5.2	mg/l	0	40
Surrogate(s)	Recovery				QC Criteria
o-Terphenyl	78.0	82.0	%	5	40-140

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0311730

Parameter	% Recovery	QC Criteria
Turbidity LCS for sample(s) 01-02 (WG156562)		
Turbidity	110	
Volatile Organics by GC/MS 8260 LCS for sample(s) 01,03 (WG156600)		
Chlorobenzene	94	
Benzene	99	
Toluene	98	
1,1-Dichloroethene	93	
Trichloroethene	100	
Surrogate(s)		
1,2-Dichloroethane-d4	100	
Toluene-d8	99	
4-Bromofluorobenzene	101	
Dibromofluoromethane	101	
Volatile Organics by GC/MS 8260 LCS for sample(s) 02 (WG156600)		
Chlorobenzene	97	
Benzene	103	
Toluene	100	
1,1-Dichloroethene	99	
Trichloroethene	103	
Surrogate(s)		
1,2-Dichloroethane-d4	102	
Toluene-d8	100	
4-Bromofluorobenzene	101	
Dibromofluoromethane	102	
PAH by GC/MS SIM 8270M LCS for sample(s) 01-02 (WG156867)		
Acenaphthene	48	46-118
2-Chloronaphthalene	46	
Fluoranthene	65	
Anthracene	46	
Pyrene	72	26-127
Surrogate(s)		
Nitrobenzene-d5	43	23-120
2-Fluorobiphenyl	53	43-120
4-Terphenyl-d14	68	33-120
PAH by GC/MS SIM 8270M LCS for sample(s) 01-02 (WG156867)		
Acenaphthene	50	46-118
2-Chloronaphthalene	52	
Fluoranthene	71	
Anthracene	47	
Pyrene	75	26-127

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0311730

Continued

Parameter	% Recovery	QC Criteria
PAH by GC/MS SIM 8270M LCS for sample(s) 01-02 (WG156867)		
Surrogate(s)		
Nitrobenzene-d5	71	23-120
2-Fluorobiphenyl	63	43-120
4-Terphenyl-d14	73	33-120
Hydrocarbon Scan by GC 8100M LCS for sample(s) 01-02 (WG156636)		
Petroleum Spike	113	40-140
Surrogate(s)		
o-Terphenyl	95	40-140

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L0311730

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
Volatile Organics by GC/MS 8260 for sample(s) 01-03 (L0311698-01, WG156600)					
Chlorobenzene	84	83	2		
Benzene	90	89	1		
Toluene	88	86	2		
1,1-Dichloroethene	84	84	0		
Trichloroethene	94	92	2		
Surrogate(s)					
1,2-Dichloroethane-d4	98	97	1		
Toluene-d8	105	104	1		
4-Bromofluorobenzene	103	103	0		
Dibromofluoromethane	100	99	1		

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0311730

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-02 (WG156562-3)							
Turbidity	1.1	NTU	0.20	30 2130B		1117 17:00	LK
Blank Analysis for sample(s) 01-02 (WG156717-1)							
Solids, Total Suspended	ND	mg/l	5.0	30 2540D		1119 13:50	DT
Blank Analysis for sample(s) 01,03 (WG156600-6)							
Volatile Organics by GC/MS 8260				1 8260B		1118 09:57	RY
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0311730

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01,03 (WG156600-6)							
Volatile Organics by GC/MS 8260 continued				1 8260B		1118 09:57	RY
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	107.	%					
Toluene-d8	100.	%					
4-Bromofluorobenzene	103.	%					
Dibromofluoromethane	100.	%					
Blank Analysis for sample(s) 02 (WG156600-8)							
Volatile Organics by GC/MS 8260				1 8260B		1119 10:11	RY
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0311730

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 02 (WG156600-8)							
Volatile Organics by GC/MS 8260 continued				1, 8260B		1119 10:11 RY	
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				

Laboratory Job Number: L0311730

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 02 (WG156600-8)							
Volatile Organics by GC/MS 8260 continued				1 8260B		1119 10:11	RT
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				
Surrogate(s)	Recovery		QC Criteria				
1,2-Dichloroethane-d4	102.	%					
Toluene-d8	102.	%					
4-Bromofluorobenzene	104.	%					
Dibromofluoromethane	99.0	%					
Blank Analysis for sample(s) 01-02 (WG156867-1)							
PAH by GC/MS SIM 8270M				1 8270C-M		1119 14:10	1120 08:23 HL
Acenaphthene	ND	ug/l	0.20				
2-Chloronaphthalene	ND	ug/l	0.20				
Fluoranthene	ND	ug/l	0.20				
Naphthalene	ND	ug/l	0.20				
Benzo(a)anthracene	ND	ug/l	0.20				
Benzo(a)pyrene	ND	ug/l	0.20				
Benzo(b)fluoranthene	ND	ug/l	0.20				
Benzo(k)fluoranthene	ND	ug/l	0.20				
Chrysene	ND	ug/l	0.20				
Acenaphthylene	ND	ug/l	0.20				
Anthracene	ND	ug/l	0.20				
Benzo(ghi)perylene	ND	ug/l	0.20				
Fluorene	ND	ug/l	0.20				
Phenanthrene	ND	ug/l	0.20				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0311730

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-02 (WG156867-1)							
PAH by GC/MS SIM 8270M continued				1 8270C-M	1119 14:10	1120 00:23	HL
Dibenzo(a,h)anthracene	ND	ug/l	0.20				
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20				
Pyrene	ND	ug/l	0.20				
1-Methylnaphthalene	ND	ug/l	0.20				
2-Methylnaphthalene	ND	ug/l	0.20				
Perylene	ND	ug/l	0.20				
Biphenyl	ND	ug/l	0.20				
Benzo(e)Pyrene	ND	ug/l	0.20				
Surrogate(s)	Recovery		QC Criteria				
Nitrobenzene-d5	55.0	%	23-120				
2-Fluorobiphenyl	55.0	%	43-120				
4-Terphenyl-d14	72.0	%	33-120				
Blank Analysis for sample(s) 01-02 (WG156636-1)							
Hydrocarbon Scan by GC 8100M				1 8100M	1118 14:45	1119 19:10	JB
Mineral Spirits	ND	mg/l	0.10				
Gasoline	ND	mg/l	0.10				
Fuel Oil #2/Diesel	ND	mg/l	0.10				
Fuel Oil #4	ND	mg/l	0.10				
Fuel Oil #6	ND	mg/l	0.10				
Motor Oil	ND	mg/l	0.10				
Kerosene	ND	mg/l	0.10				
Transformer Oil	ND	mg/l	0.10				
Unknown Hydrocarbon	ND	mg/l	0.10				
Surrogate(s)	Recovery		QC Criteria				
o-Terphenyl	97.0	%	40-140				

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30. Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.
METHOD Method number by which analysis was performed.
ID Initials of the analyst.
ND Not detected in comparison to the reported detection limit.

Please note that all solid samples are reported on dry weight basis unless noted otherwise.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

CHAIN OF CUSTODY

PAGE _____ OF _____

Date Rec'd in Lab: 11-17-03

ALPHA Job #: L0311730

ALPHA ANALYTICAL
Eight Walkup Drive Westborough, MA 01581
TEL: 508-898-9220 FAX: 508-898-9193

Client Information

Client: Tighe + Bond
Address: 324 Grove St
Worcester MA
Phone: 508-754-2201
Fax:
Email:

These samples have been previously analyzed by Alpha

Project Information

Project Name: Global Chelsea
Project Location: Chelsea MA
Project #: 32-38494
Project Manager: Rich Geisler
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved!)

Date Due: 11/20/03 Time: 72Hr

Report Information - Data Deliverables

☒ FAX ☐ EMAIL
☒ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program	Criteria
MA MCP	GW-1

MCP PRESUMPTIVE CERTAINTY - THESE QUESTIONS MUST BE ANSWERED

☐ Yes ☒ No Are MCP Analytical Methods Required?
☐ Yes ☒ No Are Drinking Water Samples Submitted?
☒ Yes ☐ No Have you met minimum field QC requirements?

Other Project Specific Requirements/Comments/Detection Limits:

ANALYSIS: TSS; Color, Turbidity; TPH 8100; PAH 8270; VOC 8260

SAMPLE HANDLING
Filtration
☐ Done ☐ Not needed ☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	TSS	Color, Turbidity	TPH 8100	PAH 8270	VOC 8260	Sample Specific Comments	
7730 .1	Influent	11/17/03	12:40	GW	JP6	X	X	X	X	X		8
.2	Effluent	11/17/03	1:00	GW	JP6	X	X	X	X	X		8
.3	Trip Blank	11/17/03	0800							X		1

Container Type	P	P	G	G	V
Preservative	A	A	A	A	R

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP?

Relinquished By:	Date/Time	Received By:	Date/Time
	11/17/03 2:40		11-17-03 1446

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Client Terms. See reverse side.

ATTACHMENT B

SUMMARY OF GROUND WATER MONITORING DATA

(2003 TO 2004)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: Tighe & Bond

Address: 4 Barlows Landing Road
Pocasset, MA 02559

Attn: Mr. Rich Geisler

Project Number: W-33494-01

Site: GLOBAL CHELSEA

Laboratory Job Number: L0311850

Date Received: 19-NOV-2003

Date Reported: 21-NOV-2003

Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0311850-01	INFLUENT	CHELSEA TERMINAL
L0311850-02	EFFLUENT	CHELSEA TERMINAL
L0311850-03	BLANK	CHELSEA TERMINAL

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized by: James Todaro
This document electronically signed

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0311850-01
INFLUENT
Sample Matrix: WATER

Date Collected: 19-NOV-2003 12:25
Date Received : 19-NOV-2003
Date Reported : 21-NOV-2003

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Turbidity	90.	NTU	0.20	30 2130B		1119 19:00	LK
Color, Apparent	180	A.P.C.U.	50.	30 2120B		1119 19:00	LK
Solids, Total Suspended	30.	mg/l	5.0	30 2540D		1120 11:40	DT
Volatile Organics by GC/MS 8260				1 8260B		1120 09:41	BT
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	23.	ug/l	0.50				
Toluene	1.6	ug/l	0.75				
Ethylbenzene	1.0	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0311850-01
INFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260 continued				1 8260B		1120 09:41	BT
p/m-Xylene	7.0	ug/l	0.50				
o-Xylene	1.8	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	1.8	ug/l	0.50				
sec-Butylbenzene	1.8	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	6.9	ug/l	0.50				
p-Isopropyltoluene	0.70	ug/l	0.50				
Naphthalene	8.2	ug/l	2.5				
n-Propylbenzene	4.2	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	5.8	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				

Surrogate(s)	Recovery		QC Criteria
1,2-Dichloroethane-d4	97.0	%	
Toluene-d8	110.	%	
4-Bromofluorobenzene	108.	%	
Dibromofluoromethane	94.0	%	

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0311850-02
EFFLUENT
Sample Matrix: WATER

Date Collected: 19-NOV-2003 12:30
Date Received : 19-NOV-2003
Date Reported : 21-NOV-2003

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 2-Plastic,2-Vial

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Turbidity	0.24	NTU	0.20	30 2130B		1119 19:00	LK
Color, Apparent	6.0	A.P.C.U.	5.0	30 2120B		1119 19:00	LK
Solids, Total Suspended	ND	mg/l	5.0	30 2540D		1120 11:40	DT
Volatile Organics by GC/MS 8260				1 8260B		1120 11:14	BT
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				

Comments: Complete list of References and Glossary of Terms found in Addendum I

Laboratory Sample Number: L0311850-02
EFFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260 continued				1 8260B		1128 11:14 BT	
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				

Surrogate(s)	Recovery		QC Criteria
1,2-Dichloroethane-d4	103.	%	
Toluene-d8	101.	%	
4-Bromofluorobenzene	94.0	%	
Dibromofluoromethane	103.	%	

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0311850-03 BLANK
Sample Matrix: WATER
Condition of Sample: Satisfactory
Number & Type of Containers: 1-Vial

Date Collected: 19-NOV-2003 09:50
Date Received : 19-NOV-2003
Date Reported : 21-NOV-2003
Field Prep: None

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260				1 8260B		1120 12:01	PT
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0311850-03
BLANK

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Volatile Organics by GC/MS 8260 continued				1 8260B		112e 11-01 BT	
1,2,3-Trichloropropane	ND	ug/l	5.0				
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				

Surrogate(s)	Recovery		QC Criteria
1,2-Dichloroethane-d4	104.	%	
Toluene-d8	99.0	%	
4-Bromofluorobenzene	96.0	%	
Dibromofluoromethane	107.	%	

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0311850

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Turbidity for sample(s) 01-02 (L0311850-01, WG156946)					
Turbidity	90.	90.	NTU	0	
Color, Apparent for sample(s) 01-02 (L0311850-01, WG156860)					
Color, Apparent	180	180	A.P.C.U.	0	

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0311850

Parameter	% Recovery	QC Criteria
Turbidity LCS for sample(s) 01-02 (WG156946)		
Turbidity	103	
Volatile Organics by GC/MS 8260 LCS for sample(s) 01-03 (WG156417)		
Chlorobenzene	103	
Benzene	103	
Toluene	107	
1,1-Dichloroethene	85	
Trichloroethene	94	
Surrogate(s)		
1,2-Dichloroethane-d4	106	
Toluene-d8	110	
4-Bromofluorobenzene	97	
Dibromofluoromethane	109	

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L0311850

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
Volatile Organics by GC/MS 8260 For sample(s) 01-03 (L0311578-01, WG156417)					
Chlorobenzene	111	112	1		
Benzene	100	102	2		
Toluene	108	110	2		
1,1-Dichloroethene	89	93	4		
Trichloroethene	98	102	4		
Surrogate(s)					
1,2-Dichloroethane-d4	104	106	2		
Toluene-d8	97	99	2		
4-Bromofluorobenzene	74	76	3		
Dibromofluoromethane	104	106	2		

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0311850

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-02 (WG156946-1)							
Turbidity	ND	NTU	0.20	30 2130B		1119 19:00	LK
Blank Analysis for sample(s) 01-02 (WG156842-1)							
Solids, Total Suspended	ND	mg/l	5.0	30 2540D		1120 11:40	DT
Blank Analysis for sample(s) 01-03 (WG156417-10)							
Volatile Organics by GC/MS 8260				1 8260B		1120 08:54	BT
Methylene chloride	ND	ug/l	5.0				
1,1-Dichloroethane	ND	ug/l	0.75				
Chloroform	ND	ug/l	0.75				
Carbon tetrachloride	ND	ug/l	0.50				
1,2-Dichloropropane	ND	ug/l	1.8				
Dibromochloromethane	ND	ug/l	0.50				
1,1,2-Trichloroethane	ND	ug/l	0.75				
Tetrachloroethene	ND	ug/l	0.50				
Chlorobenzene	ND	ug/l	0.50				
Trichlorofluoromethane	ND	ug/l	2.5				
1,2-Dichloroethane	ND	ug/l	0.50				
1,1,1-Trichloroethane	ND	ug/l	0.50				
Bromodichloromethane	ND	ug/l	0.50				
trans-1,3-Dichloropropene	ND	ug/l	0.50				
cis-1,3-Dichloropropene	ND	ug/l	0.50				
1,1-Dichloropropene	ND	ug/l	2.5				
Bromoform	ND	ug/l	2.0				
1,1,2,2-Tetrachloroethane	ND	ug/l	0.50				
Benzene	ND	ug/l	0.50				
Toluene	ND	ug/l	0.75				
Ethylbenzene	ND	ug/l	0.50				
Chloromethane	ND	ug/l	2.5				
Bromomethane	ND	ug/l	1.0				
Vinyl chloride	ND	ug/l	1.0				
Chloroethane	ND	ug/l	1.0				
1,1-Dichloroethene	ND	ug/l	0.50				
trans-1,2-Dichloroethene	ND	ug/l	0.75				
Trichloroethene	ND	ug/l	0.50				
1,2-Dichlorobenzene	ND	ug/l	2.5				
1,3-Dichlorobenzene	ND	ug/l	2.5				
1,4-Dichlorobenzene	ND	ug/l	2.5				
Methyl tert butyl ether	ND	ug/l	1.0				
p/m-Xylene	ND	ug/l	0.50				
o-Xylene	ND	ug/l	0.50				
cis-1,2-Dichloroethene	ND	ug/l	0.50				
Dibromomethane	ND	ug/l	5.0				
1,4-Dichlorobutane	ND	ug/l	5.0				
Iodomethane	ND	ug/l	5.0				
1,2,3-Trichloropropane	ND	ug/l	5.0				

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0311850

Continued

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-03 (WG156417-10)							
Volatile Organics by GC/MS 8260 continued				1, 8260B		1220 08:54 BT	
Styrene	ND	ug/l	0.50				
Dichlorodifluoromethane	ND	ug/l	5.0				
Acetone	ND	ug/l	5.0				
Carbon disulfide	ND	ug/l	5.0				
2-Butanone	ND	ug/l	5.0				
Vinyl acetate	ND	ug/l	5.0				
4-Methyl-2-pentanone	ND	ug/l	5.0				
2-Hexanone	ND	ug/l	5.0				
Ethyl methacrylate	ND	ug/l	5.0				
Acrolein	ND	ug/l	12.				
Acrylonitrile	ND	ug/l	5.0				
Bromochloromethane	ND	ug/l	2.5				
Tetrahydrofuran	ND	ug/l	10.				
2,2-Dichloropropane	ND	ug/l	2.5				
1,2-Dibromoethane	ND	ug/l	2.5				
1,3-Dichloropropane	ND	ug/l	2.5				
1,1,1,2-Tetrachloroethane	ND	ug/l	0.50				
Bromobenzene	ND	ug/l	2.5				
n-Butylbenzene	ND	ug/l	0.50				
sec-Butylbenzene	ND	ug/l	0.50				
tert-Butylbenzene	ND	ug/l	2.5				
o-Chlorotoluene	ND	ug/l	2.5				
p-Chlorotoluene	ND	ug/l	2.5				
1,2-Dibromo-3-chloropropane	ND	ug/l	2.5				
Hexachlorobutadiene	ND	ug/l	1.0				
Isopropylbenzene	ND	ug/l	0.50				
p-Isopropyltoluene	ND	ug/l	0.50				
Naphthalene	ND	ug/l	2.5				
n-Propylbenzene	ND	ug/l	0.50				
1,2,3-Trichlorobenzene	ND	ug/l	2.5				
1,2,4-Trichlorobenzene	ND	ug/l	2.5				
1,3,5-Trimethylbenzene	ND	ug/l	2.5				
1,2,4-Trimethylbenzene	ND	ug/l	2.5				
trans-1,4-Dichloro-2-butene	ND	ug/l	2.5				
Ethyl ether	ND	ug/l	2.5				

Surrogate(s)	Recovery		QC Criteria
1,2-Dichloroethane-d4	112.	%	
Toluene-d8	99.0	%	
4-Bromofluorobenzene	92.0	%	
Dibromofluoromethane	119.	%	

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

30. Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WPCF. 18th Edition. 1992.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.
METHOD Method number by which analysis was performed.
ID Initials of the analyst.
ND Not detected in comparison to the reported detection limit.

Please note that all solid samples are reported on dry weight basis unless noted otherwise.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

CHAIN OF CUSTODY PAGE 1 OF 1

Date Rec'd in Lab: 11/19/03 ALPHA Job #: L0311[illegible]

ALPHA

Eight Walkup Drive Westborough, MA 01581
TEL: 508-898-9220 FAX: 508-898-9193

Client Information

Client: Tighe & Bond
Address: 4 Barlows Landing Rd
Pocasset MA 02559
Phone: 508-564-7285
Fax:
Email: RReisler@TigheBond.com

☐ These samples have been previously analyzed by Alpha

Project Information

Project Name: Global Chelsea
Project Location: Chelsea Terminal
Project #: W-33494-01
Project Manager: Rich Geisler
ALPHA Quote #:

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved!)

Date Due: 11/21/03 Fri PM. Time:

Report Information - Data Deliverables

☒ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client Info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

MCP PRESUMPTIVE CERTAINTY - THESE QUESTIONS MUST BE ANSWERED

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are Drinking Water Samples Submitted?
☐ Yes ☐ No Have you met minimum field QC requirements?

Other Project Specific Requirements/Comments/Detection Limits:

SAMPLE HANDLING

Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: TPH 8100	PAHs 8270	VOCs 8260	TSS	Color	Turbidity							Sample Specific Comments
L0311880.1	Influent	11/19/03	1225	Water	[illegible]	✓	✓	✓	✓	✓	✓							
.2	Effluent	11/19/03	1230	Water	[illegible]	✓	✓	✓	✓	✓	✓							
.3	Blank	11/19/03	0950	Lab Water	[illegible]			✓										

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP ?

Container Type	
Preservative	

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	11/19/03 1245	[signature]	11/19 12:3[illegible]
[signature]	11/19 1715	[signature]	11/19/03 1715

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. See reverse side.

ALPHA ANALYTICAL LABORATORIES

Eight Walkup Drive
Westborough, Massachusetts 01581-1019
(508) 898-9220 www.alphalab.com

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

CERTIFICATE OF ANALYSIS

Client: Tighe & Bond

Address: 4 Barlows Landing Road
Pocasset, MA 02559

Attn: Mr. Rich Geisler

Project Number: W-33494-01

Site: GLOBAL CHELSEA

Laboratory Job Number: L0311852

Date Received: 19-NOV-2003

Date Reported: 24-NOV-2003

Delivery Method: Alpha

ALPHA SAMPLE NUMBER	CLIENT IDENTIFICATION	SAMPLE LOCATION
L0311852-01	INFLUENT	CHELSEA TERMINAL
L0311852-02	EFFLUENT	CHELSEA TERMINAL

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this report is, to the best of my knowledge and belief, accurate and complete. This certificate of analysis is not complete unless this page accompanies any and all pages of this report.

Authorized by: Scott McLean
This document electronically signed

ALPHA ANALYTICAL LABORATORIES
NARRATIVE REPORT

Laboratory Job Number: L0311852

PAH

L0311852-01 has elevated limits of detection due to the 10x dilution required by the elevated concentrations of target compounds in the sample.

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0311852-01
INFLUENT
Sample Matrix: WATER

Date Collected: 19-NOV-2003 12:25
Date Received : 19-NOV-2003
Date Reported : 24-NOV-2003

Condition of Sample: Satisfactory

Field Prep: None

Number & Type of Containers: 4-Amber

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
PAH by GC/MS SIM 8270M				1 8270C-M	1120 18:20	1122 03:58	HL
Acenaphthene	26.	ug/l	2.0				
2-Chloronaphthalene	ND	ug/l	2.0				
Fluoranthene	6.3	ug/l	2.0				
Naphthalene	2.1	ug/l	2.0				
Benzo(a)anthracene	ND	ug/l	2.0				
Benzo(a)pyrene	ND	ug/l	2.0				
Benzo(b)fluoranthene	ND	ug/l	2.0				
Benzo(k)fluoranthene	ND	ug/l	2.0				
Chrysene	ND	ug/l	2.0				
Acenaphthylene	ND	ug/l	2.0				
Anthracene	5.8	ug/l	2.0				
Benzo(ghi)perylene	ND	ug/l	2.0				
Fluorene	13.	ug/l	2.0				
Phenanthrene	12.	ug/l	2.0				
Dibenzo(a,h)anthracene	ND	ug/l	2.0				
Indeno(1,2,3-cd)Pyrene	ND	ug/l	2.0				
Pyrene	4.7	ug/l	2.0				
1-Methylnaphthalene	68.	ug/l	2.0				
2-Methylnaphthalene	5.7	ug/l	2.0				
Perylene	ND	ug/l	2.0				
Biphenyl	ND	ug/l	2.0				
Benzo(e)Pyrene	ND	ug/l	2.0				
Surrogate(s)	Recovery		QC Criteria				
Nitrobenzene-d5	60.0	%	23-120				
2-Fluorobiphenyl	76.0	%	43-120				
4-Terphenyl-d14	85.0	%	33-120				
Hydrocarbon Scan by GC 8100M				1 8100M	1120 09:00	1121 03:27	JH
Mineral Spirits	ND	mg/l	0.10				
Gasoline	ND	mg/l	0.10				
Fuel Oil #2/Diesel	ND	mg/l	0.10				
Fuel Oil #4	ND	mg/l	0.10				
Fuel Oil #6	ND	mg/l	0.10				
Motor Oil	ND	mg/l	0.10				
Kerosene	ND	mg/l	0.10				
Transformer Oil	ND	mg/l	0.10				
Unknown Hydrocarbon	5.1	mg/l	0.10				

Comments: Complete list of References and Glossary of Terms found in Addendum I

CERTIFICATE OF ANALYSIS

Laboratory Sample Number: L0311852-01
INFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Hydrocarbon Scan by GC 8100M continued				1 8100M	1120 09:00	1121 03:27	JB
Surrogate(s)	Recovery		QC Criteria				
o-Terphenyl	81.0	%	40-140				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
CERTIFICATE OF ANALYSIS

MA:M-MA086 NH:200301-A CT:PH-0574 ME:MA086 RI:65 NY:11148 NJ:MA935 Army:USACE

Laboratory Sample Number: L0311852-02 EFFLUENT
Sample Matrix: WATER

Date Collected: 19-NOV-2003 12:30
Date Received : 19-NOV-2003
Date Reported : 24-NOV-2003

Condition of Sample: Satisfactory
Field Prep: None

Number & Type of Containers: 4-Amber

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
PAH by GC/MS SIM 8270M				1 8270C-M	1120 18:20	1122 03:14	HL
Acenaphthene	ND	ug/l	0.20				
2-Chloronaphthalene	ND	ug/l	0.20				
Fluoranthene	ND	ug/l	0.20				
Naphthalene	ND	ug/l	0.20				
Benzo(a)anthracene	ND	ug/l	0.20				
Benzo(a)pyrene	ND	ug/l	0.20				
Benzo(b)fluoranthene	ND	ug/l	0.20				
Benzo(k)fluoranthene	ND	ug/l	0.20				
Chrysene	ND	ug/l	0.20				
Acenaphthylene	ND	ug/l	0.20				
Anthracene	ND	ug/l	0.20				
Benzo(ghi)perylene	ND	ug/l	0.20				
Fluorene	ND	ug/l	0.20				
Phenanthrene	ND	ug/l	0.20				
Dibenzo(a,h)anthracene	ND	ug/l	0.20				
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20				
Pyrene	ND	ug/l	0.20				
1-Methylnaphthalene	ND	ug/l	0.20				
2-Methylnaphthalene	ND	ug/l	0.20				
Perylene	ND	ug/l	0.20				
Biphenyl	ND	ug/l	0.20				
Benzo(e)Pyrene	ND	ug/l	0.20				
Surrogate(s)	Recovery		QC Criteria				
Nitrobenzene-d5	49.0	%	23-120				
2-Fluorobiphenyl	49.0	%	43-120				
4-Terphenyl-d14	87.0	%	33-120				
Hydrocarbon Scan by GC 8100M				1 8100M	1120 09:00	1121 04:31	JB
Mineral Spirits	ND	mg/l	0.10				
Gasoline	ND	mg/l	0.10				
Fuel Oil #2/Diesel	ND	mg/l	0.10				
Fuel Oil #4	ND	mg/l	0.10				
Fuel Oil #6	ND	mg/l	0.10				
Motor Oil	ND	mg/l	0.10				
Kerosene	ND	mg/l	0.10				
Transformer Oil	ND	mg/l	0.10				
Unknown Hydrocarbon	ND	mg/l	0.10				

Comments: Complete list of References and Glossary of Terms found in Addendum I

Laboratory Sample Number: L0311852-02
EFFLUENT

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Hydrocarbon Scan by GC 8100M continued				1 8100M	1120 09:00	1121 04:31	JB
Surrogate(s)	Recovery		QC Criteria				
o-Terphenyl	87.0	%	40-140				

Comments: Complete list of References and Glossary of Terms found in Addendum I

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH DUPLICATE ANALYSIS

Laboratory Job Number: L0311852

Parameter	Value 1	Value 2	Units	RPD	RPD Limits
Hydrocarbon Scan by GC 8100M for sample(s) 01-02 (L0311852-02, WG156967)					
Mineral Spirits	ND	ND	mg/l	NC	40
Gasoline	ND	ND	mg/l	NC	40
Fuel Oil #2/Diesel	ND	ND	mg/l	NC	40
Fuel Oil #4	ND	ND	mg/l	NC	40
Fuel Oil #6	ND	ND	mg/l	NC	40
Motor Oil	ND	ND	mg/l	NC	40
Kerosene	ND	ND	mg/l	NC	40
Transformer Oil	ND	ND	mg/l	NC	40
Unknown Hydrocarbon	ND	ND	mg/l	NC	40
Surrogate(s)	Recovery				QC Criteria
o-Terphenyl	87.0	98.0	%	12	40-140

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH SPIKE ANALYSES

Laboratory Job Number: L0311852

Parameter	% Recovery	QC Criteria
PAH by GC/MS SIM 8270M LCS for sample(s) 01-02 (WG157028)		
Acenaphthene	68	46-118
2-Chloronaphthalene	63	
Fluoranthene	86	
Anthracene	57	
Pyrene	89	26-127
Surrogate(s)		
Nitrobenzene-d5	71	23-120
2-Fluorobiphenyl	64	43-120
4-Terphenyl-d14	78	33-120
Hydrocarbon Scan by GC 8100M LCS for sample(s) 01-02 (WG156967)		
Petroleum Spike	105	40-140
Surrogate(s)		
o-Terphenyl	100	40-140

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH MS/MSD ANALYSIS

Laboratory Job Number: L0311852

Parameter	MS %	MSD %	RPD	RPD Limit	MS/MSD Limits
PAH by GC/MS SIM 8270M for sample(s) 01-02 (L0311852-02, WG157028)					
Acenaphthene	63	54	15	40	46-118
2-Chloronaphthalene	59	54	9	40	
Fluoranthene	86	81	6	40	
Anthracene	59	54	9	40	
Pyrene	90	81	11	40	26-127
Surrogate(s)					
Nitrobenzene-d5	56	58	4		23-120
2-Fluorobiphenyl	60	52	14		43-120
4-Terphenyl-d14	77	71	8		33-120

ALPHA ANALYTICAL LABORATORIES
QUALITY ASSURANCE BATCH BLANK ANALYSIS

Laboratory Job Number: L0311852

PARAMETER	RESULT	UNITS	RDL	REF METHOD	DATE PREP	DATE ANAL	ID
Blank Analysis for sample(s) 01-02 (WG157028-1)							
PAH by GC/MS SIM 8270M				1 8270C-M	1120 18:20	1122 00:18	MG
Acenaphthene	ND	ug/l	0.20				
2-Chloronaphthalene	ND	ug/l	0.20				
Fluoranthene	ND	ug/l	0.20				
Naphthalene	ND	ug/l	0.20				
Benzo(a)anthracene	ND	ug/l	0.20				
Benzo(a)pyrene	ND	ug/l	0.20				
Benzo(b)fluoranthene	ND	ug/l	0.20				
Benzo(k)fluoranthene	ND	ug/l	0.20				
Chrysene	ND	ug/l	0.20				
Acenaphthylene	ND	ug/l	0.20				
Anthracene	ND	ug/l	0.20				
Benzo(ghi)perylene	ND	ug/l	0.20				
Fluorene	ND	ug/l	0.20				
Phenanthrene	ND	ug/l	0.20				
Dibenzo(a,h)anthracene	ND	ug/l	0.20				
Indeno(1,2,3-cd)Pyrene	ND	ug/l	0.20				
Pyrene	ND	ug/l	0.20				
1-Methylnaphthalene	ND	ug/l	0.20				
2-Methylnaphthalene	ND	ug/l	0.20				
Perylene	ND	ug/l	0.20				
Biphenyl	ND	ug/l	0.20				
Benzo(e)Pyrene	ND	ug/l	0.20				
Surrogate(s)	Recovery		QC Criteria				
Nitrobenzene-d5	66.0	%	23-120				
2-Fluorobiphenyl	67.0	%	43-120				
4-Terphenyl-d14	83.0	%	33-120				
Blank Analysis for sample(s) 01-02 (WG156967-1)							
Hydrocarbon Scan by GC 8100M				1 8100M	1120 09:00	1120 22:10	JB
Mineral Spirits	ND	mg/l	0.10				
Gasoline	ND	mg/l	0.10				
Fuel Oil #2/Diesel	ND	mg/l	0.10				
Fuel Oil #4	ND	mg/l	0.10				
Fuel Oil #6	ND	mg/l	0.10				
Motor Oil	ND	mg/l	0.10				
Kerosene	ND	mg/l	0.10				
Transformer Oil	ND	mg/l	0.10				
Unknown Hydrocarbon	ND	mg/l	0.10				
Surrogate(s)	Recovery		QC Criteria				
o-Terphenyl	103.	%	40-140				

REFERENCES

1. Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - IIIA, 1997.

GLOSSARY OF TERMS AND SYMBOLS

REF Reference number in which test method may be found.
METHOD Method number by which analysis was performed.
ID Initials of the analyst.
ND Not detected in comparison to the reported detection limit.

Please note that all solid samples are reported on dry weight basis unless noted otherwise.

LIMITATION OF LIABILITIES

Alpha Analytical, Inc. performs services with reasonable care and diligence normal to the analytical testing laboratory industry. In the event of an error, the sole and exclusive responsibility of Alpha Analytical, Inc., shall be to re-perform the work at it's own expense. In no event shall Alpha Analytical, Inc. be held liable for any incidental consequential or special damages, including but not limited to, damages in any way connected with the use of, interpretation of, information or analysis provided by Alpha Analytical, Inc.

We strongly urge our clients to comply with EPA protocol regarding sample volume, preservation, cooling, containers, sampling procedures, holding times and splitting of samples in the field.

CHAIN OF CUSTODY

PAGE 1 OF 1

Date Rec'd in Lab: 11/19/03

ALPHA Job #: L-31852

ALPHA
Walkup Drive Westborough, MA 01581
508-898-9220 FAX: 508-898-9193

Project Information

Project Name: Global Chelsea
Project Location: Chelsea Terminal
Project #: W-33494-01
Project Manager: Rich Gritter
ALPHA Quote #:

Report Information - Data Deliverables

☒ FAX ☒ EMAIL
☐ ADEx ☐ Add'l Deliverables

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed Program | Criteria

Turn-Around Time

☐ Standard ☒ RUSH (only confirmed if pre-approved!)
Date Due: 11/21/03 Time: Fri PM.

Client Information

Tighe & Bond
Address: 4 Barlows Landing Rd
Pocasset MA 02559
Phone: 508-564-7285
Email: RReisler@TigheBond.com
These samples have been previously analyzed by Alpha

MCP PRESUMPTIVE CERTAINTY - THESE QUESTIONS MUST BE ANSWERED

☐ Yes ☐ No Are MCP Analytical Methods Required?
☐ Yes ☐ No Are Drinking Water Samples Submitted?
☐ Yes ☐ No Have you met minimum field QC requirements?

Other Project Specific Requirements/Comments/Detection Limits:

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	ANALYSIS: TPH 1664	PAHs 8270	VOCs 8260	TSS	Color	Turbidity	Sample Specific Comments
31852-1	Influent	11/19/03	1225	Water		✓	✓	✓	✓	✓	✓	
-2	Effluent	11/19/03	1230	Water		✓	✓	✓	✓	✓		
-	Blank	11/19/03	0950	Water				✓				

TOTAL # BOTTLES

QUESTIONS ABOVE MUST BE ANSWERED FOR PRESUMPTIVE CERTAINTY

IS YOUR PROJECT MCP ?

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
	11/19/03 1245		11/19/03 1415
	11/19/03 1715		11/19/03 1415

Please print clearly, legibly and completely. Samples can not be logged in and turnaround time clock will not start until any ambiguities are resolved. All samples submitted are subject to Alpha's Payment Terms. See reverse side.

ATTACHMENT B

SUMMARY OF GROUND WATER MONITORING DATA

(2003 TO 2004)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

GeoLabs, Inc.

Environmental Laboratories

LABORATORY REPORT

PREPARED FOR:

Tighe & Bond, Inc.
53 Southampton Road
Westfield, MA 01085

Attn: Rich Grisler

PROJECT ID:	W-33494-01 Chelsea Terminal
GEOLABS CERTIFICATION #:	M-MA015
SAMPLE NUMBER:	142618 - 142620
DATE PREPARED:	December 11, 2003
PREPARED BY:	Christine Johnson
APPROVED BY:	Jim Chen, Laboratory Director/Date

GeoLabs, Inc.
Environmental Laboratories

MADEP MCP Response Action Analytical Report Certification Form

Laboratory Name:	GeoLabs, Inc.	Project #:	W-33494-01
Project Location:	Chelsea Terminal	MADEP RTN:	

This form provides certifications for the following data set: 142618 - 142620

Sample matrices: Groundwater (x) Soil / Sediment ( ) Drinking Water ( ) Other ( )

MCP SW-846 Methods Used	8260B (x)	8151A ( )	8330 ( )	6010B ( )	7470/1A ( )	Other: ( ) TPH8100M
	8270C (X)	8081A ( )	VPH ( )	6020 ( )	9014M[2] ( )	
	8082 ( )	8021B ( )	EPH ( )	7000 S[3] ( )		

As specified in MADEP Compendium of Analytical Methods (Check all that apply)

1- List Release Tracking Number (RTN), if known
2- M - SW-846 Method 9014 or MADEP Physiologically Available Cyanide (PAC) Method
3- S - SW-846 Methods 7000 Series (List individual method and analyte)

An affirmative response to questions A, B, and C is required for "*Presumptive Certainty*" status

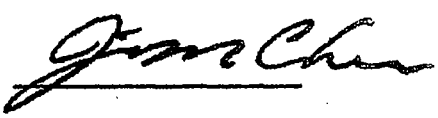
A	Were all samples received by the laboratory in a condition consistent with that described on the Chain-of-Custody documentation for the date set?	Yes (x)	No[1] ( )
B	Were all QA/QC procedures required for the specified analytical method(s) included in this report followed, including the requirement to note and discuss in a narrative QC data that did not meet appropriate performance standards or guidelines?	Yes (x)	No[1] ( )
C	Does the analytical data included in this report meet all the requirements for "Presumptive Certainty", as described in Section 2.0 of the MADEP documents CAM VII A, "Quality Assurance and Quality Control Guidelines for the Acquisition and Reporting of Analytical Data"?	Yes (x)	No[1] ( )

A response to questions D and E below is required for "*Presumptive Certainty*" status

D	Were all QC performance standards and recommendations for the specified methods achieved?	Yes (x)	No[1] ( )
E	Were results for all analyte-list compounds/elements for the specified method(s) reported?	Yes (x)	No[1] ( )

[1]All NO answers must be addressed in an attached Environmental Laboratory case narrative.

I, the undersigned, attest under the pains and penalties of perjury that, based upon my personal inquiry of those responsible for obtaining the information, the material contained in this analytical report is, to the best of my knowledge and belief, accurate and complete.

Signature:  Position: Lab Director

Printed Name: Jim Chen Date: December 11, 2003

GeoLabs, Inc.

Environmental Laboratories

Case Narrative

Project ID: W-33494-01
Client Name: Tighe & Bond, Inc.

Sample Number: 142618 - 142620
Received: 12/05/03

Physical Condition of Samples

This project was received by the laboratory in satisfactory condition. The sample(s) were received undamaged, in appropriate containers with the correct preservation.

Project Documentation

This project was accompanied by satisfactory Chain of Custody documentation. The sample container label(s) agreed with the Chain of Custody.

Analysis of Sample(s)

No analytical anomalies or non-conformances were noted by the laboratory during the processing of these sample(s).

CLIENT NAME:	**TIGHE & BOND**	PROJECT ID:	W-33494-01
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	12/11/03
COLLECTION DATE:	12/05/03	ANALYZED BY:	ZYZ
REC'D BY LAB:	12/05/03	ANALYSIS DATE:	12/05&09/03
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE ORGANICS

SAMPLE NUMBER:	142618	142619	
SAMPLE LOCATION:	INFLUENT	EFFLUENT	
	RESULTS (µg/L)		**DETECTION LIMIT (µg/L)**
Acetone	ND	ND	50.0
Acrylonitrile	ND	ND	50.0
Benzene	**5.05**	ND	5.0
Bromobenzene	ND	ND	5.0
Bromochloromethane	ND	ND	2.0
Bromoform	ND	ND	5.0
Bromomethane	ND	ND	2.8
2-Butanone	ND	ND	10.0
n-Butylbenzene	ND	ND	5.0
Carbon Tetrachloride	ND	ND	5.0
Chlorobenzene	ND	ND	5.0
Chloroethane	ND	ND	5.0
2-Chloroethylvinylether	ND	ND	5.0
Chloroform	ND	ND	5.0
Chloromethane	ND	ND	5.0
2-Chlorotoluene	ND	ND	5.0
4-Chlorotoluene	ND	ND	5.0
Dibromomethane	ND	ND	5.0
Dibromochloromethane	ND	ND	5.0
Dichlorobromomethane	ND	ND	5.0
Dichlorodifluoromethane	ND	ND	5.0
1,1-Dichloroethane	ND	ND	5.0
1,1-Dichloroethene	ND	ND	0.96
1,1-Dichloropropene	ND	ND	0.4
1,2-Dibromoethane	ND	ND	0.63
1,2-Dibromo-3-chloropropane	ND	ND	5.0
1,2-Dichlorobenzene	ND	ND	5.0
1,2-Dichloroethane	ND	ND	5.0
1,2-Dichloropropane	ND	ND	5.0
1,3-Dichlorobenzene	ND	ND	5.0
1,3-Dichloropropane	ND	ND	5.0
1,4-Dichlorobenzene	ND	ND	5.0
2,2-Dichloropropane	ND	ND	5.0
c-1,2-Dichloroethene	ND	ND	5.0
c-1,3-Dichloropropene	ND	ND	0.65
t-1,2-Dichloroethene	ND	ND	5.0
t-1,3-Dichloropropene	ND	ND	0.95
Ethylbenzene	ND	ND	5.0
Hexachlorobutadiene	ND	ND	0.19

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**TIGHE & BOND**	PROJECT ID:	W-33494-01
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	12/11/03
COLLECTION DATE:	12/05/03	ANALYZED BY:	ZYZ
REC'D BY LAB:	12/05/03	ANALYSIS DATE:	12/05&09/03
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE ORGANICS

SAMPLE NUMBER:	142618	142619	
SAMPLE LOCATION:	INFLUENT	EFFLUENT	
	RESULTS (µg/L)		**DETECTION LIMIT (µg/L)**
2-Hexanone	ND	ND	10.0
Isopropylbenzene	ND	ND	5.0
p-Isopropyltoluene	ND	ND	5.0
Methylene Chloride	ND	ND	10.0
4-Methyl-2-pentanone	ND	ND	5.0
Methyl tert-butyl ether	ND	ND	5.0
Naphthalene	ND	ND	20.0
n-propylbenzene	ND	ND	5.0
Sec-butylbenzene	ND	ND	5.0
Styrene	ND	ND	5.0
tert-butylbenzene	ND	ND	5.0
Tetrachloroethene	ND	ND	5.0
Toluene	ND	ND	5.0
Trichloroethene	ND	ND	5.0
Trichlorofluoromethane	ND	ND	5.0
1,1,1-Trichloroethane	ND	ND	5.0
1,1,2-Trichloroethane	ND	ND	5.0
1,1,2,2-Tetrachloroethane	ND	ND	0.61
1,1,1,2-Tetrachloroethane	ND	ND	5.0
1,2,3-Trichloropropane	ND	ND	5.0
1,2,3-Trichlorobenzene	ND	ND	5.0
1,2,4-Trichlorobenzene	ND	ND	5.0
1,2,4-Trimethylbenzene	**14.3**	ND	5.0
1,3,5-Trimethylbenzene	ND	ND	5.0
Vinyl Chloride	ND	ND	2.0
Xylenes	ND	ND	5.0
Surrogate Recoveries:			
dibromofluoromethane	106%	96%	
1,2-Dichloroethane	107%	115%	
toluene-d8	102%	102%	
BFB	87%	107%	

ND = NOT DETECTED

Method Reference:

EPA Method 8260B (1) GC/MS

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Ed.

CLIENT NAME:	**TIGHE & BOND**	PROJECT ID:	W-33494-01
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	12/11/03
COLLECTION DATE:	11/26/03	ANALYZED BY:	ZYZ
REC'D BY LAB:	12/05/03	ANALYSIS DATE:	12/06/03
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE ORGANICS

SAMPLE NUMBER: 142620
SAMPLE LOCATION: TRIP BLANK

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
Acetone	ND	50.0
Acrylonitrile	ND	50.0
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	2.0
Bromoform	ND	5.0
Bromomethane	ND	2.8
2-Butanone	ND	10.0
n-Butylbenzene	ND	5.0
Carbon Tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	5.0
2-Chloroethylvinylether	ND	5.0
Chloroform	ND	5.0
Chloromethane	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
Dibromomethane	ND	5.0
Dibromochloromethane	ND	5.0
Dichlorobromomethane	ND	5.0
Dichlorodifluoromethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	0.96
1,1-Dichloropropene	ND	0.4
1,2-Dibromoethane	ND	0.63
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
c-1,2-Dichloroethene	ND	5.0
c-1,3-Dichloropropene	ND	0.65
t-1,2-Dichloroethene	ND	5.0
t-1,3-Dichloropropene	ND	0.95
Ethylbenzene	ND	5.0
Hexachlorobutadiene	ND	0.19

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**TIGHE & BOND**	PROJECT ID:	W-33494-01
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	12/11/03
COLLECTION DATE:	11/26/03	ANALYZED BY:	ZYZ
REC'D BY LAB:	12/05/03	ANALYSIS DATE:	12/06/03
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE ORGANICS

SAMPLE NUMBER: 142620
SAMPLE LOCATION: TRIP BLANK

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
2-Hexanone	ND	10.0
Isopropylbenzene	ND	5.0
p-Isopropyltoluene	ND	5.0
Methylene Chloride	ND	10.0
4-Methyl-2-pentanone	ND	5.0
Methyl tert-butyl ether	ND	5.0
Naphthalene	ND	20.0
n-propylbenzene	ND	5.0
Sec-butylbenzene	ND	5.0
Styrene	ND	5.0
tert-butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	0.61
1,1,1,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
Vinyl Chloride	ND	2.0
Xylenes	ND	5.0
Surrogate Recoveries:		
dibromofluoromethane	101%	
1,2-Dichloroethane	115%	
toluene-d8	110%	
BFB	117%	

ND = NOT DETECTED

Method Reference:

EPA Method 8260B (1) GC/MS

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Ed.

BLANK **ND** 12/05/03

VOLATILE ORGANICS LCS

%RECOVERY

Dichlorodifluoromethane	98%	1,1,2-Trichloroethane	98%
Chloromethane	97%	Tetrachloroethene	101%
Vinyl chloride	100%	1,3-Dichloropropane	101%
Bromomethane	107%	2-Hexanone	90%
Chloroethane	103%	Dibromochloromethane	88%
Trichlorofluoromethane	97%	EDB	88%
Acrolein	88%	Chlorobenzene	98%
1,1-Dichloroethene	100%	1,1,1,2-tetrachloroethane	98%
Acetone	90%	Ethylbenzene	100%
Carbon Disulfide	98%	m,p-Xylene	94%
Methylene chloride	101%	o-Xylene	91%
Acrylonitrile	86%	Styrene	95%
trans-1,2-Dichloroethene	98%	Bromoform	81%
MTBE	91%	Isopropylbenzene	102%
1,1-Dichloroethane	100%	Bromobenzene	99%
2-Butanone	88%	1,1,2,2-Tetrachloroethane	93%
Carbon tetrachloride	96%	1,2,3-Trichloropropane	93%
2,2-Dichloropropane	98%	N-propylbenzene	92%
c-1,2-dichloroethene	105%	2-Chlorotoluene	95%
Bromochloromethane	96%	4-Chlorotoluene	89%
Chloroform	98%	1,3,5-Trimethylbenzene	79%
1,1,1-Trichloroethane	102%	tert-Butylbenzene	92%
1,1-dihloropropene	105%	1,2,4-Trimethylbenzene	74%
Benzene	102%	sec-Butylbenzene	108%
1,2-Dichloroethane	101%	1,3-Dichlorobenzene	101%
Trichloroethene	105%	1,4-Dichlorobenzene	103%
1,2-Dichloropropane	99%	p-Isopropyltoluene	90%
Dibromomethane	98%	1,2-Dichlorobenzene	102%
Bromodichloromethane	97%	N-Butylbenzene	87%
2-Chloroethylvinyl Ether	58%	1,2-dibromo-3-chloropropane	97%
c-1,3-Dichloropropene	100%	1,2,4-trichlorobenzene	81%
Toluene	97%	Hexachlorobutadiene	97%
t-1,3-Dichloropropene	107%	Naphthalene	83%
		1,2,3-Trichlorobenzene	91%

MCP Limits 70%-130%

The *majority* of recoveries must fall within this range.

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**TIGHE & BOND**	PROJECT ID:	W-33494-01
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	12/11/03
COLLECTION DATE:	12/05/03	ANALYZED BY:	CL
REC'D BY LAB:	12/05/03	ANALYSIS DATE:	12/10/03
COLLECTED BY:	CLIENT	DIGESTION DATE:	12/08/03
PRESERVATIVE:	SULFURIC ACID		

TOTAL PETROLEUM HYDROCARBONS

SAMPLE NUMBER	SAMPLE LOCATION	TPH (mg/L)	DETECTION LIMIT (mg/L)
142618	INFLUENT	**13.2**	**0.20**
142619	EFFLUENT	ND	0.20

ND = NOT DETECTED

Method Reference:

EPA Method 8100 (1) Modified

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1986, 3rd Edition.

CLIENT NAME:	**TIGHE & BOND**	PROJECT ID:	W-33494-01
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	12/11/03
COLLECTION DATE:	12/05/03	ANALYZED BY:	CL
REC'D BY LAB:	12/05/03		
COLLECTED BY:	CLIENT		

TPH WATER QA/QC

	BLANK	MDL	LCS %	% REC.
Gasoline	ND	0.2 mg/L		
Kerosene / Jet Fuel	ND	0.2 mg/L		
Diesel Fuel #2	ND	0.2 mg/L	77%	40-140%
Fuel #4	ND	0.2 mg/L		
Fuel #6	ND	0.2 mg/L		
Transformer Oil	ND	0.2 mg/L		
Parafin Oil	ND	0.2 mg/L		
Motor Oil	ND	0.2 mg/L		
Surrogate				
OTP % Recovery	85%		83%	40-140%

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**TIGHE & BOND**	PROJECT ID:	W-33494-01
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	12/11/03
COLLECTION DATE:	12/05/03	ANALYZED BY:	RD
REC'D BY LAB:	12/05/03	ANALYSIS DATE:	12/10/03
COLLECTED BY:	CLIENT	DIGESTION DATE:	12/08/03
PRESERVATIVE:	N/A		

POLYNUCLEAR AROMATIC HYDROCARBONS

SAMPLE NUMBER:	142618	142619	
SAMPLE LOCATION:	INFLUENT	EFFLUENT	
	RESULTS (µg/L)		**DETECTION LIMIT (µg/L)**
Naphthalene	ND	ND	0.750
2-Methylnaphthalene	**6.22**	ND	0.750
Acenaphthylene	ND	ND	0.250
Acenaphthene	**8.88**	ND	0.500
Fluorene	ND	ND	0.500
Phenanthrene	ND	ND	0.500
Anthracene	ND	ND	0.500
Fluoranthene	**1.63**	ND	0.500
Pyrene	**1.41**	ND	1.25
Benz[a]Anthracene	ND	ND	0.500
Chrysene	ND	ND	0.500
Benzo[b]Fluoranthene	ND	ND	0.500
Benzo[k]Fluoranthene	ND	ND	1.00
Benzo[a]Pyrene	ND	ND	0.200
Indeno[1,2,3-Cd]Pyrene	ND	ND	0.500
Dibenzo[a,h]Anthracene	ND	ND	0.500
Benzo[g,h,i]Perylene	ND	ND	1.00

ND = NOT DETECTED

Method Reference:

EPA Method 8270C (1)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1998 3rd Edition.

POLYNUCLEAR AROMATIC HYDROCARBONS - QC

	BLANK
Naphthalene	ND
2-Methylnaphthalene	ND
Acenaphthylene	ND
Acenaphthene	ND
Fluorene	ND
Phenanthrene	ND
Anthracene	ND
Fluoranthene	ND
Pyrene	ND
Benz[a]Anthracene	ND
Chrysene	ND
Benzo[b[Fluoranthene	ND
Benzo[k]Fluoranthene	ND
Benzo[a]Pyrene	ND
Indeno[1,2,3-Cd]Pyrene	ND
Dibenzo[a,h]Anthracene	ND
Benzo[g,h,i]Perylene	ND

	LCSS 1	Limit
Acenaphthene	84%	40-140%
Pyrene	94%	40-140%

CLIENT NAME:	**TIGHE & BOND**	PROJECT ID:	W-33494-01
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	12/11/03
COLLECTION DATE:	12/05/03	ANALYZED BY:	RP
REC'D BY LAB:	12/05/03	ANALYSIS DATE:	12/05/03
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	N/A		

TURBIDITY

SAMPLE NUMBER	SAMPLE LOCATION	TURBIDITY (N.T.U.)	DETECTION LIMIT (N.T.U.)
142618 *	INFLUENT	**90.0**	0.252
142619	EFFLUENT	**0.220**	0.0504

ND= NOT DETECTED ***5x dilution**

Method Reference:

EPA Method 180.1 (1)

1) U.S. EPA 1983. "Methods for Chemical Analysis of Water and Wastes." EPA-600/4-79-020, EPA, EMSL, Cincinnati, Ohio 45268.

CLIENT NAME:	**TIGHE & BOND**	PROJECT ID:	W-33494-01
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	12/11/03
COLLECTION DATE:	12/05/03	ANALYZED BY:	RP
REC'D BY LAB:	12/05/03	ANALYSIS DATE:	12/05/03
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	N/A		

COLOR

SAMPLE NUMBER	SAMPLE LOCATION	COLOR (mg PtCo/L)	DETECTION LIMIT (mg PtCo/L)
142618	INFLUENT	**7.00**	5.0
142619	EFFLUENT	**31.0**	5.0

ND = NOT DETECTED

Method Reference:

EPA Method 110.3 (1)

1) U.S. EPA 1983. "Methods for Chemical Analysis of Water and Wastes." EPA-600/4-79-020, EPA, EMSL, Cincinnati, Ohio 45268.

CLIENT NAME:	**TIGHE & BOND**	PROJECT ID:	W-33494-01
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	12/11/03
COLLECTION DATE:	12/05/03	ANALYZED BY:	AS
REC'D BY LAB:	12/05/03	ANALYSIS DATE:	12/10/03
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	N/A		

TOTAL SUSPENDED SOLIDS

SAMPLE NUMBER	SAMPLE LOCATION	TOTAL SUSPENDED SOLIDS (mg/L)	DETECTION LIMIT (mg/L)
142618	INFLUENT	8.00	4.00
142619	EFFLUENT	ND	4.00

LT = LESS THAN

Method Reference:

EPA Method 160.3 (1)

1) U.S. EPA 1983. "Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, EPA, EMSL, Cincinnati, Ohio 45268.

GEOLABS, INC.
45 JOHNSON LANE
BRAINTREE, MA 02184
M-MA015

LIMITATIONS & EXCLUSIONS

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

Any and all subsequent pages of this report are chain(s) of custody.

CHAIN OF CUSTODY

PAGE 1 OF 1

ht Walkup Drive Westborough, MA 01581
508-898-9220 FAX: 508-898-9193

Client Information

ont: Tighe & Bond
dress: 4 Barlows Landing Rd
3 Pocasset MA 02559
one: 508-564-7285
x:
ail: rpgeisler@tighebond.com

These samples have been previously analyzed by Alpha

Project Information

Project Name: ~~Chelsea Project #1~~
Project Location: Chelsea Terminal
Project #: W-33494-01
Project Manager: Rich Geisler
~~ALPHA~~ Quote #:

Turn-Around Time

☒ Standard ☐ RUSH (only confirmed if pre-approved!)
Date Due: Time:

Report Information - Data Deliverables

☒ FAX
☐ ADEx
Criteria Checker: _____
(Default based on Regulatory Criteria Indicated)
Other Formats: _____
☐ EMAIL (standard pdf report)
☐ Additional Deliverables: _____
Report to: (if different than Project Manager) _____

Billing Information

☐ Same as Client info PO #:

Regulatory Requirements/Report Limits

State /Fed	Program	Criteria

ther Project Specific Requirements/Comments:

ALPHA Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs 8260	TPH 8100	PAHs 8270	Turbidity	Color	TSS							Sample Specific Comments
	Influent	12/5/03	1109	GW	RPG	✓	✓	✓	✓	✓	✓							142618
	Effluent	12/5/03	1110	GW	RPG	✓	✓	✓	✓	✓	✓							142619
	Trip Blank	11/26/03	0915	GW	RPG	✓												142620

SAMPLE HANDLING
Filtration
☐ Done
☐ Not needed
☐ Lab to do
Preservation
☐ Lab to do
(Please specify below)

TOTAL # BOTTLES: 3 / 1 / 1

Adjusted pH < 2 with H_2SO_4
LOT # M1203-012

Container Type
Preservative

Relinquished By:	Date/Time	Received By:	Date/Time
RPG	12/5/03 1330		
	12/5/03 1730		12/5/03 1630

ATTACHMENT B

SUMMARY OF GROUND WATER MONITORING DATA

(2003 TO 2004)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

GeoLabs, Inc.

Environmental Laboratories

LABORATORY REPORT

PREPARED FOR:

Chelsea Sandwich, LLC
11 Broadway
Chelsea, MA 02150

Attn: Ashwin Patel

PROJECT ID:	Monthly RMS Chelsea, MA
GEOLABS CERTIFICATION #:	M-MA015
SAMPLE NUMBER:	145768
DATE PREPARED:	March 1, 2004
PREPARED BY:	Christine Johnson
APPROVED BY:	Jim Chen, Laboratory Director

CLIENT NAME:	**CHELSEA SANDWICH**	PROJECT ID:	MONTHLY RMS
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	03/01/04
COLLECTION DATE:	02/25/04	ANALYZED BY:	MR
REC'D BY LAB:	02/25/04	ANALYSIS DATE:	02/25/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	02/25/04
PRESERVATIVE:	N/A		

POLYNUCLEAR AROMATIC HYDROCARBONS

SAMPLE NUMBER: 145768
SAMPLE LOCATION: RMS EFF.

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
Naphthalene	ND	0.750
2-Methylnaphthalene	ND	0.750
Acenaphthylene	ND	0.250
Acenaphthene	ND	0.500
Fluorene	ND	0.500
Phenanthrene	ND	0.500
Anthracene	ND	0.500
Fluoranthene	ND	0.500
Pyrene	ND	1.25
Benz[a]Anthracene	ND	0.500
Chrysene	ND	0.500
Benzo[b]Fluoranthene	ND	0.500
Benzo[k]Fluoranthene	ND	1.00
Benzo[a]Pyrene	ND	0.200
Indeno[1,2,3-Cd]Pyrene	ND	0.500
Dibenzo[a,h]Anthracene	ND	0.500
Benzo[g,h,i]Perylene	ND	1.00

ND = NOT DETECTED

Method Reference:

EPA Method 8270C (1)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1998 3rd Edition.

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA SANDWICH**	PROJECT ID:	MONTHLY RMS
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	03/01/04
COLLECTION DATE:	02/25/04	ANALYZED BY:	CG
REC'D BY LAB:	02/25/04	ANALYSIS DATE:	02/27/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	02/25/04
PRESERVATIVE:	SULFURIC ACID		

TOTAL PETROLEUM HYDROCARBONS

SAMPLE NUMBER	SAMPLE LOCATION	TPH (mg/L)	DETECTION LIMIT (mg/L)
145768	RMS EFF.	ND	0.20

ND = NOT DETECTED

Method Reference:

EPA Method 8100 (1) Modified

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1986, 3rd Edition.

CLIENT NAME:	**CHELSEA SANDWICH**	PROJECT ID:	MONTHLY RMS
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	03/01/04
COLLECTION DATE:	02/25/04	ANALYZED BY:	ZYZ
REC'D BY LAB:	02/25/04	ANALYSIS DATE:	02/26/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE AROMATIC COMPOUNDS

SAMPLE NUMBER: 145768
SAMPLE LOCATION: RMS EFF.

	RESULTS (µg/L)	**DETECTION LIMIT (µg/L)**
Methyl tert-butyl ether	ND	5.00
Benzene	ND	5.00
Toluene	ND	5.00
Chlorobenzene	ND	5.00
Ethylbenzene	ND	5.00
Xylenes	ND	5.00
1,2-Dichlorobenzene	ND	5.00
1,3-Dichlorobenzene	ND	5.00
1,4-Dichlorobenzene	ND	5.00

ND = NOT DETECTED

Method Reference:

EPA Method 602 by 624 (1) GC/MS

1) Code of Federal Regulations 40 CFR, Parts 100-149, 1993.

GEOLABS, INC.
45 JOHNSON LANE
BRAINTREE, MA 02184
M-MA015

LIMITATIONS & EXCLUSIONS

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

Any and all subsequent pages of this report are chain(s) of custody.

GeoLabs, Inc.
Environmental Laboratories
45 Johnson Lane
Braintree, MA 02184
Phone: 781-848-7844
Fax: 781-848-7811

Turnaround Time
RUSH: 24hrs ☐ 48hrs ☐ 72hrs ☐ **STANDARD:** 5 Days ____ Rush Approved By: ____

Page ____ of ____

SPECIAL INSTRUCTIONS

Client: Chelsea Terminal
Address: 11 Broadway
Chelsea MA 02150
Phone: 617 660 1117
Fax: 617 660 1140
Contact: Ashwin Patel
E-mail:

Project Number: Mardly, Remed Sy. Effluent
Project Location: Chelsea, MA
Purchase Order #:
Collected By: APatel

ANALYSES REQUESTED

SAMPLE ID	COLLECTION DATE	COLLECTION TIME	COLLECTION SAMPLED BY	SAMPLE LOCATION	CONTAINER TYPE	CONTAINER QUANT	MATRIX	COMP	GRAB	PRES	GEOLABS SAMPLE NUMBER	PAHs (Total)	Naphthalene	TPH	Benzene	BTEX	MTBE			TEMPERATURE	LAB PH
RMS-1	2/25/04	9:00 AM	AP	Remed. Effluent	A	1	GW		✓		145768	✓	✓							5°	7
RMS-2	2/25/04	9:00 AM	AP	" "	A	1	GW		✓					✓						↓	12
RMS-3	2/25/04	9:00 AM	AP	" "	V	2	GW		✓						✓	✓	✓			↓	

CONTAINER CODES:
A = Amber
B = Bag
G = Glass
P = Plastic
S = Summa Canister
O = Other V = VOA

MATRIX CODES:
GW = Ground Water
WW = Wastewater
DW = Drinking Water
SL = Sludge
S = Soil **A** = Air
O = Oil **OT** = Other

PRESERVATIVE CODES:
1 = HCl 7 = ICE
2 = HNO_3
3 = H_2SO_4
4 = $Na_2S_2O_3$
5 = NaOH
6 = MeOH

Relinquished By: Date/Time 2/25 10:11a
Received By: Date/Time: 2-25-04
Relinquished By: 2-25-04 1PM
Received By: 10:11
Relinquished By:
Received By GeoLabs: 1300 2/25/04

GEOLABS CHAIN OF CUSTODY

ATTACHMENT B

SUMMARY OF GROUND WATER MONITORING DATA

(2003 TO 2004)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

GeoLabs, Inc.

Environmental Laboratories

LABORATORY REPORT

PREPARED FOR:

Chelsea Terminal
11 Broadway
Chelsea, MA 02150

Attn: Ashwin Patel

PROJECT ID:	Remedial System Chelsea, MA
GEOLABS CERTIFICATION #:	M-MA015
SAMPLE NUMBER:	147077
DATE PREPARED:	April 1, 2004
PREPARED BY:	Christine Johnson

APPROVED BY:

Jim Chen, Laboratory Director

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	REMEDIAL SYSTEM
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	04/01/04
COLLECTION DATE:	03/25/04	ANALYZED BY:	CL
REC'D BY LAB:	03/25/04	ANALYSIS DATE:	03/29/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	03/26/04
PRESERVATIVE:	SULFURIC ACID		

TOTAL PETROLEUM HYDROCARBONS

SAMPLE NUMBER	SAMPLE LOCATION	TPH (mg/L)	DETECTION LIMIT (mg/L)
147077	REMEDIAL SYS.	ND	0.20

ND = NOT DETECTED

Method Reference:

EPA Method 8100 (1) Modified

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1986, 3rd Edition.

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	REMEDIAL SYSTEM
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	04/01/04
COLLECTION DATE:	03/25/04	ANALYZED BY:	ZYZ
REC'D BY LAB:	03/25/04	ANALYSIS DATE:	03/27/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE AROMATIC COMPOUNDS

SAMPLE NUMBER: 147077
SAMPLE LOCATION: REMEDIAL SYS.

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
Naphthalene	ND	20.0
Methyl tert-butyl ether	ND	5.00
Benzene	ND	5.00
Toluene	ND	5.00
Chlorobenzene	ND	5.00
Ethylbenzene	ND	5.00
Xylenes	ND	5.00
1,2-Dichlorobenzene	ND	5.00
1,3-Dichlorobenzene	ND	5.00
1,4-Dichlorobenzene	ND	5.00

ND = NOT DETECTED

Method Reference:

EPA Method 602 by 624 (1) GC/MS

1) Code of Federal Regulations 40 CFR, Parts 100-149, 1993.

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	REMEDIAL SYSTEM
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	04/01/04
COLLECTION DATE:	03/25/04	ANALYZED BY:	RD
REC'D BY LAB:	03/25/04	ANALYSIS DATE:	03/31/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	03/29/04
PRESERVATIVE:	N/A		

POLYNUCLEAR AROMATIC HYDROCARBONS

SAMPLE NUMBER: 147077
SAMPLE LOCATION: REMEDIAL SYS.

	RESULTS (µg/L)	**DETECTION LIMIT (µg/L)**
Naphthalene	ND	0.750
2-Methylnaphthalene	ND	0.750
Acenaphthylene	ND	0.250
Acenaphthene	ND	0.500
Fluorene	ND	0.500
Phenanthrene	ND	0.500
Anthracene	ND	0.500
Fluoranthene	ND	0.500
Pyrene	ND	1.25
Benz[a]Anthracene	ND	0.500
Chrysene	ND	0.500
Benzo[b]Fluoranthene	ND	0.500
Benzo[k]Fluoranthene	ND	1.00
Benzo[a]Pyrene	ND	0.200
Indeno[1,2,3-Cd]Pyrene	ND	0.500
Dibenzo[a,h]Anthracene	ND	0.500
Benzo[g,h,i]Perylene	ND	1.00

ND = NOT DETECTED

Method Reference:

EPA Method 8270C (1)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1998 3rd Edition.

GEOLABS, INC.
45 JOHNSON LANE
BRAINTREE, MA 02184
M-MA015

LIMITATIONS & EXCLUSIONS

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

Any and all subsequent pages of this report are chain(s) of custody.

GeoLabs, Inc.
Environmental Laboratories
45 Johnson Lane
Braintree, MA 02184
Phone: 781-848-7844
Fax: 781-848-7811

Turnaround Time
RUSH: 24hrs ☐ 48hrs ☐ 72hrs ☐ **STANDARD:** 5 Days____ Rush Approved By:____

Page____of____

SPECIAL INSTRUCTIONS

Client: Chelsea Terminal
Address: 11 Broadway Chelsea, MA 02150
Phone: 617 660 1117
Fax: 617 660 1140
Contact: Ashwin Patel
E-mail:

Project Number: GW/Soil Remedial Sys
Project Location: Chelsea
Purchase Order #: Verbal
Collected By: AP

ANALYSES REQUESTED

SAMPLE ID	COLLECTION DATE	COLLECTION TIME	COLLECTION SAMPLED BY	SAMPLE LOCATION	CONTAINER TYPE	CONTAINER QUANT	MATRIX	COMP	GRAB	PRES	GEOLABS SAMPLE NUMBER	BTEX	MTBE	TPH Gas (3)	PAHs 1	Naphthalene				TEMPERATURE	LAB PH
032504/Vox	3/25/04	11:25	AP	Remedial Sys.	V	2	GW		✓		147077	✓	✓							10°	
032504/TPH	3/25/04	11:26	AP	" "	A	1	GW		✓					✓						↓	
032504/PAHs	3/25/04	11:30	AP	" "	A	1	GW		✓						✓	✓				↓	

CONTAINER CODES:	MATRIX CODES:	PRESERVATIVE CODES:	Relinquished By:	Date/Time	Received By:	Date/Time:
A = Amber	GW = Ground Water	1 = HCl 7 = ICE		12:51		3/25/04
B = Bag	WW = Wastewater	2 = HNO_3	Relinquished By:	3/25/04 4pm	Received By:	12:51
G = Glass	DW = Drinking Water	3 = H_2SO_4				
P = Plastic	SL = Sludge	4 = $Na_2S_2O_3$	Relinquished By:		Received By GeoLabs:	1600
S = Summa Canister	S = Soil A = Air	5 = NaOH				3-25-04
O = Other V = VOA	O = Oil OT = Other	6 = MeOH				

GEOLABS CHAIN OF CUSTODY

ATTACHMENT B

SUMMARY OF GROUND WATER MONITORING DATA

(2003 TO 2004)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

INTERNAL USE - REPORT

GeoLabs, Inc.

Environmental Laboratories

LABORATORY REPORT

PREPARED FOR:

Chelsea Terminal
11 Broadway
Chelsea, MA 02150

Attn: Ashwin Patel

PROJECT ID:	Chelsea, MA
GEOLABS CERTIFICATION #:	M-MA015
SAMPLE NUMBER:	147081 - 147082
DATE PREPARED:	April 1, 2004
PREPARED BY:	Christine Johnson

APPROVED BY:

Jim Chen, Laboratory Director

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	CHELSEA
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	04/01/04
COLLECTION DATE:	03/25/04	ANALYZED BY:	SB
REC'D BY LAB:	03/25/04	ANALYSIS DATE:	03/25/04
COLLECTED BY:	CLIENT	ANALYSIS TIME:	16:40

pH

SAMPLE NUMBER	SAMPLE LOCATION	pH (S.U.)
147081	032504/pH1	**6.7**
147082	032504/pH2	**6.6**

Method Reference:

EPA Method 150.1 (1)

1) U.S. EPA 1983. "Methods for Chemical Analysis of Water and Wastes." EPA-600/4-79-020, EPA, EMSL, Cincinnati, Ohio 45268.

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	CHELSEA
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	04/01/04
COLLECTION DATE:	03/25/04	ANALYZED BY:	RP
REC'D BY LAB:	03/25/04	ANALYSIS DATE:	03/26/04
COLLECTED BY:	CLIENT		
PRESERVATIVE:	N/A		

TURBIDITY

SAMPLE NUMBER	SAMPLE LOCATION	TURBIDITY (N.T.U.)	DETECTION LIMIT (N.T.U.)
147081 *	032504/TU1	**319**	0.544
147082	032504/TU2	**1.19**	0.0544

ND= NOT DETECTED *** 10x dilution**

Method Reference:

EPA Method 180.1 (1)

1) U.S. EPA 1983. "Methods for Chemical Analysis of Water and Wastes." EPA-600/4-79-020, EPA, EMSL, Cincinnati, Ohio 45268.

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	CHELSEA
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	04/01/04
COLLECTION DATE:	03/25/04	ANALYZED BY:	QS / GP
REC'D BY LAB:	03/25/04	ANALYSIS DATE:	03/30/04
COLLECTED BY:	CLIENT	DIGESTION DATE:	03/30/04
PRESERVATIVE:	NITRIC ACID		

HARDNESS

SAMPLE NUMBER	SAMPLE LOCATION	HARDNESS mg EQUIVALENT (CaCO3/L)	DETECTION LIMIT (CaCO3/L)
147081 *	032504/HA1	**232**	4.0
147082 *	032504/HA2	**233**	4.0

*** 20x dilution**

Method Reference:

Standard Method 2340B (1)

1) APHA-AWWA-WPCF "Standard Methods for the Examiniation of Water and Wastewater 1992, 18th Edition.

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	CHELSEA
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	04/01/04
COLLECTION DATE:	03/25/04	ANALYZED BY:	QS / GP
REC'D BY LAB:	03/25/04	ANALYSIS DATE:	03/30/04
COLLECTED BY:	CLIENT	DIGESTION DATE:	03/30/04
PRESERVATIVE:	NITRIC ACID		

TOTAL IRON

SAMPLE NUMBER	SAMPLE LOCATION	TOTAL IRON (mg/L)	DETECTION LIMIT (mg/L)
147081 *	032504/FE1	**23.2**	1.20
147082 *	032504/FE2	ND	1.20

ND = NOT DETECTED *** 20x dilution**

Method Reference:

EPA Method	3010A (1)	Metal Preparation
EPA Method	6010B (1)	Inductively Coupled Plasma

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Edition.

GEOLABS, INC.
45 JOHNSON LANE
BRAINTREE, MA 02184
M-MA015

LIMITATIONS & EXCLUSIONS

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

Any and all subsequent pages of this report are chain(s) of custody.

GeoLabs, Inc.
Environmental Laboratories
45 Johnson Lane
Braintree, MA 02184
Phone: 781-848-7844
Fax: 781-848-7811

Turnaround Time
RUSH: 24hrs ☐ 48hrs ☐ 72hrs ☐ *STANDARD:* 5 Days ____ Rush ____ Approved By: ____

Page ____ of ____

SPECIAL INSTRUCTIONS

Client: CHELSEA TERMINAL
Address: 11 BROADWAY
CHELSEA, MA 02150
Phone: 617 660 1117
Fax: 617 660 1140
Contact: Ashwin Patel
E-mail:

Project Number: GW/Soil Remedial Sys
Project Location: CHELSEA, MA
Purchase Order #: Verbal
Collected By: AP

ANALYSES REQUESTED

SAMPLE ID	COLLECTION DATE	COLLECTION TIME	COLLECTION SAMPLED BY	SAMPLE LOCATION	CONTAINER TYPE	CONTAINER QUANT	MATRIX	COMP	GRAB	PRES	GEOLABS SAMPLE NUMBER	Fe (2)	Hardness	Turbidity	pH					TEMPERATURE	LAB pH
032504/Fe(1)	3/25/04	11:30	AP	Remedial Sys. (IN)	P	1	GW		✓		147081	✓	✓							1P	
032504/Tu(1)	"	"	"	"	P	1	GW		✓					✓	✓						
03/2504/Fe(2)	"	"	"	"	P	1	GW		✓		147082	✓	✓								
03250/Tu(2)	"	"	"	"	P	1	GW		✓					✓	✓					↓	

CONTAINER CODES:
A = Amber
B = Bag
G = Glass
P = Plastic
S = Summa Canister
O = Other V = VOA

MATRIX CODES:
GW = Ground Water
WW = Wastewater
DW = Drinking Water
SL = Sludge
S = Soil **A** = Air
O = Oil **OT** = Other

PRESERVATIVE CODES:
1 = HCl **7** = ICE
2 = HNO_3
3 = H_2SO_4
4 = $Na_2S_2O_3$
5 = NaOH
6 = MeOH

Relinquished By:	Date/Time	Received By:	Date/Time:
[signature]		[signature]	3/25/04
[signature]	3/25/04 4pm	[signature]	8:35
Relinquished By:		Received By GeoLabs:	1600
		[signature]	3-25-04

GEOLABS CHAIN OF CUSTODY

ATTACHMENT B

SUMMARY OF GROUND WATER MONITORING DATA

(2003 TO 2004)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

GeoLabs, Inc.

Environmental Laboratories

LABORATORY REPORT

PREPARED FOR:

Chelsea Terminal
11 Broadway
Chelsea, MA 02150

Attn: Ashwin Patel

PROJECT ID:	Remedial System Chelsea
GEOLABS CERTIFICATION #:	M-MA015
SAMPLE NUMBER:	148357
DATE PREPARED:	May 4, 2004
PREPARED BY:	Christine Johnson
APPROVED BY:	Jim Chen, Laboratory Director

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	REMEDIAL SYSTEM
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	05/04/04
COLLECTION DATE:	04/27/04	ANALYZED BY:	CG
REC'D BY LAB:	04/27/04	ANALYSIS DATE:	04/29/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	04/28/04
PRESERVATIVE:	SULFURIC ACID		

TOTAL PETROLEUM HYDROCARBONS

SAMPLE NUMBER	SAMPLE LOCATION	TPH (mg/L)	DETECTION LIMIT (mg/L)
148357	REMEDIAL SYS.	ND	0.20

ND = NOT DETECTED

Method Reference:

EPA Method 8100 (1) Modified

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1986, 3rd Edition.

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	REMEDIAL SYSTEM
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	05/04/04
COLLECTION DATE:	04/27/04	ANALYZED BY:	ZYZ
REC'D BY LAB:	04/27/04	ANALYSIS DATE:	04/29/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE AROMATIC COMPOUNDS

SAMPLE NUMBER: 148357
SAMPLE LOCATION: REMEDIAL SYS.

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
Naphthalene	ND	20.0
Methyl tert-butyl ether	ND	5.00
Benzene	ND	5.00
Toluene	ND	5.00
Chlorobenzene	ND	5.00
Ethylbenzene	ND	5.00
Xylenes	ND	5.00
1,2-Dichlorobenzene	ND	5.00
1,3-Dichlorobenzene	ND	5.00
1,4-Dichlorobenzene	ND	5.00

ND = NOT DETECTED

Method Reference:

EPA Method 602 by 624 (1) GC/MS

1) Code of Federal Regulations 40 CFR, Parts 100-149, 1993.

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	REMEDIAL SYSTEM
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	05/04/04
COLLECTION DATE:	04/27/04	ANALYZED BY:	RD
REC'D BY LAB:	04/27/04	ANALYSIS DATE:	04/29/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	04/28/04
PRESERVATIVE:	N/A		

POLYNUCLEAR AROMATIC HYDROCARBONS

SAMPLE NUMBER: 148357
SAMPLE LOCATION: REMEDIAL SYS.

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
Naphthalene	ND	0.750
2-Methylnaphthalene	ND	0.750
Acenaphthylene	ND	0.250
Acenaphthene	ND	0.500
Fluorene	ND	0.500
Phenanthrene	ND	0.500
Anthracene	ND	0.500
Fluoranthene	ND	0.500
Pyrene	ND	1.25
Benz[a]Anthracene	ND	0.500
Chrysene	ND	0.500
Benzo[b]Fluoranthene	ND	0.500
Benzo[k]Fluoranthene	ND	1.00
Benzo[a]Pyrene	ND	0.200
Indeno[1,2,3-Cd]Pyrene	ND	0.500
Dibenzo[a,h]Anthracene	ND	0.500
Benzo[g,h,i]Perylene	ND	1.00

ND = NOT DETECTED

Method Reference:

EPA Method 8270C (1)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1998 3rd Edition.

GEOLABS, INC.
45 JOHNSON LANE
BRAINTREE, MA 02184
M-MA015

LIMITATIONS & EXCLUSIONS

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

Any and all subsequent pages of this report are chain(s) of custody.

GeoLabs, Inc.
Environmental Laboratories
45 Johnson Lane
Braintree, MA 02184
Phone: 781-848-7844
Fax: 781-848-7811

Turnaround Time
RUSH: 24hrs ☐ 48hrs ☐ 72hrs ☐ **STANDARD:** 5 Days ✓ Rush Approved By:

Page ____ of ____

SPECIAL INSTRUCTIONS

Client: Chelsea Terminal
Address: 11 BROADWAY
CHELSEA, MA 02150
Phone: 617 660 1117
Fax: 617 660 1140
Contact: ASHWIN PAREZ
E-mail:

Project Number: GW/Soil. Remedial Sys
Project Location: CHELSEA
Purchase Order #: VERBAL
Collected By: AP

ANALYSES REQUESTED

SAMPLE ID	COLLECTION DATE	COLLECTION TIME	COLLECTION SAMPLED BY	SAMPLE LOCATION	CONTAINER TYPE	CONTAINER QUANT	MATRIX	COMP	GRAB	PRES	GEOLABS SAMPLE NUMBER	BTEX	MTBE	TPH (Total) 6	PAH's 7	Naphthalene				TEMPERATURE	LAB pH
042704/VOC	4/27/04	9:30	AP	Remed Sys	V	2	GW		✓		14835	✓	✓							11.6	
042704/TPH	"	"	"	"	A	2	"		"					✓								
042704/PAHs	"	"	"	"	"	"	"		"						✓	✓						

CONTAINER CODES:
A = Amber
B = Bag
G = Glass
P = Plastic
S = Summa Canister
O = Other V = VOA

MATRIX CODES:
GW = Ground Water
WW = Wastewater
DW = Drinking Water
SL = Sludge
S = Soil A = Air
O = Oil OT = Other

PRESERVATIVE CODES:
1 = HCl 7 = ICE
2 = HNO_3
3 = H_2SO_4
4 = $Na_2S_2O_3$
5 = NaOH
6 = MeOH

Relinquished By: Date/Time
Relinquished By: 4/27/04 5:40
Relinquished By:

Received By: Date/Time: 4/27/04
Received By: 13:88
Received By GeoLabs: 1340 4/27/04

GEOLABS CHAIN OF CUSTODY

ATTACHMENT B

SUMMARY OF GROUND WATER MONITORING DATA

(2003 TO 2004)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

GeoLabs, Inc.

Environmental Laboratories

LABORATORY REPORT

PREPARED FOR:

Chelsea Terminal
11 Broadway
Chelsea, MA 02150

Attn: Ashwin Patel

PROJECT ID:	Remedial Systems Chelsea, MA
GEOLABS CERTIFICATION #:	M-MA015
SAMPLE NUMBER:	149649
DATE PREPARED:	June 4, 2004
PREPARED BY:	Christine Johnson

APPROVED BY:

Jim Chen, Laboratory Director

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	REMEDIAL SYSTEMS
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/04/04
COLLECTION DATE:	05/28/04	ANALYZED BY:	CL
REC'D BY LAB:	06/01/04	ANALYSIS DATE:	06/02/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	06/01/04
PRESERVATIVE:	SULFURIC ACID		

TOTAL PETROLEUM HYDROCARBONS

SAMPLE NUMBER	SAMPLE LOCATION	TPH (mg/L)	DETECTION LIMIT (mg/L)
149649	REMEDIAL SYSTEMS	ND	0.20

ND = NOT DETECTED

Method Reference:

EPA Method 8100 (1) Modified

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1986, 3rd Edition.

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	REMEDIAL SYSTEMS
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/04/04
COLLECTION DATE:	05/28/04	ANALYZED BY:	ZYZ
REC'D BY LAB:	06/01/04	ANALYSIS DATE:	06/03/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE AROMATIC COMPOUNDS

SAMPLE NUMBER: 149649
SAMPLE LOCATION: REMEDIAL SYSTEMS

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
Naphthalene	ND	20.0
Methyl tert-butyl ether	ND	5.00
Benzene	ND	5.00
Toluene	ND	5.00
Chlorobenzene	ND	5.00
Ethylbenzene	ND	5.00
Xylenes	ND	5.00
1,2-Dichlorobenzene	ND	5.00
1,3-Dichlorobenzene	ND	5.00
1,4-Dichlorobenzene	ND	5.00
Surrogate Recoveries:		
dibromofluoromethane	102%	
1,2-Dichloroethane	90%	
toluene-d8	101%	
BFB	96%	

ND = NOT DETECTED

Method Reference:

EPA Method 602 by 624 (1) GC/MS

1) Code of Federal Regulations 40 CFR, Parts 100-149, 1993.

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	REMEDIAL SYSTEMS
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/04/04
COLLECTION DATE:	05/28/04	ANALYZED BY:	rd
REC'D BY LAB:	06/01/04	ANALYSIS DATE:	06/01/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	06/01/04
PRESERVATIVE:	N/A		

POLYNUCLEAR AROMATIC HYDROCARBONS

SAMPLE NUMBER: 149649
SAMPLE LOCATION: REMEDIAL SYSTEMS

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
Naphthalene	ND	0.750
2-Methylnaphthalene	ND	0.750
Acenaphthylene	ND	0.250
Acenaphthene	ND	0.500
Fluorene	ND	0.500
Phenanthrene	ND	0.500
Anthracene	ND	0.500
Fluoranthene	ND	0.500
Pyrene	ND	1.25
Benz[a]Anthracene	ND	0.500
Chrysene	ND	0.500
Benzo[b]Fluoranthene	ND	0.500
Benzo[k]Fluoranthene	ND	1.00
Benzo[a]Pyrene	ND	0.200
Indeno[1,2,3-Cd]Pyrene	ND	0.500
Dibenzo[a,h]Anthracene	ND	0.500
Benzo[g,h,i]Perylene	ND	1.00

ND = NOT DETECTED

Method Reference:

EPA Method 8270C (1)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1998 3rd Edition.

GEOLABS, INC.
45 JOHNSON LANE
BRAINTREE, MA 02184
M-MA015

LIMITATIONS & EXCLUSIONS

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

Any and all subsequent pages of this report are chain(s) of custody.

GeoLabs, Inc.
Environmental Laboratories
45 Johnson Lane
Braintree, MA 02184
Phone: 781-848-7844
Fax: 781-848-7811

Turnaround Time
RUSH: 24hrs ☐ 48hrs ☐ 72hrs ☐
STANDARD: 5 Days ____ Rush ____ Approved By: ____

Page ____ of ____

SPECIAL INSTRUCTIONS
Pl. attached QA/QC info to the report - Fill blanks etc

Client: CHELSEA TERMINAL
Address: 11 BROADWAY
CHELSEA MA 02150
Phone: 617 660 1117
Fax: 617 660 1140
Contact: ASHWIN PATEL
E-mail:

Project Number: GW/Soil Remedial Sys
Project Location: CHELSEA MA
Purchase Order #: Verbal
Collected By: AP

reduced

ANALYSES REQUESTED

SAMPLE ID	COLLECTION DATE	COLLECTION TIME	COLLECTION SAMPLED BY	SAMPLE LOCATION	CONTAINER TYPE	CONTAINER QUANT	MATRIX	COMP	GRAB	PRES	GEOLABS SAMPLE NUMBER	BTEX	MTBE	TPH (Total)	PAH's	Naphthalene				TEMPERATURE	LAB pH
05 28 04 VOC	5/28/04	9:00	AP	Remedial Sys. Eff	V	2	GW		✓		149649	✓	✓							2	
05 28 04 TPH	5/28/04	9:00	AP	Remedial Sys	A	2	GW		✓					✓							
05 28 04 PAHs	5/28/04	9:00	AP	" "	A	2	GW		✓						✓	✓					

CONTAINER CODES:	MATRIX CODES:	PRESERVATIVE CODES:	Relinquished By: / Date/Time	Received By: / Date/Time:
A = Amber	GW = Ground Water	1 = HCl 7 = ICE	[signature] 6-1-04 10:30	[signature] 6/01/04
B = Bag	WW = Wastewater	2 = HNO_3	Relinquished By: [signature] 6-1-04 12:45	Received By: 10:30
G = Glass	DW = Drinking Water	3 = H_2SO_4		
P = Plastic	SL = Sludge	4 = $Na_2S_2O_3$	Relinquished By:	Received By GeoLabs: 124 S [signature] 6-1-04
S = Summa Canister	S = Soil A = Air	5 = NaOH		
O = Other V = VOA	O = Oil OT = Other	6 = MeOH		

GEOLABS CHAIN OF CUSTODY

ATTACHMENT B

SUMMARY OF GROUND WATER MONITORING DATA

(2003 TO 2004)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

GeoLabs, Inc.

Environmental Laboratories

LABORATORY REPORT

PREPARED FOR:

Chelsea Terminal
11 Broadway
Chelsea, MA 02150

Attn: Ashwin Patel

PROJECT ID: EPA 40CFR 423-APP-A-TEST
Chelsea Terminal

GEOLABS CERTIFICATION #: M-MA015

SAMPLE NUMBER: 150584

DATE PREPARED: June 28, 2004

PREPARED BY: Jennifer McAlpine

APPROVED BY:

Jim Chen, Laboratory Director

Location: 45 Johnson Lane
Braintree, MA 02184

Phone: (781) 848-7844
Fax: (781) 848-7811

GeoLabs, Inc.

Environmental Laboratories

Case Narrative

Project ID: EPA40CFR
Client Name: Chelsea Sandwich

Sample Number: 150584
Received: 06/30/04

Physical Condition of Samples

This project was received by the laboratory in satisfactory condition. The sample(s) were received undamaged, in appropriate containers with the correct preservation.

Project Documentation

This project was accompanied by satisfactory Chain of Custody documentation. The sample container label(s) agreed with the Chain of Custody.

Analysis of Sample(s)

No analytical anomalies or non-conformances were noted by the laboratory during the processing of these sample(s).

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA**	PROJECT ID:	EPA40CFR
SAMPLE TYPE:	WATER	REPORT DATE:	6/28/04
COLLECTION DATE:	6/14/04	ANALYZED BY:	QS/GP
REC'D BY LAB:	6/14/04	ANALYSIS DATE:	SEE BELOW
COLLECTED BY:	CLIENT	DIGESTION DATE:	SEE BELOW
PRESERVATIVE:	NITRIC ACID		

TOTAL METALS

SAMPLE NUMBER: 150584
SAMPLE LOCATION: GW/SOIL REMED SYS

	RESULTS (mg/L)	DETECTION LIMIT (mg/L)	DIGESTION DATE	ANALYSIS DATE
ANTIMONY	ND	0.05	6/15/04	6/16/04
ARSENIC	ND	0.05	6/15/04	6/16/04
BERYLLIUM	ND	0.00	6/15/04	6/16/04
CADMIUM	ND	0.01	6/15/04	6/16/04
CHROMIUM	ND	0.06	6/15/04	6/16/04
COPPER	ND	0.01	6/15/04	6/16/04
LEAD	ND	0.01	6/15/04	6/16/04
MERCURY	ND	0.00	6/29/04	6/29/04
NICKEL	ND	0.01	6/29/04	6/16/04
SELENIUM	ND	0.05	6/29/04	6/16/04
SILVER	ND	0.01	6/29/04	6/16/04
THALLIUM	ND	0.20	6/29/04	6/16/04
ZINC	ND	0.10	6/29/04	6/16/04

ND = NOT DETECTED

Method Reference:

EPA Method	3010A (1)	Metal Preparation
EPA Method	6010B (1)	Inductively Coupled Plasma
EPA Method	245.1 (2)	Manual Cold Vapor (Mercury)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1986, 3rd Edition.
2) U.S. EPA 1994. "Methods for the Determination of Metals in Environmental Samples",-Supplement I-EPA/600/R-94-111-May 1994.

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	CHELSEA	PROJECT ID:	EPA40CFR
SAMPLE TYPE:	WATER	REPORT DATE:	6/28/04

METALS QC

	Blank	Spike % Rec.	Limits
Mercury	ND	97%	80-120%
Thallium	ND	82%	80-120%
Arsenic	ND	89%	80-120%
Selenium	ND	92%	80-120%
Zinc	ND	93%	80-120%
Antimony	ND	88%	80-120%
Chromium	ND	91%	80-120%
Cadmium	ND	87%	80-120%
Lead	ND	91%	80-120%
Nickel	ND	91%	80-120%
Beryllium	ND	90%	80-120%
Copper	ND	88%	80-120%
Silver	ND	86%	80-120%

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	EPA 40 CFR
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/28/04
COLLECTION DATE:	06/14/04	ANALYZED BY:	RP
REC'D BY LAB:	06/14/04	ANALYSIS DATE:	06/16/04
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	SODIUM HYDROXIDE		

TOTAL CYANIDE

SAMPLE NUMBER	SAMPLE LOCATION	TOTAL CYANIDE (mg/L)	DETECTION LIMIT (mg/L)
150584	GW/SOIL REMED SYS EF	ND	0.0961

ND = NOT DETECTED

Method Reference:

EPA Method 335.2 (1)

1) U.S. EPA 1983. "Methods for Chemical Analysis of Water and Wastes, EPA-600/4-79-020, EPA, EMSL, Cincinnati, Ohio 45268.

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	EPA40CFR 423
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/28/04
COLLECTION DATE:	06/14/04	ANALYZED BY:	CG
REC'D BY LAB:	06/14/04	ANALYSIS DATE:	06/17/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	06/15/04
PRESERVATIVE:	N/A		

PESTICIDES

SAMPLE NUMBER: 150584
SAMPLE LOCATION: GW/SOIL REMD SYS EFF

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
ALDRIN	ND	0.2
a-BHC	ND	0.2
b-BHC	ND	0.2
d-BHC	ND	0.2
g-BHC	ND	0.2
CHLORDANE	ND	0.2
4,4-DDD	ND	0.2
4,4-DDE	ND	0.1
4,4-DDT	ND	0.2
DIELDRIN	ND	0.1
ENDOSULFAN I	ND	0.1
ENDOSULFAN II	ND	0.1
ENDOSULFAN SULFATE	ND	0.2
ENDRIN	ND	0.2
ENDRIN ALDEHYDE	ND	0.2
HEPTACHLOR	ND	0.2
HEPTACHLOR EPOXIDE	ND	0.2
METHOXYCHLOR	ND	0.2
TOXAPHENE	ND	0.7
Recovery: (30-150%)		**Limit**
TCMX Signal 1	60%	30-150%
DCBP Signal 1	72%	30-150%
TCMX Signal 2	76%	30-150%
DCBP Signal 2	88%	30-150%

ND = NOT DETECTED

Method Reference:

EPA Method 8081A (1)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Edition.

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	EPA40CFR 423
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/28/04
COLLECTION DATE:	06/14/04	ANALYZED BY:	CG
REC'D BY LAB:	06/14/04	ANALYSIS DATE:	06/17/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	06/15/04
PRESERVATIVE:	N/A		

PESTICIDE LIQUID QC

	BLANK	MDL µg/L	LCS % Rec.	% Rec.	RPD	Limit
Aldrin	ND	0.2	58	42-122	23.1	30
alpha-BHC	ND	0.2	56	37-134	26.4	30
beta-BHC	ND	0.2	58	17-147	24.2	30
gamma-BHC (indane)	ND	0.2	50	19-140	27.6	30
delta-BHC	ND	0.2	50	32-127	27.6	30
4,4-DDD	ND	0.2	54	31-141	28.6	30
4,4-DDE	ND	0.1	52	30-145	26.7	30
4,4-DDT	ND	0.2	52	25-160	32.3	30
Dieldrin	ND	0.1	56	36-146	27.7	30
Endosulfan I	ND	0.1	58	45-153	24.2	30
Endosulfan II	ND	0.1	56	0-202	27.7	30
Endosulfan sulfate	ND	0.2	56	26-144	25.0	30
Endrin	ND	0.2	58	30-147	24.2	30
Endrin aldehyde	ND	0.2	12	30-150	66.7	30
Heptachlor	ND	0.2	54	34-111	25.8	30
Heptachlorepoxide	ND	0.2	58	37-142	26.9	30
Hexachlorobenzene	ND	0.2	64	30-150	22.2	30
Methoxychlor	ND	0.2	69	30-150	24.9	30

Surrogate (30-150%)	Blank	LCS % Recovery
TCMX SIGNAL 1	80	80%
DCBP SIGNAL 1	102	104%
TCMX SIGNAL 2	68	70%
DCBP SIGNAL 2	106	104%

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	EPA40CFR 423
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/28/04
COLLECTION DATE:	06/14/04	ANALYZED BY:	CG
REC'D BY LAB:	06/14/04	ANALYSIS DATE:	06/17/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	06/15/04
PRESERVATIVE:	N/A		

POLYCHLORINATED BIPHENYLS

SAMPLE NUMBER: 150584
SAMPLE LOCATION: GW/SOIL REMED. SYS EFF

	RESULTS (µg/L)	**DETECTION LIMIT (µg/L)**
Arochlor 1221	ND	0.30
Arochlor 1232	ND	0.30
Arochlor 1016/1242	ND	0.30
Arochlor 1248	ND	0.30
Arochlor 1254	ND	0.30
Arochlor 1260	ND	0.30
Arochlor 1262	ND	0.30
Arochlor 1268	ND	0.30

Recovery: (30-150%)		**Limit**
TCMX Signal 1	52%	30-150%
DCBP Signal 1	52%	30-150%
TCMX Signal 2	52%	30-150%
DCBP Signal 2	58%	30-150%

ND = NOT DETECTED

Method Reference:

EPA Method 8082 Arochlor (1)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Edition.

PCB WATER MCP QC SHEET

BLANK = ND **MDL = 0.30 µg/L**

	LCS %	MS	MSD	% Rec. Limits	RPD	LIMIT
Arochlor 1221	N/A	N/A	N/A	40-140	N/A	50
Arochlor 1232	N/A	N/A	N/A	40-140	N/A	50
Arochlor 1016	65	N/A	N/A	40-140	N/A	50
Arochlor 1248	N/A	N/A	N/A	40-140	N/A	50
Arochlor 1254	N/A	N/A	N/A	40-140	N/A	50
Arochlor 1260	88	N/A	N/A	40-140	N/A	50
SURROGATE: (30-150%)	**BLANK**	**LCS**				
TCMX SIGNAL 1	56	54				
DCBP SIGNAL 1	73	88				
TCMX SIGNAL 2	56	54				
DCBP SIGNAL 2	84	82				

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	EPA 40 CFR 423
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/28/04
COLLECTION DATE:	06/14/04	ANALYZED BY:	RD
REC'D BY LAB:	06/14/04	ANALYSIS DATE:	06/15/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	06/15/04
PRESERVATIVE:	N/A		

SEMI-VOLATILE ORGANICS

SAMPLE NUMBER: 150584
SAMPLE LOCATION: GW/SOIL REMED. SYS EFF

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
Acenaphthene	ND	0.500
Acenaphthylene	ND	0.250
Acetophenone	ND	0.750
Aniline	ND	2.250
Anthracene	ND	0.500
Azobenzene	ND	5.000
Benzo [a] anthracene	ND	0.500
Benzo [b] fluoranthene	ND	0.500
Benzo k] fluoranthene	ND	1.000
Benzo [ghi] perylene	ND	1.000
Benzo [a] pyrene	ND	0.200
Benzyl alcohol	ND	1.000
Bis-(2-chloroethoxy)methane	ND	0.500
Bis-(2-chloroethyl) ether	ND	0.500
Bis-(2-chloroisopropyl) ether	ND	0.750
Bis-(2-ethylhexyl)phthalate	ND	2.000
4-Bromophenyl phenyl ether	ND	0.750
Butyl benzyl phthalate	ND	1.250
Carbazole	ND	0.750
4-Chloroaniline	ND	2.500
4-Chloro-3-methylphenol	ND	0.500
2-Chloronaphthalene	ND	0.500
2-Chlorophenol	ND	0.500
4-Chlorophenyl-phenylether	ND	0.500
Chrysene	ND	0.500
Dibenz [a,h] anthracene	ND	0.500
Dibenzofuran	ND	0.500

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	EPA 40 CFR 423
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/28/04
COLLECTION DATE:	06/14/04	ANALYZED BY:	RD
REC'D BY LAB:	06/14/04	ANALYSIS DATE:	06/15/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	06/15/04

SEMI-VOLATILE ORGANICS

SAMPLE NUMBER: 150584
SAMPLE LOCATION: GW/SOIL REMED. SYS EFF

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
1,2-Dichlorobenzene	ND	1.000
1,3-Dichlorobenzene	ND	1.000
1,4-Dichlorobenzene	ND	1.000
3,3'-dichlorobenzidine	ND	2.500
2,4-Dichlorophenol	ND	0.500
Diethyl phthalate	ND	1.250
2,4-Dimethylphenol	ND	3.750
Dimethylphthalate	ND	1.750
Di-n-butylphthalate	ND	0.750
Di-n-octyl phthalate	ND	2.000
1,2-Dinitrobenzene	ND	5.000
1,3-Dinitrobenzene	ND	0.750
1,4-Dinitrobenzene	ND	5.000
4,6-Dinitro-2-methylphenol	ND	1.000
2,4-Dinitrophenol	ND	0.250
2,4-Dinitrotoluene	ND	0.500
2,6-Dinitrotoluene	ND	0.250
Fluoranthene	ND	0.500
Fluorene	ND	0.500
Hexachlorobenzene	ND	1.000
Hexachlorobutadiene	ND	0.500
Hexachlorocyclopentadiene	ND	10.000
Hexachloroethane	ND	2.000
Indeno [1,2,3-cd] pyrene	ND	0.500
Isophorone	ND	0.500
2-Methylnaphthalene	ND	0.750
2-Methylphenol	ND	1.000
3-Methylphenol/4-methylphenol	ND	1.500

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	EPA 40 CFR 423
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/28/04
COLLECTION DATE:	06/14/04	ANALYZED BY:	RD
REC'D BY LAB:	06/14/04	ANALYSIS DATE:	06/15/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	06/15/04

SEMI-VOLATILE ORGANICS

SAMPLE NUMBER: 150584
SAMPLE LOCATION: GW/SOIL REMED. SYS EFF

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
Naphthalene	ND	0.750
2-Nitroaniline	ND	0.750
3-Nitroaniline	ND	1.500
4-Nitroaniline	ND	1.000
Nitrobenzene	ND	0.750
2-Nitrophenol	ND	0.500
4-Nitrophenol	ND	0.500
N-Nitrosodimethylamine	ND	1.000
N-Nitrosodiphenylamine	ND	5.000
N-nitroso-di-n-propylamine	ND	1.000
Pentachlorophenol	ND	1.000
Phenanthrene	ND	0.500
Phenol	ND	0.250
Pyrene	ND	1.250
Pyridine	ND	1.250
2,3,4,6-Tetrachlorophenol	ND	1.000
1,2,4-Trichlorobenzene	ND	0.750
2,4,5-Trichlorophenol	ND	0.750
2,4,6-Trichlorophenol	ND	0.500
Surrogate Recoveries		
2-Fluorophenol	43%	
Phenol-d6	35%	
Nitrobenzene-d5	52%	
2-Fluorobiphenyl	51%	
2,4,6-Tribromophenol	90%	
Terphenyl-d14	94%	

ND = NOT DETECTED CALCULATIONS BASED ON DRY WEIGHT

Method Reference:

EPA Method 8270C (1)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Ed.

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	EPA 40 CFR 423
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/28/04
COLLECTION DATE:	06/14/04	ANALYZED BY:	RD
REC'D BY LAB:	06/14/04	ANALYSIS DATE:	06/15/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	06/15/04

SEMI-VOLATILE ORGANICS - QC

	Blank	Spike % Rec.	Limits
Phenol	ND	38%	30-130%
2-chlorophenol	ND	68%	30-130%
1,4-Dichlorobenzene	ND	52%	40-140%
N-Nitroso-di-n-propylamine	ND	67%	40-140%
1,2,4-Trichlorobenzene	ND	56%	40-140%
4-Chloro-3-methylphenol	ND	92%	30-130%
Acenaphthene	ND	74%	40-140%
4-Nitrophenol	ND	55%	30-130%
2,4-Dinitrotoluene	ND	53%	40-140%
Pentachlorophenol	ND	98%	30-130%
Pyrene	ND	109%	40-140%

Surrogate Recoveries:	% Rec.	% Rec.	Limits
2-Fluorophenol	45%	49%	30-130%
Phenol-d6	32%	38%	30-130%
Nitrobenzene-d5	52%	57%	30-130%
2-Fluorobiphenyl	57%	62%	30-130%
2,4,6-Tribromophenol	94%	107%	30-130%
Terphenyl-d14	96%	98%	30-130%

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	EPA 40 CFR 423
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/28/04
COLLECTION DATE:	06/14/04	ANALYZED BY:	MA CT 008
REC'D BY LAB:	06/14/04	ANALYSIS DATE:	06/24/04
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	SULFURIC ACID		

PHENOLS

SAMPLE NUMBER	SAMPLE LOCATION	PHENOLS (mg/L)	DETECTION LIMIT (mg/L)
150584	GW/SOIL REMED.SYS EFF	ND	0.030

ND = NOT DETECTED

Method Reference:

EPA Method 420.1 (1)

1) U.S. EPA 1983. "Methods for Chemical Analysis of Water and Wastes." EPA-600/4-79-020, EPA, EMSL, Cincinnati, Ohio 45268.

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	EPA 40 CFR 423
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/28/04
COLLECTION DATE:	06/14/04	ANALYZED BY:	ZYZ
REC'D BY LAB:	06/14/04	ANALYSIS DATE:	06/15/04
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE ORGANICS

SAMPLE NUMBER: 150584
SAMPLE LOCATION: GW/SOIL REMED SYS EFF

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
Acetone	ND	50.0
Acrylonitrile	ND	50.0
Benzene	ND	5.0
Bromobenzene	ND	5.0
Bromochloromethane	ND	2.0
Bromoform	ND	5.0
Bromomethane	ND	2.00
2-Butanone	ND	10.0
n-Butylbenzene	ND	5.0
Carbon Tetrachloride	ND	5.0
Chlorobenzene	ND	5.0
Chloroethane	ND	5.0
2-Chloroethylvinylether	ND	5.0
Chloroform	ND	5.0
Chloromethane	ND	5.0
2-Chlorotoluene	ND	5.0
4-Chlorotoluene	ND	5.0
Dibromomethane	ND	5.0
Dibromochloromethane	ND	5.0
Dichlorobromomethane	ND	5.0
Dichlorodifluoromethane	ND	5.0
1,1-Dichloroethane	ND	5.0
1,1-Dichloroethene	ND	0.96
1,1-Dichloropropene	ND	0.4
1,2-Dibromoethane	ND	1.00
1,2-Dibromo-3-chloropropane	ND	5.0
1,2-Dichlorobenzene	ND	5.0
1,2-Dichloroethane	ND	5.0
1,2-Dichloropropane	ND	5.0
1,3-Dichlorobenzene	ND	5.0
1,3-Dichloropropane	ND	5.0
1,4-Dichlorobenzene	ND	5.0
2,2-Dichloropropane	ND	5.0
c-1,2-Dichloroethene	ND	5.0
c-1,3-Dichloropropene	ND	0.65
t-1,2-Dichloroethene	ND	5.0
t-1,3-Dichloropropene	ND	0.95
Ethylbenzene	ND	5.0
Hexachlorobutadiene	ND	0.50

GeoLabs, Inc.

Environmental Laboratories

CLIENT NAME:	**CHELSEA TERMINAL**	PROJECT ID:	EPA 40 CFR 423
SAMPLE TYPE:	GROUNDWATER	REPORT DATE:	06/28/04
COLLECTION DATE:	06/14/04	ANALYZED BY:	ZYZ
REC'D BY LAB:	06/14/04	ANALYSIS DATE:	06/15/04
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE ORGANICS

SAMPLE NUMBER: 150584
SAMPLE LOCATION: GW/SOIL REMED SYS EFF

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
2-Hexanone	ND	10.0
Isopropylbenzene	ND	5.0
p-Isopropyltoluene	ND	5.0
Methylene Chloride	ND	10.0
4-Methyl-2-pentanone	ND	5.0
Methyl tert-butyl ether	ND	5.0
Naphthalene	ND	20.0
n-propylbenzene	ND	5.0
Sec-butylbenzene	ND	5.0
Styrene	ND	5.0
tert-butylbenzene	ND	5.0
Tetrachloroethene	ND	5.0
Toluene	ND	5.0
Trichloroethene	ND	5.0
Trichlorofluoromethane	ND	5.0
1,1,1-Trichloroethane	ND	5.0
1,1,2-Trichloroethane	ND	5.0
1,1,2,2-Tetrachloroethane	ND	0.61
1,1,1,2-Tetrachloroethane	ND	5.0
1,2,3-Trichloropropane	ND	5.0
1,2,3-Trichlorobenzene	ND	5.0
1,2,4-Trichlorobenzene	ND	5.0
1,2,4-Trimethylbenzene	ND	5.0
1,3,5-Trimethylbenzene	ND	5.0
Vinyl Chloride	ND	2.0
Xylenes	ND	5.0
Surrogate Recoveries:		
dibromofluoromethane	96%	
1,2-Dichloroethane	83%	
toluene-d8	102%	
BFB	94%	

ND = NOT DETECTED

Method Reference:

EPA Method 8260B (1) GC/MS

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1997, 3rd Ed.

BLANK **ND** 06/15/04

VOLATILE ORGANICS LCS

%RECOVERY

Dichlorodifluoromethane	86%	1,1,2-Trichloroethane	107%
Chloromethane	98%	Tetrachloroethene	109%
Vinyl chloride	97%	1,3-Dichloropropane	107%
Bromomethane	125%	2-Hexanone	99%
Chloroethane	113%	Dibromochloromethane	94%
Trichlorofluoromethane	98%	EDB	105%
Acrolein	91%	Chlorobenzene	111%
1,1-Dichloroethene	99%	1,1,1,2-tetrachloroethane	101%
Acetone	87%	Ethylbenzene	106%
Carbon Disulfide	101%	m,p-Xylene	110%
Methylene chloride	113%	o-xylene	108%
Acrylonitrile	109%	Styrene	114%
trans-1,2-Dichloroethene	89%	Bromoform	90%
MTBE	100%	Isopropylbenzene	112%
1,1-Dichloroethane	99%	Bromobenzene	110%
2-Butanone	108%	1,1,2,2-Tetrachloroethane	113%
Carbon tetrachloride	86%	1,2,3-Trichloropropane	112%
2,2-Dichloropropane	94%	N-propylbenzene	114%
c-1,2-dichloroethene	88%	2-Chlorotoluene	113%
Bromochloromethane	98%	4-Chlorotoluene	113%
Chloroform	95%	1,3,5-Trimethylbenzene	106%
1,1,1-Trichloroethane	89%	tert-Butylbenzene	104%
1,1-dichloropropene	105%	1,2,4-Trimethylbenzene	107%
Benzene	103%	sec-Butylbenzene	113%
1,2-Dichloroethane	102%	1,3-Dichlorobenzene	110%
Trichloroethene	96%	1,4-Dichlorobenzene	109%
1,2-Dichloropropane	102%	p-Isopropyltoluene	111%
Dibromomethane	80%	1,2-Dichlorobenzene	112%
Bromodichloromethane	92%	N-Butylbenzene	107%
2-Chloroethylvinyl Ether	80%	1,2-dibromo-3-chloropropane	102%
c-1,3-Dichloropropene	98%	1,2,4-trichlorobenzene	103%
Toluene	106%	Hexachlorobutadiene	115%
t-1,3-Dichloropropene	98%	Naphthalene	95%
		1,2,3-Trichlorobenzene	106%

MCP Limits 70%-130%

The *majority* of recoveries must fall within this range.

GEOLABS, INC.
45 JOHNSON LANE
BRAINTREE, MA 02184
M-MA015

LIMITATIONS & EXCLUSIONS

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

Any and all subsequent pages of this report are chain(s) of custody.

GeoLabs, Inc.
Environmental Laboratories
45 Johnson Lane
Braintree, MA 02184
Phone: 781-848-7844
Fax: 781-848-7811

Turnaround Time
RUSH: 24hrs ☐ 48hrs ☐ 72hrs ☐ **STANDARD:** 5 Days ✓ Rush Approved By:

Page ____ of ____

SPECIAL INSTRUCTIONS
NOTE: Please provide all QA/QC data Thank you.

Client: Chelsea Terminal
Address: 11 BROADWAY Chelsea, MA 02150
Phone: 617 660 1117
Fax: 617 660 1140
Contact: ASHWIN PATEL
E-mail:

Project Number: EPA 40CFR423-App-A-Tot
Project Location: Chelsea Terminal
Purchase Order #: Verbal
Collected By: ASHWIN PATEL

RCRA only

ANALYSES REQUESTED

SAMPLE ID	COLLECTION DATE	COLLECTION TIME	COLLECTION SAMPLED BY	SAMPLE LOCATION	CONTAINER TYPE	CONTAINER QUANT	MATRIX	COMP	GRAB	PRES	GEOLABS SAMPLE NUMBER	9 Metals	12 CN	7 Reactivity	7 PCBs	7 8270	12 Phenols	VOCs		TEMPERATURE	LAB pH
61104/Metals	6/14/04	9:20 AM	ASP	GW/Soil Remed Sys. Eff	P	1	GW		✓	2	150584	✓								7.0	
61104/CN	"	"	"	"	P	1	"		✓	5			✓								
61104/Pest	"	"	"	"	A	2	"		✓	4				✓							
61104/PCBs	"	"	"	"	"	"	"		✓	4					✓						
61104/8270	"	"	"	"	"	"	"		✓	4						✓					
61104/Phenols	"	"	"	"	"	1	"		✓	3							✓				
61104/VOCs	"	"	"	"	V	2	"		✓	1								✓		✓	

CONTAINER CODES:
A = Amber
B = Bag
G = Glass
P = Plastic
S = Summa Canister
O = Other V = VOA

MATRIX CODES:
GW = Ground Water
WW = Wastewater
DW = Drinking Water
SL = Sludge
S = Soil A = Air
O = Oil OT = Other

PRESERVATIVE CODES:
1 = HCl 7 = ICE
2 = HNO_3
3 = H_2SO_4
4 = $Na_2S_2O_3$
5 = NaOH
6 = MeOH

Relinquished By: Date/Time: 6/14/04
Relinquished By: 6.14.04 3:53
Relinquished By:

Received By: Date/Time: 6-14-04
Received By: 3:50
Received By GeoLabs: 1555 SBurke 6-14-04

GEOLABS CHAIN OF CUSTODY

Date: July 12, 2004

Ms. Linda M. Murphy, Director
Office of Ecosystem Protection
EPA – Region 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Mr. Neil Handler, Project Manager
Office of Ecosystem Protection
EPA – Region 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Re: Chelsea Terminal – NPDES Permit No. MA0003280
Responses to the EPA Information Request dated June 9, 2004

Dear Ms. Murphy and Mr. Handler:

In response to the subject information request, attached are:

1. Analytical results for the metals you requested (Attachment 1). Inadvertently, the laboratory missed to fax pages 3 and 4 of the report.

2. Sample collection method is discussed in the attachment 2.

Should you have further questions concerning the above matter, please call me 617-660-1117

Sincerely,

Ashwin Patel
Manager – Environmental Compliance

Cc File

GeoLabs, Inc.
Environmental Laboratories

ATTACHMENT 1

CLIENT NAME:	CHELSEA	PROJECT ID:	EPA40CFR
SAMPLE TYPE:	WATER	REPORT DATE:	6/28/04
COLLECTION DATE:	6/14/04	ANALYZED BY:	QS/GP
REC'D BY LAB:	6/14/04	ANALYSIS DATE:	SEE BELOW
COLLECTED BY:	CLIENT	DIGESTION DATE:	SEE BELOW
PRESERVATIVE:	NITRIC ACID		

TOTAL METALS

SAMPLE NUMBER: 160584
SAMPLE LOCATION: GW/SOIL REMED SYS

	RESULTS (mg/L)	DETECTION LIMIT (mg/L)	DIGESTION DATE	ANALYSIS DATE
ANTIMONY	ND	0.05	6/15/04	6/16/04
ARSENIC	ND	0.05	6/15/04	6/16/04
BERYLLIUM	ND	0.00	6/15/04	6/16/04
CADMIUM	ND	0.01	6/16/04	6/16/04
CHROMIUM	ND	0.06	6/15/04	6/16/04
COPPER	ND	0.01	6/15/04	6/16/04
LEAD	ND	0.01	6/15/04	6/16/04
MERCURY	ND	0.00	6/29/04	6/29/04
NICKEL	ND	0.01	6/29/04	6/16/04
SELENIUM	ND	0.05	6/29/04	6/16/04
SILVER	ND	0.01	6/29/04	6/16/04
THALLIUM	ND	0.20	6/29/04	6/16/04
ZINC	ND	0.10	6/29/04	6/16/04

ND = NOT DETECTED

Method Reference:

EPA Method	3010A (1)	Metal Preparation
EPA Method	6010B (1)	Inductively Coupled Plasma
EPA Method	245.1 (2)	Manual Cold Vapor (Mercury)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1986, 3rd Edition.
2) U.S. EPA 1994. "Methods for the Determination of Metals in Environmental Samples",-Supplement I-EPA/600/R-94-111-May 1994.

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	CHELSEA	PROJECT ID:	EPA40CFR
SAMPLE TYPE:	WATER	REPORT DATE:	6/28/04

METALS QC

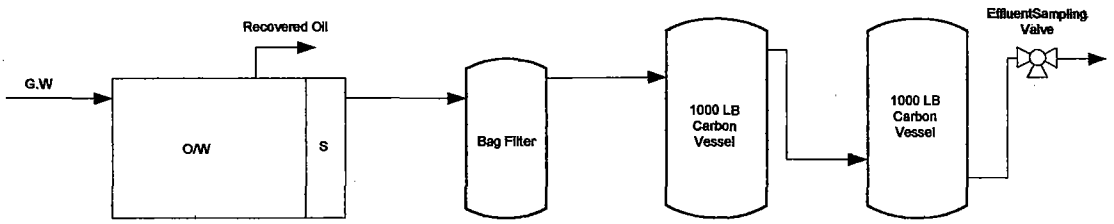
	Blank	Spike % Rec.	Limits
Mercury	ND	97%	80-120%
Thallium	ND	82%	80-120%
Arsenic	ND	89%	80-120%
Selenium	ND	92%	80-120%
Zinc	ND	93%	80-120%
Antimony	ND	88%	80-120%
Chromium	ND	91%	80-120%
Cadmium	ND	87%	80-120%
Lead	ND	91%	80-120%
Nickel	ND	91%	80-120%
Beryllium	ND	90%	80-120%
Copper	ND	88%	80-120%
Silver	ND	86%	80-120%

Chelsea Terminal
NPDES Permit # MA 0003280

Attachment 2

The groundwater and soil remediation system operates continuously however it poses during the time when the water table is fully depressed until recovered. Thus, effluent flow is continuously except times when ground water wells are being recharged. Effluent samples are collected when the system in continuous operational mode. Effluent samples are collected after 24 hours when the system is restarted after maintenance or downtime.

Sampling Point. The effluent sampling point is located after the last carbon vessel where the treated water exits the treatment system



Samples are grabbed directly into the containers (including vials) provided by the laboratory. The containers are pre labeled and properly marked and contain preservative when necessary. Collected samples are immediately stored in a refrigerator until picked up by a carrier

Chelsea Sandwich LLC
11 Broadway
Chelsea, MA 02150

Chelsea terminal
11 Braodway - Chelsea
NPDES Permit # 0003280
Responses to the EPA information
Request dated May 19, 2004

RECEIVED
JUL 0 8 2004
NPDES PERMIT UNIT

Date: July 1, 2004

Ms. Linda M. Murphy, Director
Office of Ecosystem Protection
EPA – Region 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Mr. Neil Handler, Project Manager
Office of Ecosystem Protection
EPA – Region 1
One Congress Street, Suite 1100
Boston, MA 02114-2023

Re: Chelsea Terminal – NPDES Permit No. MA0003280
Responses to the EPA Information Request dated May 19, 2004
IR # 3 (10) Groundwater Treatment System Effluent Quality:

Dear Ms. Murphy and Mr. Handler:

Pursuant to the EPA request, the groundwater treatment system's effluent samples were obtained on June 14, 2004 and analyzed for the EPA 40CFR 423, Appendix A listed priority pollutants. The samples were submitted to the GeoLab of Braintree (Massachusetts Certification # M-MA015) for analytical work. The laboratory report is attached.

Should you have further questions concerning the above matter, please call me 617-660-1117

Sincerely

Ashwin Patel
Manager – Environmental Compliance

Cc File

ATTACHMENT B

SUMMARY OF GROUND WATER MONITORING DATA

(2003 TO 2004)

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

GeoLabs, Inc.

Environmental Laboratories

LABORATORY REPORT

PREPARED FOR:

Chelsea Terminal
11 Broadway
Chelsea, MA 02150

Attn: Ashwin Patel

PROJECT ID:	Monthly Remed. Sys. Effluent Chelsea, MA
GEOLABS CERTIFICATION #:	M-MA015
SAMPLE NUMBER:	152947
DATE PREPARED:	August 6, 2004
PREPARED BY:	Karen Mullally

APPROVED BY: Jim Chen, Laboratory Director

CLIENT NAME:	**Chelsea Terminal**	PROJECT ID:	Monthly Remed
SAMPLE TYPE:	WATER	REPORT DATE:	08/06/04
COLLECTION DATE:	07/29/04	ANALYZED BY:	ZYZ
REC'D BY LAB:	07/30/04	ANALYSIS DATE:	08/04/04
COLLECTED BY:	CLIENT	DIGESTION DATE:	N/A
PRESERVATIVE:	HYDROCHLORIC ACID		

VOLATILE AROMATIC COMPOUNDS

SAMPLE NUMBER: 152947
SAMPLE LOCATION: Rem. Sys Eff

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
Methyl tert-butyl ether	ND	5.00
Benzene	ND	5.00
Toluene	ND	5.00
Ethylbenzene	ND	5.00
Xylenes	ND	5.00
Naphthalene	ND	20.0

Surrogate Recoveries:

dibromofluoromethane	95%
1,2-Dichloroethane	87%
toluene-d8	97%
BFB	104%

ND = NOT DETECTED

Method Reference:

EPA Method 602 by 624 (1) GC/MS

1) Code of Federal Regulations 40 CFR, Parts 100-149, 1993.

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**Chelsea Terminal**	PROJECT ID:	Monthly Remed.
SAMPLE TYPE:	WATER	REPORT DATE:	08/06/04
COLLECTION DATE:	07/29/04	ANALYZED BY:	RD
REC'D BY LAB:	07/30/04	ANALYSIS DATE:	08/03/04
COLLECTED BY:	CLIENT	EXTRACTION DATE:	08/02/04
PRESERVATIVE:	N/A		

POLYNUCLEAR AROMATIC HYDROCARBONS

SAMPLE NUMBER: 152947
SAMPLE LOCATION: Rem Sys Eff

	RESULTS (µg/L)	DETECTION LIMIT (µg/L)
Naphthalene	ND	0.750
2-Methylnaphthalene	ND	0.750
Acenaphthylene	ND	0.250
Acenaphthene	ND	0.500
Fluorene	ND	0.500
Phenanthrene	ND	0.500
Anthracene	ND	0.500
Fluoranthene	ND	0.500
Pyrene	ND	1.25
Benz[a]Anthracene	ND	0.500
Chrysene	ND	0.500
Benzo[b]Fluoranthene	ND	0.500
Benzo[k]Fluoranthene	ND	1.00
Benzo[a]Pyrene	ND	0.200
Indeno[1,2,3-Cd]Pyrene	ND	0.500
Dibenzo[a,h]Anthracene	ND	0.500
Benzo[g,h,i]Perylene	ND	1.00

ND = NOT DETECTED

Method Reference:

EPA Method 8270C (1)

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1998 3rd Edition.

POLYNUCLEAR AROMATIC HYDROCARBONS - QC

	BLANK
Naphthalene	ND
2-Methylnaphthalene	ND
Acenaphthylene	ND
Acenaphthene	ND
Fluorene	ND
Phenanthrene	ND
Anthracene	ND
Fluoranthene	ND
Pyrene	ND
Benz[a]Anthracene	ND
Chrysene	ND
Benzo[b[Fluoranthene	ND
Benzo[k]Fluoranthene	ND
Benzo[a]Pyrene	ND
Indeno[1,2,3-Cd]Pyrene	ND
Dibenzo[a,h]Anthracene	ND
Benzo[g,h,i]Perylene	ND

	LCSS 1	Limit
Acenaphthene	80%	40-140%
Pyrene	91%	40-140%

GeoLabs, Inc.
Environmental Laboratories

CLIENT NAME:	**Chelsea Terminal**	PROJECT ID:	Monthly Remed
SAMPLE TYPE:	WATER	REPORT DATE:	08/06/04
COLLECTION DATE:	07/29/04	ANALYZED BY:	GP
REC'D BY LAB:	07/30/04	ANALYSIS DATE:	08/03/04
COLLECTED BY:	CLIENT	DIGESTION DATE:	08/02/04
PRESERVATIVE:	SULFURIC ACID		

TOTAL PETROLEUM HYDROCARBONS

SAMPLE NUMBER	SAMPLE LOCATION	TPH (mg/L)	DETECTION LIMIT (mg/L)
152947	Remed. Sys. Eff.	ND	0.20

ND = NOT DETECTED

Method Reference:

EPA Method 8100 (1) Modified

1) U.S. EPA Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 1986, 3rd Edition.

GEOLABS, INC.
45 JOHNSON LANE
BRAINTREE, MA 02184
M-MA015

LIMITATIONS & EXCLUSIONS

All the professional opinions presented in this report are based solely on the scope of work conducted and sources referred to in our report. The data presented by GeoLabs in this report was collected and analyzed using generally accepted industry methods and practices at the time the report was generated. This report represents the conditions, locations and materials that were observed at the time the work was conducted. No inferences regarding other conditions, locations or materials, at a later or earlier time may be made based on the contents of the report. No other warranty, express or implied is made.

This report was prepared for the sole use of our client. Portions of the report may not be used independent of the entire report.

All analyses were performed within required holding times, in accordance with EPA protocols and using accepted QA/QC procedures. All QA/QC meets acceptable limits unless otherwise noted. The information contained in this report is, to the best of my knowledge, accurate and complete.

Any and all subsequent pages of this report are chain(s) of custody.

July Samples

GeoLabs, Inc.
Environmental Laboratories
45 Johnson Lane
Braintree, MA 02184
Phone: 781-848-7844
Fax: 781-848-7811

Turnaround Time
RUSH: 24hrs ☐ 48hrs ☐ 72hrs ☐ **STANDARD:** 5 Days____ Rush Approved By:____

Page____of____

SPECIAL INSTRUCTIONS

Client: Chelsea Terminal
Address: 11 Broadway
Chelsea MA 02150
Phone: 617 660 1117
Fax: 617 660 1140
Contact: Ashwin Patel
E-mail:

Project Number: Monthly Remed Sys. Effluent
Project Location: Chelsea MA
Purchase Order #:
Collected By: A. Patel

ANALYSES REQUESTED

SAMPLE ID	COLLECTION DATE	TIME	SAMPLED BY	SAMPLE LOCATION	CONTAINER TYPE	CONTAINER QUANT	MATRIX	COMP	GRAB	PRES	GEOLABS SAMPLE NUMBER	PAHs (Total)	Naphthalene	TPH 02	Benzene	BTEX	MTBE			TEMPERATURE	LAB pH
072904/MW5	7/29/04	11:10	AP	Remed Sy. Effluent	A	2	GW		✓			✓	✓							30	
072905/MW1	"	"	"	" " "	A	2	"		"		152947			✓							
072906/MW2	"	"	"	" "	V	2	"		"						✓	✓	✓				

CONTAINER CODES:
A = Amber
B = Bag
G = Glass
P = Plastic
S = Summa Canister
O = Other V = VOA

MATRIX CODES:
GW = Ground Water
WW = Wastewater
DW = Drinking Water
SL = Sludge
S = Soil A = Air
O = Oil OT = Other

PRESERVATIVE CODES:
1 = HCl 7 = ICE
2 = HNO_3
3 = H_2SO_4
4 = $Na_2S_2O_3$
5 = NaOH
6 = MeOH

Relinquished By:	Date/Time	Received By:	Date/Time:
	7/29		7.30.04
Relinquished By:	7.30.04 1105	Received By:	9:40
Relinquished By:		Received By GeoLabs:	7/30/04 1105

GEOLABS CHAIN OF CUSTODY

ATTACHMENT C

SUMMARY OF DISCHARGE MONITORING REPORT (DMR) RESULTS

(2001 TO 2003)

FOR POLYNUCLEAR AROMATIC COMPOUNDS

CHELSEA SANDWICH, LLC

NPDES PERMIT NO. MA0003280

Chelsea Sandwich LLC Terminal (Permit No. MA0003280) 2001-2003 Quarterly Storm Water Monitoring Results for PAHs [1] / Outfall 001

PAH Compounds	1st Quarter 2001 (ug/L)	2nd Quarter 2001 (ug/L)	3rd Quarter 2001 (ug/L)	4th Quarter 2001 (ug/L)	1st Quarter 2002 (ug/L)	2nd Quarter 2002 (ug/L)	3rd Quarter 2002 (ug/L)	4th Quarter 2002 (ug/L)	1st Quarter 2003 [2] (ug/L)	2nd Quarter 2003 (ug/L)	3rd Quarter 2003 (ug/L)	4th Quarter 2003 (ug/L)
Benzo(a)anthracene	<5.2	<5.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene	<5.2	<5.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(b)fluoranthene	<5.2	<5.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(k)fluoranthene	<5.2	<5.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chrysene	<5.2	<5.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dibenzo(a,h)anthracene	<5.2	<5.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Indeno(1,2,3-cd)pyrene	<5.2	<5.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

(1) PAHs or Polynuclear Aromatic Hydrocarbons

ATTACHMENT D

ENDANGERED SPECIES LIST

Protected Resources

NOAA Fisheries National Marine Fisheries Service

"conserving protected marine resources and maintaining marine biodiversity"

Species Listed under the Endangered Species Act of 1973

The authority to list species as threatened or endangered is shared by the National Marine Fisheries Service (NMFS), which is responsible for listing most marine species, and the Fish and Wildlife Service (FWS), which administers the listing of all other plants and animals. There are two classifications under which a species may be listed.

- Species determined to be in imminent danger of extinction throughout all of a significant portion of their range are listed as "endangered."
- Species determined likely to become endangered in the foreseeable future are listed as "threatened."

Further, distinct populations may be listed even if a species is abundant in other portions of its range. The criteria for endangerment must be based solely on biological evidence and the best scientific and/or commercial data available. Moreover, additions or deletions may be proposed by anyone who presents adequate evidence of the endangered status of a species.

Domestic Endangered Species			
Atlantic salmon	Green sea turtle	Leatherback sea turtle	Sperm whale
Blue whale	Hawaiian monk seal	Northern right whale	Steelhead
Bowhead whale	Hawksbill sea turtle	Olive ridley sea turtle	White abalone
Caribbean monk seal	Humpback whale	Sei whale	Smalltooth sawfish
Fin whale	Kemp's ridley sea turtle	Shortnose sturgeon	

Domestic Threatened Species			
Chinook salmon	Green sea turtle	Johnson's sea grass	Sockeye salmon

Coho salmon	Guadalupe fur seal	Loggerhead sea turtle	Steelhead
Chum salmon	Gulf sturgeon	Olive ridley sea turtle	Steller sea lion

Domestic Species Proposed for Listing

International Species Listed as Endangered or Threatened Under the ESA			
Chinese River dolphin	Gulf of California harbor porpoise (vaquita)	Mediterranean monk seal	Southern right whale
Gray whale - Western North Pacific population	Indus River dolphin	Ringed seal (Siamma seal)	Totoaba

Contact Us | Related Links | Search | Regional Offices | Privacy Statement | Disclaimer |

NOAA Fisheries, Office of Protected Resources, 1315 East West Highway, Silver Spring, MD 20910
Fax:301-713-0376 Phone:301-713-2332

U.S. Endangered Species Act

Listings under the U.S. Endangered Species Act

The U.S. Endangered Species Act (U.S. ESA) is the primary legislation that affords federal legal protections to threatened and endangered species in the United States, and is administered by the U.S. Fish and Wildlife Service (USFWS) (http://endangered.fws.gov/) and U.S. National Marine Fisheries Service (NMFS) (http://www.nmfs.noaa.gov/prot_res/overview/es.html). As defined by the Act, endangered refers to species that are "in danger of extinction within the foreseeable future throughout all or a significant portion of its range," while threatened refers to "those animals and plants likely to become endangered within the foreseeable future throughout all or a significant portion of their ranges." Plant species and varieties (including fungi and lichens), animal species and subspecies, and vertebrate animal populations are eligible for listing under the Act.

Status under the U.S. Endangered Species Act provided by *NatureServe Explorer* is based on formal notices published by USFWS or NMFS in the Federal Register. The date shown alongside the status (in parentheses) refers to the formal Federal Register publication date regarding the status designation. Dates appear only for taxa and populations that are specifically named in a Federal Register Notice of Review Table or in the section of a Federal Register Proposed or Final Rule that proposes or declares an amendment to 50 Code of Federal Regulations Part 17 Section 11 or 12 (i.e., changes to the Lists of Endangered and Threatened Wildlife and Plants).

Specifically, dates represent:

For listed endangered and threatened taxa and populations: the date of publication of the Federal Register "Final Rule" for the taxon or population.

For proposed taxa and populations: the date of publication of the most recent Federal Register "Proposed Rule" for the taxon or population.

For candidate taxa and populations: the date of publication of the most recent "Notice of Reclassification" or "Notice of Review" in which the candidate appears.

NatureServe staff update the central databases with changes in status due to proposals and determinations to add taxa to the Lists of Endangered and Threatened Wildlife and Plants within two weeks of publication in the Federal Register. Addition and removal of candidates in Notices of Review or Notices of Reclassification are entered within four weeks of their publication. *NatureServe Explorer* is updated periodically from the NatureServe Central Databases and reflects the federal status current at the time of update.

ESA Status Definitions in *NatureServe Explorer*

NatureServe Explorer generally uses the same scientific name as USFWS for species with status under the Endangered Species Act. For listed population segments of vertebrate animals, *NatureServe Explorer* information can typically be found in the species record associated with the subspecies or population. Where names used by the USFWS differ from those used by NatureServe, *NatureServe Explorer* records are cross-referenced and can be

found using either name. The following table provides abbreviations and definitions for various listing statuses under the U.S. Endangered Species Act.

U.S. Endangered Species Act Abbreviations	
***NatureServe Explorer* Abbreviation**	**Status Under the U.S. Endangered Species Act**
LE	Listed endangered
LT	Listed threatened
PE	Proposed endangered
PT	Proposed threatened
C	Candidate
PDL	Proposed for delisting
SAE or SAT	Listed endangered or threatened because of similarity of appearance
PSAE or PSAT	Proposed endangered or threatened because of similarity of appearance
XE	Essential experimental population
XN	Nonessential experimental population
Null value	Usually indicates that the taxon does not have any federal status. However, because of potential lag time between publication in the Federal Register and entry in the central databases and refresh of this website, some taxa may have a status which does not yet appear.

Status Due to Taxonomic Relationship ("Implied USESA Status")

In some cases species or infraspecific taxa may not be named in a federal register notice, but may still have federal protection due to their taxonomic relationship with formally listed taxa. Section 17.11(g) of the Endangered Species Act states, "the listing of a particular taxon includes all lower taxonomic units." Also, if an infraspecific taxon or population has federal status, then by default, some part of the species has federal protection. NatureServe Explorer notes where federal protection of a taxon is "implied" through such taxonomic relationships. Where federal status is implied due to a taxonomic relationship alone, the status abbreviation appears with a flag (1) and no date of listing is given.

Status of Geopolitically or Administratively Defined Populations

Distinct population segments of vertebrate animals may be listed as threatened or endangered under the Endangered Species Act. Listed populations may be defined by geopolitical boundaries (i.e., the status applies to the species or subspecies only within those boundaries, even though the taxon may range more broadly), or populations may be defined administratively (e.g., experimental populations). Because such populations do not typically have individual records in NatureServe Explorer, the U.S. ESA status is recorded for the species or subspecies to which that

population belongs. In these cases, the status abbreviation appears with a flag (5), after the abbreviation "PS" for "partial status" - indicating that the status applies only to a portion of the species' range.

Implied ESA Status Notations (Status Due to Taxonomic Relationship)		
Example	**Explanation**	**Definition**
value,value	Combination values	The taxon has one status currently, but a more recent proposal has been made to change that status with no final action yet published. For example, "LE, PDL" indicates that the species is currently listed as endangered, but has been proposed for delisting. Or, the taxon has two different statuses throughout its range. More specifically, it has a status in one portion of its range and a different status in the remainder of its range.
(*Value*)	Flagged Values	The taxon itself is not named in the Federal Register as having U.S. ESA status; however, it does have U.S. ESA status as a result of its taxonomic relationship to a named entity. For example, if a species is federally listed as endangered, then by default, all of its recognized subspecies also have endangered status. The subspecies in this example would have the value "LE (1)" under U.S. ESA Status. Likewise, if all of a species' infraspecific taxa (rangewide) have the same U.S. ESA status, then that status appears in the record for the "full" species as well. In this case, if the taxon at the species level is not mentioned in the Federal Register, the status appears in NatureServe Explorer with a flag (1).
(*value,value*)	Combination flagged values	The taxon itself is not named in the Federal Register as having U.S. ESA status; however, all of its infraspecific taxa (rangewide) have official status but two or more of the taxa do not have the same status. In this case, a combination of the statuses shown with a flag (7) indicates the statuses that apply to infraspecific taxa or populations within this taxon.
(PS)	partial status	Indicates "partial status"—status in only a portion of the species' range. Typically indicated in a "full" species record where at least one but not all of a species' infraspecific taxa or populations has U.S. ESA status.
(PS:*value*)	partial status	Indicates "partial status"—status in only a portion of the species' range. The value of that status appears because the listed entity (usually a population defined by geopolitical boundaries or defined administratively, such as experimental populations) does not have an individual entry in NatureServe Explorer. Information about the listed entity can be found in reports for the associated species.

Version 4.1 (11 November 2004)
Data last updated: October 2004

Site Index

ATTACHMENT E

ESSENTIAL FISH HABITAT DESIGNATION

Guide to Essential Fish Habitat Designations in the Northeastern United States

Important Note To Users

This guide provides a geographic species list of Essential Fish Habitat (EFH) designations completed by the New England Fishery Management Council, Mid-Atlantic Fishery Management Council, South Atlantic Fishery Management Council, and the National Marine Fisheries Service (NMFS) in the Northeastern United States pursuant to the Magnuson-Stevens Fishery Conservation and Management Act. The guide is designed to provide government agencies and other interested parties with a quick reference to determine the species and life stages of fish, shellfish, and mollusks for which EFH has been designated in a particular area. Using a "point and click" format, it lists the EFH species in selected 10' x 10' squares of latitude and longitude along the coast. Although not provided in this guide, EFH has also been designated in offshore areas throughout the Exclusive Economic Zone. This guide lists the EFH species within an area and is not intended for use on its own. The actual EFH descriptions, the species habitat preferences and life history parameters are provided in Guide to EFH Descriptions. The Councils' Fishery Management Plans (FMPs) should be referred to for more extensive information regarding EFH whenever necessary.

To skip the introduction, click here.

To view EFH Designations for Skate Species, which are not in the map below, click here.

Background

The 1996 amendments to the Magnuson-Stevens Act strengthened the ability of NMFS and the Councils to protect and conserve the habitat of marine, estuarine, and anadromous finfish, mollusks, and crustaceans. This habitat is termed "essential fish habitat" and is broadly defined to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The Act requires the Councils to describe and identify the essential habitat for the managed species, minimize to the extent practicable adverse effects on EFH caused by fishing, and identify other actions to encourage the conservation and enhancement of EFH.

The Act also establishes measures to protect EFH. NMFS must coordinate with other federal agencies to conserve and enhance EFH, and federal agencies must consult with NMFS on all actions or proposed actions authorized, funded, or undertaken by the agency that may adversely affect EFH. In turn NMFS must provide recommendations to federal and state agencies on such activities to conserve EFH. These recommendations may include measures to avoid, minimize, mitigate, or otherwise offset adverse effects on EFH resulting from actions or proposed actions authorized, funded, or

undertaken by that agency.

Description of the Guide

To facilitate the EFH consultation process, this guide provides a quick method of ascertaining what species and lifestages have EFH in a given geographic area. The information is presented as tabular summaries for selected 10' x 10' squares of latitude and longitude. Each table includes a short but detailed description of the square, including a table of coordinates, as well as landmarks along the coastline such as towns, cities, necks, points, rocks, islands, bays, coves, shoals, marshes, beaches, banks, estuaries, creeks, thorofares, or rivers. The information for the square descriptions was taken from National Oceanic and Atmospheric Administration (NOAA) Coast Survey nautical charts. An attempt was made to ensure the names used in the description are as thorough as possible. However, if a question arises in regards to a location, please refer to the nautical charts or any reference map. Also, when in doubt concerning whether a project is divided by a square boundary, please refer to a map or chart.

For the offshore squares, the information is based primarily on the offshore trawl survey data that was used to support the Councils' EFH designations. For squares located within major estuaries and bays, the EFH designations are based on Estuarine Living Marine Resources data along with some trawl survey data. For detailed species lists for the major estuaries, select from the estuaries list instead of the 10 minute square. The Guide to EFH Descriptions provides an overall species list categorized by the Council's jurisdictions. Click on the species name to retrieve the EFH Designations as well as additional habitat information, where available. These summaries are not a substitute for the actual EFH designations provided in the Council's FMPs. Users should refer to the Councils' FMPs when questions arise.

Definitions

The tables are fairly straightforward, but the following definitions will help clarify exactly what each summary shows:

10 Minute Square Tables

The notation "X" in a table indicates that EFH has been designated within the square for a given species and life stage.

The notation "n/a" in the tables indicates some of the species either have no data available on the designated lifestages, or those lifestages are not present in the species' reproductive cycle. These species are:

- redfish, which have no eggs (larvae born already hatched);
- long finned squid, short finned squid, surf clam, and ocean quahog which are referred to as pre-recruits and recruits (this corresponds with juveniles and adults in the tables);
- spiny dogfish, which have no eggs or larvae (juveniles born live);
- scup and black sea bass, for which there is insufficient data for the life stages listed, and no EFH designation has been made as of yet (some estuary data is available for all the life stages of these species, and some of the estuary squares will reflect this)

The Highly Migratory Species' life stages that are summarized within the squares are broken down into neonates, juveniles, and adults. For these species there are no 'egg' designations, and neonates correspond to the heading larvae within each summary table.

Estuaries Tables

S = The EFH designation for this species includes the seawater salinity zone of this bay or estuary (salinity > or = 25.0%).

M = The EFH designation for this species includes the mixing water/ brackish salinity zone of this bay or estuary (0.5% < salinity < 25.0%).

F = The EFH designation for this species includes the tidal freshwater salinity zone of this bay or estuary (0.0% < or = salinity < or = 0.5%).

n/a = The species does not have this lifestage in its life history (dogfish/ redfish), or has no EFH designation for this lifestage (squids, surf clam, ocean quahog). With regard to the squids, the surf clam, and the ocean quahog, juvenile corresponds with pre-recruits, and adult corresponds with recruits in these species' life histories.

These EFH designations of estuaries and embayments are based on the NOAA Estuarine Living Marine Resources (ELMR) program (Jury et al. 1994; Stone et al. 1994).

Disclaimer

The process involved in converting the EFH designations into this format was tedious. It consisted of determining the designations within each square, square by square and species life stage by species life stage, and then compiling the information into each table. Information has been double checked, but some errors may appear. When questions arise, the Councils' Fishery Management Plans are ultimately and legally determinative of the geographic limits of EFH.

To use the Guide, click here.

If you have comments on the Guide, send an e-mail message tojill.ortiz@noaa.gov.

Summary of Essential Fish Habitat (EFH) Designations

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

10' x 10' latitude and longitude squares included in this bay or estuary or river (southeast corner boundaries):

4220/7100; 4210/7050; 4210/7100

Species	Eggs	Larvae	Juveniles	Adults	Spawning Adults
Atlantic salmon *(Salmo salar)*					
Atlantic cod *(Gadus morhua)*	S	S	M,S	M,S	S
haddock *(Melanogrammus aeglefinus)*	S	S			
pollock *(Pollachius virens)*	S	S	M,S		
whiting *(Merluccius bilinearis)*	S	S	M,S	M,S	
offshore hake *(Merluccius albidus)*					
red hake *(Urophycis chuss)*		S	S	S	
white hake *(Urophycis tenuis)*	S	S	S	S	
redfish *(Sebastes fasciatus)*	n/a				
witch flounder *(Glyptocephalus cynoglossus)*					
winter flounder *(Pleuronectes americanus)*	M,S	M,S	M,S	M,S	M,S
yellowtail flounder *(Pleuronectes ferruginea)*	S	S	S	S	S
windowpane flounder *(Scopthalmus aquosus)*	M,S	M,S	M,S	M,S	M,S
American plaice *(Hippoglossoides platessoides)*	S	S	S	S	S
ocean pout *(Macrozoarces americanus)*			S	S	
Atlantic halibut *(Hippoglossus hippoglossus)*	S	S	S	S	S
Atlantic sea scallop *(Placopecten magellanicus)*					
Atlantic sea herring *(Clupea harengus)*		S	M,S	M,S	
monkfish *(Lophius americanus)*					

bluefish *(Pomatomus saltatrix)*			M,S	M,S	
long finned squid *(Loligo pealei)*	n/a	n/a			
short finned squid *(Illex illecebrosus)*	n/a	n/a			
Atlantic butterfish *(Peprilus triacanthus)*	S	S			
Atlantic mackerel *(Scomber scombrus)*	M,S	M,S	M,S	M,S	
summer flounder *(Paralicthys dentatus)*					
scup *(Stenotomus chrysops)*					
black sea bass *(Centropristus striata)*					
surf clam *(Spisula solidissima)*	n/a	n/a			
ocean quahog *(Artica islandica)*	n/a	n/a			
spiny dogfish *(Squalus acanthias)*	n/a	n/a			
tilefish *(Lopholatilus chamaeleonticeps)*					

MASSACHUSETTS DIVISION OF MARINE FISHERIES - DESIGNATED SHELLFISH GROWING AREA

Division of Marine Fisheries

MASS GIS

Produced: December 06, 1999

STATION TYPE

- CLASSIFICATION
- POLLUTION SOURCE
- AD-HOC
- PRIMARY PSP
- SECONDARY PSP
- TERTIARY PSP
- CHEMICAL
- MARINA

BOUNDARY LINES CLASS AREA TYPE, AS OF 07/01/1999

- GROWING AREA
- CLASSIFICATION AREA
- TOWN

- APPROVED
- CONDITIONALLY APPROVED
- CONDITIONALLY RESTRICTED
- RESTRICTED
- MANAGEMENT CLOSE
- PROHIBITED

This product is for planning and educational purposes only. It is not to be used by itself for legal boundary definition or regulatory interpretation.

GROWING AREA CODE: GBH4
AREA NAME: BOSTON INNER HARBOR
AREA TOWN(S): BOSTON/CAMBRIDGE/CHELSEA/EVERETT/REVERE/SOMERVILL