DRAFT

AUTHORIZATION TO DISCHARGE UNDER THE
NATIONAL POLLUTION DISCHARGE ELIMINATION SYSTEM

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

Algonquin Gas Transmission, LLC
890 Winter Street, Suite 300
Waltham, MA 02451

and

Northeast Gateway Energy Bridge, LLC
1330 Lake Robbins Drive, Suite 270
The Woodlands, TX 77380

are authorized to discharge from a facility located at

Northeast Gateway Energy Bridge
Pipeline Lateral Project
Massachusetts Bay

to receiving waters named

Massachusetts Bay

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

This permit shall become effective (see***below)

This permit and the authorization to discharge expire at midnight on

This permit consists of 5 pages in Part I including effluent limitations, monitoring requirements, etc and 25 pages in Part II including General Conditions and Definitions.

Signed this day of

_____	_____
Stephen S. Perkins, Director	Glenn Haas, Director
Office of Ecosystem Protection	Division of Watershed Management
Environmental Protection Agency	Department of Environmental Protection
Boston, MA	Commonwealth of Massachusetts
	Boston, MA

***This permit will become effective on the date of signature if no comments are received during public notice. If comments are received during public notice, this permit will become effective on the first day of the calendar month immediately following 60 days after signature.

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date of the permit and lasting through expiration, the permittee is authorized to discharge through **outfall serial numbers 001, 002 and 003: Neutralized Floodwater.** Discharge shall be limited and monitored by the permittee as specified below:

OUTFALL 001 – Pipeline Lateral Mile Point (MP) 0.0
Massachusetts Bay, East of Marblehead, MA
Massachusetts Waters
Latitude 42º28'46" Longitude 70º46'45"

OUTFALL 002 - Flow Line A MP 0.0
Massachusetts Bay, Approximately 26 miles east of Revere, MA
Federal Waters
Latitude 42º 23' 40" Longitude 70º 35' 38"

OUTFALL 003 - Flow Line B MP 0.0
Massachusetts Bay, Approximately 26 miles east of Revere, MA
Federal Waters
Latitude 42º 23' 59" Longitude 70º 36' 54"

	Discharge Limitations	**Monitoring Requirements**	
Effluent Characteristic (units)	**Maximum Daily**	**Measurement Frequency**	**Sample Type**
Flow rate (gpm) [1]	2400	Continuous	Estimate
Total suspended solids (mg/l)	100	2/discharge	Grab
THPS[2] (mg/l)	4.4	1/hour	Grab
Dissolved oxygen (mg/l)	6.0 (minimum)	1/discharge	Grab
pH range (s.u..)	6.5 to 8.5	1/discharge	Grab

Footnotes:

1. Total flow from Outfalls 001, 002 and 003 not to exceed the total volume required to fill the Pipeline Lateral, Flowline A, and Flowline B one time.
2. THPS = Tetrakis Hydroxymethyl Phosphonium Sulfate

Part I.A (continued)

2. The discharges, either individually or in combination shall not cause a violation of State Water Quality Standards of the receiving waters.

3. The pH of the effluent shall not be less than 6.5 or greater than 8.5 standard units at any time unless these values are exceeded as a result of natural causes.

4. The discharge shall not cause objectionable discoloration of the receiving waters.

5. The effluent shall not contain visible oil sheen, foam, or floating solids at any time.

6. The discharge shall not contain materials in concentrations or combinations which are hazardous or toxic to human health, aquatic life of the receiving waters or which would impair the uses designated by its classification.

7. Pollutants which are not limited by this permit, but which have been specifically disclosed in the permit application, may be discharged up to the frequency and level disclosed in the application, provided that such discharge does not violate Section 307 or 311 of the Clean Water Act (CWA) or applicable state water quality standards.

8. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:

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

      i One hundred micrograms per liter (100 µg/l);

      ii Two hundred micrograms per liter (200 µg/l) for acrolein and acrylonitrite; five hundred micrograms per liter (500 µg/l) for 2,4-dinitrophenol; and one milligram per liter (1 mg/l) for antimony;

      iii Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R.§122.21(g)(7); or

      iv Any other notification level established by the Director in accordance with 40C.F.R.§122.44(f)

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

      i Five hundred micrograms per liter (500 µg/l);

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

      iii Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R.§122.21(g)(7).

      iv Any other notification level established by the Director in accordance with 40

C.F.R.§122.44(f).

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

9. The permittee shall include notification of completion of the dewatering testing of the pipes with the submission of the appropriate discharge monitoring report. The permit shall be terminated upon completion and testing of the pipeline lateral and port connector pipes.

B. MANAGEMENT PRACTICES

1. The permittee shall ensure that the flooded pipe is enclosed to the extent practicable. The permittee shall not leave the flooded pipe open except to complete necessary underwater measurements or connections. The permittee shall enclose the end of the pipe securely when leaving the pipe unattended.

2. At no time shall both ends of the flooded pipe be open at the same time.

3. The permittee shall provide for storage of flood water prior to and following neutralization in an appropriate storage vessel. Holding tanks used for this purpose shall be cleaned and inspected to ensure that they are free or debris of other material that may cause the discharge of pollutants.

4. The permittee shall conduct an "on-charter survey" of each flood water storage vessel prior to its use to ensure that it is free of contamination that might cause harm to receiving waters.

5. The permittee shall use dewatering vessels with sufficient capacity for recycling and testing to assure that the treated effluent is not discharged above required permit limits.

6. The permittee shall conduct visual observations at least hourly (when collecting samples for testing) to check for fish kills, sheen or other perceived operational problems and have in place mechanisms to halt the discharge if problems develop. If a fish kill occurs, the discharge shall be stopped until the cause of the fish kill can be determined and remedied. Notification shall be made to Massachusetts Department of Marine Fisheries at 978-282-0308 within 24 hours of a fish kill.

C. MONITORING AND REPORTING

1. The permittee shall report within twenty four (24) hours any discharge of THPS in concentrations greater than 4.4 mg/l to the U.S. Environmental Protection Agency (EPA), the Massachusetts Department of Environmental Protection (MassDEP) and the Massachusetts Division of Marine Fisheries (MassDMF) at the following phone numbers:

EPA:	617-918-1715
MassDEP:	978-661-7600
MassDMF:	978-922-0308 x122

2. Monitoring results obtained during the previous month shall be summarized for each month and reported on separate discharge monitoring report (DMR) forms postmarked no later than the 15th day of the month following the effective date of the permit.

3. Signed and dated originals of these, and all other reports required herein, shall be submitted to the Director and the State at the following addresses:

U.S. Environmental Protection Agency
Water Technical Unit (SEW)
P.O. Box 8127
Boston, MA 02114

and

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

4. Signed and dated DMRs required by this permit shall be submitted to the State at:

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

D. STATE PERMIT CONDITIONS

1. This discharge permit is issued jointly by the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) under federal and state law, respectively. As such, all the terms and conditions of this permit are hereby incorporated into and constitute a discharge permit issued by the Commissioner of the MassDEP pursuant to M.G.L. Chap. 21, §43.

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
NEW ENGLAND - REGION I
ONE 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 PURSUANT TO THE CLEAN WATER ACT (CWA)

NPDES PERMIT NUMBER: MA0040240

NAME AND MAILING ADDRESS OF APPLICANTS:

Northeast Gateway Pipeline Lateral
Algonquin Gas Transmission, LLC
890 Winter Street, Suite 300
Waltham, MA 02451

and

Northeast Gateway Energy Bridge, LLC
1330 Lake Robbins Drive, Suite 270
The Woodlands, TX 77380

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Northeast Gateway Energy Bridge
Pipeline Lateral Project
Massachusetts Bay

RECEIVING WATER(S):

Massachusetts Bay

RECEIVING WATER CLASSIFICATION(S): SA

SIC CODE: 4924

Table of Contents

1.0 PROPOSED ACTION, TYPE OF FACILITY, AND DISCHARGE LOCATION

The above named applicants have applied to the U.S. Environmental Protection Agency (EPA) for the issuance of a NPDES permit to discharge into the Massachusetts Bay. The one time discharge consists of 1.99 million gallons of seawater treated with Tetrakis hydroxymethyl phosphonium sulfonate (THPS) biocide and neutralized with hydrogen peroxide. At least 1.9 million gallons of biocide treated seawater will be discharged in Massachusetts Bay within Massachusetts coastal waters (Outfall 001). Contingent discharge locations (Outfalls 002 and 003) for 85,000 gallons of biocide treated seawater beyond Massachusetts waters and within federal jurisdiction is included in this permit. The permit will be terminated upon completion and testing of the pipeline.

The discharge is the result of construction of three new natural gas pipelines to service a new liquefied natural gas (LNG) port in Massachusetts Bay. The new pipelines will facilitate the delivery of regasified liquefied natural gas (LNG) from the planned Northeast Gateway Energy Bridge Deepwater Port (Northeast Port) to onshore markets in New England. Ships containing LNG will deliver regasified natural gas into these gas pipelines which will be connected to the existing offshore and land based natural gas distribution system. All of the natural gas piping described herein will be buried on the ocean floor. Figure 1 shows the location of the new and existing natural gas pipelines in Massachusetts Bay. One of the new pipelines (the Pipeline Lateral) will be built by Algonquin Gas Transmission, LLC (Algonquin) and two (Flowlines A and B) will be built by Northeast Energy Bridge, LLC (NEG) which will also be constructing the remaining Northeast Port infrastructure. Although the three pipelines will have two different owners, they will be constructed by a single contractor as one project. Therefore, Algonquin and NEG have applied to be co-permittees on a single NPDES permit. Discharges and seawater intakes associated with the operation of the Northeast Port are not included in the draft permit.

1.1 Pipeline Lateral

Algonquin Gas Transmission, LLC, a subsidiary of Duke Energy Corporation (Algonquin), plans to construct an approximately 16.1-mile long, 24-inch diameter natural gas pipeline (Pipeline Lateral) that will interconnect the Northeast Port with Algonquin's existing offshore natural gas pipeline system (Hubline) in Massachusetts Bay. The Pipeline Lateral originates at the existing Hubline at Milepost (MP) 0.0 and terminates at the Northeast Port (MP16.1). The tie-in with the Hubline is located 3 miles east of Marblehead Neck in waters approximately 120 feet deep. Starting from MP 0.0, the Pipeline Lateral route extends towards the northeast, crossing outer reaches of the territorial waters of the municipal boundaries of the Town of Marblehead, the City of Salem, the City of Beverly, and the Town of Manchester-by-the-Sea for approximately 6.3 miles of pipeline length within municipal boundaries. The Pipeline Lateral then exits Manchester-by-the-Sea waters and enters waters regulated by the Commonwealth of Massachusetts. The Pipeline Lateral route continues to the south/southeast for approximately 6.2 miles to MP 12.5, where it exits state waters and enters federal waters. The Pipeline Lateral route then extends to the south for approximately another 3.6 miles through Stellwagen Basin, terminating in waters approximately 280 feet deep at the proposed flowline of Buoy A for the Northeast Port.

As part of the marine pipeline installation process, The Pipeline Lateral will be assembled on the deck of a barge and lowered to the sea floor. After the pipe is laid, it will be buried using plowing and backfill plowing methods. Prior to backfill plowing of the pipeline, the pipeline will be flooded with biocide-treated seawater to ensure the burial depth is maintained during the backfilling process. Figure 2 is a schematic showing the typical flooding of the pipeline with

biocide injected seawater. The pipeline will be installed and flooded in one continuous segment. The flooding of the pipeline will involve the one-time withdrawal of seawater totaling 1.9 million gallons.

The buried pipeline will be hydrostatically pressure tested using the same biocide-treated seawater. Following testing, the pipeline final connections to the existing Hubline will be made and tested and the pipeline will be dewatered using a dewatering pig which will be propelled through the pipeline with compressed air. The dewatering effluent will be collected and treated on a vessel prior to discharge at Outfall 001 located at Pipeline Lateral MP 0.0, as shown on Figure 1.

1.2 Flowlines A and B

The Northeast Port will consist of two identical sets of natural gas receiving facilities, each of which includes a subsea Submerged Turret Loading™ buoy (Buoy), a flexible riser, a pipeline end manifold, and a subsea pipeline (called a flowline), that will facilitate the mooring and connection of a fleet of specially designed regasification vessels that deliver LNG for unloading. Figure 3 shows the major components of each flowline to Buoy arrangement.

In addition to the Pipeline lateral, this NPDES permit relates to the construction of the two subsea pipelines needed to connect the Buoys (A & B) to the 24-inch Pipeline Lateral. The distance between the tie-in flange for Flowline A and the flange for Flowline B is less than 20 ft. The two pipelines are referred to as Flowline A and Flowline B for their relationship to the respective Buoys. Flowline A is an 18-inch diameter pipeline approximately 3,950 feet in length. Flowline B is also an 18-inch diameter pipeline and is approximately 2,950 feet in length. Both of these are located in Federal Waters. Flooding of both flowlines will involve the one-time withdrawal of seawater totaling 85,000 gallons.

The construction, flooding, hydrostatic testing and burial of the Flowlines A and B will follow the same procedures as for the Pipeline Lateral, described in Section 1.1. Depending on available equipment, contractor capabilities and construction conditions, the dewatering of the flowlines may be conducted in conjunction with the dewatering of the Pipeline Lateral. If that is the case, the biocide treated seawater will be collected and treated with the biocide-treated seawater from the Pipeline and discharged at Outfall 001. In the event that the Flowlines and Pipeline Lateral cannot be flooded, tested and dewatered as one unit, the Flowlines will be flooded, tested and dewatered in the Northeast Port area. Outfalls 002 and 003 are contingent outfalls which may be used, if necessary, to discharge treated effluent from the Flowlines.

1.3 Schedule

NEG and Algonquin consulted various agencies, interest groups, and other stakeholders to determine the optimum time of year to construct the Pipeline Lateral and Northeast Port to minimize impacts to marine resources, while at the same time providing realistic timeframes to facilitate completion of construction. NEG and Algonquin have consulted with the Massachusetts Lobsterman's Association, National Marine Fisheries Service (NMFS), Massachusetts Division of Marine Fisheries (MDMF), United States Coast Guard (USCG), EPA, United States Army Corps of Engineers (USACE), Massachusetts Department of Environmental Protection (MassDEP), and other industry and governmental representatives in order to develop the least intrusive plan.

The schedule calls for the pipe lay and burial (excluding imported backfill) to be completed within 90 days of the start of construction and for the hydrostatic pressure test to begin in Month 5 (September/October) timeframe. It is anticipated that the seawater withdrawals will occur in

Month 3 (July/August) timeframe. These dates are estimated based on the entire construction schedule and could vary by several weeks to a month depending on contingencies. After filling the pipe, the trench will be backfilled. A delay may be realized should unusual weather prove to be a greater obstacle than anticipated. The dewatering and treatment of the biocide-treated seawater is planned between these two dates. At the maximum anticipated flow rate of 2,400 gpm, the total discharge resulting from the emptying of the Pipeline Lateral and both Flowlines will last 14 hours.

2.0 DESCRIPTION OF DISCHARGE

The following description of discharge applies to the Pipeline Lateral and both Flowlines A and B, regardless of whether they are flooded and dewatered together or individually.

2.1 Use of THPS-Biocide

The entire pipeline will be filled with seawater to assist in the backfilling process, as described in Section 1.0 of this fact sheet. Biological growth can develop on the surface of pipe when seawater is in contact with metal pipe surfaces for an extended period of time. This biological growth can potentially result in microbiologically induced corrosion (MIC) within the pipe. For the Pipeline Laterals and Flowlines, the majority of the interior pipe surface will be coated with an epoxy-based coating which may prohibit biological growth but cannot prevent it completely. At the weld connections and at the ends of each pipe section, coating cannot be applied. The processes of concern regarding MIC are the corrosion of the joints resulting from the growth of sulfate reducing bacteria (SRB) and acid producing bacteria (APB) and damage due to hydrogen sulfide produced in the growth of SRB.

The length of time in which MIC develops within the pipe is not exact, although according to the permittees, best engineering practices suggest 14 to 90 days. For this project, the permittees have assumed a 30-day period for MIC to commence. This decision was based on consideration of the anticipated dependence of end-users on the gas supplied, the minimum 40-year design life of the pipeline, and the difficulty in repairing underwater segments of pipe. Since the seawater is likely to remain in the referenced pipe sections for more than 30 days, a Tetrakis hydroxymethyl phosphonium sulfate (THPS) based biocide will be used to minimize the risk of MIC. THPS-based biocide has been successfully used in other locations for underwater pipeline installation, including the installation of the Hubline in 2003.

The entire pipeline will be filled with THPS-treated seawater. The biocide to be used is a solution of 35 percent active THPS. The THPS-based biocide will be introduced at the time of the pipe flooding so that the initial concentration of the biocide is target to be approximately 290 milligrams per liter (mg/l).

During the dwell time in the pipe, the concentration of biocide will decrease. Based on a recommendation from the distributor of the product, an initial concentration of 290 mg/l of biocide is required to result in a final concentration of 50 mg/l at the end of the 60 day timeframe the seawater will be contained in the pipeline. This will allow the biocide to remain effective and accounts for anticipated degradation throughout the flooded timeframe.

2.2 Neutralization of THPS and Discharge

THPS-based biocides can be broken down to very low concentrations. Introduction of hydrogen peroxide quickly reduces the concentration of the THPS-based biocide. Effluent from the

dewatered pipelines will be stored on a vessel and treated with hydrogen peroxide to reduce residual THPS concentrations to below 4.4 mg/l, as explained below.

At the receiving vessel, a 3 percent solution of hydrogen peroxide will be introduced to the effluent water to neutralize any remaining THPS-based biocide. The quantity of hydrogen peroxide necessary to neutralize the biocide will depend on the concentration of the residual biocide at the time of effluent collection. Field measurements taken at the vessel, where the neutralization agent will be added, will be conducted to determine the current concentration of the biocide. Hydrogen peroxide will be added to the seawater based on manufacturer recommendations: 4 parts 3-percent hydrogen peroxide to 1 part 35-percent THPS biocide. The hydrogen peroxide will be injected into the discharge piping immediately upon release from the pipeline and prior to collection in the first holding tank.

The initial discharge stream, containing the neutralizing hydrogen peroxide, will be captured in a series of ballast tanks within the dewatering vessel. The volume of these tanks will be at least 150,000 gallons to permit capture of one hour of flow at a 2,400 gpm flow rate. A sample of treated water from the last tank prior to overboard discharge at Sampling Point C, as shown on Figure 4, will be tested to confirm that the target THPS level (<4.4 mg/l of THPS) has been achieved as well as proper pH and DO levels. If the target residual THPS level has been achieved, then the treated water will be allowed to flow overboard. If the target residual THPS level has not been achieved, the discharge flow will be diverted into an additional tank(s) and additional hydrogen peroxide will be injected to achieve neutralization and the water will be tested again to ensure that the target level is reached and overboard discharge can occur.

Once the appropriate hydrogen peroxide dosing rate is confirmed the removal of water from the pipe, treatment in the tank, and overboard discharge will proceed on an ongoing basis. Although expected to be a homogeneous mixture, the concentration of THPS leaving the pipeline will be monitored on an hourly basis. The discharge flow rate and the injection rate of hydrogen peroxide will be constantly monitored. A splash plate or other aerating device will be used during the neutralization and/or discharge to further increase the dissolved oxygen concentration of the effluent.

2.3 Discharge from Pipe Tie-Ins

Flanged pipe tie-ins will be required at each end of the Pipeline Lateral and each Flowline, for a total of six tie-ins. The locations of the tie-ins are identified in Table 1 on the following page and shown in Figure 1.

During the installation of the flanged tie-in assemblies, the pipeline flooded with treated seawater must be opened, thereby exposing the local area to a minimum amount of un-neutralized chemically treated water. The flooding of the pipeline with treated seawater results in equalized pressure to the water depth, minimizing the potential for release of un-neutralized floodwater at each tie-in. In addition to being at equalized pressure, the water in the pipeline will be at ambient temperature and in a static (no flow) condition. The tie-in construction may take up to seven days.

Table 1 Pipeline Lateral and Flowline Tie-in Locations

Tie-in	Latitude	Longitude
Pipeline Lateral - Hot Tap Tie-In (MP 0)	42º 28’ 46”	70º 46’ 45”
Pipeline Lateral - Collocated Tie-in Assembly (MP16.1)	42º 24’ 01”	70º 36’ 17”
Flowline A – Tie-in to Pipeline Lateral (MP 0)	42º 24’ 02”	70º 36’ 17”
Flowline A – Buoy end (MP 0.75)	42º 23’ 40”	70º 35’ 38”
Flowline B – Tie-in to Pipeline Lateral (MP 0)	42º 24’02”	70º 36’ 19”
Flowline B – Buoy end (MP 0.56)	42º 23’ 59”	70º 36’ 54”

To mitigate the potential for discharging biocide treated seawater as the pipeline and flowlines are tied in, a temporary closure plate will be placed and secured over the open-ended flange. The temporary closure will remain in place through-out the tie-in installation duration to the greatest extent possible. This procedure will be followed at each tie-in along the Pipeline Lateral and each tie-in on both flowlines.

3.0 RECEIVING WATER DESCRIPTION

The state waters portion of Massachusetts Bay has been designated as a Class SA water body by the Massachusetts Department of Environmental Protection (MassDEP). The Massachusetts Surface Water Quality Standards [314 CMR 4.05(4)(a)] state that *“Class SA waters are designated as an excellent habitat for fish, other aquatic life, and wildlife, and for primary and secondary contact recreation. In approved areas they shall be suitable for shellfish harvesting without depuration (Open Shellfish Areas). These waters shall have excellent aesthetic value”* Massachusetts Bay is identified in 314 CMR 4.06, Table 28, as approved as an open shellfish area.

The waters of Massachusetts Bay beyond state jurisdiction are federal waters and are not subject to state water quality standards, but are subject to the federal ocean discharge criteria as provided in section 403 of the Clean Water Act (CWA). Consideration of contingent discharges from outfalls 002 and 003 in regards to the federal ocean discharge criteria are discussed in section 10.0 of this fact sheet.

4.0 LIMITATIONS AND CONDITIONS

The proposed effluent limitations and monitoring requirements may be found in the draft NPDES permit.

5.0 PERMIT BASIS: STATUTORY AND REGULATORY AUTHORITY

5.1 General Requirements

The CWA prohibits the discharge of pollutants to waters of the United States without a National Pollutant Discharge Elimination System (NPDES) permit unless such a discharge is otherwise authorized by the CWA. The NPDES permit is the mechanism used to implement technology and water quality-based effluent limitations and other requirements including monitoring and reporting. The draft NPDES permit was developed in accordance with various statutory and

regulatory requirements established pursuant to the CWA and applicable State regulations. The regulations governing the EPA NPDES permit program are generally found at 40 CFR Parts 122, 124, 125, and 136. In this permit EPA considered (a) technology-based requirements and (b) water quality-based requirements when developing the permit limits.

5.2 Technology Based Requirements

Subpart A of 40 CFR Part 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under Section 301(b) of the CWA, included the application of EPA promulgated effluent limitations and Best Professional Judgment (BPJ), 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 Part 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 available (BAT) for toxic and non-conventional pollutants. In general, technology-based effluent guidelines for non-POTW facilities must have been 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 flood water discharges from underwater pipeline construction projects.

5.3 Water Quality-Based Requirements

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

Under Section 301(b)(1)(C) of the CWA and EPA regulations, NPDES permits must contain effluent limits more stringent than technology-based limits where more stringent limits are necessary to maintain or achieve state or federal water quality standards.

Water quality standards consist of three parts: (1) beneficial designated uses for a water-body or a segment of a water-body; (2) numeric and/or narrative water quality criteria sufficient to protect the assigned designated use(s); and (3) anti-degradation requirements to ensure that once a use is attained it will not be degraded. The Massachusetts Surface Water Quality Standards, found at 314 CMR 4.00, include these elements. The state will limit or prohibit discharges of pollutants to surface waters to assure that surface water quality standards of the receiving waters are protected and maintained or attained. These standards also include requirements for the regulation and control of toxic constituents and require that EPA criteria, established pursuant to Section 304(a) of the CWA, shall be used unless site specific criteria are established.

The draft permit must limit any pollutant or pollutant parameter (conventional, non-conventional, and toxic) that is or may be discharged at a level that causes or has the “reasonable potential” to

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

6.0 EXPLANATION OF THE PERMIT'S EFFLUENT LIMITATION(S)

6.1 Permitted Outfalls

The draft permit authorizes a total volume of flow (see section 6.2.1) from three different outfall locations. Regardless of which outfall location is used, hydrogen peroxide treated effluent will be pumped from the second holding tank on the treatment vessel into the ocean via a diffuser submerged 20 feet below the water surface, as shown in Figure 4.

Since the process, source water and additives are all the same, regardless of which outfall is used, the effluent limits and conditions in the draft permit are identical for outfalls 001, 002 and 003. Therefore, the derivation of effluent limits discussed below applies to all three outfalls.

6.2 Derivation of Effluent Limits

6.2.1 Flow

The total volume of treated effluent is limited in the draft permit to that required to fill each pipe one time. The maximum flow of 2,400 gpm may be estimated using pump capacity and hours of operation.

6.2.2 Total Suspended Solids (TSS)

Massachusetts Water Quality Standards specify in 310 CMR 4.05(4)(a)5 that Class SA coastal and marine water be "*free from floating, suspended and settleable solids in concentrations or combinations that would impair any use assigned to this class, that would cause aesthetically objectionable conditions, or that would impair the benthic biota or degrade the chemical composition of the bottom"*. The Multi-Sector General Permit for Industrial Activities (MSGP) (Federal Register/Vol 65 No 210/Monday, October 20, 2000/pp 64766-7), includes a benchmark of 100 mg/l for TSS. The fact sheet for the MSGP states: "The benchmarks are also viewed by EPA as a level that, if below, a facility presents little potential for water quality concern".

Since there are not National Effluent Guidelines (NEGs) promulgated for discharges associated with the construction of gas pipelines, the permit writer is authorized to under Section 402(a)(1) of the CWA to establish effluent limitations on a case-by-case basis using Best Professional Judgement (BPJ). Based on BPJ, the draft permit includes an effluent limit of 100 mg/l TSS as well as requirements that the holding tanks be inspected and cleaned prior to use, as described in Part I.B.3 of the draft permit.

6.2.3 Tetrakis Hydroxymethyl Phosphonium Sulfate (THPS)

The manufacturers of biocides containing THPS have provided whole effluent toxicity (WET)

data for THPS and its principal metabolite, tris hydroxymethyl phosphine oxide (THPO). A summary of the results are presented in Attachment A. Of species evaluated for discharges into Massachusetts coastal waters, mysid shrimp (*mysidopsis bahia*), sheepshead minnow (*cyprinodon variegates)*, and *menidia beryllina*, are used as toxicity indicators organisms. Of these, the lowest threshold observed was the No Observed Adverse Effect Concentration (NOAEC) concentration for *mysidopsis bahia* of 12.5 mg/l.

The byproduct of the hydrogen peroxide treated biocide is tris hydroxymethyl phosphine oxide (THPO). THPO has been shown to have very low toxicity to aquatic organisms except at very high concentrations (see Attachment A). It should be noted that the durations for all the whole effluent toxicity tests listed in Attachment A are greater than the proposed 14 hour discharge period. Very little dilution is required to lower the THPS concentration to levels where no adverse effects are observed for the most sensitive species tested.

TRC Environmental Corporation conducted rudimentary dilution modeling using CORMIX-GI Version 4.01b. The results were included in the NPDES permit application submittal. The modeling conducted by TRC demonstrated rapid near field dilution with a dilution factor exceeding 15:1 at slack tide.

The permittee had requested a maximum daily THPS effluent limit of 12.5 mg/l to meet the lowest NOAEC threshold for toxicity indicator organisms in coastal waters. However, since Algonquin was able to meet the more stringent effluent limit of 4.4mg/l in the 2003 construction of the Hubline, the draft permit includes an instantaneous maximum limit of 4.4 mg/l for THPS. The permittee is required to sample hourly through the discharge using the sampling protocol. The effluent limit and sampling requirements are based on the application of the Best Available Technology and Best Professional Judgement (BPJ).

6.2.4 Dissolved Oxygen (DO)

Ambient concentrations of DO may be reduced after extended storage in the pipelines. In addition to the oxidizing effect the hydrogen peroxide will have, a splash plate or other aerating device will be used during the neutralization and/or discharge to increase the DO levels. The DO effluent limit in the draft permit of no less than 6.0 mg/l is consistent with the Massachusetts Surface Water Quality Standards (314 CMR 4.05(4)(a)) for Class SA waters.

6.2.5 pH

The pH range of 6.5 to 8.5 standard units (s.u.) is based on the Massachusetts Surface Water Quality Standards (314 CMR 4.05(4)(a)) for the SA waters at all outfalls.

7.0 ESSENTIAL FISH HABITAT

Under the 1996 Amendments (PL 104-267) to the Mangnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. § 1801 et seq.(1998)), EPA is required to consult with the National Marine Fisheries Service (NMFS) if EPA's proposed actions that it funds, permits, or undertakes "may adversely impact any essential fish habitat" (EHF) 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 of physical disruption), indirect (e.g., loss of prey, reduction in species' fecundity), site-specific or habitat-wide impacts, including individual, cumulative, or synergistic consequences of actions.

Essential fish habitat is only designated for fish species for which federal Fisheries Management Plans exist. EFH designations for New England were approved by the U.S. Department of Commerce on March 3, 1999. Listings of the essential fish habitat designations for the 10 minute by 10 minute square coordinates containing the discharge locations for Outfalls 001, 002 and 003 are provided in Attachment B.

The effluent limitations and other permit requirements identified in this fact sheet are designed to be protective of all aquatic species, including those with designated EFH. EPA has determined that a formal EFH consultation with NMFS is not required because the proposed discharge will not adversely impact the EFH.

8.0 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 the protection of 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 & 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.

The following species are known to inhabit (seasonally) the Massachusetts Bay in the area of the proposed discharge: North Atlantic right whale, blue whale, humpback whale, fin whale, sei whale, Kemp's ridley sea turtle, leatherback sea turtle, loggerhead sea turtle, hawksbill sea turtle and green sea turtle.

EPA has engaged in formal consultation with NMFS in relation to its permits for the proposed LNG terminal project, including this NPDES permit for the pipeline construction-related treated seawater discharges. This formal ESA consultation has been conducted with the United States Maritime Administration (MARAD) as the "lead agency," given its role in permitting the LNG terminal under the Deepwater Port Act, and has been carried out in conjunction with the development of the Environmental Impact Statement (EIS) for the project under National Environmental Policy Act. Under the Deepwater Port Act, the United States Coast Guard was the lead agency for the EIS development. EPA will continue to coordinate and consult with NMFS as necessary as EPA develops the final NPDES permit.

In addition, the permittee consulted with the NMFS during the planning stages of this project to ascertain the optimum time frame for discharge so as to minimize impacts to marine and anadromous species. The proposed discharge is to an area that offers high immediate dilution. The neutralized biocide treated flood water will display low toxicity, as evidenced by the whole effluent toxicity test data introduced previously. Therefore, the conditions in the draft permit should be protective of the most sensitive species.

9.0 NATIONAL MARINE SANCTUARIES ACT

Section 304(d) of the National Marine Sanctuaries Act (NMSA), 16 U.S.C. § 1434(d), requires federal agencies to consult with the Secretary of Commerce, through the National Oceanic and Atmospheric Administration (NOAA), regarding any action or proposed action that is likely to

destroy, cause the loss of, or injure any sanctuary resource. The proposed LNG terminal is in the vicinity of the Stellwagen Bank National Marine Sanctuary (SBNMS). For the SBNMS, the consultation requirement is triggered by any federal or federally licensed activity that "may affect sanctuary resources." NOAA determined that the LNG terminal project "may affect" SBNMS resources and initiated the NMSA consultation process with the MARAD and USCG as the lead federal agencies on behalf of themselves and other agencies, including EPA. This consultation has been carried out in conjunction with the EIS development for the LNG terminal projects, as discussed above. If NOAA determines that a proposed action is likely to destroy, cause the loss of, or injure marine sanctuary resources, then it shall develop and recommend reasonable and prudent alternatives for the Federal agency to implement to protect the sanctuary resources.

NOAA determined that some aspects of the LNG terminal project, but not the treated seawater discharges that are the subject of this permit, are likely to destroy, cause the loss of, or injure sanctuary resources. As a result, in a July 3, 2006, letter, NOAA recommended reasonable and prudent alternatives to the MARAD and USCG which also apply to EPA "insofar as . . . [the alternatives] relate[] to . . . [EPA's] responsibilities as [a] federal action agenc[y] for this project." EPA does not believe that any of the reasonable and prudent alternatives relate to EPA's responsibilities and also does not believe that the discharges that are the subject of this permit are likely to destroy, cause the loss of, or injure any sanctuary resources.

10.0 OCEAN DISCHARGE CRITERIA

Outfalls 002 and 003 have been determined to be located in ocean waters as defined by 40 CFR §125 Subpart M. These discharge criteria require EPA to examine a number of specific endpoints, including marine sanctuaries, special aquatic sites, endangered species, commercial fishing and marine water quality criteria. EPA must make a determination on whether the permitted discharge will cause unreasonable degradation in any of the previously mentioned endpoints. Outfalls 002 and 003 are strictly contingency discharge locations, so it is quite possible that no discharge will occur in ocean waters. However, if a discharge were to occur, it will be a one time event of a relatively small volume (86,000 gallons) that has been treated to neutralize the active ingredients in the biocide. EPA has determined that due to the small volume and the anticipated treatment, discharges out of outfalls 002 and 003 will not contribute to unreasonable degradation of the ocean environment.

11.0 STATE CERTIFICATION REQUIREMENTS

EPA may not issue a permit in the Commonwealth of Massachusetts unless the commissioner of MassDEP certifies that the effluent limitations contained in the permit are stringent enough to assure that the discharge will not cause the receiving water to violate State Water Quality Standards. The staff of the MassDEP has reviewed the draft permit. EPA has requested state certification for this permit pursuant to 40 C.F.R. §124.53 and expects that the draft permit will be certified.

12.0 COMMENT PERIOD, HEARING REQUESTS, AND PROCEDURES FOR FINAL ISSUANCE

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 Ellen Weitzler, U.S. EPA, Office of Ecosystem Protection, Industrial Permits Branch (CIP), 1 Congress Street, Suite 1100, Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing for a public hearing to consider the Draft Permit to EPA and the State Agency. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public meeting may be held if the criteria stated in 40 C.F.R. § 124.12 are satisfied. In reaching a final decision on the Draft Permit, the EPA will respond to all significant comments and make these responses available to the public at EPA's Boston office.

Following the close of the comment period, and after any public hearings, if such hearings are held, the EPA will issue a Final Permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within 30 days following the notice of the Final Permit decision, any interested person may submit a petition for review of the permit to EPA's Environmental Appeals Board consistent with 40 C.F.R. § 124.19.

13.0 EPA AND MASSDEP CONTACT

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:

Ellen Weitzler
Industrial Permits Branch
U.S. Environmental Protection Agency
1 Congress Street, Suite 1100 (CIP)
Boston, MA 02114-2023
Telephone: (617) 918-1582
Email: weitzler.ellen@epa.gov

or

Paul M. Hogan
MassDEP
Division of Watershed Management
627 Main Street
Worcester, MA 01608
Telephone: (508) 767-2796
Email: Paul.Hogan@state.ma.us

_____

Stephen S. Perkins, Director
Office of Ecosystem Protection
U.S. Environmental Protection Agency

ATTACHMENT A

Summary of THPS Whole Effluent Toxicity Tests

The Magnicide 535™ manufacturer, Baker Petrilite reported the following results for WET tests performed using a product containing 75% active ingredient THPS. The data is adjusted to present the data for 35% concentrate equivalent to the concentration of Maganicide.

	Organism	WET Test	Result
Algae	*Skeletonema constatum*	EC_{50}[1] (Growth Rate)	0.34 mg/l THPS
Algae	*Skeletonema constatum*	EC_{50} (Growth Rate)	4479 mg/l THPO
Invertebrate	*Arcatia tonsa*	48 hour LC_{50}[2]	1.29 mg/l THPS
Invertebrate	*Arcatia tonsa*	48 hour toxicity	>2143 mg/l THPO
Invertebrate	*Mytilus edulis*	EC_{50}	>1869 mg/l THPO
Invertebrate	*Arenicola marina*	LC_{50}	>2143 mg/l THPO
Invertebrate	*Corophium volutator*	LC_{50}	4659 mg/kg THPS
Invertebrate	Brown shrimp	48 hour LC_{50}	729 mg/l THPS
Invertebrate	Mysid shrimp	96 hour LC_{50}	15.6 mg/l THPS
Invertebrate	Oyster shell deposition	EC_{50}	3.4 mg/l THPS
Fish	Juvenile plaice	96 hour LC_{50}	184 mg/l THPS
Fish	Sheepshead minnow	96 hour LC_{50}	154 mg/l THPS

See Page A-2 for explanation of footnotes

The THPS manufacturer Rhodia reported the following results for WET tests performed using a product containing 35% THPS.

	Organism	**WET Test**	**Result**
Vertebrate	*Cyprinodon variegates*	96 hour LC_{50} (35% THPS)[3]	154 mg/l THPS
Vertebrate	*Cyprinodon variegates*	NOAEC[4] (35% THPS)	87 mg/l THPS
Vertebrate	*Menidia beryllina*	48 hour LC_{50} (35% THPS)	209 mg/l THPS
Vertebrate	*Menidia beryllina*	NOAEC (35% THPS)	62.5 mg/l THPS
Invertebrate	*Mysidopsis bahia*	48 hour LC_{50} (35% THPS)	34.2 mg/l THPS
Invertebrate	*Mysidopsis bahia*	NOAEC (35% THPS)	12.5 mg/l THPS
Invertebrate	*Crassostrea virginica*	48 hour LC_{50} (35% THPS)	3.4 mg/l THPS
Invertebrate	*Crassostrea virginica*	NOAEC (35% THPS)	1.4 mg/l THPS
Invertebrate	*Arcatia tonsa*	48 hour LC_{50} (35% THPS)	3.4 mg/l THPS
Fish	Juvenile plaice	96 hour LC_{50}	86 mg/l THPS
Invertebrate	*Corophium volutator*	10 day LC_{50}	2174 mg/kg
Invertebrate	*Corophium volutator*	10 day LC_{50} (35% THPS)	3595 mg/kg
Invertebrate	*Crangon crangon*	96 hour LC_{50}	340 mg/l THPS
Phytoplankton	*Skeletonoma costatum*	72 hour EC_{50}	0.16 mg/l THPS
Invertebrate	*Mytilus edulis*	5 day EC_{50}	>872 mg/l THPS
Invertebrate	*Arenicola marina*	10 Day NOEC	>1000 mg/l THPS
Phytoplankton	*Skeletonoma costatum*	72 hour LC_{50}	2090 mg/kg THPS

Footnotes:

1. EC_{50} – Median effective concentration. The concentration of THPS that effects 50% of the test animals in the given time.
2. LC_{50} – Median lethal concentration. The concentration of THPS that kills 50 % of the test animals in the given time.
3. 35% THPS – Testing was performed on the 75% THPS concentration and the information was adjusted to present the data for 35% concentrated equivalent to the concentration of Magnicide.
4. NOAEC – No Observed Adverse Effect Concentration

ATTACHMENT B

Summary of Essential Fish Habitat (EFH) Designation

Outfall 001 - 10' x 10' Square Coordinates:

Boundary	North	East	South	West
Coordinate	42° 30.0' N	70° 40.0' W	42° 20.0' N	70° 50.0' W

Square Description (i.e. habitat, landmarks, coastline markers): Atlantic Ocean waters within Massachusetts Bay within the square one square north of Scituate, MA., and Cohasset, MA., and two squares east of Boston, MA. This is the beginning/ end of the Boston Harbor Shipping Traffic Lanes, and encompasses a discontinued dumping ground right at the entrance to the outbound shipping lane, and a disposal area on the middle of the northern boundary of the square along with another discontinued dumping ground just south of that disposal area. Also, the square encloses most of the precautionary pilot area. In addition, towards the middle of the square, the sewage outfall pipe diffusers from Deer Island, nine miles west, open up into the Bay. Finally, on the northwest corner are the waters within Marblehead Channel.

Species	Eggs	Larvae	Juveniles	Adults
Atlantic cod *(Gadus morhua)*	X	X	X	X
haddock *(Melanogrammus aeglefinus)*	X	X	X	
pollock *(Pollachius virens)*	X	X	X	X
whiting *(Merluccius bilinearis)*	X	X	X	X
offshore hake *(Merluccius albidus)*				
red hake *(Urophycis chuss)*	X	X	X	X
white hake *(Urophycis tenuis)*	X	X	X	X
redfish *(Sebastes fasciatus)*	n/a	X	X	X
witch flounder *(Glyptocephalus cynoglossus)*	X	X		X
winter flounder *(Pleuronectes americanus)*	X	X	X	X
yellowtail flounder *(Pleuronectes ferruginea)*	X	X	X	X
windowpane flounder *(Scopthalmus aquosus)*	X	X	X	X
American plaice *(Hippoglossoides platessoides)*	X	X	X	X
ocean pout *(Macrozoarces americanus)*	X	X	X	X
Atlantic halibut *(Hippoglossus hippoglossus)*	X	X	X	X
Atlantic sea scallop *(Placopecten magellanicus)*	X	X	X	X
Atlantic sea herring *(Clupea harengus)*		X	X	X
monkfish *(Lophius americanus)*	X	X		
bluefish *(Pomatomus saltatrix)*			X	X
long finned squid *(Loligo pealei)*	n/a	n/a	X	X
short finned squid *(Illex illecebrosus)*	n/a	n/a	X	X
Atlantic butterfish *(Peprilus triacanthus)*	X	X	X	X
Atlantic mackerel *(Scomber scombrus)*	X	X	X	X
summer flounder *(Paralicthys dentatus)*				
scup *(Stenotomus chrysops)*	n/a	n/a	X	X
black sea bass *(Centropristus striata)*	n/a			
surf clam *(Spisula solidissima)*	n/a	n/a	X	X
ocean quahog *(Artica islandica)*	n/a	n/a		
spiny dogfish *(Squalus acanthias)*	n/a	n/a	X	X
tilefish *(Lopholatilus chamaeleonticeps)*				
bluefin tuna *(Thunnus thynnus)*			X	X

Summary of Essential Fish Habitat (EFH) Designation

Outfall 002 and Outfall 003 - 10' x 10' Square Coordinates:

Boundary	North	East	South	West
Coordinate	42° 30.0' N	70° 30.0' W	42° 20.0' N	70° 40.0' W

Square Description (i.e. habitat, landmarks, coastline markers): Waters within the Atlantic Ocean within Massachusetts Bay within the square one square northeast of Scituate, MA. and Cohasset, MA., and three squares east of Boston, MA. There are three overlapping dump sites within this square, two of which are for dredged material, and one of which is a discontinued site that had industrial wastes dumped in it, all of which are approximately in the middle of the square. Also, on the southwest corner, part of the Boston Harbor Shipping Traffic Lane is affected.

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

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

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF ECOSYSTEM PROTECTION
REGION I
BOSTON, MASSACHUSETTS 02114

JOINT PUBLIC NOTICE OF A DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT TO DISCHARGE INTO THE WATERS OF THE UNITED STATES UNDER SECTION 301 AND 402 OF THE CLEAN WATER ACT (THE "ACT"), AS AMENDED, AND REQUEST FOR STATE CERTIFICATION UNDER SECTION 401 OF THE ACT.

DATE OF NOTICE: 1/25/07 to 2/23/07

PERMIT NUMBER: MA0040240

PUBLIC NOTICE NUMBER: MA-009-07

NAME AND MAILING ADDRESS OF APPLICANT:

Mr. Greg Kenney
Northeast Gateway Pipeline Lateral Project
Algonquin Gas Transmission, LLC
890 Winter Street
Waltham, MA 02451
and
Mr. Robert Bryngelson
Northeast Gateway Energy Bridge, LLC
1330 Lake Robbins Drive, Suite 270
The Woodlands, TX 77380

NAME AND ADDRESS OF THE FACILITY WHERE DISCHARGE OCCURS:

Massachusetts Bay, Essex County, MA
Massachusetts Bay, Federal Waters

RECEIVING WATER: Massachusetts Bay

RECEIVING WATER CLASSIFICATION: Class SA

PREPARATION OF THE DRAFT PERMIT:
The U.S. Environmental Protection Agency, (EPA) and the Massachusetts Department of Environmental Protection (MassDEP) have cooperated in the development of a permit for the above identified facility. The effluent limits and permit conditions imposed have been drafted to assure that State Water Quality Standards and provisions of the Clean Water Act will be met. EPA has formally requested that the State certify this draft permit pursuant to Section 401 of the Clean Water Act and expects that the draft permit will be certified.

INFORMATION ABOUT THE DRAFT PERMIT:

The draft permit is in regards to a one time discharge of 1.99 million gallons of seawater treated with Tetrakis hydoxymethyl phosphonium sulfonate (THPS) biocide and neutralized with hydrogen peroxide. The discharge is the result of construction of three new natural gas pipelines to service a new liquefied natural gas port in Massachusetts Bay.

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

Ellen Weitzler
US EPA
1 Congress Street, Suite 1100 (CIP)
Boston, MA 02114-2023
Telephone: (617) 918-1582

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

PUBLIC COMMENT AND REQUEST FOR PUBLIC HEARING:

All persons, including applicants, who believe any condition of this draft permit is inappropriate, must raise all issues and submit all available arguments and all supporting material for their arguments in full by February 23, 2007, to the U.S. EPA, 1 Congress Street, Suite 1100, Boston, Massachusetts 02114-2023. Any person, prior to such date, may submit a request in writing to EPA and the State Agency for a public hearing to consider this draft permit. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty days public notice whenever the Regional Administrator finds that response to this notice indicates significant public interest. In reaching a final decision on this draft permit the Regional Administrator will respond to all significant comments and make the responses available to the public at EPA's Boston office.

FINAL PERMIT DECISION:

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

Glenn Haas, Director
DIVISION OF WATERSHED MANAGEMENT
MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION

Stephen S. Perkins, Director
OFFICE OF ECOSYSTEM PROTECTION
ENVIRONMENTAL PROTECTION AGENCY

NPDES PART II STANDARD CONDITIONS
(January, 2007)

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PART II. A. GENERAL REQUIREMENTS

1. Duty to Comply

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

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

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

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

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

2. Permit Actions

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

3. Duty to Provide Information

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

4. Reopener Clause

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

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

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

5. Oil and Hazardous Substance Liability

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

6. Property Rights

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

7. Confidentiality of Information

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

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

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

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

8. Duty to Reapply

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

9. State Authorities

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

10. Other Laws

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

PART II. B. OPERATION AND MAINTENANCE OF POLLUTION CONTROLS

1. Proper Operation and Maintenance

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

2. Need to Halt or Reduce Not a Defense

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

3. Duty to Mitigate

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

4. Bypass

a. Definitions

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

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

b. Bypass not exceeding limitations

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

c. Notice

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

d. Prohibition of bypass

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

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

5. Upset

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

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

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

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

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

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

PART II. C. MONITORING REQUIREMENTS

1. Monitoring and Records

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

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

c. Records of monitoring information shall include:

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

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

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

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

2. Inspection and Entry

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

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

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

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

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

PART II. D. REPORTING REQUIREMENTS

1. Reporting Requirements

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

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

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

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

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

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

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

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

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

e. Twenty-four hour reporting.

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

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

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

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

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

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

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

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

2. Signatory Requirement

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

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

3. Availability of Reports.

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

PART II. E. DEFINITIONS AND ABBREVIATIONS

1. Definitions for Individual NPDES Permits including Storm Water Requirements

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

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

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

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

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

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

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

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

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

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

Construction Activities - The following definitions apply to construction activities:

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

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

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

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

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

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

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

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

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

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

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

Discharge of a pollutant means:

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

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

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

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

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

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

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

EPA means the United States "Environmental Protection Agency".

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

NPDES means "National Pollutant Discharge Elimination System".

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

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

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

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

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

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

(a) Sewage from vessels; or

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Waters of the United States means:

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

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

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

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

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

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

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

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

(f) The territorial sea; and

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Feed crops are crops produced primarily for consumption by animals.

Fiber crops are crops such as flax and cotton.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Range land is open land with indigenous vegetation.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

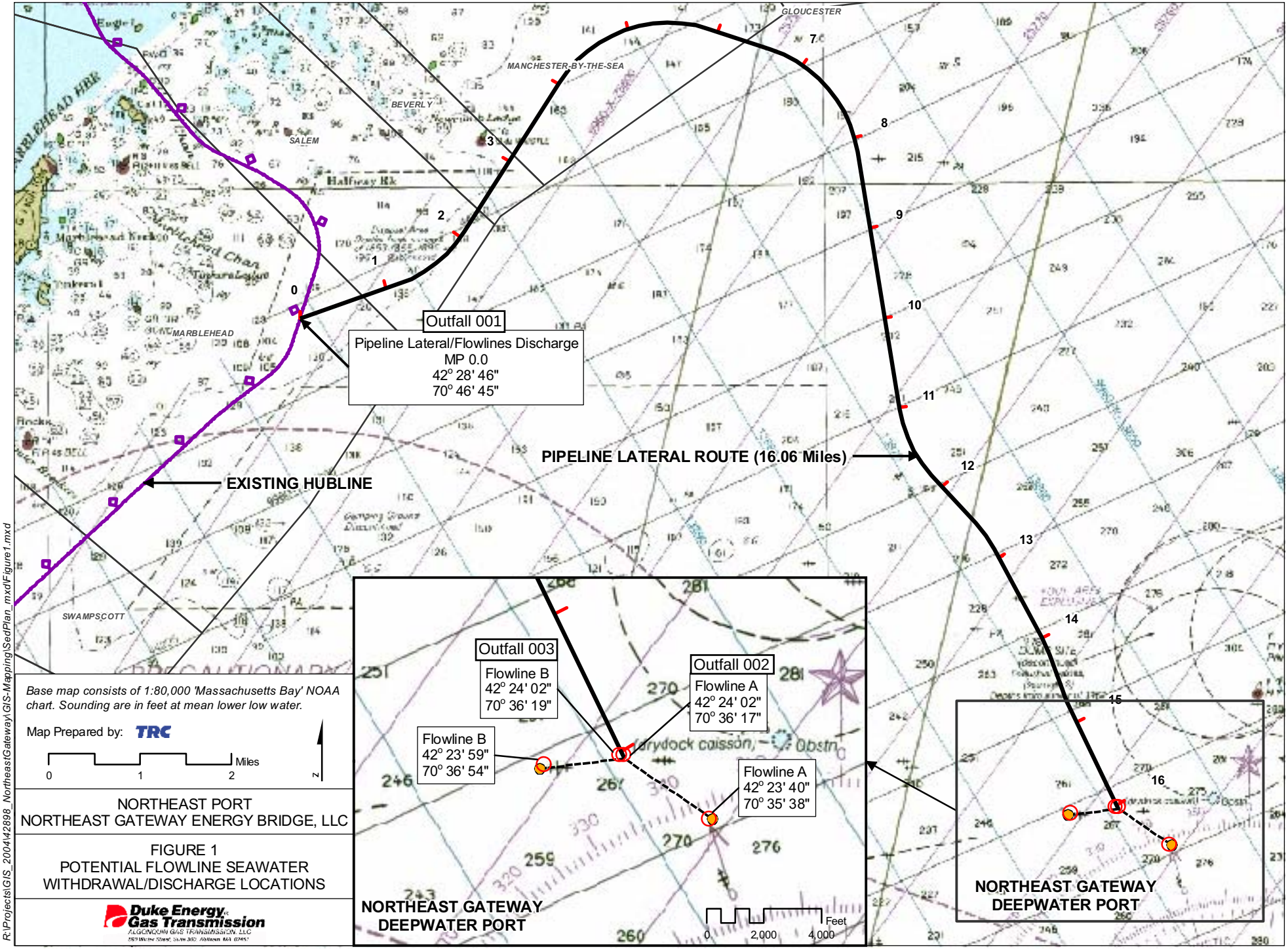
Wet scrubber is an air pollution control device that uses water to remove pollutants in the exit gas from a sewage sludge incinerator stack.

3. Commonly Used Abbreviations

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

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

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



Base map consists of 1:80,000 'Massachusetts Bay' NOAA chart. Sounding are in feet at mean lower low water.

Map Prepared by: TRC

Miles
0
1
2
N

NORTHEAST PORT
NORTHEAST GATEWAY ENERGY BRIDGE, LLC

FIGURE 1
POTENTIAL FLOWLINE SEAWATER
WITHDRAWAL/DISCHARGE LOCATIONS

Duke Energy Gas Transmission
ALGONQUIN GAS TRANSMISSION, LLC

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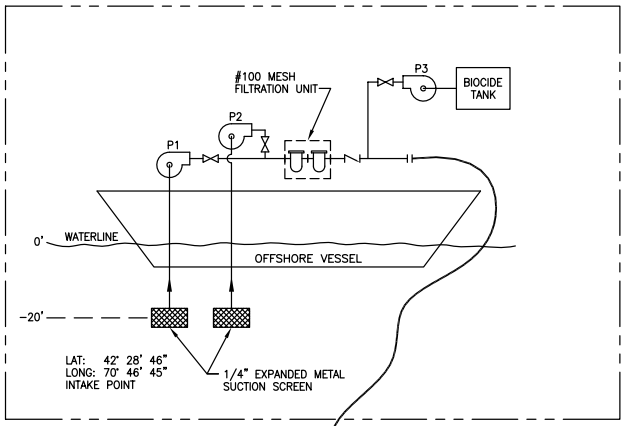
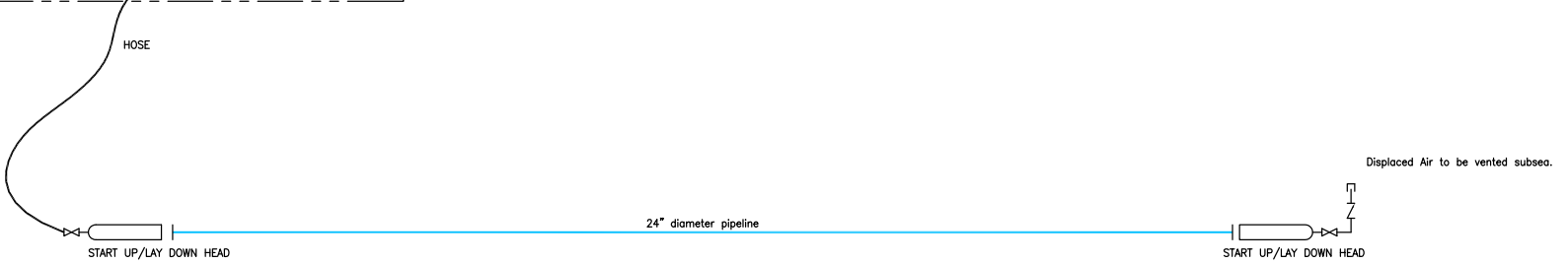
Primary Fill Vessel
(MP 0.0)





Notes:

1. The primary fill vessel may be located at either MP 0 or MP 16.1

PUMPS	
P1	6" CENTRIFUGAL PUMP (1200 GPM)
P2	6" CENTRIFUGAL PUMP (1200 GPM)
P3	POSITIVE DISPLACEMENT CHEMICAL INJECTION PUMP

NO.	REVISION	DATE	APPR.
			–
			–
			–
			–
A	ISSUED FOR PERMIT	9-25-06	–

Duke Energy Gas Transmission
Algonquin Gas Transmission, LLC
890 Winter St, Waltham, MA (617) 2544100

NORTHEAST GATEWAY PIPELINE
TYPICAL FLOODING OF PIPELINE
WITH BIOCIDE INJECTED SEAWATER

DRAWN BY: R.P.G	CHK'D. BY: M.G.S.
DATE: 8-24-06	APPRV. BY:

FIGURE 2 — REV A

09-25-06 9.12 04125\PERMIT 1 R.P.G.

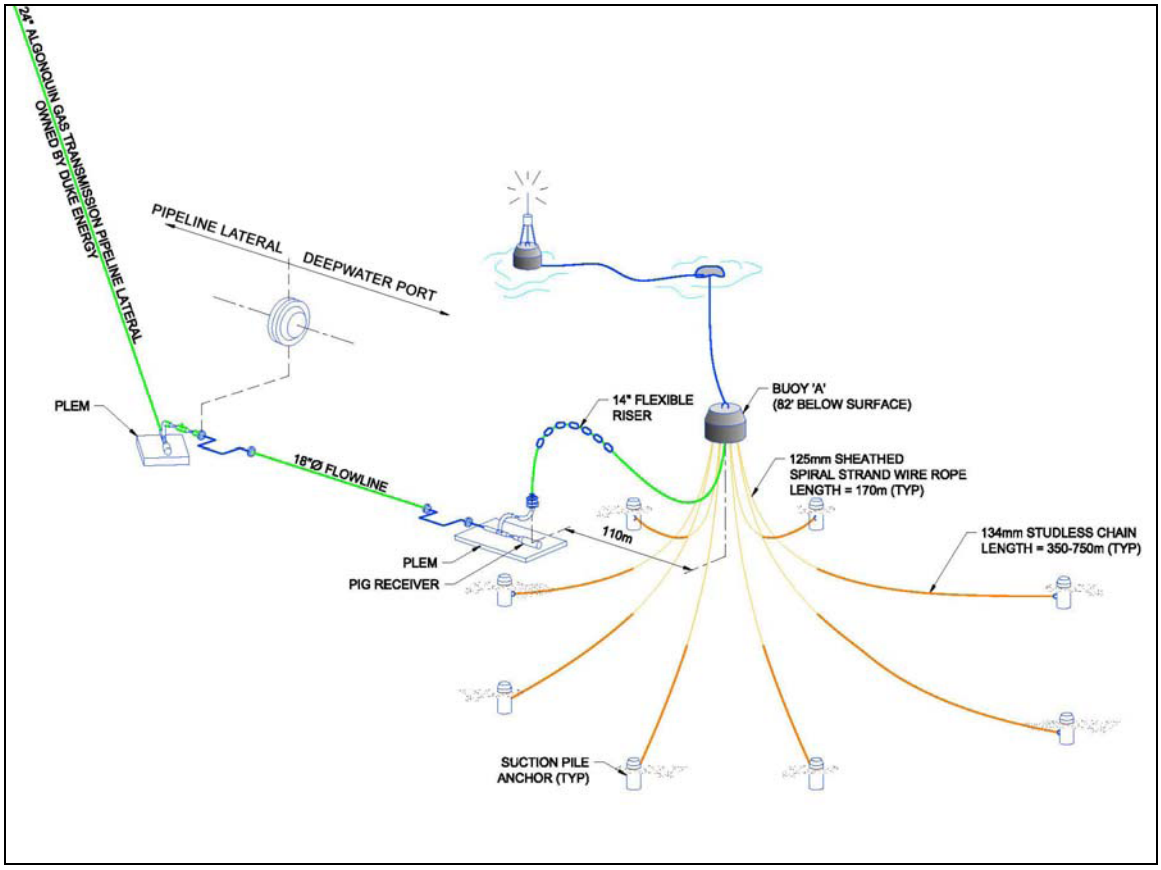
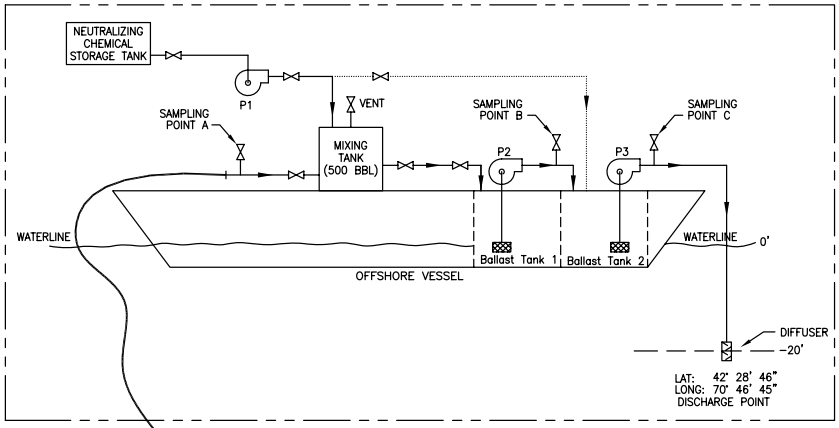
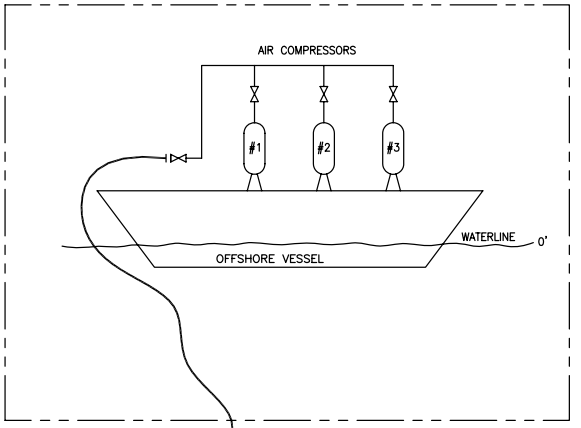


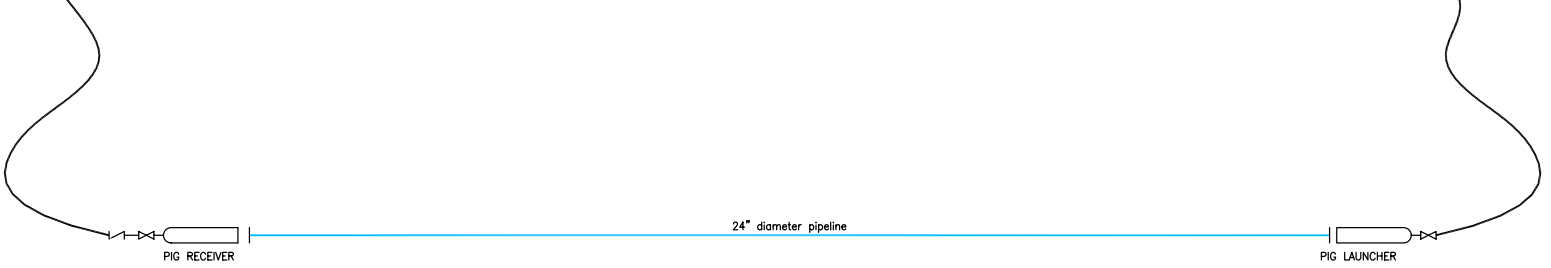
Figure 3. STL[TM]Buoy and General Flowline Arrangement (Source: NEG, 2005a)

Neutralization and Discharge Vessel (MP 0.0)



Dewatering Vessel (MP 16.1)





PUMPS	
P1	POSITIVE DISPLACEMENT CHEMICAL INJECTION PUMP
P2	CENTRIFUGAL PUMP (1200 to 2400 GPM)
P3	CENTRIFUGAL PUMP (1200 to 2400 GPM)

Duke Energy Gas Transmission

Algonquin Gas Transmission, LLC

DISPLACEMENT OF BIOCIDE INJECTED SEAWATER WITH COMPRESSED AIR
NEUTRALIZATION AND DISCHARGE SCHEMATIC

NO.	REVISION	DATE	APPR.
A	ISSUED FOR PERMIT	9-25-06	–

DRAWN BY: R.P.G. | CHK'D. BY: M.G.S.

DATE: 8-25-06 | APPRV. BY:

FIGURE 4

REV A

09-25-06 8:05 04125\PERMIT 1 R.P.G.