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

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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
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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