

RESPONSES TO SUPPLEMENTAL REQUESTS OF EPA

NOVEMBER 16, 2010

Quonset Business Park

In the August 25, 2010 submittal to USEPA, we referenced an area immediately south of Pier 1 at the Quonset Business Park. This area is described as approximately 27.5 acres. This area is hereinafter referred to as the “Magnolia Street Area”. USEPA has requested that we clarify the boundaries of this area and locate it on a map for reference purposes. The attached aerial photos note the location of the Magnolia Street Area.

In addition to Pier 1 and Pier 2, and Magnolia Street Area, there is unimproved land between the Quonset Point Airport and the area immediately to the south of Pier 1; this area is referred to as the “Broadway Street Area”, and is also shown on the attached aerial photos. Although considered, the Broadway Street Area was not explicitly mentioned within the August 25, 2010 submission to USEPA and is deemed impracticable for the following reasons:

Site Control/Site Availability: As outlined for other areas at the Quonset Business Park, as a general matter, the Commonwealth, in conjunction with the City of New Bedford, is seeking to own or operate a marine terminal to serve a primary purpose of support for the offshore renewable energy. It is highly unlikely that the State of Rhode Island would grant the necessary property rights to the Commonwealth, and the Commonwealth has no authority to take land in Rhode Island by eminent domain.

The Broadway Street Area is approximately 45 acres in size, and is adjacent to the shoreline; however, the area has as little as zero feet of water depth for its entire length, and does not have appropriate load bearing capacity. Thus, it could only be used as a staging area in conjunction with Pier 2, which is not available for the reasons set forth in the August 25, 2010 submittal to USEPA.

Disproportionate Environmental Impacts Compared to Other Alternatives: The creation of a terminal at the Broadway Street area was deemed to have significantly higher environmental impacts than other alternatives. The most practicable and likely the least environmentally damaging method for improving the Broadway Street area would be to extend the existing bulkhead to the south for approximately 1,200 linear feet. The northern 800 linear feet of shoreline at the Broadway Street Area are dominated by an approximately 6 acre salt marsh, which would be destroyed should the terminal be built in this location, the location of which can be seen on the attached aerial photos.

An extension of the bulkhead, to create 1,200 linear feet of berthing space, would fill approximately 15.7 acres of intertidal and shallow sub-tidal area, which is approximately three times the area that is proposed to be filled associated with an extension of South Terminal.

In order to create a boat basin to service the new facility, approximately 9 acres of shallow sub-tidal area would need to be dredged from between -1 and -6 MLLW to between -20 and -30 MLLW.

A turning basin would need to be dredged to allow deeper vessels to maneuver into the facility. This turning basin would need to be approximately 1.5 times the size of the typical international vessel (460 to 490 linear feet long, as stated within the August 25, 2010 submission to USEPA) that would service the facility. The estimated size of this turning basin is approximately 9.75 acres, which would dredge shallow sub-tidal areas to a depth of approximately -30 MLLW.

A channel would need to be dredged that would reach the existing channel that services Pier 1 and Pier 2. The estimated distance between the existing channel and the proposed terminal is approximately 4,000 linear feet. Subtracting the size of the boat basin (300 linear feet) and the approximately size of the turning basin (approximately 700 feet) results in approximately 3,000 linear feet of channel that would need to be dredged to -30 MLLW. It is currently anticipated that approximately 14 acres would need to be dredged to create such a channel. Should the facility be shifted to the south to avoid impacts to the salt marsh, the length of the channel would need to be extended, and the area impacted by dredging would increase.

In order to create the boat basin, turning basin, and channel, approximately 32.75 acres would need to be dredged, which is approximately twice the area that would need to be dredged for the proposed South Terminal extension.

Overhead Clearance: The center-line of the Quonset Point airport's main runway is located approximately 3,200 linear feet (less than one mile) from the southern boundary of the Magnolia Street Area. As stated earlier, in order for the facility to be practicable for full

assembly on land and the use of larger turbines, no overhead restrictions lower than 250 feet can be present either at the facility, or in the approach to the facility by water. As outlined within the Dry Dock #4 “Overhead Clearance” section within the August 25, 2010 submittal to USEPA, it was clear that the use of Dry Dock #4 (located less than one mile from Logan International Airport) for offshore renewable energy support would represent a Determination of Hazard or a Determination of Presumed Hazard to air traffic, based upon the FAA’s previous history of determinations within Massachusetts. It is currently unclear if the use of Pier 1, Pier 2, or the Magnolia Street Area would pose a severe restriction to air traffic as all three areas have been considered to be utilized by offshore renewable energy interests; however, it is extremely likely that use of areas within the Broadway Street Area (which would bring the cranes within 2,000 linear feet of the main runway at Quonset Point) would represent a Determination of Hazard or a Determination of Presumed Hazard to air traffic, and clearly would if the site were adjusted to the south to avoid impact to the salt marsh (which would bring the cranes within 1,200 linear feet or closer of the main runway at Quonset Point).

Ability to Beneficially Reuse Sand: Utilization of the Port of Davisville as a staging point for reuse of CAD Material is infeasible as the location would be beyond the control of the Commonwealth of Massachusetts, would require multiple handling, and would require transportation a great distance from the generation point (CAD Cells within New Bedford Harbor).

Jack-Up Barge Access.

Within the August 25, 2010 submittal to USEPA, it was stated that “It is unreasonable to expect that any other methodology could be utilized to secure the jack-up barges when the loads are placed upon the barges (anticipated be hundreds of tons of material)” due to the presence of Boston Blue Clay below Boston Harbor. USEPA requested additional information regarding the performance of jack-up barges within soft substrates, such as Boston Blue Clay. The following reference was consulted in gathering this additional material: Design Guides for Offshore Structures, Stability and Operation of Jack Ups, P. La Tirant and Ch. Perol, Editions Technip, Paris, France, 1993. This book focuses on offshore jack-up barge design and planning for oil drilling purposes. Oil drilling jack-up barges are significantly larger, have larger, truss-type support spuds, and are typically lighter for their size than the jack-up barges anticipated to be utilized to support the offshore renewable energy industry. The jack-up barges anticipated to be utilized for installation of offshore renewable energy facilities will be smaller, very heavily loaded, and have smaller spuds (i.e. more concentrated point loads) than those described within this reference; however, the design assumptions for oil-drilling jack-up barges are similar to those anticipated to be utilized at the proposed facility. The reference states that, although the penetration of the spuds “never exceeds a few meters in stiff soils, so that the uncertainty in the actual penetration has no effect on the choice of the jackup (leg length)”, in softer soils (such as Boston Blue Clay) “penetration can be as high as 20, 30, or 40 meters in soft soils, sometimes with a high uncertainty to be taken into account in choosing the leg length of the jackup”. This difference in uncertainty can result in significant settlement of jack-up barges, including uneven settlement that can result in failure of the barge. According to the reference, “The causes of

accidents of jackups in afloat, in preload, and in operation are many. Noble Denton classes (Sharples et al., 1990) jackup accidents into ten categories (listed in order of magnitude):

- Soils and foundations;
- Tow (including dry transportation);
- Blow-out and fire;
- Collision;
- Structural design;
- Action of storms or hurricanes;
- Fatigue of structural components;
- Jacking on installation or demobilization;
- Accidents due to war;
- Other (miscellaneous or unidentified).

The first three categories listed (foundations, towing, and blow-outs) by themselves account for two-thirds of the accidents observed.” Other potential accident causes notwithstanding, clearly the substrate located below the spuds is crucial for proper functioning of the jack-up barges. The reference goes further, in stating that jack-up barge accidents resulting from uncertain substrates result “most often from rapid punch-through of one (or more) spud during pre-loading” and “from various causes of foundation soil failure during operation”. Finally, the reference states that “the consequences of accidents or incidents due to the foundations range from minor (or no) damage to one leg to the total loss of the jackup.” Therefore, the presence of Boston Blue Clay (a relatively soft and potentially unsteady surface) below the jack-up barges, has the potential for minor to extremely damaging accidents. Thus, the presence of the Boston Blue Clay results in

the inability to utilize jack-up barges in Boston Harbor, making it infeasible to site the facility at Dry Dock #4 in Boston Harbor.

Union Wharf and Fairhaven Shipyard

USEPA has also sought additional information about the alternative of Union Wharf and Fairhaven Shipyard. As outlined within the August 25, 2010 submittal to USEPA, the existing total wharf and yard upland area at Union Wharf and Fairhaven Shipyard is approximately 9.14 acres. Although the parcels are contiguous, due to the lack of total wharf and yard upland area, a CDF would need to be constructed. The CDF would be constructed between the two existing docks at Union Wharf and Fairhaven Shipyard. The available area for filling between the two docks is 2.87 acres. Expansion of the facility to the east would be impracticable as the proposed facility would be bounded by Water Street on that side. Expansion of the facility to the west would impinge upon the Federal Navigation Project, which runs immediately to the west of both Union Wharf and Fairhaven Shipyard.

It is impracticable to expand the CDF to the north or south, due to the presence of private, water-dependent industries located to the north (Harbor Blue Seafoods) and the south (WJA Properties). These industries currently support commercial fishing in New Bedford Harbor, which is currently under significant pressure due to a lack of berthing space. In accordance with The Massachusetts Waterways Regulations (Chapter 91), any displaced water-dependent use would need to be relocated as stipulated within 310 CMR 9.36(4). It is unlikely that these facilities would be able to be relocated within the Port of New Bedford/Fairhaven without the creation of a new marine terminal.

After construction of the CDF, the total wharf and yard upland area would increase to approximately 12.01 acres, which does not meet the landside criteria for the creation of an off-shore renewable energy support facility (28 acres, as stated earlier).

Although Union Wharf and Fairhaven Shipyard are located within a water-dependent industrial area on Fairhaven Harbor, residential neighborhoods are located immediately to the east of the area. Additionally, local roads adjacent to the two sites are not configured to allow for the movement of large renewable energy components.

Therefore, due to the lack of wharf space onsite, and the lack of suitable upland areas nearby the site (and the unsuitability of adjacent roadways to transport components to upland locations, if any), there location is infeasible due to a lack of sufficient total wharf and yard upland area.

New Bedford Site Control

Finally, you asked for information about site control over the various parcels that comprise the south terminal. Attached is a map showing site ownership. The parcels that form the south terminal are numbered 263, 288, 53, 49, 48, 7, and 45. All of these parcels are either owned by the City or the Commonwealth except parcels 263 and 288. We are engaged in discussions with the private landowner of 263 and 288, and we anticipate being successful and securing the necessary property rights to expeditiously construct the terminal. We are also actively engaged in securing an easement across parcel 30 as well, and similarly anticipate being able to secure those rights expeditiously to construct the terminal.