FINAL TIER 1 EVALUATION OF SANDY POINT OVERBURDEN

Plaquemines Parish, Louisiana

BARATARIA/PLAQUEMINES BARRIER SHORELINE SYSTEM COMPLEX PROJECT

CWPPRA PROJECT Fed No./BA-38

Prepared for:

U.S. Department of Commerce

National Oceanic and Atmospheric Administration

National Marine Fisheries Service

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1.0 INTRODUCTION

The National Oceanographic and Atmospheric Administration (NOAA) National Marine Fisheries Service (NOAA Fisheries), is seeking an ocean disposal permit for the Barrier Island Complex Project (BA-38), in Plaquemines Parish, Louisiana. Regulations implementing Section 103 of the Marine Protection, Research and Sanctuaries Act (MPRSA) of 1972, regarding issuance of ocean disposal permits, are found in 40 Code of Federal Regulations (CFR) 227. Subpart 13(b) of Section 227 sets general and specific criteria that must be satisfied for disposal of dredged material in the ocean.

Using the criteria set forth in 40 CFR 227.13(b), a Tier 1 evaluation determines whether issuance of an ocean disposal permit can be made on the basis of existing information. In conducting a Tier 1 evaluation, the information collected on the proposed dredged material is compared to the three criteria listed in 40 CFR 227.13(b). If one or more of the three criteria can be satisfied, the dredged material is deemed "environmentally acceptable for ocean dumping," and no further evaluation is required. NOAA seeks approval for disposal of dredged material without testing on the basis that the dredged material meets the criteria set forth in 40 CFR 227.13(b)(3).

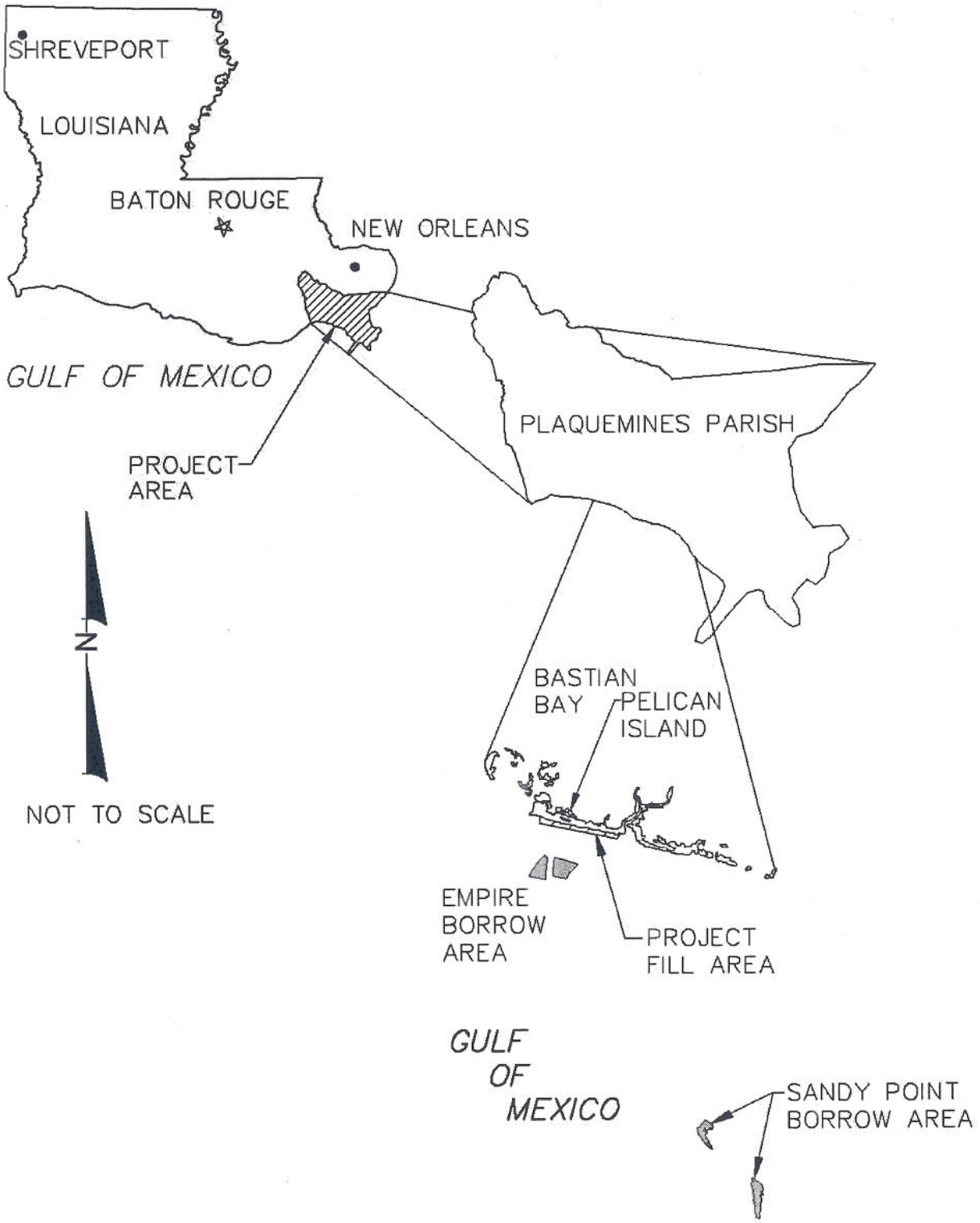
This Tier 1 evaluation includes background information on the project (Section 2.0), a summary of the purpose and need for the project (Section 3.0), and a description of the portion of the project that requires disposal of dredged materials (Section 4.0). A review of the applicable regulations and an evaluation is in Section 5.0, and conclusions are in Section 6.0. Literature cited is in Section 7.0.

2.0 PROJECT BACKGROUND

The Barataria Barrier Island Complex Project proposes restoration efforts in two reaches of the Barataria-Plaquemines shoreline: Pelican Island and Pass La Mer to Chaland Pass (Chaland Headland) (see Figure 1). The Pelican Island segment lies between Scofield Pass and Fontanelle Pass. The Chaland Headland segment lies between Pass La Mer and Chaland Pass. This project is authorized under the Coastal Wetlands Planning, Protection and Restoration Act (CWPPRA) of 1990 (16 United States Code [U.S.C.] §777c, 3951-3956), which stipulates that five Federal agencies and the State of Louisiana jointly develop and implement a plan to reduce the loss of coastal wetlands in Louisiana (16 U.S.C. §3952 (b) (2)).

FIGURE 1

PROJECT LOCATION



As Federal sponsor for the implementation of the Barataria Barrier Island Complex Project, NOAA Fisheries is responsible for compliance with all applicable environmental regulations. The Louisiana Department of Natural Resources (LDNR) is the non-Federal local project sponsor. The Minerals Management Service, (MMS), a bureau within the U.S. Department of the Interior, is a Federal cooperating agency. Other participating Federal agencies include the U.S. Army Corps of Engineers (USACE); the U.S. Fish and Wildlife Service (USFWS), Department of the Interior; Natural Resources Conservation Service (NRCS), Department of Agriculture; and the U.S. Environmental Protection Agency (EPA). The CWPPRA Task Force approved this project in January 2002 as part of the 11th Priority Project List. The Louisiana Coastal Wetlands Conservation and Restoration Task Force (LCWCRTF) chooses projects for this annual list by conducting a careful technical and public evaluation of numerous candidate projects.

A portion of the proposed Barataria Barrier Island Complex project will involve the use of sand resources located on the Outer Continental Shelf (OCS). The United States Government, and specifically, MMS, have jurisdiction over all mineral resources on the Federal OCS. Public Law 103-426, enacted October 31, 1994, gave MMS the authority to convey, on a noncompetitive basis, the rights to OCS sand, gravel, or shell resources for shore protection, beach or wetlands restoration projects, or for use in construction projects funded in whole or part or authorized by the Federal government. Those resources fall under the purview of the Secretary of the Interior who oversees the use of OCS sand and gravel resources, and the MMS as the agency charged with this oversight by the Secretary. After an evaluation required by the National Environmental Policy Act (NEPA), the MMS may issue non-competitive leases for the use of OCS sand to the requesting agencies. Accordingly, an environmental assessment (EA) prepared in cooperation with the MMS examined (1) the physical, biological, and socioeconomic resources affected by dredging OCS sand from one of the proposed borrow sites and emplacement of sand on a barrier island, (2) the impact-producing factors caused by dredging or emplacement, and (3) the potential impacts from dredging or emplacement on the affected environmental resources (Tetra Tech EM Inc. [Tetra Tech] 2003).

3.0 PURPOSE AND NEED FOR ACTION

The purpose of the project is to: (1) prevent breaching of the barrier shoreline by increasing its width and average height; and (2) protect and create dune, swale, and intertidal marsh habitat along the Plaquemines barrier island and shoreline complex. The project addresses a strategy in the plan to restore the Louisiana coastline for the Plaquemines region to "restore/maintain barrier headlands, islands, and shorelines"

(LCWCRTF and Wetlands Conservation and Restoration Authority [WCRA] 1998). As authorized under CWPPRA, project objectives include the following:

- Nourish and rebuild the shoreline with sand.
- Create a beach berm and dune.
- Create a back-barrier marsh platform with unrestricted tidal exchange.
- Create tidal creeks and tidal ponds.
- Reduce erosion rates in the project area.
- Prevent breaching of the gulf shoreline.

During the last 50 years, land loss rates in Louisiana have at times exceeded 40 square miles (mi^2) per year (103.6 square kilometers [km^2]) (LCWCRTF and WCRA 1998). In the 1990s, the rate was estimated at 25 to 35 mi^2 (64 to 90 km^2) each year (LCWCRTF and WCRA 1998). A healthy coastal marsh provides rearing habitat for shellfish and finfish; furnishes habitat for waterfowl, wading birds, small mammals, and numerous amphibians and reptiles; protects interior lands from storm surges; helps maintain water quality; and provides other services. Louisiana's coastal wetlands are essential to sustain renewable fisheries resources integral to the local, state, and national economies. Of the 1.7 billion pounds of fisheries landings reported for the Gulf Coast in 2000, more than 75% were caught in Louisiana (NOAA 2001). Barrier island wetlands, flats, and subtidal habitat provide unique nursery, foraging, and spawning habitat for numerous marine and estuarine species of commercial and recreational importance.

Many species prefer back-barrier beaches (Thompson 1988) and intra-island ponds and tidal creeks (Williams 1998). Island fragmentation results in loss of habitat, as more area is exposed to storm surges and erosion. As the islands break up, both habitat and infrastructure behind the islands become increasingly vulnerable to damage from high energy Gulf waves (Kindinger and others 2001).

The Barataria barrier shoreline and associated wetlands are the most rapidly eroding areas in Louisiana (Coastal Research Laboratory 2000; Boesch and others 1994). Erosion and deterioration of the shoreline and back-bay wetlands result from increased relative sea-level rise; diminished sediment supply; repeated storm events; construction of canals and navigation channels; and high rates of subsidence (Kulp and Penland 2001; Boesch and others 1994). The barrier islands on the southern margin of Barataria Bay have decreased in size 47% from the 1890s to the late 1980s (Williams and others 1992). Shoreline in the project area has receded to a critical width susceptible to breaching during storm events that can remove

up to 100 feet (30.5 meters [m]) of shoreline; average storm return frequency is 8.3 years along the Barataria shoreline. As the Barataria barrier shoreline degrades, the infrastructure and interior marshes of Barataria Bay in Plaquemines, Lafourche, and Jefferson Parishes become more vulnerable to erosion. A fragmentation analysis compared percentages of water and land in 1988 and 2000 for project areas within sub-reaches of the Plaquemines shoreline. Fragmentation indicates extent of disintegration of the barrier islands and therefore serves as a measure of Gulf connectivity to the back-bay marshes. The results of this analysis show loss of land in the project areas (Coastal Research Laboratory 2000). Coastal Research Laboratory also conducted a shoreline change analysis and predicted rates and timetables for loss of different sub-reaches of the Barataria shoreline. This study estimated that the Barataria shoreline is retreating at a rate of 1.9 to 100 feet (0.6 to 30.5 m) per year, averaging 18 feet (5.5 m) per year over the last 100 years (Coastal Research Laboratory 2000).

Surveys conducted by Tetra Tech and Coastal Planning and Engineering, Inc. (CPE) in October 2000 and September 2002 were the first to assess volumetric changes in both project areas (Tetra Tech and CPE 2003a). In the 30% design report for this project, volumetric changes were analyzed from the landward dune toe (at +1.5 feet [0.46 m] North American Vertical Datum [NAVD]) to the depth of closure. The report excluded apparent changes due to inlet shoaling, mechanically placed fill, and survey errors. Between October 2000 and September 2002, Pelican Island lost 157,000 cubic yards (yd^3) (120,026 cubic meters [m^3]). Gains on the western half of the island result from impoundment at the Empire Waterway east jetty. Losses on the eastern half of the island derive from channel shifting at Scofield Pass and a rapid landward migration of the eastern end of the island. Pelican Island has been losing approximately 42 acres (17 hectares) of land per year. Land areas were evaluated from U.S. Geological Survey (USGS) georeferenced quad maps for the years 1981-83 and 1989 (USGS 2002). The September 2002 land areas were estimated by locating the mean high-water contour (+1.5 feet [0.46 m] NAVD) based on the survey data. Much of what appears to be land in the aerial photographs is actually intertidal marsh. Most remaining land area is concentrated near the dune (Tetra Tech and CPE 2003b).

The EA predicted that with no action, the shoreline of Pelican Island will retreat an average 17.9 feet (5.5 m) per year, and the island will lose approximately 5.2 acres per year. The shoreline position 20 years after construction will be -358 feet (109 m) with respect to its current position. Total acreage above zero feet 20 years after project construction will be 70 acres (Tetra Tech and CPE 2003b). In addition, a breach has developed on the eastern side of the Empire Jetties between the structure and the island. While this breach is currently small, the risk of a major breach developing within this area is significant. Formation of a major breach has the potential to sever the link between the island and the

eastern Empire Jetty terminal structure. This would result in a rapid recession of the western portion of Pelican Island into the Empire Waterway. The project plan therefore provides additional island volume within this area to maintain the connection between the island and the eastern empire jetty. The island cross section has been extended to the jetty and a more seaward orientation of the island has been adopted.

4.0 PROJECT DESCRIPTION

The portion of this project that requires disposal of offshore sediments is described briefly in this section. Beach fill material will be dredged from the Sandy Point borrow area and placed along 2.4 miles of shoreline. The Sandy Point borrow area is located approximately 8 to 9.5 miles offshore of Pelican Island. Mean grain size of the sand component within the borrow area varies from 0.11 to 0.12 millimeters (mm) with an average silt content of 9% to 13.7% (see Table 1). Removal of overburden material will be required to exploit the sand deposit for island construction. The total volume of overburden removed from the borrow area will be at the discretion of the dredging contractor. This material may be used for marsh construction or may be relocated to one of the two designated overburden disposal sites adjacent to the borrow area. The fate of the overburden material will depend primarily on the equipment adopted by the dredging contractor for excavation of the borrow area.

TABLE 1

CHARACTERISTICS OF BORROW AREAS

Attribute	Sandy Point	
	Southeast	Northwest
Distance from Shore (miles)	11	9
Water Depth (feet)	-35	-35.5
Area (square miles)	0.18	0.13
Depth of Cut (feet)	-55	-55
Volume of Sand and Silt (cubic yards)	2,421,800	1,583,500
Mean Grain Size (millimeters)	0.12	0.11
Sand Percent	91	86

The Sandy Point borrow area contains sufficient sand volumes to meet the volumetric requirements of the Pelican Island restoration project (Tetra Tech and CPE 2003c). The Sandy Point borrow area lies in the Gulf of Mexico from 5.5 to 7 nautical miles (10.2 to 12.9 kilometers) south-southwest of Sandy Point in Plaquemines Parish, Louisiana (Tetra Tech and CPE 2003c). Within the Sandy Point borrow area, two potential sand deposits (northwest [NW] and southeast [SE]) were identified, surveyed, mapped, and

cored (Tetra Tech and CPE 2003c) (see Figures 2 and 3). These areas were found to contain 3.6 million yd^3 (2.7 million m^3) of clean sand and 4 million yd^3 (3.2 million m^3]) of sand and silt. Oil and gas pipelines somewhat limit the areas that contain workable volumes of clean sandy sediments. The two subareas within the Sandy Point borrow area are described in greater detail below.

NW Sandy Point Borrow Area:

The NW Sandy Point borrow area is 6 nautical miles (11.1 km) south-southwest of Sandy Point in the south half of Block 27, West Delta Area. Water depths in the NW Borrow area range from 34 to 37 feet (10.4 to 11.3 m) NAVD. The NW Sandy Point borrow area contains approximately 1,846,700 yd^3 (1.4 million m^3) of sandy sediment. The average mean grain size of the sand deposits is 0.11 mm, and the average percent silt is 13.7%. Figure 2 illustrates the NW Sandy Point borrow area.

SE Sandy Point Borrow Area:

The SE Sandy Point borrow area is 7 nautical miles (12.9 km) south of Sandy Point in the northwestern corner of Block 49 and the southwestern edge of Block 26, West Delta Area. Water depths in the SE borrow area range from 33 to 36 feet (9.9 to 10.8 m) NAVD. The SE borrow area contains approximately 2,220,100 yd^3 (1.7 million m^3) of sandy sediment. The average mean grain size of the sand deposits is 0.12 mm, and the average percent silt is 9.0%. Figure 3 illustrates the SE Sandy Point borrow area.

Approximately 3 million yd^3 (2.3 million m^3) of overburden cover the total extent of sand deposits within the two Sandy Point borrow subareas (Tetra Tech and CPE 2003c). To access the sand deposits, the overburden must be removed. The overburden will be excavated and transported to underwater disposal sites that will not interfere with future excavation of material from the Sandy Point borrow area. The NW Sandy Point overburden disposal area is 5 nautical miles (9.3 km) south-southwest of Sandy Point in the west central portion of Block 27, West Delta Area. Water depths in the NW disposal area range from to 35 feet (10.0 to 10.6 m) NAVD. The SE Sandy Point disposal area is 7 nautical miles (12.9 km) south of Sandy Point in the north central part of Block 49 and southern edge of Block 26, West Delta Area. Water depths in the SE disposal area range from 34 to 35 feet (10.4 to 10.5 m) NAVD (Tetra Tech and CPE 2003c).

FIGURE 2

DETAILS OF NORTHWEST SANDY POINT BORROW AREA

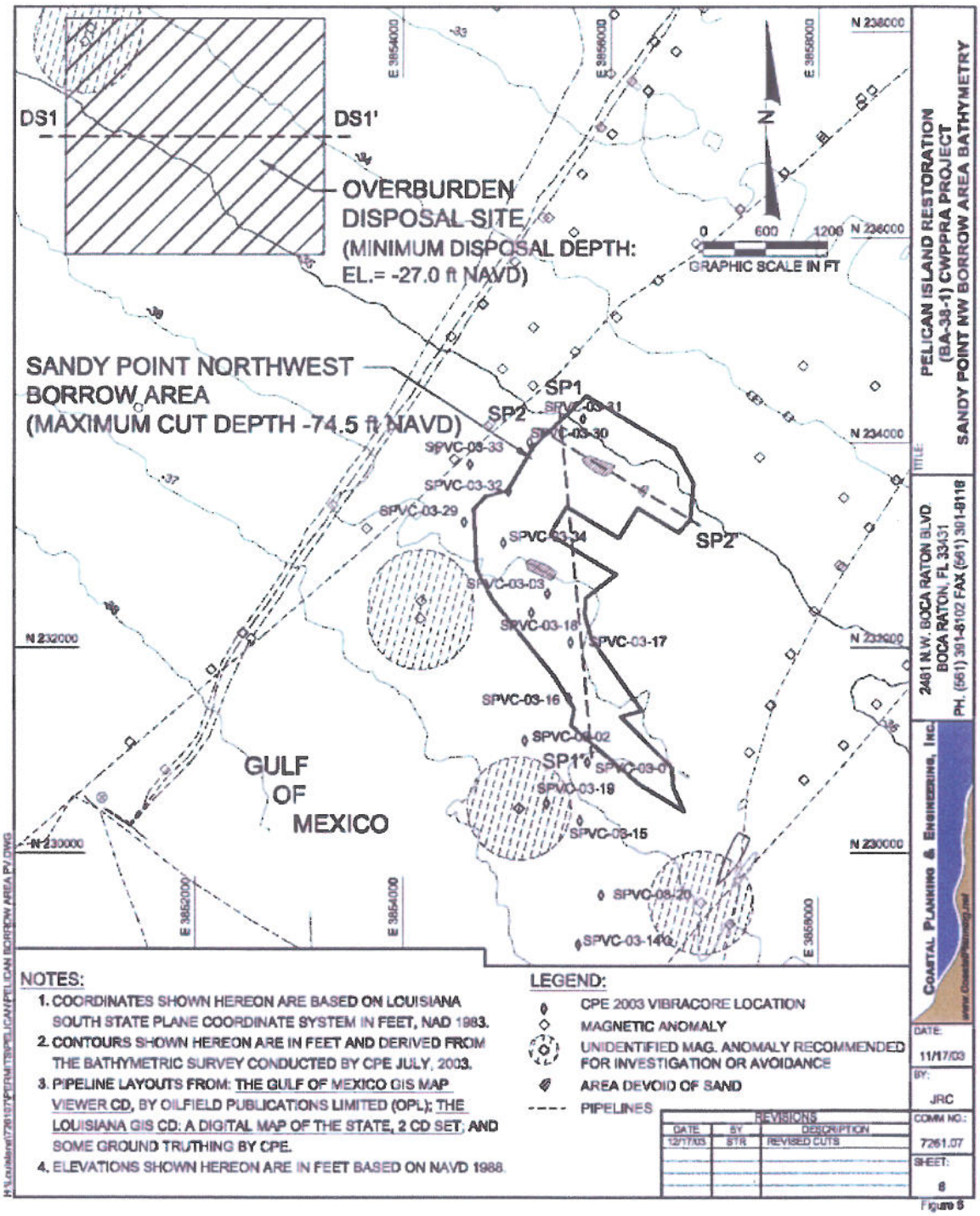
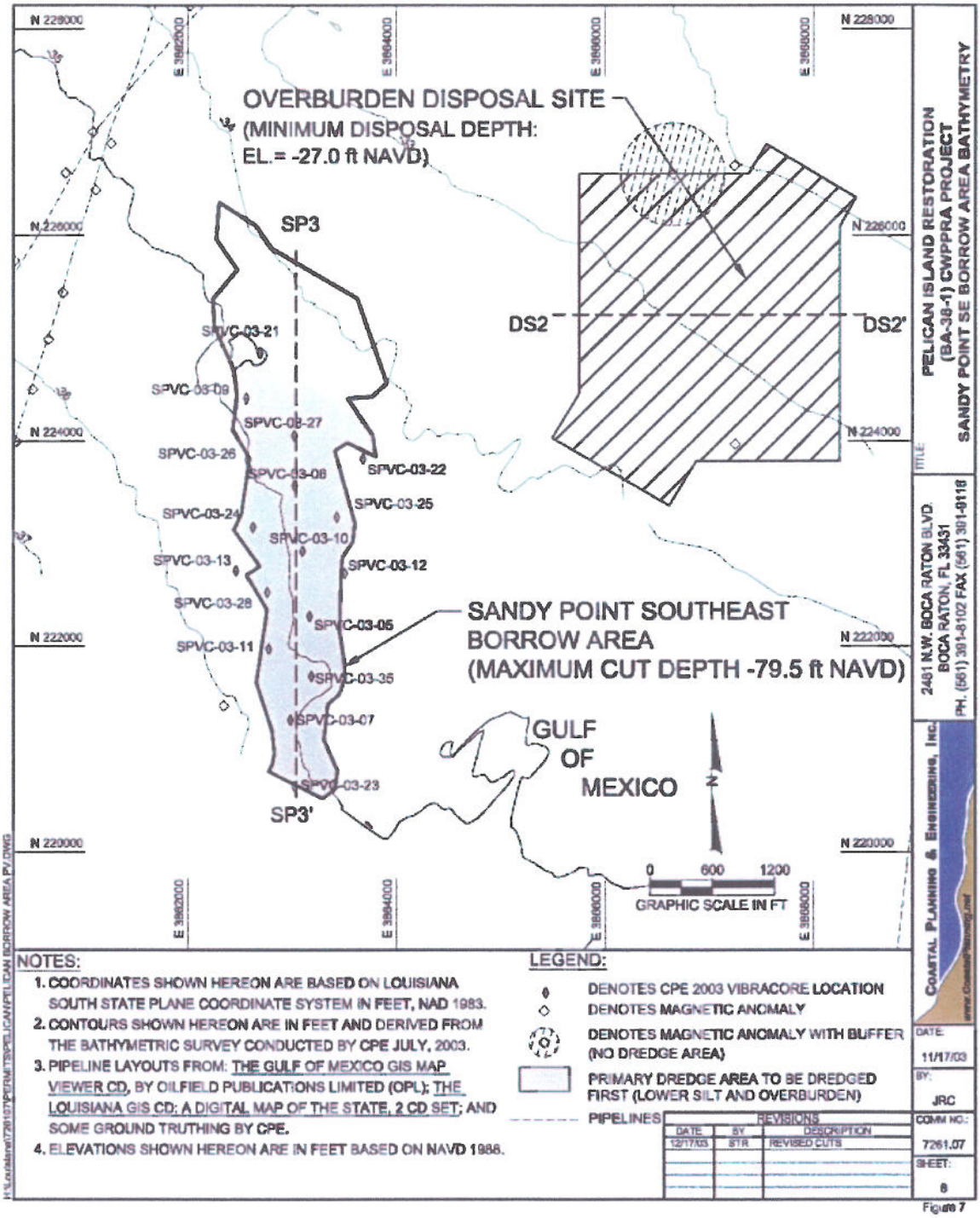


FIGURE 3

DETAILS OF SOUTHEAST SANDY POINT BORROW AREA



The dimensions of the offshore disposal areas allow for efficient disposal of overburden material. The disposal cross sections are sufficiently large to encompass the volume of anticipated overburden material. The 2,600 feet total disposal area length is sufficiently long to allow for efficient ingress and egress of a large hopper dredge. A minimum depth of -27 feet NAVD is specified to allow for adequate post-disposal draft and navigation within the area. The areas have been sited to avoid existing oil infrastructure and sand resources. Potentially significant cultural resources within the disposal areas will be avoided.

Overburden material will be extracted through dredging, and mixed with water to form a slurry. The slurry will be transported through pipelines and deposited underwater. The disposal pipeline will likely be suspended under the surface of the water, but well above bottom, depending on water depth of disposal. The placement under water will help to further mix and spread the material, which should prevent the creation of undesirable shallow areas. To avoid formation of shallow areas hazardous to navigation, specifications will require the contractor to periodically survey the disposal site and to relocate the discharge pipe whenever a critical minimum water depth occurs (Tetra Tech and CPE 2003b). In this way, the overburden can be spread well away from the borrow area without creating a hazard to navigation.

In addition, disposal will occur away from any oil infrastructure that placement of sediment might adversely affect. An alternative to disposal on the undredged gulf bottom is to dispose of the material in areas that have been used as borrow areas. But how much material actually will remain in the borrow pit is unknown because of uncertainty about the nature of the material as it is dredged and further affected by water mixing. Furthermore, the overburden would be transported a sufficient distance to avoid creating additional overburden over sand resources yet to be excavated (Tetra Tech and CPE 2003b).

5.0 APPLICABLE, RELEVANT, AND APPROPRIATE REGULATIONS

The *Green Book* (EPA and USACE 1991, page 26) states, "For a Tier 1 evaluation, the information collected on the proposed dredged material is first compared to the three exclusionary criteria in paragraph 227.13(b). If one or more of the exclusionary criteria can be satisfied...no further evaluation is required."

The three exclusionary criteria in CFR 227.13(b) are as follows:

40 CFR 227.13(b)

(b) Dredged material which meets the criteria set forth in the following paragraphs (b)(1), (2), or (3) of this section is environmentally acceptable for ocean dumping without further testing under this section:

40 CFR 227.13(b)(1)

(1) Dredged material is composed predominantly of sand, gravel, rock, or any other naturally occurring bottom material with particle sizes larger than silt, and the material is found in areas of high current or wave energy such as streams with large bed loads or coastal areas with shifting bars and channels; or

40 CFR 227.13(b)(2)

(2) Dredged material is for beach nourishment or restoration and is composed predominantly of sand, gravel or shell with particle sizes compatible with material on the receiving beaches; or

40 CFR 227.13(b)(3)

(3) When: (i) The material proposed for dumping is substantially the same as the substrate at the proposed disposal site; and

40 CFR 227.13(b)(3)(ii)

(ii) The site from which the material proposed for dumping is to be taken is far removed from known existing and historical sources of pollution so as to provide reasonable assurance that such material has not been contaminated by such pollution.

NOAA seeks approval on the basis that the dredged material meets the criteria set forth in 40 CFR 227.13(b)(3). Consideration of these criteria with respect to the proposed dredging at Sandy Point supports the conclusion that the material to be disposed of is "substantially the same" as the material in the receiving area, and that the source material is "far removed" from any known sources of pollution.

The *Green Book* (EPA and USACE 1991) outlines appropriate sources of information for Tier 1 evaluation, as follows:

- Available results of prior physical, chemical, and biological tests of the material proposed to be dumped.
- Available results of prior field monitoring studies of the material proposed to be dumped (e.g., physical characteristics, organic-carbon content, and grain size).
- Available information describing the source of the material to be dumped which would be relevant to the identification of potential contaminants of concern.

- Existing data contained in files of either the EPA or USACE or are otherwise available from public or private sources. Searchable databases include the following:

  - Pesticide Spill Reporting System (EPA)
  - Pollution Incident Reporting System (United States Coast Guard)
  - Identification of In-Place Pollutants and Priorities for Removal (EPA)
  - Hazardous waste sites and management facilities reports (EPA)
  - USACE studies of sediment pollution and sediments
  - Federal STORET, BIOS, CETIS, and ODES databases (EPA)
  - NPDES permit records

Evidence for Substantial Similarity:

Data collected in the Sandy Point borrow area support the conclusion that the overburden to be dredged and disposed is substantially similar to material in the disposal area. When the effects of chemical contaminants are the focus of a Tier 1 evaluation, selection of an appropriate reference sediment is the key to evaluating adverse effects of dredged materials on benthic organisms. The Tier 1 guidance provided in the *Green Book* (EPA and USACE 1991, page 17) defines a reference sediment as "a sediment, substantially free of contaminants, that is as similar as practicable to the grain size of the dredged material and the sediment at the disposal site, and that reflects the conditions that would exist in the vicinity of the disposal site had no dredged-material disposal ever taken place, but had all other influences on sediment condition taken place. These conditions have to be met to the maximum extent possible. The reference sediment serves as a point of comparison to identify potential effects of contaminants in the dredged material."

NOAA's determination that sediment in the borrow areas and disposal areas are "substantially similar" is based on analysis of seismic data from the areas. There are no vibracores from the disposal areas, but signatures in the seismic (sub-bottom) data records across the disposal site (detailed borrow site investigations and ultra-detailed cultural survey investigations) show similar patterns as seen for the borrow areas.

The similarity in sediment is substantiated by the nature of the sedimentary environment. The borrow areas occur within the Plaquemines lobe of the modern Belize deltaic system of the Mississippi River. This deltaic system, which was abandoned about two hundred years ago, covers portions of the St. Bernard lobe that was abandoned 1,600 to 4,000 years before present. A focused geotechnical investigation conducted in the areas showed the layering of materials with respect to overburden (clay laminae and silty sands) on top of sandy materials (greater than 60 percent sand) (Tetra Tech and CPE 2003c). The seismic data show the presence of incised paleo-distributary channels, abandoned and

infilled by fine-grained materials. In gross outline, the stratigraphy is inferred from the seismic data as unconsolidated layered fine-grained sediments overlying compacted clays. Channel sequences, or distributaries, and migration paths are clearly evident in the unconsolidated surficial materials. Identical patterns are seen in the disposal areas, and it would be unreasonable to assume that different sedimentary environments and materials co-exist in such proximity (2,000 to 3,000 feet) to the borrow areas. Reconnaissance surveys conducted by Kindinger et al. (2001) identify general trends of paleovalley systems on the continental shelf, some of which were verified and extended by the site-specific investigations (Tetra Tech and CPE 2003c). The paleochannels identified by Tetra Tech surveys tie into part of the systems previously identified. All evidence indicates that overburden muds removed from the borrow areas are similar to muds in the two disposal sites.

Evidence for Absence of Pollution:

Both the borrow areas and disposal areas are "far removed from any known existing and historical sources of pollution," as required by 40 CFR 227.13(b)(3)(ii). The Sandy Point borrow and disposal areas are located approximately 8 miles off the Louisiana coast, as described in Section 4.0 of this report (see Figure 1). The ocean dumping regulations are specifically written to prevent the offshore disposal of contaminated materials dredged from inland or nearshore areas, such as harbors and rivers. Activities associated with shipping, as well as other industrial activities typical of rivers and harbors, can result in chemical releases. Thus, it is reasonable to suspect contaminants exist in sediment dredged from such areas. In contrast, Sandy Point is an area of mud and sand 8 miles from the coast, indistinguishable to the naked eye from the vast expanse of the Gulf of Mexico in which it lies. No site-specific industrial activity occurs at Sandy Point, and there is no reason to suspect that any site-specific contaminants occur at Sandy Point. To confirm the absence of site-related chemical spills, a records search of pollution databases was conducted, as described below.

The Lexis Emergency Response Notification System (ERNS) (http://www.lexisnexis.com/) was searched using the latitude and longitude coordinates for the Sandy Point borrow area. The ERNS file contains reports on discharges of oil and other hazardous substances, which are compiled from the official spill reports submitted to federal agencies, including the Environmental Protection Agency (EPA), U.S. Coast Guard, the National Response Center, and the Department of Transportation. The reports include information on the types of hazardous substances involved; the degree of property damage resulting from the incident; and injuries or deaths that occurred as a result of the spill. No spills or chemical releases were reported in the ERNS database for the borrow site location.

The EPA's STORET (http://www.epa.gov/STORET/dbtop.html) and National Pollutant Discharge Elimination System (NPDES) (http://cfpub.epa.gov/npdes/) databases were searched by state. Results were further refined by using the latitude and longitude coordinates of the Sandy Point borrow areas. STORET is a repository for water quality, biological, and physical data. NPDES provides information on permitted releases of aqueous pollutants. Neither of these databases yielded results of discharges in the Sandy Point borrow area.

The Outer Continental Shelf Lands Act requires either MMS or the U.S. Coast Guard to prepare within 30 days a public report for major oil spills resulting from Outer Continental Shelf mineral operations. The MMS investigates significant pollution incidents, petroleum or other toxic substance spills of 50 barrels (2,100 gal) or more, describing the circumstances surrounding the incident with the ultimate goal of prevention through safety alerts in addition to site-specific corrections. Records contained in the MMS Technical Information Management System for the last ten were searched for any incidents occurring in West Delta Blocks 27 or 49, where the Sandy Point borrow areas are located. No significant pollution incidents or pipeline incidents were reported in either of these blocks.

A review of the National Priorities List of Superfund sites provided by EPA shows that no Superfund sites occur in the three Parishes of coastal Louisiana nearest to the Sandy Point borrow areas (Jefferson, Plaquemines, or St. Bernard Parishes).

The ACOE contracted Gulf Engineers and Consultants (GEC) to conduct an investigation of the hazardous, toxic, and radioactive waste (HTRW) present in the Barataria basin, including the barrier islands and marshes of Lafourche, Jefferson, and Plaquemines Parishes (GEC 2001). This comprehensive study was prepared pursuant to ACOE regulations concerning identification of areas of environmental concern in the vicinity of civil works projects. Offshore areas were not investigated. The only major offshore spill reported in the HTRW summary of the area occurred west of Empire, Louisiana, in 1989; the spill was subsequently cleaned up to EPA's specifications. The GEC report concluded that no evidence existed for the ongoing adverse environmental impacts resulting from oil and gas improvements, and that the presence of contaminated sediment in the project area was low (GEC 2001).

A search of the technical literature on contaminated sediment yielded no research focused on contaminants in the offshore sediments of the Gulf of Mexico. Major environmental studies of contaminated sediments focus on distributaries and estuaries, but do not include areas as far offshore as Sandy Point. For example, EPA's Environmental Monitoring and Assessment Program (EMAP) is a

long-term research effort to monitor aquatic ecosystems across the United States. Many stations along the Louisiana coast are included in the EMAP database, but none extend further south than 29° latitude. The borrow areas are at 22° latitude.

In the absence of site-specific spills or releases, the only way contaminated sediments can be expected to occur in the project are via longshore transport from the Mississippi River or by natural seepage of petroleum from reservoirs beneath the borrow areas. Each of these possibilities is discussed below.

Concentrations of dissolved contaminants in the main stem of the Mississippi River, which drains a heavily industrialized corridor, are remarkably low, according to a comprehensive USGS study of the hydrogeochemistry of the Mississippi River (Meade 1995). Recognizing that sediment-bound contaminants may be more problematical that dissolved contaminants, the USGS recently launched a study of the fate and transport of contaminated sediment in the Mississippi River (*Evaluating Basin/Shelf Effects in the Delivery of Sediment-Hosted Contaminants in the Atchafalaya and Mississippi River Deltas - a New U.S. Geological Survey Coastal and Marine Geology Project*). This project responds to the paucity of data currently available on the accumulation, deposition, and transport of sediment-hosted pollutants to the Gulf of Mexico.

Evidence for autochthonous residues of petroleum constituents in the Gulf of Mexico comes from a study funded by the NASA/Goddard Space Flight Center to measure natural seeps using radar data from satellites, as well as from other exploratory work. This study reported that oil seeps from rocks beneath the Gulf of Mexico in more than 600 locations, and spreads in a thin film across an area covering 4 mi^2 of water (http://www.sciencedaily.com/releases/2000/01/000127082228.htm). Based on this evidence, it is reasonable to expect non-zero background concentrations of petroleum constituents, such as polycyclic aromatic hydrocarbons, at the project site.

Evidence for Absence of Other Environmental Effects:

The MPRSA requires that issuance of ocean disposal permits consider the environmental effect of the proposed dumping operation, the need for ocean dumping, alternatives to ocean dumping, and the effect of the proposed action on esthetic, recreational and economic values and on other uses of the ocean (40 CFR 227.1(a)).

The Sandy Point borrow and disposal areas were included in a regional environmental impact statement (EIS) prepared by MMS in support of their intention to issue oil and gas leases in the Central Gulf of

Mexico (MMS 2002). In the final EIS, MMS concluded that even the much larger scale disruption of sediments necessitated by the installation of pipelines would result in no adverse environmental effects. The report stated that "No adverse impacts to the ecological function or biological productivity of the widespread, low-density chemosynthetic communities or to the widespread, typical, deep-sea benthic communities are expected to occur as a result of routine activities or accidental spills resulting from a proposed action in the Central Planning Area." Regarding threatened and endangered species and other fisheries resources, the final EIS concluded that "the routine activities related to a proposed action in the Central Planning Area are not expected to have long-term adverse effects on the size and productivity of any marine mammal species or population stock endemic to the northern Gulf of Mexico" (MMS 2002).

Given that the final EIS for the Central Planning Area reached a determination of "no long-term impact" for operations far greater in magnitude, both in terms of spatial scale and volume of material, it is reasonable to conclude that the environmental effect of the proposed Sandy Point dredging operation is *de minimis*.

The EA for the Barataria Complex Project reached the same conclusion (Tetra Tech 2003). This EA found that no significant long-term adverse environmental impacts are anticipated from implementing the project. Short-term impacts related to construction activities are considered reversible. This conclusion is based on a comprehensive review of relevant literature, site-specific data, and project-specific engineering reports related to biological, physical, and cultural resources. The natural resource benefits anticipated from implementing this project will enhance and sustain dune, swale, and intertidal habitat within the project area. The increase in both quality and acreage of fisheries habitat is expected to have long-term beneficial impacts on the local economy, as more people visit the area to take advantage of recreational and commercial fishing opportunities. In addition, the project will result in increased protection for infrastructure on and behind the barrier islands to be restored.

Other Applicable Regulations:

NOAA has submitted an application to the USACE under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 401 *et seq.*), which requires authorization from the USACE for the construction of any structure in or over any navigable water of the United States, the excavation/dredging or deposition of material in these water or any obstruction or alteration in a navigable water. Structure or work outside the limits defined for navigable waters of the United States require a §10 permit if the structure or work affects the course, location, condition, or capacity of the water body.

Section 10 requires that regulated activities conducted below the Ordinary High Water (OHW) elevation of navigable waters of the United States be approved/permitted by the USACE. Regulated activities include the placement/removal of structures, work involving dredging, disposal of dredged material, filling, excavation, or any other disturbance of soils/sediments or modification of a navigable waterway. Navigable waters of the United States are those waters of the United States that are subject to the ebb and flow of the tide shoreward to the mean high water mark and/or are presently used, or have been used in the past or may be susceptible to use to transport interstate or foreign commerce. Navigable waters of the United States are not necessarily the same as state navigable waterways.

6.0 CONCLUSIONS

NOAA, in this application, seeks approval on the basis that material to be dredged from the Sandy Point borrow areas and deposited in the Sandy Point dump areas meets the criteria set forth in 40 CFR 227.13(b)(3). Consideration of these criteria with respect to the proposed dredging at Sandy Point supports the conclusion that the material to be disposed of is "substantially the same" as the material in the receiving area, and that the source material is "far removed" from any known sources of pollution. NOAA recommends that a permit for this activity be issued with no further requirements for evaluation under Section 103 of the MPRSA.

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