

**DRAFT
ENVIRONMENTAL ASSESSMENT,
404(b)(1) EVALUATION REPORT,
AND
FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

**SAND ISLAND 406 OIL MITIGATION
MOBILE COUNTY
MOBILE, ALABAMA**

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Environmental Resources Branch
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FINDINGS OF NO SIGNIFICANT IMPACT - DRAFT
SAND ISLAND 406 OIL MITIGATION
MOBILE, ALABAMA

Waterway and Location: Mobile Harbor, Alabama, is located in the southwestern part of the state in Mobile and Baldwin Counties, at the junction of the Mobile River with the head of Mobile Bay. The Port of Mobile is about 28 nautical miles north of the Bay entrance from the Gulf of Mexico and 170 nautical miles east of New Orleans, Louisiana. The Sand Island Beneficial Use Area (SIBUA) and proposed restored Sand Island is located 3 miles offshore from the primary Mobile Bay entrance channel, bordered on the west by Dauphin Island, on the east by Mobile Point, Alabama, adjacent to the Sand Island Lighthouse and west of the Bar Channel as it approaches to the Mobile Harbor Ship Channel.

As District Engineer, U.S. Army Corps of Engineers, Mobile District, it is my duty in the role and responsible Federal Officer to review and evaluate, in light of public interest, the stated views of other interested agencies and concerned public, the environmental effects of this proposed action.

My evaluation and findings are as follows:

1. Description of the Proposed Action for Which These Findings Are Made.

The proposed Sand Island 406 Oil Mitigation action, the Corps is proposing the placement of approximately 1 to 2 million cubic yards (cy) of sand for use towards re-establishment of Sand Island. The initial source of sand will be from portions of the SIBUA with options for future placement from the regular maintenance dredging of sand from the Mobile Bar Channel. Placement will begin at and around the Sand Island Lighthouse proceeding to the northwest as far as the supplemental funding source allows. Actions for this effort will be over and above the District's normal maintenance dredging activities for the Mobile Bar Channel, which provides options for additional future periodic placement of sand onto the Island.

The proposed action will create an emergent island in a manner that will begin a re-establishment of the original Sand Island. In addition to oil mitigation, the Corps feels that this action would provide an excellent opportunity towards accelerating the return of sediment into the local littoral system as well as increasing disposal capacity in the SIBUA consistent with established regional sediment management implementation principles and goals. Also, it is believed that this action provides an excellent opportunity for the protection of the Sand Island Lighthouse which is a valuable cultural resource. Re-establishing the island to include the light house will provide valuable protection to this historic structure.

2. Coordination. Mobile District coordinated the proposed action with federal, state, and local agencies and issued a Notice of Availability to solicit comments on the proposed action via public notice FP10-MH15-10, dated December 13, 2010.

3. Environmental Effects and Impacts. This proposed action is in compliance with all environmental laws. The funding for this effort has already been received. Sec 406 of P.L. 111-

212 Supplemental Funds clearly states that funds have already been made available to place, at full Federal expense, dredged material available from maintenance dredging of existing Federal navigation channels located in the Gulf Coast region to mitigate the impacts of the Deepwater Horizon Oil spill in the Gulf of Mexico.

4. Determination. I have determined that this action does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, the action does not require the preparation of a detailed statement under Section 102 (2) (c) of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.). My determination was made considering the following factors discussed in the Environmental Assessment to which this document is attached:

a. The proposed action will not adversely impact or threaten the continued existence of any threatened or endangered species potentially occurring in the project area.

b. No unacceptable adverse cumulative or secondary impacts will result from implementation of this action.

c. The proposed action will not significantly impact wetlands or cultural resources.

d. The proposed action will result in no significant impacts to air or water quality.

e. The proposed action will result in no significant adverse impact to fish and wildlife resources.

f. The proposed action complies with Executive Order 13045, “Protection of Children from Environmental Health Risks and Safety Risks.”

g. The proposed action complies with Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations.”

5. Findings and Conclusions. The proposed action will result in no significant environmental impacts and is the alternative that represents sound natural resource management practices and environmental standards.

Date: _____

STEVEN J. ROEMHILDT, P.E.
Colonel, Corps of Engineers
District Commander

ENVIRONMENTAL ASSESSMENT
SAND ISLAND 406 OIL MITIGATION
MOBILE, ALABAMA
FEDERALLY AUTHORIZED

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ACRONYMS AND ABBREVIATIONS

ADEM	Alabama Department of Environmental Management
BA	Biological Assessment
BO	Biological Opinion
BMP	Best Management Practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
Corps	United States Army Corps of Engineers
CZC	Coastal Zone Consistency
DA	Disposal Area
EA	Environmental Assessment
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EJ	Environmental Justice
EO	Executive Order
EPA	Environmental Protection Agency
ER	Engineering Regulation
ESA	Endangered Species Act
FONSI	Findings of No Significant Impact
GMFMC	Gulf of Mexico Fishery Management Council
GIWW	Gulf Intracoastal Waterway
ITS	Incidental Take Statement
Mg/l	Milligrams per liter
MHTB	Mobile Harbor Turning Basin
MLW	Mean Low Water
MLLW	Mean Lower Low Water
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLAA	Not Likely to Adversely Affect
NLAM	Not Likely to Adversely Modify
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
ODMS	Ocean Dredged Material Disposal Site
O&M	Operations and Maintenance
RBO	Regional Biological Opinion
Register	National Register of Historic Places
SAV	Submerged Aquatic Vegetation
SHPO	State Historic Preservation Officer
TSS	Total Suspended Solids
USFWS	United States Fish and Wildlife Service
WRDA	Water Resources Development Act
WQC	Water Quality Certification

**ENVIRONMENTAL ASSESSMENT
SAND ISLAND 406 OIL MITIGATION
MOBILE, ALABAMA**

FEDERALLY AUTHORIZED INTRODUCTION

This Environmental Assessment (EA) presents impacts that would potentially result from the proposed placement of fill material for the re-establishment of Sand Island just to the south of the mouth of Mobile Bay for purposes of oil mitigation. The U.S. Army Corps of Engineers, Mobile District, proposes to place at full Federal expense, dredged material available from maintenance dredging of existing Federal navigation channels located in the Gulf Coast region to mitigate the impacts of the Deepwater Horizon Oil spill in the Gulf of Mexico. Under the authority included below, the Corps is proposing the placement of approximately 1 to 2 million cubic yards (cy) of sand for re-establishing Sand Island, beginning at the Sand Island Lighthouse and proceeding to the northwest. The source of sand for this action will be from the Sand Island Beneficial Use Area (SIBUA) and the Mobile Bar Channel. In addition to oil mitigation, the Corps feels that this action would provide an excellent opportunity towards accelerating the return of sediment into the local littoral system and increasing disposal capacity in the SIBUA consistent with established regional sediment management principles and goals. It is believed this will also provide protection to the Sand Island Lighthouse which is a valuable cultural resource. The purpose of this EA is to determine whether or not the proposed action has the potential for creating significant impacts to the environment and would thereby warrant a more detailed study on possible impacts, mitigation, and alternative courses of action.

The National Environmental Policy Act (NEPA) of 1969, as amended, excuses or excludes Federal agencies from the preparation of any formal environmental analysis with respect to actions that result in minor or no environmental effects, which are known as "categorical exclusions." An intermediate level of analysis, an EA, is prepared for an action that is not clearly categorically excluded, but does not clearly require an Environmental Impact Statement (EIS) [40 Code of Federal Regulations (CFR) §1501.3 (a) and (b)]. Based on the EA, Federal agencies either prepares an EIS, if one appears warranted, or issues a "Finding of No Significant Impact" (FONSI), which satisfies the NEPA requirement. This EA is prepared according to the Corps' Engineer Regulation (ER) 200-2, Procedures for Implementing NEPA, and the Council of Environmental Quality (CEQ) Regulations (40 CFR § 1508.27) for Implementing the Procedural Provisions of NEPA (40 CFR § 1500-1508).

1.1 Location. Mobile Harbor, Alabama, is located in the southwestern part of the state in Mobile and Baldwin Counties, at the junction of the Mobile River with the head of Mobile Bay (**Figure 1**). The Port of Mobile is about 28 nautical miles north of the Bay entrance from the Gulf of Mexico and 170 nautical miles east of New Orleans, Louisiana. The SIBUA and proposed restored Sand Island is located 3 miles offshore from the primary Mobile Bay entrance channel, boarded on the west by Dauphin Island, on the east by Mobile Point, Alabama, adjacent to the Sand Island Lighthouse and west of the Bar Channel as it approaches to the Mobile Harbor Ship Channel (**Figure 2**).

1.2 Purpose and Need for the Proposed Action. The primary objective and overall project purpose is to mitigate the impacts of the Deepwater Horizon Oil spill in the Gulf of Mexico to Mobile Bay under the authority included below. The intent of this action is to prevent, as much as possible, submerged oil in the Gulf of Mexico from entering into the entrance of Mobile Bay. Doing so will provide protection to the fragile ecosystems and valuable natural resources that are an important and integral part of the Mobile Bay system. In addition to oil mitigation, the Corps feels that this action would provide an excellent opportunity towards accelerating the return of sediment into the local littoral system and increasing disposal capacity in the SIBUA consistent with established regional sediment management principles and goals. It is believed this will also provide protection to the Sand Island Lighthouse which is a valuable cultural resource.

1.3 Project Authorization. Sec 406 of P.L. 111-212 Supplemental Funds.

SEC. 406. (a) The Secretary of the Army may use funds made available under the heading ‘‘OPERATION AND MAINTENANCE’’ of this chapter to place, at full Federal expense, dredged material available from maintenance dredging of existing Federal navigation channels located in the Gulf Coast region to mitigate the impacts of the Deepwater Horizon Oil spill in the Gulf of Mexico.

(b) The Secretary of the Army shall coordinate the placement of dredged material with appropriate Federal and Gulf Coast State agencies.

(c) The placement of dredged material pursuant to this section shall not be subject to a least-cost-disposal analysis or to the development of a Chief of Engineers report.

(d) Nothing in this section shall affect the ability or authority of the Federal Government to recover costs from an entity determined to be a responsible party in connection with the Deepwater Horizon Oil spill pursuant to the Oil Pollution Act of 1990 or any other applicable Federal statute for actions undertaken pursuant to this section.

1.4 Scope. This Environmental Assessment (EA) was prepared in accordance with Engineer Regulation (ER) 200-2-2, *Procedures for Implementing the National Environmental Policy Act (NEPA)* and the Council on Environmental Quality (CEQ) *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 Code of Federal Regulations (CFR) Pts. 1500-1508). The objective of the EA is to determine the magnitude of the environmental impacts of the proposed storm protection and restoration actions. If such impacts are relatively minor, a Finding of No Significant Impact (FONSI) would be issued and the Mobile District, U.S. Army Corps of Engineers will proceed with the Federal action. If the environmental impacts are significant according to CEQ's criteria (40 CFR Pt. 1508.27), an Environmental Impact Statement (EIS) would be prepared before a decision is reached to implement the proposed action.

Applicable laws under which these impacts will be evaluated include the National Environmental Policy Act (NEPA), Endangered Species Act, the Clean Water Act, the Clean Air Act, the U.S. Fish and Wildlife Coordination Act, National Historic Preservation Act, Magnuson – Stevens Fishery Conservation and Management Act, and Coastal Zone Management Act.

1.5 Environmental Assumptions. The general environmental criteria for projects of this nature are identified in Federal environmental statutes, executive orders, planning guidelines, and the USACE Environmental Operating Principles (EOP). It is the national policy that ecosystem restoration, particularly that which results in conservation of fish and wildlife resources, be given equal consideration with other study purposes in the formulation and evaluation of alternative plans. The basic guidance during planning studies is to assure that care is taken to preserve and protect significant ecological and cultural resources, and to conserve natural resources. These efforts also should provide the means to maintain and restore, as applicable, the desirable qualities of the human and natural environment. Formulation of alternative plans should avoid damaging the environment to the extent practicable and contain measures to minimize or mitigate unavoidable environmental damages. Consistent with laws and policy, alternative plans formulated should avoid damaging the environment to the extent practicable and contain measures to minimize or mitigate unavoidable environmental impacts.

EOPs have been established for evaluation of water resource projects. Throughout the evaluation process to ensure conservation, environmental preservation, and restoration is considered at the same level as economic issues. These principles are: 1) Strive to achieve environmental sustainability, 2) Consider environmental consequences, 3) Seek balance and synergy, 4) Accept responsibility, 5) Mitigate impacts, 6) Understand the environment, and 7) Respect other views. The following criteria were used to address environmental impacts during the evaluation of alternatives:

- Protection, preservation, and improvement of the existing fish and wildlife resources along with the protection and preservation of coastal and offshore habitat and water quality;
- Consideration in the project design of the least disruptive construction techniques and methods;
- Protection and preservation of endangered and/or threatened species, critical habitat, and EFH; and
- Preservation of significant historical and archeological resources through avoidance, if possible, or data recordation if destruction of the resources is necessary.

1.6 Applicable Environmental Laws and Regulations. Of primary concern is compliance with the Clean Water Act. Potential water quality impacts associated with the borrowing and placement of fill material associated with coastal operations must be considered. Such activities include evaluation of sediment from identified borrow sources for placement within the littoral zone within the study area. Borrow sediments identified as suitable must match, as closely as possible, the sediment characteristics at the nourishment site. This information will be utilized in the preparation of the Section 404(b)(1) evaluation report (APPENDIX A) and also in developing the management requirements to minimize impacts to threatened and/or endangered species under Section 7 of the Endangered Species Act.

The Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA) identified habitats within the marine and estuarine areas of the U.S. that were essential to the management of certain specific fin and shellfish. Areas identified by the Gulf of Mexico Fishery Management Council as essential fish habitat (EFH) include all the marine and estuarine areas of Walton County. Consultation with the National Marine Fisheries Service (NMFS) focused on activities to minimize impacts to EFH. Of particular concern has been avoidance or minimization of impacts or the enhancement of EFH. Coordination with the FWS and NMFS concerning potential impacts to listed species is required and has been initiated for the selected Federal plan. Efforts have been made to include actions that would benefit the recovery of listed species.

All Federal activities affecting any land, water use, or natural resources of the coastal zone shall be carried out in a manner which is consistent, to the maximum extent practicable, with the enforceable policies of the Alabama coastal management program. These activities have been evaluated to assess coastal zone management compliance. In addition, water quality certification (WQC) from the State of Alabama is required for all actions to be implemented. A WQC/CZC application will be submitted to the state to obtain the necessary certifications.

2.0 DESCRIPTION OF THE PROPOSED ACTION.

The Corps, Mobile District is responsible for the operations and maintenance (O&M) of the federally-authorized Mobile Harbor navigation project. Mobile Bay is an estuarine system approximately seven miles wide at the northern end and 30 miles wide at the southernmost end. It stretches approximately 30 miles long from the Mobile Delta to the Dauphin Island-Mobile Point entrance. It is situated at the mouth of the Mobile River basin, which drains approximately 44,000 square miles in Alabama, Mississippi, and Georgia. The bay is almost uniformly shallow with an average depth of about 9.5 feet. The Port of Mobile is on the western side of the Mobile River at the head of the bay. Three federally-authorized navigation channels cross the bay, the Mobile Ship Channel from north to south, the Gulf Intracoastal Waterway from east to west, and the Theodore Industrial Park from northwest to southeast. The southern-most portion of authorized navigation channel known as the Mobile Bar Channel extends approximately seven (7) miles from the Gulf of Mexico into Mobile Bay is typically maintained by a hopper dredge with the sandy material placed in the authorized Sand Island Beneficial Use Area (SIBUA) as shown in **Figure 2**.

The beneficial use area is located west of the Federal navigation channel and is intended to keep valuable sand removed from the bar channel in the local littoral system. In September 2004 a modification of the SIBUA was issued to expand the disposal site to include the area around the Sand Island Lighthouse (**Figure 3**), which is a valuable cultural resource listed on the National Register of Historic Places. Placement of sandy material around the light house's rubble foundation is beneficial in that it provides protection to the historic structure. In order to continue the beneficial use practices, in December 2008 the Corps expanded the SIBUA extending a 4,500-foot wide southern boundary approximately 2,000 to the south, also illustrated in **Figure 3**. This expanded area provides for continued placement of sandy material from the Mobile Bar Channel in a manner that returns this material to the local littoral system.

Under the proposed Sand Island 406 Oil Mitigation action, the Corps is proposing the

placement of approximately 1 to 2 million cubic yards (cy) of sand for use towards re-establishment of Sand Island. The initial source of sand will be from portions of the SIBUA with options for future placement from the regular maintenance dredging of sand from the Mobile Bar Channel. Placement will begin at and around the Sand Island Lighthouse proceeding to the northwest as far as the supplemental funding source allows. Actions for this effort will be over and above the District's normal maintenance dredging activities for the Mobile Bar Channel, which provides options for additional future periodic placement of sand onto the Island.

The proposed action will create an emergent island in a manner that will begin a re-establishment of the original Sand Island. The proposed Sand Island plan view is presented in **Figure 4** with the resulting cross sections illustrated in **Figure 5**. In addition to oil mitigation, the Corps feels that this action would provide an excellent opportunity towards accelerating the return of sediment into the local littoral system as well as increasing disposal capacity in the SIBUA consistent with established regional sediment management implementation principles and goals. Also, it is believed that this action provides an excellent opportunity for the protection of the Sand Island Lighthouse which is a valuable cultural resource. Re-establishing the island to include the light house will provide valuable protection to this historic structure.

It should be noted that the eastern end of the proposed restored Sand Island is actually within the existing SIBUA, therefore, the borrowed sandy sediments that will be placed to re-establish the island have been deemed compatible from a biological and physical standpoint according to guidelines established by the Corps and the U.S. Environmental Protection Agency (EPA). The placement activities will be accomplished by either using hopper dredges within pump-out capabilities or hydraulic pipeline dredges. The characteristics of the sediment being dredged and placed ranges from fine to medium-grained quartz sand from the Mobile Bay Bar navigation channel.

2.1 Alternatives. No other alternatives were considered for this project. The funding for this effort has already been received. The authority clearly states that funds have already been made available to place, at full Federal expense, dredged material available from maintenance dredging of existing Federal navigation channels located in the Gulf Coast region to mitigate the impacts of the Deepwater Horizon Oil spill in the Gulf of Mexico.

3.0 AFFECTED ENVIRONMENTAL RESOURCES

3.1 Fish and Wildlife Resources

Oyster Reefs. Oyster reefs of commercial importance are subtidal and form aggregates that cover thousands of acres (1896 hectares of mapped oyster reef) of bay bottom throughout coastal Alabama. The primary oyster reefs of Alabama are located in the southwestern portion of Mobile Bay (Cedar Point, Sand Reef Buoy, Dauphin Island Bay, Kings Bayou, and Peavy Island Reef). Oyster reefs are also located to the east in Bon Secour Bay and to the west in Portersville Bay. There are additional small, scattered patches of oysters especially along the western shore of Mobile Bay in addition to the riparian beds located in Heron Bay and the Mississippi Sound (May 1971; Tatum *et al.* 1996).

Submerged Aquatic Vegetation. The Mobile Bay National Estuary Program funded a survey of submerged aquatic vegetation (SAV) in coastal Alabama in summer and fall 2002. This work included ground-truthed photo-interpreted aerial imagery of SAVs (Vittor and Associates, 2003). In the marine areas the 2002 SAV survey found shoal grass *Halodule wrightii* comprised most of the acreage, particularly in Mississippi Sound (819.4 acres) and southern Perdido Bay (299.6 acres, including Florida waters). In addition, relatively small patches of SAV occurred along the northern shoreline of the western end of Dauphin Island, and in Baldwin County in Little Lagoon, Bay la Launch, Arnica Bay, and Palmetto Creek.

Wetlands. Tidal marshes are located along the bay shorelines and the shoreline of the Mississippi Sound. These marshes are typically bordered along the waters edge by a strip of salt marsh grass, *Spartina alterniflora*, with scattered stands of *S. cynosuroides*, *S. patens*, *Distichlis spicata*, and *Phragmites communis*. The majority of the marsh inside of this strip is composed of *Juncus roemerianus* (Swingle, 1971). Within the vicinity of the project there are also a few isolated wetlands, some being densely vegetated with slash pine *Pinus elliotti*, a thick understory of titi *Cyrilla racemiflora*, and other shrubs.

Sediments. The sediments along the Mobile Harbor navigation channel consist of sand to clays with various mixtures of sand, silt, and clay located throughout the channel. Sediments are primarily composed of sands in the Bar Channel; a mix of estuarine silty clay and clay in Mobile Bay; and clays in the Mississippi Sound (Corps 1980). The current velocities range from about 8 inches per second (in/s) to 16 in/s near the SIBUA. The directions of the currents measured during the April survey (ebb tide conditions) moved towards the east while August directions (flood tide conditions) moved to the north-northwest (Kjerfve 1983).

3.2 Terrestrial Wildlife. Birds in the vicinity of the project may include: Gulls, pelicans, terns, sandpipers, plovers, stilts, skimmers, oystercatchers, herons, egrets and ibises.

3.3 Benthos, Motile Invertebrates, and Fishes. The benthic community in the Mississippi Sound and lower Mobile Bay was classified by Vittor and Associates in a study of the Mississippi Sound and selected sites in the Gulf of Mexico (Vittor, 1982). A total of 437 taxa were collected at densities ranging from 1,097 to 35,537 individuals per square meter. Generally, densities increase from fall through the spring months since most of the dominant species exhibit a late winter to early spring peak in production. These species, though sometimes low to moderate in abundance, occur in a wide range of environmental conditions. They are usually the most successful at early colonization and thus tend to strongly dominate the sediment subsequent to disturbances such as dredging activities. These species include polychaetes *Mediomastus spp.*, *Paraprionospio pinnata*, *Myriochele oculata*, polychaete worm *Owenia fusiformis*, *Lumbrineris app.*, *Sigambra tentaculata*, the *Linopherus-Paraphinome* complex, and *Magelona cf. phyllisae*. The *phoronid*, *Phoronis ap.* and the *cumacean* *Oxyurostylis* also fit this category. *M. oculata* and *O. fusiformis* are predominate species in the Mississippi Sound. The numerically dominant species collected during the study were polychaete worm *M. californiensis* and *P. pinnata*.

A number of studies evaluating the fish and invertebrates of Alabama estuaries have been conducted. These studies looked at species abundance and diversity in coastal waters. The

nearshore and marsh species are comprised largely of fish in the families *Poeciliidae*, *Cyprinodontidae*, and *Atherinidae* which serve as the prey for the Southern flounder *Paralichthys lethostigma* and seatrout *Cynoscion spp.*, both important sport and commercial species. Common migratory fish in the study area are Atlantic croaker *Micropogonias undulatus*, spot *Leiostomus xanthurus*, and sand seatrout *Cynoscion arenarius*. Important forage fish within the area are the pelagic species; Bay anchovy *Anchoa mitchilli*, striped anchovy *Anchoa hepsetus*, and Gulf menhaden *Brevoortia patronus*. The most commercially important shellfish found in the area include the brown and white shrimp, blue crab, and American oyster (Swingle, 1971 and Swingle and Bland, 1974).

Most marine species considered to be of significant economic importance utilize open water areas of the Gulf of Mexico for spawning purposes rather than the confines of semi-enclosed estuaries. However, almost all of these species, except for anadromous forms, migrate seaward seasonally for spawning, then larvae and early juveniles return to the estuaries, which serve as nursery grounds. Estuaries provide larvae and juveniles with protective habitat, an influx of freshwater, a continuous mixing zone, and an abundance of food supply. This phenomenon considered in this report is documented in scores of publications, but especially Christmas and Waller (1973), Loyacano and Smith (1979), and Benson (1982). This section evaluates potential impacts on several species as a result of expanding the SIBUA site for the disposal of dredged material.

Shipp (1983) documented this utilization activity by numerous species, such as the bay anchovy (*Anchoa mitchilli*), the speckled trout or spotted sea trout (*Cynoscion nebulosus*), and the red fish or red drum (*Sciaenops ocellatus*) in the immediate vicinity of the SIBUA. Pattillo et al (1997) summarized the life history and environmental tolerances for three species of shrimp in this region. The bay anchovy spawns throughout estuaries and nearshore Gulf of Mexico waters. Large numbers of these fish inhabit the lower estuaries and near-shore waters during warm months. The SIBUA and proposed Sand Island site does provide suitable spawning habitat for the bay anchovy but no data exists to indicate this particular site is more suitable than another. The SIBUA does not provide the only habitat necessary to maintain the existing population levels of the bay anchovy. Other areas in the Gulf of Mexico also provide the required habitat needed to maintain successful bay anchovy populations.

Spotted sea trout and red fish are species of concern to coastal states due to their game fish importance. The red drum is an important recreational species throughout its range. Juveniles generally live in estuaries and move to near-shore oceanic waters, such as the SIBUA and Sand island site, as they reach maturity (Pearson 1929). Adults range widely over the near-shore continental shelf waters throughout the year but apparently move to coastal waters to spawn (Overstreet 1983). Spawning is generally thought to take place in coastal waters near inlets (Jannke 1971, Holt et al. 1985) although Lyczkowski-Shultz et al. (1988) found eggs and larvae out to 20 miles from shore in the eastern Gulf of Mexico. It is believed that water temperature and salinity levels are more important to the spawning of the spotted sea trout than a specific location because newly hatched spotted sea trout will not survive low salinity and low temperature conditions. Optimum spawning conditions for spotted sea trout exist when salinity is 20 to 34 parts per thousand (ppt) and temperatures reach 70 to 90° Fahrenheit (F). Spawning takes place at night in coastal bays, sounds, and lagoons, near passes, and around barrier islands

from March through November. Females may lay up to 10 million eggs. The eggs hatch within 20 hours and are transported to estuaries by winds and currents. Juveniles spend 2 to 4 years in shallow grassy areas and then tend to move into the near-shore passes and along beaches.

The SIBUA and proposed Sand Island site could possibly serve as a spawning site for these species since both are known to spawn in lower estuaries, in near-shore areas, and around barrier islands (Perret et al. 1980; Williams et al., 1980; Benson, 1982). In a literature review, Wade (1980) noted that earliest observations of this century data implied intra-estuarine spawning, while the more recent data, relying more heavily on empirical observations of the presence and transport of eggs and larvae, indicated that most spawning is really salinity dependent, and in fact more activity is concentrated just off the barrier islands than previously thought. Studies indicated large numbers of eggs and larvae of several species of the drum family, including both the spotted sea trout and red drum, are present around SIBUA. The passes into the Mobile Bay estuary are the lanes of transport for these larvae leading into the Bay. These passes are located near the vicinity of the SIBUA. Thus, strong evidence support that all near-shore areas are important spawning areas for these species, and the SIBUA is not unique in their importance. Spawning location for the red drum is more definitive. Christmas and Waller (1973) report spawning of red drum outside of the Mississippi barrier islands, near to passes, and indicate no mature females have ever been taken in estuarine waters along their area of study.

Marine shrimp is by far the most popular seafood in the United States. There are many species of shrimp found in the Gulf of Mexico; however, only those of the family *Penaeidae* are large enough to be considered seafood. Brown shrimp (*Penaeus aztecus*), white shrimp (*P. setiferus*) and pink shrimp (*P. duorarum*) make up the bulk of Alabama shrimp landings.

The life cycles of brown, white and pink shrimp are similar. They spend part of their life in estuaries, bays and the Gulf of Mexico. Spawning occurs in the Gulf of Mexico. One female shrimp releases 100,000 to 1,000,000 eggs that hatch within 24 hours. The postlarvae shrimp develop through several larval stages as they are carried shoreward by winds and currents. Postlarvae drift or migrate to nursery areas within shallow bays, tidal creeks, and marshes where food and protection necessary for growth and survival are available. There they acquire color and become bottom dwellers. If conditions are favorable in nursery areas, the young shrimp grow rapidly and soon move to the deeper water of the bays. When shrimp reach juvenile and subadult stages (3-5 inches long) they usually migrate from the bays to the Gulf of Mexico where they mature and complete their life cycles. Most shrimp will spend the rest of their life in the Gulf. Several shrimpers actively fish in the vicinity of the SIBUA site for shrimp. However, shrimp is also actively fished outside of the boundaries of the site.

3.4 Essential Fish Habitat. Congress defines Essential Fish Habitat (EFH) as “those waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity.” The designation and conservation of EFH seeks to minimize adverse effects on habitat caused by fishing and non-fishing activities. The Gulf of Mexico Fishery Management Council (GMFMC) and National Marine Fisheries Service (NMFS) have identified EFHs for the Gulf of Mexico in its Fishery Management Plan Amendments. These habitats include estuarine areas, such as estuarine emergent wetlands, seagrass beds, algal flats, and mud, sand, shell, and rock substrates. In addition, marine areas, such as the water column, vegetated and non-vegetated bottoms,

artificial and coral reefs, geologic features and continental shelf features have also been identified. The habitat within the vicinity of the project consists of open-water marine environment with a sandy bottom and subject to high wave action and currents.

Open-water and estuarine marshes provide habitat for various species of invertebrates and vertebrates. Epibenthic crustaceans and infaunal polychaetes dominate the diets of higher trophic levels, such as flounder, catfish, croaker, porgy, and drum. The fish species composition of the estuarine and offshore area along the northern Gulf of Mexico is of a high diversity due to the variety of environmental conditions, which exist within the area. The major fisheries landed along the Mississippi and Alabama Gulf coast are Spanish mackerel (*Scomberomerus maculatus*), king mackerel (*Scomberomerus cavalla*), cobia (*Rachycentron canadum*), bluefish (*Pomatomus saltatrix*), pompano (*Trachinotus carolinus*), little tunny (*Euthynnus alletteratus*), spotted sea trout (*Cynoscion nebulosus*), red drum (*Sciaenops ocellatus*), and several shark species. In addition, numerous species of less interest may be taken, including ladyfish (*Elops saurus*), crevalle jack (*Caranx hippos*), blue runner (*Caranx crysos*), and black drum (*Pogonias cromis*). Trawlers work the area primarily for brown and white shrimp (*Peneus aztecus* and *P. setiferous*), but occasional trawlers seeking finfish species, including menhaden (*Brevoortia patronus*) and croaker (*Micropogonias undulatus*), as well as other industrial species may trawl this bottom (GMFMC-1998, 2004 and 2005, and Fishbase 2007).

The Mississippi Sound and adjacent waters have been identified as important nursery areas for nine sharks, primarily Atlantic sharpnose, blacktip, finetooth, and bull sharks. Less prevalent species are the spinner, blacknose, sandbar, bonnethead, and scalloped hammerhead. Typically sharks migrate inshore in the early spring around March and April, remain inshore during the summer months and then migrate offshore during the late fall around October. Most shark species in the Mississippi waters give birth during late spring and early summer, with young sharks spending just a few months of their life's in shallow coastal waters. Most shark species are abundant around barrier islands, with adult sharks commonly located south of the barrier islands (Carlson *et al.*, 2003).

The species managed by the Gulf of Mexico Fishery Management Council are listed in **Table 1** below.

Table 1: Fishery Management Plans and Managed Species for the Gulf of Mexico. (NMFS 2008)	
<p>Shrimp Fishery Management Plan brown shrimp – <i>Farfantepenaeus aztecus</i> pink shrimp - <i>F. duorarum</i> royal red shrimp - <i>Pleoticus robustus</i> white shrimp - <i>Litopenaeus setiferus</i></p>	<p>Stone Crab Fishery Management Plan FL stone crab - <i>Menippe mercenaria</i> gulf stone crab – <i>M. adina</i></p>
<p>Reef Fish Fishery Management Plan almaco jack – <i>Seriola rivoliana</i> anchor tilefish - <i>Caulolatilus ntermedius</i> banded rudderfish – <i>S. zonata</i> blackfin snapper - <i>Lutjanus buccanella</i> blackline tilefish - <i>Caulolatilus cyanops</i> black grouper- <i>Mycteroperca bonaci</i> blueline tilefish – <i>C. microps</i> cubera snapper – <i>L. cyanopterus</i> dog snapper – <i>L. jocu</i> dwarf sand perch - <i>Diplectrum ivittatum</i> gag grouper - <i>M. microlepis</i> goldface tilefish – <i>C. chrysops</i> goliath grouper - <i>Epinephelus itajara</i> gray snapper – <i>L. griseus</i> gray triggerfish - <i>Balistes capricus</i> greater amberjack – <i>S. dumerili</i> hogfish - <i>Lachnolaimus maximus</i> lane snapper - <i>Lutjanus synagris</i> lesser amberjack - <i>S. fasciata</i> mahogany snapper – <i>L. mahogoni</i> marbled grouper – <i>E. inermis</i> misty grouper – <i>E. mystacinus</i> mutton snapper – <i>L. analis</i> Nassau grouper – <i>E. striatus</i> queen snapper - <i>Etelis oculatus</i> red hind - <i>Epinephelus guttatus</i> red grouper – <i>E. morio</i> red snapper - <i>L. campechanus</i> rock hind – <i>E. adscensionis</i> sand perch - <i>Diplectrum formosum</i> scamp grouper - <i>M. phenax</i> schoolmaster – <i>L. apodus</i> silk snapper – <i>L. vivanus</i> snowy grouper – <i>E. niveatus</i> speckled hind - <i>E. drummondhayi</i> tilefish - <i>Lopholatilus chamaeleonticeps</i> vermilion snapper - <i>Rhomboplites aurorubens</i> Warsaw grouper – <i>E. nigritus</i> wenchman - <i>Pristipomoides aquilonaris</i></p>	<p>Spiny Lobster Fishery Management Plan spiny lobster - <i>Panulirus argus</i> slipper lobster - <i>Scyllarides nodife</i></p> <p>Coral and Coral Reef Fishery Management Plan varied coral species and coral reef communities comprised of several hundred species</p> <p>Coastal Migratory Pelagic Fishery Management Plan cobia - <i>Rachycentron canadum</i> king mackerel – <i>Scomberomorus cavalla</i> Spanish mackerel - <i>S. maculatus</i></p> <p>Red Drum Fishery Management Plan red drum - <i>Sciaenops ocellatus</i></p> <p>yellowedge grouper <i>E. lavolimbatus</i> yellowfin grouper – <i>M. venenosa</i> yellowmouth grouper – <i>M. interstitialis</i> yellowtail snapper – <i>Ocyurus chrysurus</i></p>

Within the project area, EFH has been designated for managed species of Gulf of Mexico dolphin, wahoo, red drum, blue marlin, sharks (11 species), coastal migratory pelagics (3 species), reef fish (43 species), stone crab (2 species) and shrimp (4 species). No habitat areas of particular concern were identified for this area.

3.5 Threatened and Endangered Species. Several species of threatened and endangered marine mammals, turtles, fish and birds occur in the Gulf of Mexico off the coast of Alabama. The National Oceanic and Atmospheric Administration (NOAA) and USFWS lists the following species in **Table 2** as either threatened and/or endangered that may potentially occur within the project area:

Table 2: Threatened and Endangered Species (NOAA and USFWS 2009)

LISTED SPECIES	SCIENTIFIC NAME	STATUS	DATE LISTED
Marine Mammals			
blue whale	<i>Balaenoptera musculus</i>	Endangered	12/02/70
finback whale	<i>Balaenoptera physalus</i>	Endangered	12/02/70
humpback whale	<i>Megaptera novaengliae</i>	Endangered	12/02/70
sei whale	<i>Balaenoptera borealis</i>	Endangered	12/02/70
sperm whale	<i>Physeter macrocephalus</i>	Endangered	12/02/70
West Indian manatee	<i>Trichechus manatus</i>	Endangered	03/11/67
Turtles			
green sea turtle	<i>Chelonia mydas</i>	Threatened ¹	07/28/78
hawksbill sea turtle	<i>Eretmochelys imbricata</i>	Endangered	06/02/70
Kemp's ridley sea turtle	<i>Lepidochelys kempii</i>	Endangered	12/02/70
leatherback sea turtle	<i>Dermochelys coriacea</i>	Endangered	06/02/70
loggerhead sea turtle	<i>Caretta caretta</i>	Threatened	07/28/78
Fish			
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	Threatened	09/30/91
Birds			
Piping Plover	<i>Charadrius melodus</i>	Threatened	12/11/85
Least Tern	<i>Sterna antillarum</i>	Endangered	05/28/85

3.6 Water Quality. Water quality within Mobile Bay, Mississippi Sound, and adjacent Gulf of Mexico is influenced by several factors, including the discharge of freshwater from rivers, seasonal climate changes, and variations in tide and currents. The primary driver of water quality is the rivers that feed into the Bay and Sound. Freshwater inputs from the local watersheds provide nutrients and sediments that serve to maintain productivity both in the Sound and in the extensive salt marsh habitats bordering estuaries of the Sound. The salt marsh habitats act to regulate the discharge of nutrients to coastal waters and serve as a sink for pollutants. Suspended sediments enter the Bay and Sound from fresh water sources, but are hydraulically restricted due to barrier islands and near shore areas. In addition, dynamic features such as the Loop Current, eddies, and river plumes create variations in temperature, salinity, and water density. Temperature and salinity strongly influence chemical, biological, and ecological patterns and processes. Differences in water density affect vertical ocean currents and may also concentrate buoyant materials such as detritus, and plankton. Greatest stratification in the water occurs in summer (Thompson et al., 1999)

The Alabama Department of Environmental Management (ADEM) has classified the coastal water in the project area as suitable for recreation, propagation of fish and wildlife and shellfish harvesting. Sufficient dissolved oxygen concentrations, water clarity, and typical salinity ranges with little to no stratification in the water column occur within this site. Water quality within the project area is influenced mainly by non-point source pollution. According to the 2008 Section 303(d) list prepared by the ADEM, the main causes of water quality degradation within the area are pathogens, introduced into the system by urban runoff and storm sewers.

3.7 Hazardous Material.

Deepwater Horizon Oil Spill Impacts. On April 20, 2010, while working on an exploratory well approximately 50 miles offshore of Louisiana, the floating semi-submersible mobile offshore drilling unit Deepwater Horizon experienced an explosion and fire. The rig subsequently sank and oil and natural gas began leaking into the Gulf of Mexico. The total amount of oil and natural gas that has escaped into the Gulf of Mexico is yet to be finally determined. On September 19, the relief well process was successfully completed and the federal government declared the well "effectively dead". The spill has caused extensive damage to marine and wildlife habitats as well as the Gulf's fishing and tourism industries.

This spill has created uncertainty on whether future dredging operations will meet environmental compliance criteria and requirements for ocean disposal. The long term impacts of the oil spill on the northern Gulf Coast are uncertain at this time. This spill could potentially adversely impact USACE water resources projects and studies within the coastal area. Potential impacts could include factors such as changes to existing or baseline conditions, as well as changes to future-without and future with project conditions. The USACE will continue to monitor and closely coordinate with other Federal and state resource agencies and local sponsors in determining how to best address any potential problems associated with the oil spill that may adversely impact USACE water resources development projects/studies. This could include revisions to this proposed action as well as the generation of supplemental environmental analysis and documentation for specific projects/studies as warranted by changing conditions.

3.8 Air Quality. Existing air quality in coastal Mobile and Baldwin counties was assessed in terms of types of sources contributing to emissions that are regulated by National Ambient Air Quality Standards (NAAQS). NAAQS have been developed for oxides of nitrogen, hydrocarbons, particulate matter, carbon monoxide, sulfur dioxide, lead, volatile organic compounds and other hazardous air pollutants. Sources of air pollution in the project area are mainly from non-point sources such as boat motors and vehicular traffic emissions. No major sources of air pollution were found within the vicinity of the project area. Mobile and Baldwin counties are in attainment for all NAAQS (Environmental Protection Agency, 2009).

3.9 Esthetics. SIBUA and the proposed Sand Island site is located offshore from any beach or recreational areas. The closest beachfront to the site is the dynamic barrier island (about 3.0 miles) known as Pelican Island, which is oriented southeastward to northeastward. This island is a popular boating designation for individuals operating out from the Mobile Bay or the Gulf

Shore/Fort Morgan vicinity. The remote location of the island makes it a favorite spot to visit for boaters and overnight campers during the summer months. During cooler periods, very few visitors use it. Pelican Island has recently become connected to the Dauphin Island resulting from the natural local littoral transport processes. No structures of any substance are located there because it is vulnerable to storms and strong tides due the unconsolidated nature of the sediment and low relief (maximum about 9 feet). The island continually changes its contour in response to the meteorological and wave energy conditions and was severed in several places by Hurricane Frederic in September of 1979. Other tropical storms have also altered the shape of the island.

The closest developed resort to the SIBUA is Dauphin Island. Several hundred permanent residents populate Dauphin Island. However, the population increases during the summer months, due to the presence of several hundred vacation and resort homes, several condominiums, and educational facilities. The island also attracts several thousand additional daytime visitors during weekends depending on local weather conditions. Despite populations described above, there is very little public access to the island's beaches. The majority of beachfront is privately owned, and the extreme western end of the island, which is undeveloped, has been fenced to prevent public access. Therefore, Dauphin Island cannot be considered a major resort/beach site for the general public. However, it is extensively developed for private ownership.

Even more remote from the SIBUA than either Sand or Dauphin Island is the Gulf Shores-Fort Morgan peninsula area. Actually, the extreme eastern tip of Fort Morgan peninsula is nearly the same distance from the site as is Dauphin Island, but the majority of this beachfront extends directly eastward. Gulf Shores and Fort Morgan have become a major Gulf Coast tourist attraction, with scores of condominiums and hotels/motels, and an ever-increasing westward moving wave of development. Private residents live year-round in Gulf Shores and Fort Morgan; however, the population escalates during the summer months due to the number of hotels, motels, and the condo and house rentals. Gulf Shores and Fort Morgan also attract snowbirds from the north for the wintering months.

3.10 Noise. Noise levels in the area are typical of recreational, boating, and fishing activities. Noise levels fluctuate with the highest levels usually occurring during the spring and summer months due to increased recreational activities.

3.11 Cultural Resources. Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended and implementing regulations 36 CFR Part 800 requires consultation with other agencies to avoid or minimize adverse effect on historical, architectural, archaeological, and cultural resource. In order to ensure compliance, cultural resources were evaluated via a literature review and remote sensing data which focused on archaeological resources (shipwrecks). The information gathered from these sources was used to characterize and assess the potential effects of the proposed project. The data search revealed that there were several possible ship wrecks in the vicinity of the SIBUA. No sites have been identified within the Bar Channel. One site has been identified as being of potential cultural importance within the SIBUA. All of the sites are currently covered with several feet of sand and have not been recently disturbed.

4.0 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION

4.1 Fish and Wildlife Resources.

Oyster Reefs. No significant adverse impacts to oyster reefs from the continued operation and disposal of maintenance material in the SIBUA were identified in this evaluation. The closest oyster reefs are located several miles from the open water dredging and placement activities associated with this project.

Submerged Aquatic Vegetation. No significant impacts to the SAVs were identified in this evaluation. The closest known SAVs are located several miles from open water dredging and placement activities associated with this project and no SAVs are located within the expected 400-foot turbidity mixing zone of channel dredging.

Wetlands. Emergent wetlands are not located in the vicinity of the project and will not be impacted.

Sediments. Dredging and disposal operations will result in the temporary increases of suspended sediments, the loss of benthic organisms, increases in nutrients, and bathymetry changes in the ocean bottom. The increase in turbidity will reduce light penetration through the water column, thereby reducing photosynthesis, surface water temperatures, and esthetics. These conditions could potentially alter visual predator-prey relations in the immediate project vicinity. In addition, sediment adheres to fish gills, resulting in respiratory stresses, and natural movement of eggs and larvae could be potentially altered as a result of the sediment adherence. However, the salinity of water associated with the proposed project area is high enough to promote rapid settling of finer particles. Ninety-eight percent of discharged sediments from hydraulic dredging have been observed to settle out within 200 feet of discharge points during similar operations in the project vicinity (Corps 1978). All of these described impacts are temporary and are anticipated to return to previous conditions shortly after disposal operations. In addition, the Section 404(b)(1) Evaluation Report (**APPENDIX A**) concluded that the proposed maintenance and dredging action will not jeopardize or adversely impact any oyster reefs, SAVs, wetlands or other critical habitat. The sediment quality and texture of the SIBUA dredged material is expected to be homogenous to that existing in at the proposed Sand Island site. This is due to their close proximity to each other.

4.2 Terrestrial Wildlife. As a result of this evaluation, no adverse impacts to the terrestrial wildlife located in the vicinity of project were identified. This project is located several miles from the nearest land.

4.3 Benthos, Motile Invertebrates, and Fishes. There would be temporary disruption of the aquatic community caused by the dredging and open-water placement. Non-motile benthic fauna within the area would be destroyed by dredging and open water placement operations, but should repopulate upon project completion. Some of the motile benthic and pelagic fauna, such as crabs, shrimp, and fishes are able to avoid the disturbed area and should return shortly after the activity is completed. Larval and juvenile stages of these forms may not be able to avoid the activity due to limited mobility.

Rates of benthic community recovery observed after dredged material placement ranged from a few months to several years. The relatively species-poor benthic assemblages associated with low salinity estuarine sediments can recover in periods of time ranging from a few months to approximately one year (Leathem et al., 1973; McCauley et al., 1976 and 1977; Van Dolah et al. 1979 and 1984; Clarke and MillerWay, 1992), while the more diverse communities of high salinity estuarine sediments may require a year or longer (e.g. Jones, 1986; Ray and Clarke, 1999).

Open-water placement activities will result in the mounding of the sandy dredged material after it is released from the hopper dredge in a relatively thick layer. Deposits greater than 20-30 cm (8-12 in) generally eliminate all but the largest and most vigorous burrowers (Maurer et al., 1978). The sediment quality and texture of the channel dredged material are expected to be homogenous to that existing in the dredging and disposal areas, due to their close proximity to each other. Placement of material similar to the ambient sediments (e.g., sand on sand or mud on mud) has been shown to produce less severe, long-term impacts (Maurer et al. 1978, 1986).

Temporary loss of benthic invertebrate populations would occur within the project footprint of the dredging and open water disposal areas.

Several studies of turbidity from total suspended solids (TSS) associated with dredging operations have concluded that dredging had no substantial effects on nekton (Ritchie, 1970; Stickney, 1972; Wright, 1978); however, other studies have shown that elevated TSS levels and prolonged exposure can suffocate and reduce growth rates of adult and juvenile nekton and reduce viability of eggs (Moore, 1977; Stern and Stickle, 1978). Detrimental effects are generally recognized at TSS concentrations greater than 500 milligrams per liter (mg/L) and for durations of continuous exposure ranging from several hours to a few days. Turbidities exceeding 500 mg/L have been observed around maintenance dredging and placement operations (EH&A, 1978), and such turbidities may affect some aquatic organisms near the active dredges. In a study in Corpus Christi Bay, Schubal et al. (1978) reported TSS values greater than 300 mg/L but only in a relatively small area near the bottom. They also found that TSS from maintenance dredging in Corpus Christi Bay is not greater than that from shrimping and affects the bay for much shorter time periods. In a study of the Laguna Madre, Sheridan (1999) found elevations in turbidity only over the subtidal placement material fluid mud pile. In this study they found that even 16.5 feet from the edge of the placed material, turbidity was not statistically greater than that 1 kilometer or more away. May (1973) found that TSS was reduced by 92 percent within 100 feet of the discharge point, by 98 percent at 200 feet, and that concentrations above 100 mg/L were seldom found beyond 400 feet from the point of placement. Elevated turbidities during construction and maintenance dredging may affect some aquatic organisms near the dredging activity; however, turbidities in open-water habitats can be expected to return to near ambient conditions within a few hours after dredging ceases or moves out of a given area. Schidler (1984) reports similar TSS levels from dredging and storm events. Overall, motile organisms are mobile enough to avoid highly turbid areas (Hirsch et al., 1978). Under most conditions, fish and other motile organisms are only exposed to localized suspended-sediment plumes for short durations (minutes to hours) (Clarke and Wilber, 2000).

SIBUA and the Sand Island site does not provide important habitat that could not be found in other areas of the Gulf of Mexico. There is no significant resource at this site that is essential for the continued survival of any particular species. With the small area (percentage wise) of ecosystem that will be affected at a given point in time and the use open-water disposal methods being employed, no significant long-term impacts to the benthos, motile invertebrates, and fishes are expected to occur as a result of the proposed action. Therefore, it was determined that no adverse impacts to the aquatic community would result from the dredging of material from the SIBUA and subsequent placement at the Sand Island site.

4.4 Essential Fish Habitat (EFH). The Corps, Mobile District will take extensive steps to reduce and avoid potential impacts to EFH as well as other significant area resources. No estuarine emergent wetlands, oyster reefs, or SAVs would be adversely affected by the proposed action. Most of the motile benthic and pelagic fauna, such as crab, shrimp, and fish, should be able to avoid the disturbed area and should return shortly after the activity is completed. No long-term direct impacts to managed species of finfish or shellfish populations are anticipated. However, it is reasonable to anticipate some non-motile and motile invertebrate species will be physically affected through disposal operations. These species are expected to recover rapidly soon after the disposal operations are complete. As detailed in section 4.3 of this assessment, no significant long-term impacts to this resource is expected as result of this action.

Increased water column turbidity during dredging would be temporary and localized. The spatial extent of elevated turbidity is expected to be within 400 feet of the operation, with turbidity levels returning to ambient conditions within a few hours after completion of the dredging activities. Due to the nature of dredging and disposal activities and the small area (percentage wise) of ecosystem that would be affected at a given point in time no significant long-term impacts are expected to occur.

4.5 Threatened and Endangered Species. Significant impacts to threatened and endangered species would be the loss of or long term reduction in the size of a population; a habitat modification that causes a permanent disruption to breeding, foraging or other life history requirement; permanent interference with the movement of native resident or migratory protected species; and loss of any area designated a critical habitat.

The whale species listed as threatened or endangered that could occur in the vicinity of the project area typically occur in the deeper waters off the continental shelf and would only venture through the project area as incidental transients. Any impacts to these species would be limited to annoyance and alteration of swimming patters to avoid the active dredging areas. Any such impacts would be negligible. The West Indian manatee migrates along the Gulf coast from Florida to Louisiana as a seasonal transient. The project area does not provide habitat requirements and it is very unlikely that the animal would be located that far out from shore. In the unlikely event that a manatee was located in the vicinity of the project site, "Standard Manatee Construction Conditions" would be implemented. The piping plover and least tern occur along the Gulf Coast and also may occur on Pelican Island or other nearby land forms. Since this project is located over water and away for any land forms, it is highly unlikely that these birds would be disrupted by the proposed project. In summary, any impacts to whales, manatees or shore birds would be temporary or negligible.

Through ongoing consultation with the NMFS and the USFWS the Corps, Mobile District has determined that five species of sea turtles (loggerhead, green, hawksbill, Kemp's ridley, and leatherback), and Gulf sturgeon protected by the ESA can be found in or near the project area and may be affected by the project. These species will likely avoid the immediate project vicinity during dredging or sand placement due to noise from vessels and machinery; however these effects will be insignificant. Sea turtles and Gulf sturgeon may also be affected by dredging and disposal operations if they were to be struck by the dredge as it transits the site or by the movement of hydraulic pipelines; however, due to their mobility, the chance of this occurring is discountable. This project is not located within designated critical habitat for any of the listed species.

Activities associated with the removal of materials from the Mobile Bar Channel by hopper dredge have already been analyzed in the November 2003 Regional Biological Opinion (RBO) titled "Dredging of Gulf of Mexico Navigation Channels and Sand Mining ("Borrow") Areas Using Hopper Dredges by Corps of Engineers (COE) Galveston, New Orleans, Mobile, and Jacksonville Districts" as amended and modified on June 24, 2005, and January 7 2009. Potential impacts on the five species of listed sea turtles and Gulf sturgeon from hopper dredging activities were assessed in the 2003 RBO. In the opinion, NMFS concluded that sea turtles and Gulf sturgeon can be adversely affected by hopper dredges and included in Incidental Take Statement (ITS), pursuant to Section 7 of ESA. The ITS in the 2003 RBO contains reasonable and prudent measures with implementing terms and conditions to help minimize impacts of take; therefore any sea turtle or Gulf sturgeon take resulting from future maintenance dredging in Mobile Bar Channel will be assessed against the Annual ITS in the RBO.

The Corps, Mobile District made an assessment and determined that no federally-protected species or designated critical habitat were likely to be adversely affected as a result of the proposed project. Letters requesting concurrence with the District's Not Likely to Adversely Affect (NLAA) determination are being prepared for transmittal to the NMFS and USFWS.

4.6 Water Quality. The dredging and disposal operations are expected to create some degree of construction-related turbidity in excess of the natural condition in the proximity of the channel and placement site. Impacts from sediment disturbance during these operations are expected to be temporary, minimal and similar to conditions experienced during past routine operation and maintenance of the channel. The dredged material from SIBUA and placed at the Sand Island site will consist primarily of fine to medium-grained sands. This type of material has historically resulted in insignificant release potential for dissolved constituents that may potentially enter the water column. Suspended particles are expected to settle out within a short time, with no long-term measurable effects on water quality. No measurable changes in temperature, salinity, PH, hardness, oxygen content or other chemical characteristics are expected. SIBUA has been historically used for the disposal of sandy dredged material since 1997. Thus, the Mobile District does not anticipate any adverse impacts as a result of this action. In addition, a water quality certification will be requested from ADEM.

4.7 Hazardous Materials. No hazardous materials are known to exist in the project area. The contractor would be responsible for proper storage and disposal of any hazardous materials, such as oils and fuels used during the dredging and disposal operation.

4.8 Air Quality. The proposed action would have no significant long-term affect on air quality. Air quality in the immediate vicinity of the construction equipment would be slightly affected for a short period of time by the fuel combustion and resulting engine exhausts. The exhaust emissions are considered insignificant in light of prevailing breezes and when compared to the existing exhaust fumes from other vessels using the project area. Any air quality impacts would be temporary and negligible.

4.9 Esthetics. SIBUA is currently used by the Mobile District for the maintenance operations of the bar channel. Continued use of the SIBUA and re-establishment of Sand Island is not anticipated to have any adverse impacts to Pelican and Dauphin Islands, Gulf Shores, and Fort Morgan due to the distances of these sites from the disposal sites. Pelican Island should benefit from the activity due to the additional sand placed in the littoral system. SIBUA may be intensely trawled during offshore migrations in summer and early fall for fish and shrimp. Commercial and recreational vessels and dredges have concurrently utilized the same area in the past without incident. Only temporary degradation to the esthetic environment would occur as a result of the proposed action to the local environment. Impacts would primarily occur as a result of the physical presence of heavy equipment. Some minor increases in turbidity maybe noted in the immediate vicinity during dredging operations, but these increases would be minor and short term in nature.

4.10 Noise. Noise impacts from project equipment are expected to increase in the vicinity during maintenance dredging work as a result of engine noise from the dredge, and noise emitted from other job related equipment. While there is little that can be done to reduce noise during the operation, these impacts would be short term and restricted to the immediate vicinity of the activity. No long-term increase in noise would occur in or around the project area. Noise is not expected to be a significant impact.

4.11 Cultural Resources. During July and August of 2009, a remote sensing survey was conducted by the Corps, Mobile District on areas of SIBUA. The purpose of the survey was to identify cultural resources sites (most notably shipwrecks) within the disposal area boundaries. The survey work was conducted as part of the Corps' responsibility as outlined in Section 106 of the NHPA. In addition, the survey was discussed directly with the Alabama State Historic Preservation Officer (SHPO) and with the Marine Advisory Commission. The existing SIBUA includes several clusters of anomalies believed to be shipwrecks. SIBUA dredging activities associated with this project will coordinated with the SHPO to assure avoidance of these historic resources.

5.0 CUMULATIVE EFFECTS SUMMARY. Federal regulations implementing the NEPA (40 CFR Sections 1500-1508) require that the cumulative impacts of a Proposed Action be assessed. NEPA defines cumulative effects as an “impact on the environment which results from the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or nonfederal) or person undertakes such other actions.” Cumulative impacts can result from individually minor but

collectively significant actions taking place over a period of time. This section analyzes the proposed action as well as any connected, cumulative, and similar existing and potential actions occurring in the area and surrounding the site.

The Corps is required by Congress to maintain the federally-authorized Mobile Harbor navigation channel and MHTB to provide safe navigation for commercial and recreational vessels. The oil mitigation in the form of the re-establishment of Sand Island is essential for protection of the valuable natural resources within Mobile Bay and Mississippi. Future development of the surrounding area would likely proceed under the “no action” or the “preferred action” plan as development in the immediate area of Mobile Bay is not specific to the proposed action but connected with existing local attractions and urbanization of the area. Thus, the re-establishment of Sand Island is expected to have no significant direct cumulative impacts to biological resources, water chemistry, or oceanographic resources.

6.0 OTHER CONSIDERATIONS

6.1 Coastal Zone Management Act of 1972. The Corps, Mobile District determined that the proposed action is consistent with the Alabama Coastal Management Program to the maximum extent practicable. A Coastal Zone Consistency determination is being requested from the State of Alabama.

6.2 Clean Water Act of 1972. No work would occur until the State has issued water quality certification for the proposed action. It is expected that all State water quality standards will be met. Section 401 water quality certification was requested from the ADEM for the proposed action. A draft Section 404(b)(1) evaluation report has been prepared and is included in **APPENDIX A** of this EA.

6.3 Rivers and Harbors Act of 1899. The proposed work would not obstruct navigable waters of the United States.

6.4 Marine Mammal Protection Act of 1972, as amended. Incorporation of the safe guards used to protect threatened or endangered species during project implementation will also protect any marine mammals in the area; therefore, the project is in compliance with this Act.

6.5 Fish and Wildlife Coordination Act of 1958, as amended. This project was coordinated with the FWS, and is in full compliance with the act.

6.6 E.O. 11988, Protection of Children. The proposed action complies with Executive Order 13045, “Protection of Children from Environmental Health Risks and Safety Risks”, and does not represent disproportionately high and adverse environmental health or safety risks to children in the United States.

The proposed action is located in open-water and uninhabited; thus, no changes in demographics, housing, or public services would occur as a result of the proposed project. With respect to the protection of children, the likelihood of disproportionate risk to children is not significant. Re-designating the disposal site does not involve activities that would pose any disproportionate environmental health risk or safety risk to children.

6.7 E.O. 11990, Environmental Justice. The proposed action complies with Executive Order 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations”, and does not represent disproportionately high and adverse human health or environmental effects on minority populations and low-income populations in the United States.

The proposed action is not designed to create a benefit for any group or individual. The expansion and disposal activities do not create disproportionately high or adverse human health or environmental impacts on minority or low-income populations of the surrounding community. Review and evaluation of this action has not disclosed the existence of identifiable minority or low-income communities that would be adversely impacted by the proposed project.

7.0 COORDINATION. The general public was notified of the proposed action via public notice on December 13, 2010. The public notice was mailed to Federal and state agencies and the interested public and included a 30-day review period. All comments on the action are being considered prior to a decision on the action. A legal notice will be published in the Mobile Register.

8.0 CONCLUSION. The proposed oil mitigation for the re-establishment of Sand Island would have no significant environmental impacts on the existing environment. No mitigation actions are required for the proposed project. The implementation of the proposed action would not have a significant adverse impact on the quality of the environment and an environmental impact statement is not required.

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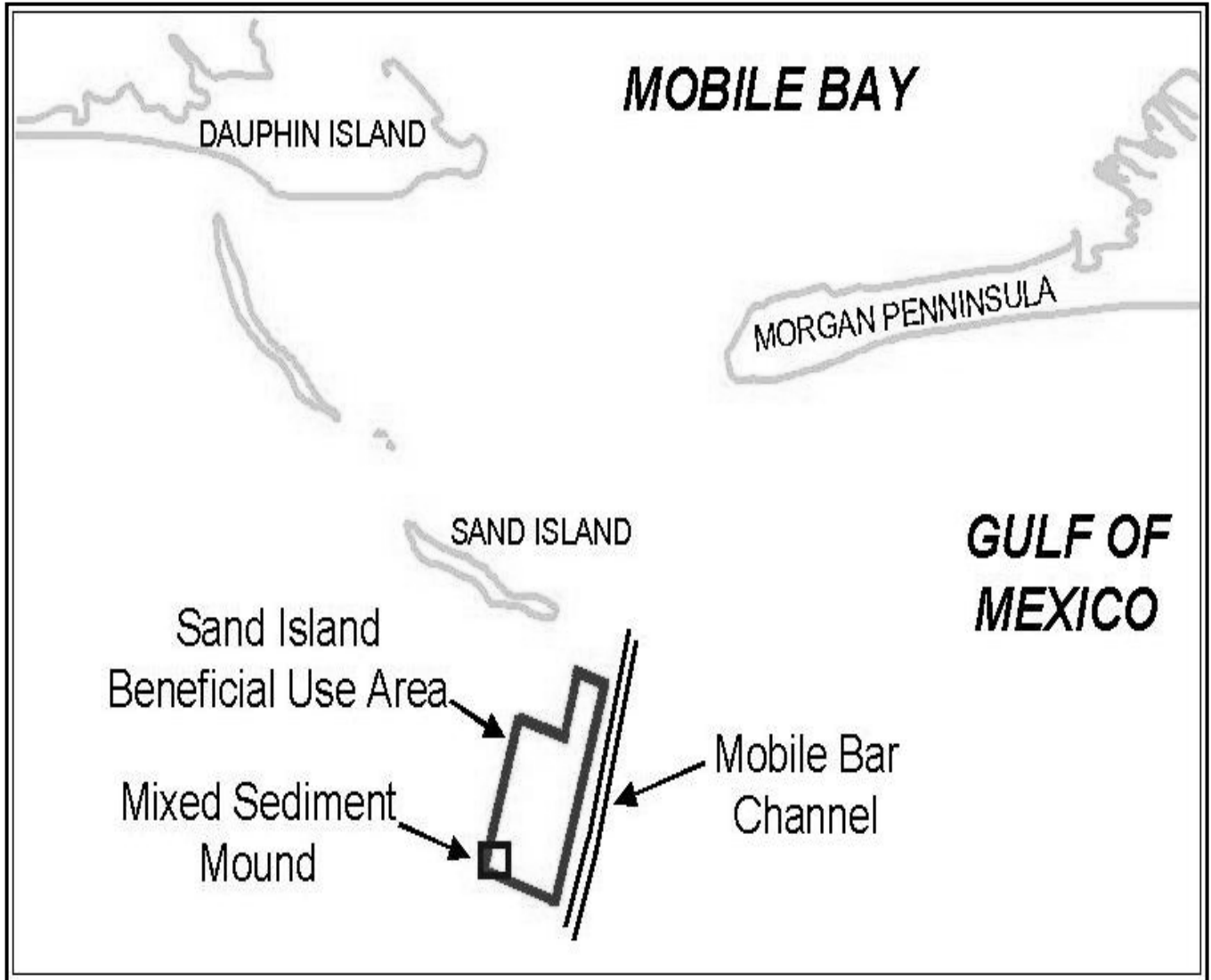


Figure 2. Location of the Mobile Bar Channel and Sand Island Beneficial Use Area (SIBUA)

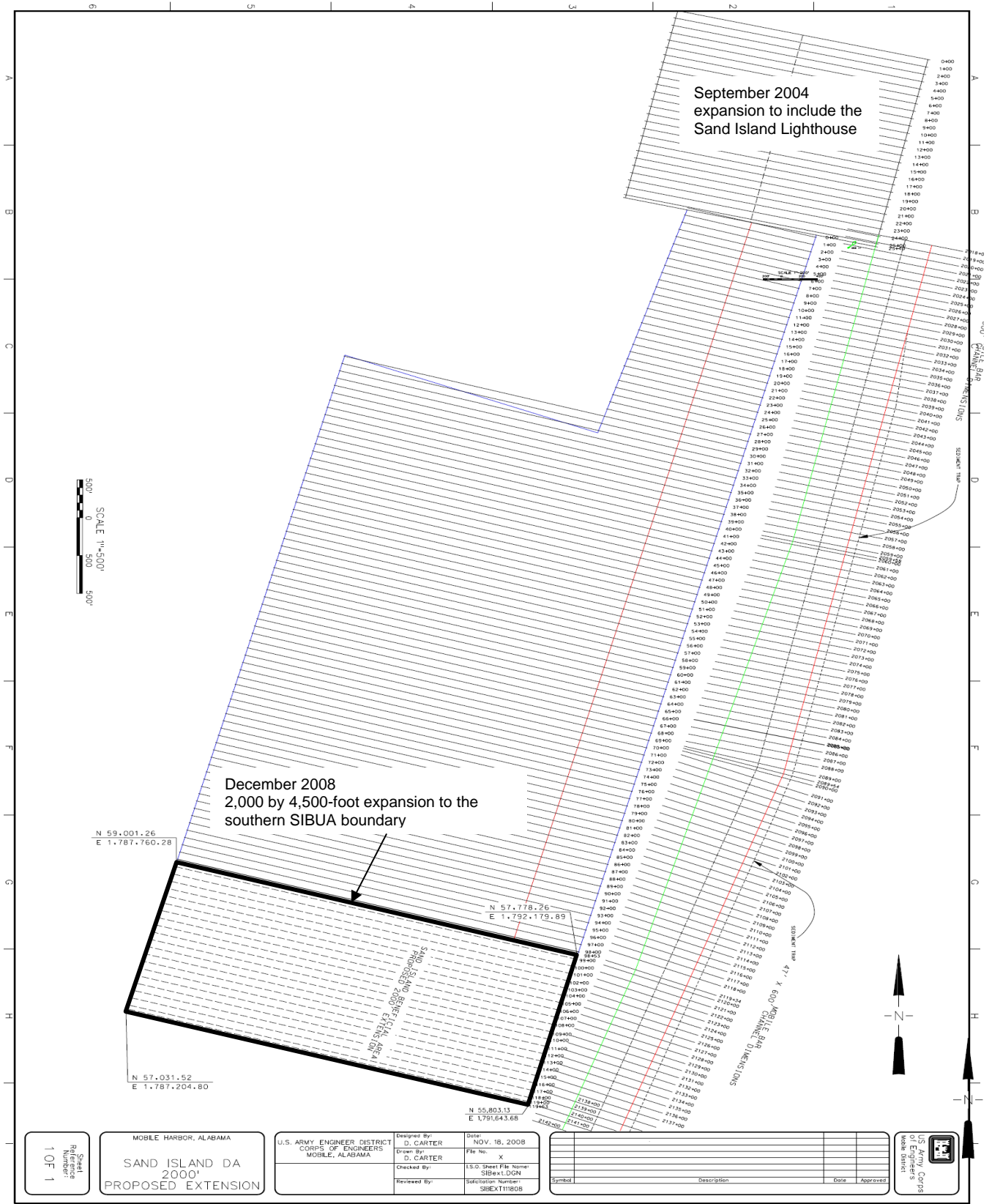


Figure 3. September 2004 and December 2008 SIBUA expansion areas.

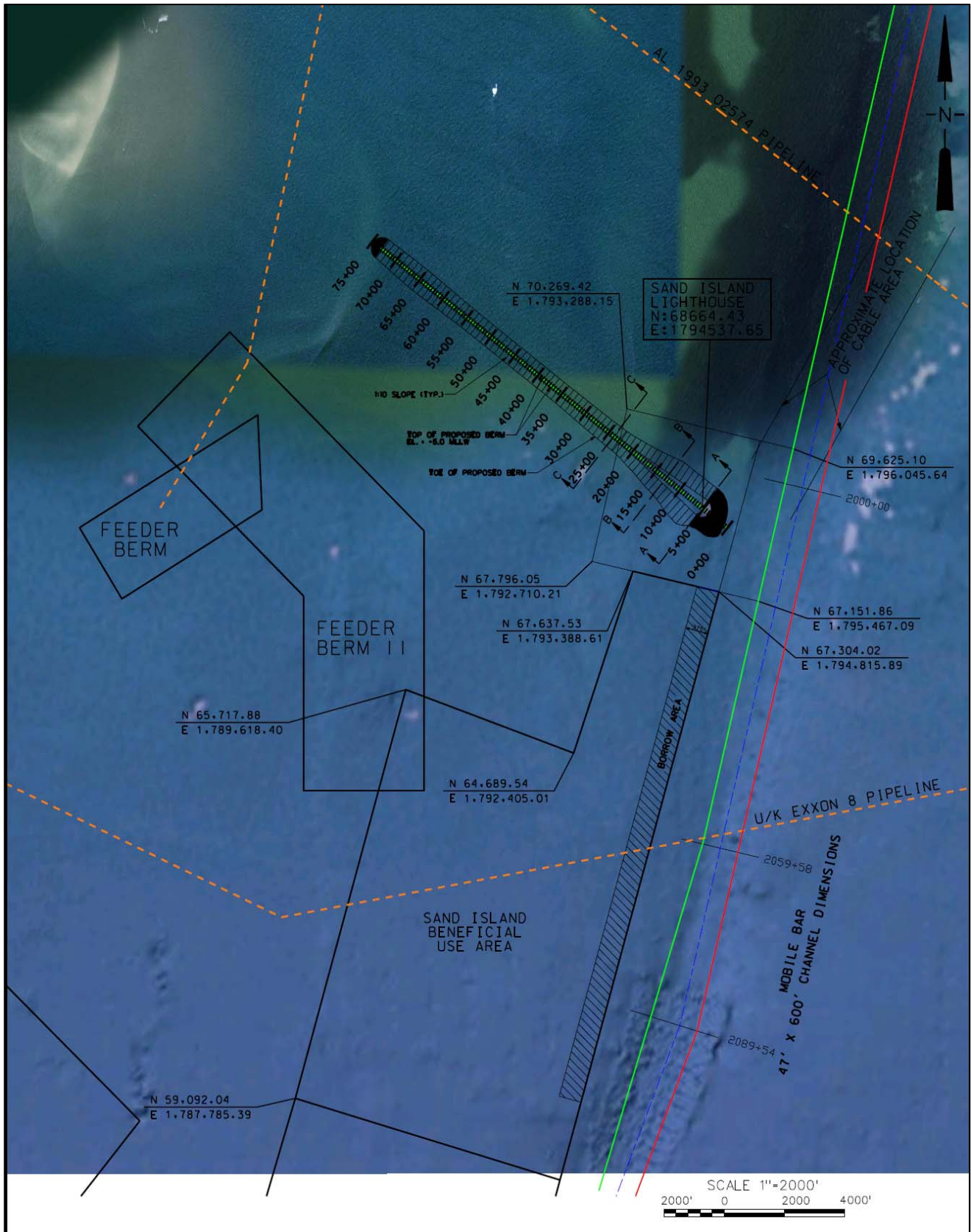


Figure 4. Proposed Sand Island plan view

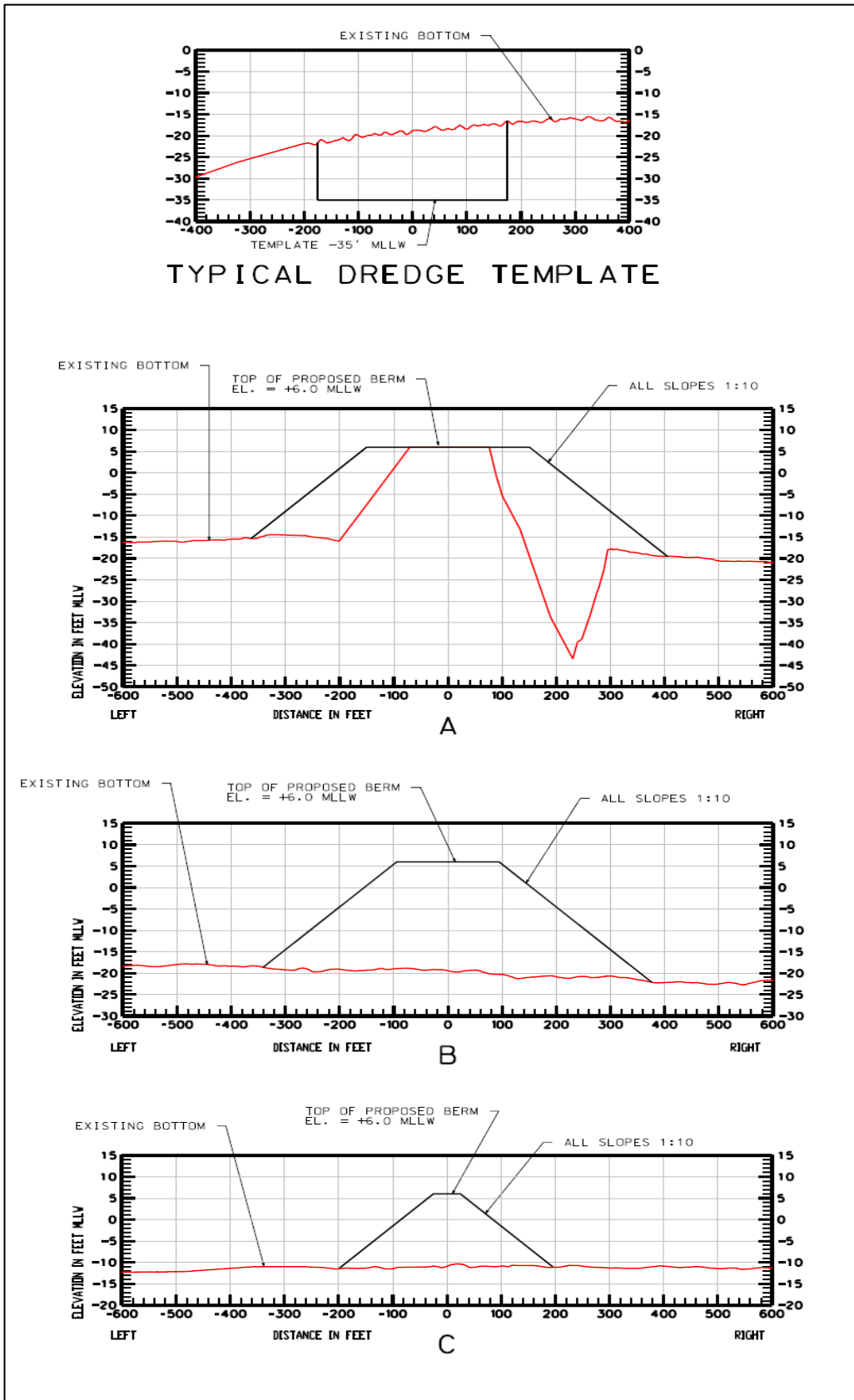


Figure 5. Proposed Sand Island cross sections

APPENDIX A

SECTION 404 (b)(1) EVALUATION REPORT

SAND ISLAND 406 OIL MITIGATION

MOBILE, ALABAMA

FEDERALLY AUTHORIZED

I. PROJECT DESCRIPTION:

A. **Location:** The oil mitigation re-establishment of Sand Island is located southeast of Pelican Island along the west side of the Mobile Bar Channel and adjacent to the Sand Island Lighthouse in the Gulf of Mexico, Mobile County, Alabama. (**Figure 1 and 2**) of the Environmental Assessment [EA]).

B. **General Description:** For the proposed Sand Island 406 Oil Mitigation action, the Corps is proposing the placement of approximately 1 to 2 million cubic yards (cy) of sand for use towards re-establishment of Sand Island. The initial source of sand will be from portions of the SIBUA with options for future placement from the regular maintenance dredging of sand from the Mobile Bar Channel. Placement will begin at and around the Sand Island Lighthouse proceeding to the northwest as far as the supplemental funding source allows. Actions for this effort will be over and above the District's normal maintenance dredging activities for the Mobile Bar Channel, which provides options for additional future periodic placement of sand onto the Island.

The proposed action will create an emergent island in a manner that will begin a re-establishment of the original Sand Island. The proposed Sand Island plan view and resulting cross sections are presented in **Figures 4 and 5** of the EA. In addition to oil mitigation, the Corps feels that this action would provide an excellent opportunity towards accelerating the return of sediment into the local littoral system as well as increasing disposal capacity in the SIBUA consistent with established regional sediment management implementation principles and goals. Also, it is believed that this action provides an excellent opportunity for the protection of the Sand Island Lighthouse which is a valuable cultural resource. Re-establishing the island to include the light house will provide valuable protection to this historic structure.

It should be noted that the eastern end of the proposed restored Sand Island is actually within the existing SIBUA, therefore, the borrowed sandy sediments that will be placed to re-establish the island have been deemed compatible from a biological and physical standpoint according to guidelines established by the Corps and the U.S. Environmental Protection Agency (EPA). The placement activities will be accomplished by either using hopper dredges within pump-out capabilities or hydraulic pipeline dredges. The characteristics of the sediment being dredged and placed ranges from fine to medium-grained quartz sand from the Mobile Bay Bar navigation channel.

C. **Authority and Purpose:** Sec 406 of P.L. 111-212 Supplemental Funds.

SEC. 406. (a) The Secretary of the Army may use funds made available under the heading “OPERATION AND MAINTENANCE” of this chapter to place, at full Federal expense, dredged material available from maintenance dredging of existing Federal navigation channels located in the Gulf Coast region to mitigate the impacts of the Deepwater Horizon Oil spill in the Gulf of Mexico.

(b) The Secretary of the Army shall coordinate the placement of dredged material with appropriate Federal and Gulf Coast State agencies.

(c) The placement of dredged material pursuant to this section shall not be subject to a least-cost-disposal analysis or to the development of a Chief of Engineers report.

(d) Nothing in this section shall affect the ability or authority of the Federal Government to recover costs from an entity determined to be a responsible party in connection with the Deepwater Horizon Oil spill pursuant to the Oil Pollution Act of 1990 or any other applicable Federal statute for actions undertaken pursuant to this section.

D. **General Description of Dredged or Fill Material:**

(1) **General Characteristics of Material:** The material to be dredged and placed in the proposed Sand Island site will be maintenance dredged material from the bar channel and turning basin. The dredged material from the SIBUA will be sandy sediments and composed predominantly of medium and fine-grained quartz sand.

(2) **Quantity and Source of Material:** It is estimated approximately 1 to 2 million cubic yards (cys) sandy material will be removed from the SIBUA and used for the re-establishment of Sand Island. The project will also provides the option for future placement from the regular maintenance dredging of sand from the Mobile Bar Channel.

E. **Description of the Proposed Discharge Site:**

(1) **Location:** The discharge site is located around the Sand Island Lighthouse continuing to the east toward Pelican and Dauphin Islands in the Gulf of Mexico, Mobile County, Alabama. The Sand Island site is presented in **Figure 4** of the EA.

(2) **Size:** The footprint of the proposed Sand Island site can be seen in **Figure 4** of the EA

(3) **Type of Site:** The borrow site is a previously authorized open-water beneficial use area.

(4) **Type of Habitat:** The proposed disposal site is characterized by predominantly fine to medium quartz sand that is white to tan in color. It is part of the ebb tide shoal associated with the mouth of Mobile Bay. It is a very dynamic environment that changes drastically as a function of climate and wave conditions. The direction of littoral transport is from east to west. The constantly shifting sediments do not allow aquatic vegetation to become rooted or attached to the unconsolidated sandy substrate. No submerged aquatic vegetation or oyster reefs are present at this site.

(5) **Timing and Duration of Discharge:** The dredging placement activities for this project can occur any time of the year.

F. **Description of the Disposal Method:** Placement will be accomplished by a hopper dredge with pump-out capabilities and in some instances may be conducted using a pipeline dredge.

II. Factual Determinations (Section 230.11):

A. Physical Substrate Determinations:

(1) **Substrate Elevation and Slope:** The footprint and resulting cross sections can be seen in **Figures 4 and 5** of the EA.

(2) **Sediment Type:** All material dredged from the SIBUA and placed on the Sand Island site is fine to medium quality quartz sand consistent with the near shore areas along the northern Gulf of Mexico.

(3) **Dredged/Fill Material Movement.** The dredged material placed to re-establish Sand Island would be subject to movement in the littoral system. This movement would occur on a continuous basis depending upon wave action, climate and the frequency of storm events. The predominant sediment transport pattern in this area is from east to west. The intent of this action is to prevent, as much as possible, submerged oil in the Gulf of Mexico from entering into the entrance of Mobile Bay. Doing so will provide protection to the fragile ecosystems and valuable natural resources that are an important and integral part of the Mobile Bay system. Additionally, placement of the sand at the proposed site will allow the sand to return to the littoral system and migrate west, thus, providing benefits to the local environment.

(4) **Physical Effects on Benthos.** It is certain that some benthic organisms would be destroyed by the proposed action; however, due to the constant movement of material by currents, benthic organism diversity and abundance would appear to be low. Research conducted by the U.S. Army Corps of Engineers, Engineering, Research and Development Center (ERDC) under the Dredged Material Research Program suggests that the benthic community is adapted to a wide range of naturally occurring environmental changes and that no significant or long-term changes in community structure or function are expected.

(5) **Other effects.** No other effects are anticipated.

(6) **Actions Taken to Minimize Impacts (Subpart H).** No actions that would further reduce impacts due to the placement of the dredged material are deemed necessary.

B. Water Column Determinations:

(1) **Salinity.** There would be no change in salinity gradients or patterns.

(2) **Water Chemistry (pH, etc.).** No effect.

(3) **Clarity.** Minor increases in turbidity may be experienced in the immediate vicinity of the project during disposal operations. However, these increases will be temporary and would return to pre-project conditions shortly after completion.

(4) **Color.** No effect.

(5) **Odor.** No effect.

(6) **Taste.** No effect.

(7) **Dissolved Gas Levels.** Temporary decreases in dissolved oxygen could likely result from the operations depending on timing of discharge. If decreases occur, they will be of a short duration. No significant effect to the water column is anticipated.

(8) **Nutrients.** Slight increases in nutrient concentrations may occur; however, these would rapidly return to normal. These described increases would have no significant effect to the water column.

(9) **Eutrophication.** No effect.

C. Water Circulation, Fluctuation, and Salinity Gradient Determinations:

(1) Current Patterns and Circulation.

(a) **Current Patterns and Flow.** Placement of dredged material into the open-water disposal site would have no effect on current patterns and flow in the vicinity of the project area.

(b) **Velocity.** No effect.

(2) **Stratification.** No effect.

(3) **Hydrologic Regime.** No effect.

(4) **Normal Water Level Fluctuations.** No effect.

(5) **Salinity Gradient.** No effect on the salinity gradient is anticipated.

D. Suspended Particulate/Turbidity Determination:

(1) **Expected Changes in Suspended Particulates and Turbidity Levels in Vicinity of Placement Site:** Suspended particulate and turbidity levels are expected to undergo minor increases during dredging and placement activities, however, suspended sediment of this type will quickly fall out of the water column and return to normal conditions. No significant effects would occur as a result of these increases. Turbidity during disposal is not expected to violate State water quality certification conditions.

(2) Effects on Chemical and Physical Properties of the Water Column:

(a) **Light Penetration.** Increased turbidity levels in the project area as a result of the placement of dredged material would reduce the penetration of light into the water column only slightly and would be a minor short-term impact.

(b) **Dissolved Oxygen.** No significant effects.

(c) **Toxic Metals and Organics.** No effects.

(d) **Pathogens.** No effect.

(e) **Esthetics.** Placement of dredged material would likely decrease the esthetic qualities of the project area for a short period of time during and shortly after placement. The disposal areas equilibrate and rapidly return to normal upon exposure to the wave climate.

(3) Effects on Biota:

(a) **Primary Production Photosynthesis.** No significant effects.

(b) **Suspension/Filter Feeders.** No significant effects.

(c) **Sight Feeders.** No significant effects.

(4) **Actions Taken to Minimize Impacts (Subpart H).** No further actions are deemed appropriate.

D. Contaminant Determinations.

Deepwater Horizon Oil Spill Impacts. On April 20, 2010, while working on an exploratory well approximately 50 miles offshore of Louisiana, the floating semi-submersible mobile offshore drilling unit Deepwater Horizon experienced an explosion and fire. The rig subsequently sank and oil and natural gas began leaking into the Gulf of Mexico. The total amount of oil and natural gas that has escaped into the Gulf of Mexico is yet to be finally determined. On September 19, the relief well process was successfully completed and the federal government declared the well "effectively dead". The spill has caused extensive damage to marine and wildlife habitats as well as the Gulf's fishing and tourism industries.

This spill has created uncertainty on whether future dredging operations will meet environmental compliance criteria and requirements for ocean disposal. The long term impacts of the oil spill on the northern Gulf Coast are uncertain at this time. This spill could potentially adversely impact USACE water resources projects and studies within the coastal area. Potential impacts could include factors such as changes to existing or baseline conditions, as well as changes to future-without and future with project conditions. The USACE will continue to monitor and closely coordinate with other Federal and state resource agencies and local sponsors in determining how to best address any potential problems associated with the oil spill that may adversely impact USACE water resources development projects/studies. This could include revisions to this proposed action as well as the generation of supplemental environmental analysis and documentation for specific projects/studies as warranted by changing conditions.

F. **Aquatic Ecosystem and Organism Determinations:**

- (1) **Effects on Plankton.** No significant effects.
- (2) **Effects on Benthos.** Benthic organisms would be destroyed by the dredging and placement material below the waterline in the project areas, but no long-term effects are expected on the benthic community as a result of the proposed action.
- (3) **Effects on Nekton.** No significant effects.
- (4) **Effects on Aquatic Food Web.** No significant effects.
- (5) **Effects on Special Aquatic Sites.** No effect.
 - (a) **Sanctuaries and Refuges.** No effect.
 - (b) **Wetlands.** No effect.
 - (c) **Mud Flats.** Not applicable.
 - (d) **Vegetated Shallows.** Not applicable.
 - (e) **Coral Reefs.** Not applicable.
 - (f) **Riffle and Pool Complexes.** Not applicable.
- (6) **Effects on Threatened and Endangered Species.** Through consultation with the National Marine Fisheries Service (NMFS) Protected Resource Division (PRD) and the U.S. Fish and Wildlife Service (USFWS) the Corps, Mobile District has determined that the following threatened and endangered species: Gulf sturgeon; West Indian manatee; and the leatherback, hawksbill, loggerhead, green and Kemp's ridley sea turtles may be affected by the project action. Letters are being prepared to NMFS and USFWS requesting concurrence with the District's Not

Likely to Adversely Affect (NLAA) any listed endangered and/or threatened species or their associated critical habitat on July 24, 2009.

(7) **Effects on Other Wildlife.** No significant effects.

(8) **Actions to Minimize Impacts.** No other actions to minimize impacts on the aquatic ecosystem are deemed appropriate.

G. Proposed Disposal Site Determinations:

(1) **Mixing Zone Determination.** The Alabama Department of Environmental Management (ADEM) specified a mixing zone for turbidity compliance of up to 400 feet from the activity and an increase of 50 NTUs above background turbidity levels. The Corps, Mobile District, will adhere to that turbidity requirement.

(a) **Depth of water at the disposal site.** Depths of water at the site vary from 23 to 46 feet.

(b) **Current velocity, direction, and variability at the disposal site.** Not significant.

(c) **Degree of turbulence.** Not significant.

(d) **Stratification attributable to causes such as obstructions, salinity or density profiles at the disposal site.** No effect.

(e) **Discharge vessel speed and direction, if appropriate.** No effect.

(f) **Rate of discharge.** Rate of discharge will vary according to the particular type of dredge disposing of the material.

(g) **Ambient concentrations of constituents of interest.** Not applicable.

(h) **Dredged material characteristics, particularly concentrations of constituents, amount of material, type of material (sand, silt, clay, etc.) and settling velocities.** The proposed action would involve open-water disposal of dredged material consisting of marine sand from the Mobile Bar Channel and SIBUA. Sand from the bar channel is predominantly white to light brown and consists of fine to medium quartz sand. Rapid settling of the sandy material is anticipated.

(i) **Number of discharge actions per unit of time.** The number of discharge actions per unit of time will vary depending upon the particular disposal activity.

(2) **Determination of Compliance with Applicable Water Quality Standards.** The proposed activity is in compliance with all applicable water quality standards. Water Quality Certification and Coastal Zone Consistency will be requested from ADEM for this project.

(3) **Potential Effects on Human Use Characteristics.**

(a) **Municipal and Private Water Supply.** No effect.

(b) **Recreational and Commercial Fisheries.** Recreational and commercial fishing would be temporarily impacted primarily as a result of the physical presence of heavy equipment during operation activities.

(c) **Water Related Recreation.** No significant effects.

(d) **Aesthetics.** No significant effects.

(e) **Parks, National and Historical Monuments, National Seashores, Wilderness Areas, Research Sites, and Similar Preserves.** Placement of the material will include the area around Sand Island Lighthouse which is a valuable cultural resource listed on the National Register of Historic Places. There should be no impact to this structure.

(f) **Other Effects.** No effect.

H. **Determination of Cumulative Effects on the Aquatic Ecosystem.** The proposed action is not expected to have significant cumulative adverse impacts.

I. **Determination of Secondary Effects of the Aquatic Ecosystem.** The proposed action is not expected to have any significant secondary adverse effects on the aquatic ecosystem.

III. **Finding of Compliance with the Restrictions on Discharge:**

A. No significant adaptations of the Section 404(b)(1) guidelines were made relative to this evaluation.

B. The proposed discharge represents the least environmentally damaging practicable alternative.

C. The planned dredging and placement of materials would not violate any applicable State water quality standards; nor will it violate the Toxic Effluent Standard of Section 307 of the Clean Water Act (CWA). The renewed permit was received from ADEM on September 1, 2009 for Section 410 Water Quality Certification and Coastal Zone Consistency.

D. The oil mitigation action will not jeopardize the continued existence of any federally-listed endangered or threatened species or their critical habitat provided the specified conditions in this document are implemented during maintenance dredging and disposal operations.

E. The proposed placement of fill material will not contribute to significant degradation of waters of the United States, nor will it result in significant adverse effects on human health and

welfare, including municipal and private water supplies, recreation and commercial fishing; life stages of organisms dependent upon the aquatic ecosystem; ecosystem diversity, productivity and stability; or recreational, aesthetic or economic values.

F. Appropriate and practicable steps will be taken to minimize potential adverse impacts of discharge on the aquatic ecosystem.

Date: _____

STEVEN J. ROEMHILDT, P.E.
Colonel, Corps of Engineers
District Commander