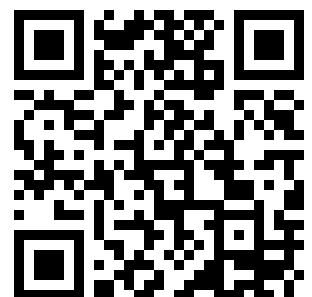


---

This is a reproduction of a library book that was digitized by Google as part of an ongoing effort to preserve the information in books and make it universally accessible.

Google™ books

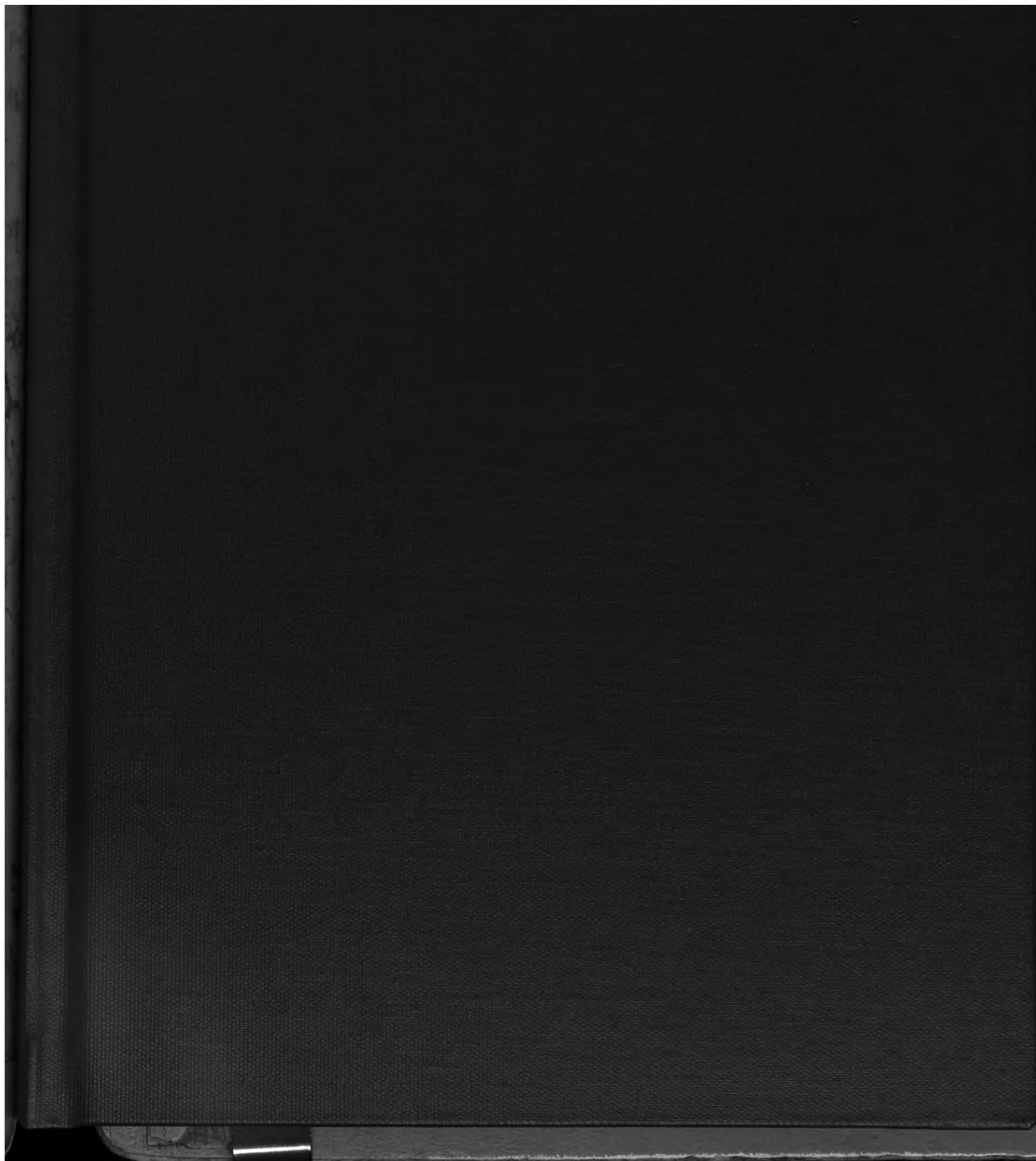
<https://books.google.com>

















-EPA-TX-910411-F-

716

NOV 15, 1991  
RECEIVED  
910411-F

United States  
Environmental Protection  
Agency

Region 6  
1445 Ross Avenue  
Dallas, TX 75202

EPA 906/11-91-003  
November 1991

EPA

# ENVIRONMENTAL IMPACT STATEMENT

## FINAL

### BRAZOS ISLAND HARBOR 42-FOOT PROJECT, TEXAS OCEAN DREDGED MATERIAL DISPOSAL SITE DESIGNATION

TRANSPORTATION LIBRARY

Nov 1991

NORTHWESTERN UNIVERSITY







UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200

DALLAS, TEXAS 75202-2733

NOV 6 1991

3 5556 030 089163

TO INTERESTED AGENCIES, OFFICIALS, PUBLIC GROUPS AND INDIVIDUALS:

Enclosed is a copy of the Final Environmental Impact Statement (EIS) concerning the Environmental Protection Agency's (EPA) designation of an ocean disposal site for the one-time disposal of construction material dredged from the Brazos Island Harbor (BIH) Entrance Channel. The Corps of Engineers, Galveston District proposes to deepen and widen the main channel and turning basin and discharge the dredged material offshore. This proposal is called the BIH 42-Foot Project, Texas. Although the National Environmental Policy Act does not apply to ocean disposal site designation actions, EPA has voluntarily committed to prepare EISs on these actions.

Because changes from the Draft EIS are minor, the Final EIS incorporates the Draft EIS by reference and includes the following: 1) a revised summary; 2) comments received on the Draft EIS and EPA's responses; 3) modifications and corrections to the Draft EIS; and 4) EPA's proposed action.

Written comments or inquiries on this Final EIS should be mailed to Norm Thomas, Chief, Federal Activities Branch, at the above address by the date stamped on the cover sheet following this letter.

Sincerely yours,

*Robert E. Layton Jr.*  
Robert E. Layton Jr., P.E.  
Regional Administrator

Enclosure

**FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS) FOR THE  
BRAZOS ISLAND HARBOR 42-FOOT PROJECT, TEXAS  
OCEAN DREDGED MATERIAL DISPOSAL SITE (ODMDS) DESIGNATION**

**RESPONSIBLE AGENCY:** U.S. Environmental Protection Agency, Region VI

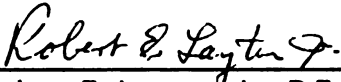
**ADMINISTRATIVE ACTION:** The purpose of the action is to comply with the Marine Protection, Research, and Sanctuaries Act of 1972 by providing an environmentally acceptable ODMDS in compliance with the Ocean Dumping Regulations (40 CFR §§ 220-229).

**EPA CONTACT:** Norm Thomas (6E-F)  
U.S. Environmental Protection Agency  
First Interstate Bank Tower  
1445 Ross Avenue  
Dallas, TX 75202-2733

**ABSTRACT:** The proposed action is the designation of a site for the ocean disposal of 1,325,000 cu yd of construction material from the Brazos Island Harbor (BIH) Entrance Channel in conjunction with the U.S. Army Engineer District, Galveston, BIH, Texas, 42-Foot Project. The major adverse environmental impact of disposal at the site is the high mortality of the benthic infaunal community within the disposal-site boundary.

**COMMENTS ON THE FEIS DUE:** DEC 23 1991

**RESPONSIBLE OFFICIAL:**

  
Robert E. Layton, Jr., P.E.  
Regional Administrator

## CONTENTS

PREFACE .....	iv
PART I. SUMMARY OF THE DRAFT AND FINAL EIS .....	I-1
A. Background .....	I-1
B. Alternatives .....	I-3
C. Affected Environment .....	I-9
D. Environmental Consequences .....	I-13
E. Proposed Action .....	I-13
PART II. CONSULTATION AND COORDINATION .....	II-1
A. Public Review Process .....	II-1
B. Responses to Comments .....	II-1
PART III. MODIFICATIONS AND CORRECTIONS TO THE DRAFT EIS .....	III-1
PART IV. EPA'S PROPOSED ACTION .....	IV-1

## LIST OF FIGURES

Figure I-1. Brazos Island Harbor (BIH) Area Showing Locations of the BIH Historic ODMDS, the BIH Maintenance ODMDS, and the Proposed BIH 42-Foot Project ODMDS .....	I-2
--	-----

## LIST OF TABLES

Table I-1. Summary of General Criteria as Applied to the Proposed Disposal Site .....	I-14
Table I-2. Summary of Specific Criteria as Applied to the Proposed Disposal Site .....	I-16

## **PREFACE**

To deepen the 2.5-mile-long Brazos Island Harbor (BIH) Entrance Channel to 44 ft and the 14.8-mile-long Brownsville Ship Channel to 42 ft, the United States Army Corps of Engineers (USACE) plans to conduct dredging operations and discharge the dredged material at an Ocean Dredged Material Disposal Site (ODMDS) off the Texas coast. This Federal dredging project is a one-time deepening and widening of an existing navigable waterway that is presently maintained by the USACE to the depth of 36 ft. The proposed project will require the dredging of 1.325 million cubic yards new work (virgin, nonmaintenance) material and a one-time use of the ocean site for disposal of the material. The U.S. Environmental Protection Agency (EPA) has proposed a 0.42-nmi<sup>2</sup> rectangular ODMDS for this project. The ODMDS is northeast of the BIH Entrance Channel, in 60-67 ft of water.

The Draft Environmental Impact Statement (DEIS) for the BIH 42-Foot Project ODMDS Designation was issued by EPA in April 1991. The DEIS was distributed to approximately 25 Federal, State, and local agencies and interested individuals. Eight comment letters were received by EPA during the public review period that expired on July 8, 1991.

This Final Environmental Impact Statement (FEIS) consists of four sections, which are (1) a summary of the disposal alternatives considered, the proposed action, and an evaluation of the environmental impacts of the proposed action; (2) the comments received and EPA's responses; (3) modifications or corrections to the DEIS; and (4) EPA's proposed action. A complete environmental analysis of the proposed action is provided by the DEIS and FEIS together.

This FEIS was prepared with the assistance of Battelle Ocean Sciences.

## **PART I. SUMMARY OF THE DRAFT AND FINAL EIS**

### **A. BACKGROUND**

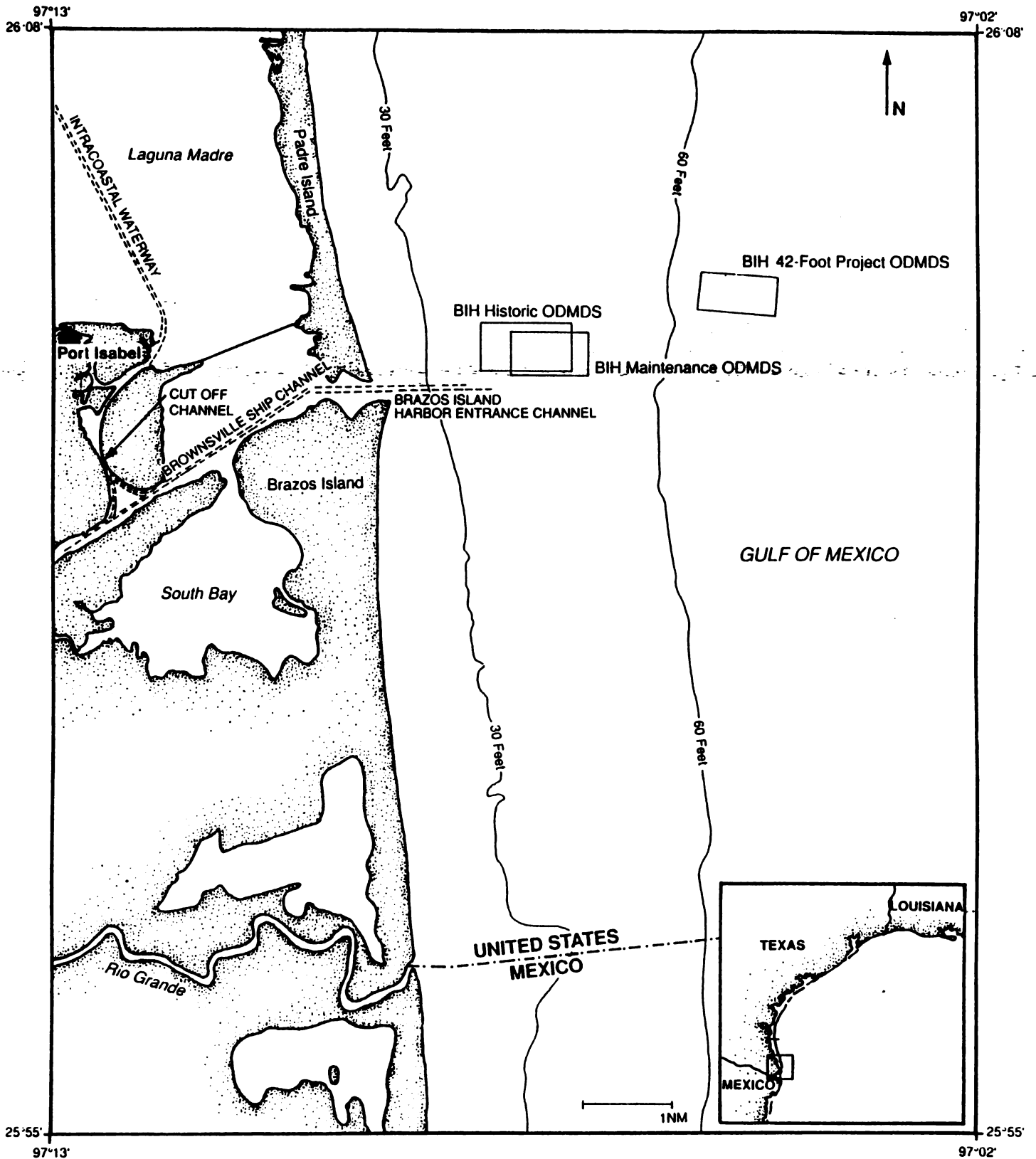
The purpose of this Final Environmental Impact Statement (FEIS) is to identify an environmentally acceptable site (Figure I-1) for the one-time disposal of construction (virgin, nonmaintenance) material to be dredged from the Brazos Island Harbor (BIH) Entrance Channel. The United States Army Corps of Engineers (USACE) BIH 42-Foot Project plan recommends the enlargement of the BIH Entrance Channel from deep water in the Gulf of Mexico through to the Port of Brownsville Turning Basin. This Federal project is a one-time deepening and widening of an existing navigable waterway that is maintained by the USACE to a depth of 36 ft. Improvements to the BIH Entrance Channel will produce an anticipated 1.325 million cubic yards of virgin dredged material to be discharged offshore. The BIH 42-Foot Project plan includes

- Deepening and widening the BIH Entrance Channel to 44 and 400 ft, respectively, for a length of approximately 2.5 miles, an increase from the presently maintained dimensions of 38 and 300 ft, respectively
- Deepening the Brownsville Ship Channel to 42 ft and widening it to 300 ft from the BIH Entrance Channel to the turning basin extension, a distance of approximately 14.8 miles
- Deepening the 1-mile-long turning basin to 42 ft and widening it from 325 to 400 ft
- Removing Brownsville Navigation District Wharves 5, 6, and 9, and widening and deepening that portion of the turning basin to 1200 and 36 ft, respectively

As part of the BIH 42-Foot Project, the USACE plans to discharge the dredged material at a new Ocean Dredged Material Disposal Site (ODMDS) in the Gulf of Mexico for a period of 2 years or less.

The USACE is mandated by the Congress to construct and maintain the Congressionally authorized navigation channels of the United States [Pub.L. 99-662 Sec. 101 (b)], and the Galveston District of the USACE is charged with maintaining the BIH Entrance Channel. If the 42-Foot Project is conducted, approximately 480,000 cu yd of maintenance material will be removed approximately every 13 months from the BIH Entrance Channel and discharged offshore at the existing BIH Maintenance ODMDS.





**Figure I-1. Brazos Island Harbor (BIH) Area Showing Locations of the BIH Historic ODMDS, the BIH Maintenance ODMDS, and the Proposed BIH 42-Foot Project ODMDS.**

The BIH Entrance Channel was first constructed in 1905 when a 10-ft-deep, 70-ft-wide cut was made through the sandbar east of Port Isabel for the passage of ship traffic. The channel, designated the Brazos Santiago Pass, was stabilized in 1935 by the construction of rubble-mound jetties (topped with 4-ft cubic granite blocks and concrete) and rehabilitated in 1987. Presently, the north and south jetties are 6,330 and 4,550 ft long, respectively. The BIH Entrance Channel crosses the southern portion of the Laguna Madre, and then divides into the Port Isabel Cut Off Channel and the Brownsville Ship Channel. The three connecting channels have a combined length of 21.5 miles and presently afford a controlling depth of 36 ft over a 200-ft bottom width to the former Goose Island Passing Basin and then over a 300-ft bottom width to the 500-ft-wide Brownsville Turning Basin extension. The turning basins at both Port Isabel and Brownsville currently have depths of 36 ft.

The existing BIH Maintenance ODMDS (designated by EPA in September 1990) receives material dredged from the 2-mile portion of the BIH Entrance Channel that begins between the jetties and extends into the Gulf. This final-designated ODMDS includes a portion of and some areas south and east of the BIH Historic ODMDS, which has received maintenance material from the channel since the mid-1970s.

The Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA), Pub.L. 92-532, empowered the U.S. Environmental Protection Agency (EPA) to issue regulations for ocean disposal of dredged material and assigned the USACE as the permitting authority for dredging operations. EPA's Ocean Dumping Regulations, revised in January 1977 (40 CFR §§ 220-229), establish procedures for ODMDS designation and terms for their management. Pursuant to these regulations, all existing ODMDSs were designated as interim sites including the BIH Historic ODMDS. When the BIH Maintenance ODMDS was designated in 1990, the BIH Historic ODMDS was removed as an interim site.

## **B. ALTERNATIVES**

EPA's proposed action is to designate a new ODMDS for the one-time disposal of construction material dredged from the BIH Entrance Channel as part of the BIH 42-Foot Project. Disposal alternatives that were considered include no action, land-based disposal, and ocean disposal at nearshore, midshelf, and continental shelf sites.

### **No Action**

The no-action alternative provides that EPA refrain from designating an ocean disposal site for the one-time disposal of 1.325 million cubic yards of virgin (nonmaintenance) construction material. Without site designation, the USACE would be required to develop an alternative disposal method (e.g., land-based) or modify or cancel the project. Upland disposal was evaluated and ruled out in the USACE Draft Environmental Impact Statement (DEIS) for the BIH 42-Foot Project (see discussion below). Cancellation or modification of the BIH 42-Foot Project would include the following impacts: (1) long-term increases in transportation costs relative to those that would result from project implementation and (2) loss of potential for increased channel usage, since a widened channel would permit vessel traffic during maintenance dredging. Therefore, the no-action alternative is not considered to be a reasonable option.

### **Land-Based Disposal**

Non ocean-disposal alternatives that were considered in the DEIS included upland disposal and beach nourishment. Upland sites that are available for disposal of BIH 42-Foot Project virgin construction material are too small, far away, and/or in environmentally sensitive and productive habitats such as shallow habitats and wetlands. The nearest available land disposal area, an 82-acre site located 3 miles away from the seaward end of the project area, was considered as a temporary alternative. The volume of this site is needed for construction and future maintenance of the inland portions of the Channel; therefore, use of this land site for the BIH 42-Foot Project would require the acquisition of new land or ocean disposal sites for the future disposal of construction and maintenance material from the inland portions of the channel. Because the surrounding land areas are wetlands or shallow-bay habitats, it is unlikely that a suitably sized replacement area could be obtained without a significant loss of ecologically sensitive and economically valuable wetlands or bay bottoms. Land or inland-water sites farther away would have to be used, or ocean disposal would have to be resumed. Additionally, the costs of overland transport of dredged material are very high, including costs for property purchases, pipeline easements, heavy equipment, and pumps. The limited capacity of the one available site and the cost of using it (and other more inland sites) make upland disposal an economically unfavorable alternative.

In addition to dramatically higher disposal costs, upland dredged-material disposal is difficult to properly engineer and carries more environmental risk. Dredged material that is disposed of in upland sites, even very clean material such as from the BIH Entrance Channel, must often be dewatered, diked, and either covered or vegetated with terrestrial plants to prevent erosion. Erosion is already a problem at upland areas that receive dredged material from the BIH inland channels. The arid conditions in South Texas lead to hypersaline conditions in the land-disposed material; vegetation cannot take root and wind-driven dust and erosion become significant problems.

The use of dredged virgin construction material from the BIH 42-Foot Project for beach nourishment and/or other beneficial uses was also evaluated in the DEIS. The construction material is only 8.2% sand and is, therefore, not appropriate for beach nourishment. The poor construction quality of the material to be dredged (i.e., 68% silt/clay) and the relatively low quantity of material preclude any other viable beneficial uses such as submerged mounds or feeder berms.

In conclusion, land-based disposal alternatives for the BIH 42-Foot Project construction material offer no environmental or economical advantages over disposal of the material in the ocean.

### **Ocean Disposal**

Ocean disposal at the midcontinental shelf, the continental slope, and nearshore was considered. These disposal alternatives are evaluated in the following sections.

#### ***Offshore Sites***

The midshelf and continental slope areas are 25-30 and 60 miles, respectively, from the seaward terminus of the BIH Entrance Channel. Generally, the midshelf and continental shelf sites were determined to be unacceptable because of uncertain environmental impacts, decreased monitoring and surveillance feasibility, increased transportation costs, and greater safety risks. The sediments dredged from the BIH have significantly different chemical and physical properties, compared to deep-water coastal sites. Deep-water benthic communities are inherently less adapted to perturbations that might occur during dredged-material disposal

than are shallow-water communities. Shallow-water communities are adapted to high turbidity and occasional burial caused by wave action and storm events.

Hauling dredged material to a midshelf or continental slope site will increase the length of time to complete each dredging operation, increase equipment and fuel costs, and require more manpower and closer surveillance to guard against short dumps. Fuel combustion introduces a range of environmental pollutants, increasing the overall environmental impact of disposal at an offshore site. Use of additional vessels would reduce the total number of days to complete the work, but would not reduce the number of man-days or the quantity of fuel required.

Deepwater disposal sites are also more difficult to monitor for baseline conditions and postdisposal impacts. Whereas grab samplers and scuba divers can be used to monitor shallow sites, more sophisticated sampling devices, submersibles, and larger research vessels are necessary to monitor deep-water sites. Additionally, working farther offshore carries greater safety risks during both the disposal and monitoring operations. Because of these considerations, the midshelf and continental slope sites were eliminated as feasible disposal-site alternatives.

#### *Nearshore Sites*

A nearshore site was determined to be the best alternative, based on monitoring studies that show that no cumulative impacts have occurred from disposal at the BIH Historic ODMDs, the feasibility of continued monitoring, and decreased cost and safety hazards.

Nearshore areas that are suitable for the establishment of ODMDs were identified by using the Zone of Siting Feasibility (ZSF) approach. This approach involves identification of a large area within which an ODMD could be located, based on physical, political and geographical constraints. Subareas within the ZSF are then eliminated from ODMD siting, based on the locations of biologically sensitive areas, beaches and recreational areas, cultural and historical areas, and living and nonliving resources. These areas are excluded from the ZSF based on an interpretation of 5 general and 11 specific criteria described in 40 CFR §§ 228.5 and 228.6(a) of the Ocean Dumping Regulations.

A computerized literature search was conducted to collect data relevant to the BIH 42-Foot Project area. Because there were no significant environmental reasons to locate the ODMDS farther offshore, a 10-mile radius from the intersection of the BIH Entrance Channel and the beach line was used as the boundary of the ZSF. The enclosed area (approximately 140 square miles) is restricted on the southern side by the United States/Mexico boundary and would allow a maximum hopper dredge transport distance of 10 miles. Monitoring and surveillance activities are feasible within all regions of the ZSF, and all areas outside the ZSF were eliminated from further consideration.

#### **ODMDS Size and Location**

The determination of the BIH 42-Foot Project ODMDS size and location was based on the analysis of the daily number of discharges expected during dredging operations and location restrictions as described in 40 CFR §§ 220-229. Other important siting considerations include (1) the cost of the dredging operations, (2) the regulations stating that ODMDS sites shall be as small as possible to contain any future impacts and allow for effective monitoring [40 CFR § 228.5 (d)], and (3) the regulations stating that historical disposal sites shall be used whenever feasible [40 CFR § 228.5(e)].

The analysis concluded that the ODMDS for the BIH 42-Foot Project should be 5300 ft in a direction parallel to the BIH Entrance Channel (east—west) and 2895 ft in a direction perpendicular to the channel (north—south) (with a 2400- × 4800-ft discharge area located in the center of the site). Use of the BIH Maintenance ODMDS for disposal of the project material was considered and rejected after it was determined that the grain-size distribution of the project material was dramatically different from the grain size of the BIH Maintenance ODMDS area. Therefore, EPA recommends siting the BIH 42-Foot Project ODMDS inside the following coordinates (see Figure I-1).

26° 04' 47"N, 97° 05' 07"W;    26° 05' 16"N, 97° 05' 04"W;  
26° 05' 10"N, 97° 04' 06"W;    26° 04' 42"N, 97° 04' 09"W.

The above coordinates would be recorded differently according to EPA's latest policy on positioning (see page III-1). The proposed ODMDS has an area of 0.55 square statute miles (0.42 nmi<sup>2</sup>). The northwest corner of the BIH 42-Foot Project ODMDS is located at the intersection of the safety fairway and the boundary of the sandy-silt regime.



It should be noted that an ODMDS designation does not permit the disposal of toxic or otherwise hazardous dredged material at the site. By law (40 CFR §§ 220-229), dredged material must meet stringent toxicity and bioaccumulation criteria before it may be disposed at a designated ODMDS. In addition, dredged material must meet the limiting permissible concentration (LPC) for toxicity and bioaccumulation per 40 CFR §§ 227.27. Dredged material from the BIH Entrance Channel has historically met the LPC. Additionally, no detrimental impact has been detected at the BIH Historic ODMDS.

While the literature on maintenance material disposal on the Gulf coast indicates only minor short-term and negligible long-term mounding from disposal activities, the BIH 42-Foot Project was sized based on significant expected mounding. There is a no-impact history for the discharge of maintenance material but not for virgin construction material because there has been no periodic testing of the latter. Therefore, the following monitoring and surveillance program is proposed for the BIH 42-Foot Project ODMDS during construction.

- **Monitoring Discharge Locations** — A major consideration in sizing the BIH 42-Foot Project ODMDS was the location of the dredge when each discharge occurs. To prevent excessive mounding, each discharge location will be recorded.
- **Mounding Surveillance** — Routine bathymetric scans will be conducted, with any disposal methodology, to allow the prevention of excessive mounding and so that a Notice to Mariners can be posted relative to any significant mounding that does occur.
- **Sample Collection** — Monitoring stations (including a control station), stations located immediately outside the BIH 42-Foot Project ODMDS, and stations located some distance down-current from the site will be sampled for grain-size analysis, chemical sediment characterization, and macrobenthic invertebrates (in triplicate) to determine if impacts are occurring outside the BIH 42-Foot Project ODMDS. Two stations on each side of the BIH 42-Foot Project ODMDS, roughly 300 ft from the BIH 42-Foot Project ODMDS edges, a control site located east of the BIH 42-Foot Project ODMDS, and two stations located 10,000 ft down-current (north) of the down-current edge of the BIH 42-Foot Project ODMDS are proposed. These stations will be sampled periodically during the project and for 1 year after the cessation of virgin-material disposal at the ODMDS. Duration and frequency of monitoring will be decided by EPA, in cooperation with the USACE prior to construction.

## **C. AFFECTED ENVIRONMENT**

### **Physical Environment**

The Brownsville Ship Channel and the BIH Entrance Channel are on the South Texas Coastal Plain in a semitropical marine environment controlled by the Gulf of Mexico. The average temperature and rainfall for winter (January) and summer (July) are 60 °F and 1.5 in. and 85 °F and 1.2 in., respectively. Water depth at the ODMDS is approximately 60-67 ft. and the bottom topography in this part of the Gulf is flat and relatively featureless.

Water circulation in the area near the BIH Entrance Channel is the result of a complex interaction of lunar tides, meteorological driving forces, freshwater inflow, and Coriolis acceleration. The diurnal tidal range in the BIH 42-Foot Project ODMDS area is 2 to 4 ft. Because the tidal range is relatively small, wind or storms can completely obscure tidal fluctuations. Annually, there are 32%, 21%, and 3% chances of a tropical storm, hurricane, and extreme hurricane, respectively, striking the mid-Texas coast. Bottom currents are predominantly to the north, with average near-bottom velocities of 0.1 to 0.3 kn beyond the 50-ft isobath. Maximum bottom currents of around 4 kn occur on an average of once every 3 years, and sustained bottom currents of 1 kn or greater occur for only several days per year. The semipermanent northerly current in the southwestern Gulf of Mexico dominates the hydrodynamic regime near Brownsville and is strongest from May through August. This causes sediment transport to the north and, when combined with sediment from the bays through Brazos Santiago Pass, causes shoaling of the BIH Entrance Channel of approximately 350,000 cu yd/year, with a calculated shoaling rate of 480,000 cu yd/year after the BIH 42-Foot Project is completed.

### **Analysis of BIH Dredged Material and ODMDS Conditions**

Offshore from the BIH Entrance Channel, the sediment becomes sandy silt with a large, irregular pattern of clayey sand within the sandy-silt regime. Farther offshore, other matrices of sand, silt, and clay are found. On the average, the virgin material to be dredged during the BIH 42-Foot Project contains clayballs (23.9%), silt/clay (67.9%), and sand (8.2%). As the virgin construction material is predominantly silt and clay, a silty clay regime is the preferable bottom type for disposal of the material, with a sand-silt-clay regime as the second-best

alternative. However, these regimes are in areas excluded by the ZSF and the exclusionary criteria in the regulations. Therefore, the 42-Foot Project ODMDS will be located in the third choice sediment type, sandy silt.

Water samples in the project area show no significant water-quality problems, although copper was higher than the EPA Water Quality Criteria in four of the five years in which samples were taken.

Beaches in the BIH area are generally in a state of erosion, although there is a net accretion on the upcurrent (south) side of the jetties at Brazos Santiago Pass. The beach north of the jetties is experiencing erosion. Storm-driven sediment is transported via southeast winds, along with hurricane and tropical storm winds, from the beaches and onto the tidal flats and Laguna Madre. Prevailing southeast onshore winds strike the shoreline at a high angle and generate strong, northerly longshore drift. The longshore drift is evidenced by the buildup of sand on the south side of the jetties of Brazos Santiago Pass.

#### **Biological Environment**

Phytoplankton standing crops offshore of Brownsville are similar to those of other sections in the south Texas outer continental shelf. The dominant phytoplankton in South Texas Gulf of Mexico waters are diatoms, with the heaviest concentrations occurring nearshore. Peaks in phytoplankton abundance occur in the spring and fall for nearshore communities. Offshore, phytoplankton density increases during warm seasons. Changes in nearshore-phytoplankton biomass correlate closely with freshwater runoff into the nearshore environment. Zooplankton communities in the area are dominated by copepods with a spring/summer peak of abundance. Greater numbers of zooplankton were normally found nearshore.

Macroinfauna in the area are dominated by polychaetes followed by molluscs. A different benthic infaunal species composition was found at and south of the BIH Historic ODMDS than at areas farther north and farther offshore. This appeared to be due, primarily, to a shift in the grain-size composition of the bottom sediment of the ODMDS toward sandier sediment, probably as a result of dredged-material disposal and longshore transport of beach and Rio Grande sediments.

Nekton offshore of the project area include a combination of species utilizing both the Bay and Gulf, species found exclusively on the shelf at varying depths year round, and species that migrate into the area from southern latitudes in response to the shelf water warming. Commercially and recreationally important fishery resources in the area are typical of the Texas Gulf coast and include penaeid shrimp, blue crab, kingfish, croaker, star drum, pompano, and red snapper. Other primarily recreational species are the spotted seatrout, black and red drum, flounder, whiting, and sheepshead. Other species that occur in large numbers around the project area include the Gulf whiting, Atlantic threadfin, mullet, sardine, silverside, killifish, and anchovy. None of these species is expected to be significantly impacted by the proposed use of the BIH 42-Foot Project ODMS.

The National Marine Fisheries Service (NMFS) has identified 10 species of aquatic vertebrates considered endangered or threatened that possibly inhabit the Gulf in the Texas area. These species are the humpback whale, sei whale, sperm whale, right whale, fin whale, leatherback sea turtle, Kemp's ridley sea turtle, hawksbill sea turtle, green sea turtle, and the loggerhead sea turtle. Fifteen species of aquatic and terrestrial vertebrates considered endangered or threatened are also listed by the [U.S.] Fish and Wildlife Service (FWS) (50 CFR § 17). The Texas Parks and Wildlife Department lists 10 additional species of dolphins and whales as threatened that are not listed by the FWS. Additionally, the Texas Organization for Endangered Species lists two dolphin species as threatened.

In Texas coastal waters, the loggerhead turtle is the most abundant and the hawksbill turtle is the least abundant. The largest concentration of green sea turtles on the Texas coast occurs along the lower portion of the Laguna Madre. Juvenile green turtles inhabit the Laguna Madre primarily in the fall. In 1987 and 1988, strandings of loggerhead, Kemp's ridley, green, hawksbill, and leatherback turtles were recorded on Texas beaches. Nesting along the Texas coast is extremely rare. The last two recorded loggerhead nests were in 1977 and 1979, both on South Padre Island. Six Kemp's ridley nests have also been recorded on South Padre Island. Leatherback and hawksbill nests are extremely rare in the area.

Only four listed cetacean species are known to occur off the Texas coast — the sperm whale, blue whale, black right whale, and the fin whale. The sperm whale is the most common, but none is known to regularly inhabit nearshore Texas waters. EPA has determined that

designated of the BIH 42-Foot Project ODMDs will not adversely impact any endangered or threatened species.

There are no designated marine sanctuaries in the project area, although there is a fish haven approximately 1.5 statute miles WNW of the preferred ODMDs and shrimp spawning of many commercially valuable species occurs throughout the region.

### **Socioeconomic Elements**

Brazos Island Harbor is an active port for commercial and recreational vessels throughout the year. Commercial uses include fishing vessels and bulk-cargo vessels that transport petroleum products, cotton, corn, sorghum grains, fresh fruits, and nuts. Records show that  $1.23 \times 10^6$  short tons of bulk cargo was shipped through the BIH in 1987. This is a significant decline from a peak of  $6.38 \times 10^6$  short tons in 1973 when Port Isabel had an operational deep-draft transshipment terminal. Important wade-bank recreational fishing areas include the Brazos Santiago Pass jetties, the shoreline both north and south of the Pass, the bayside shoreline of South Padre Island at its southern tip, portions of the BIH Entrance Channel, and the beaches of Brazos Island. Popular boat fishing areas include Brazos Santiago Pass, Mexiquita Flats, South Bay, and numerous other areas in the Laguna Madre north of the Old Queen Isabella Causeway Pier. In addition, charter-boat and party-boat fishing is important both recreationally and commercially to the region.

Economically important tourist/recreational beaches in the area are located on the southernmost 10 miles of South Padre Island and Brazos Island. A State recreation area is also located on Brazos Island. The Port Isabel State Historic Structure and the Queen Isabella State Fishing Pier are located on the mainland. In the vicinity of the ODMDs, there is one unit of the Lower Rio Grande National Wildlife Refuge located on Brazos Island. In addition, the State of Texas South Bay Coastal Preserve is located west of Brazos Island, and the National Audubon Society's Three Islands Bird Sanctuary and the Laguna Atascosa National Wildlife Refuge are located to the north of Brazos Island. Cultural and historic sites in the area consist of 116 shipwrecks. Of the 116 shipwrecks, 62 are clustered near the jetties of the BIH Entrance Channel.

No mineral extraction is presently occurring in the project area, nor are there any military restrictions that would influence the BIH ODMDS selection process. The nearest international boundary is the United States/Mexico border approximately 10 miles south of the preferred BIH ODMDS.

#### **D. ENVIRONMENTAL CONSEQUENCES**

The BIH 42-Foot Project ODMDS has been evaluated according to five general and 11 specific criteria in the Ocean Dumping Regulations [40 CFR §§ 228.5 and 228.6(a)]. This evaluation is summarized in Tables I-1 and I-2.

#### **E. PROPOSED ACTION**

EPA's proposed action is the designation of an ODMDS for the one-time disposal of virgin (nonmaintenance) construction material dredged for the BIH 42-Foot Project.



TABLE I-1. SUMMARY OF GENERAL CRITERIA AS APPLIED TO THE PROPOSED DISPOSAL SITE

General Criteria as Listed in 40 CFR § 228.5(a-e)	Proposed Disposal Site
(a) The dumping of materials into the ocean will be permitted only at sites or in areas selected to minimize the interference of disposal activities with other activities in the marine environment, particularly avoiding areas of existing fisheries or shellfisheries and regions of heavy commercial or recreational navigation.	The proposed BIH 42-Foot Project Ocean Dredged Material Disposal Site (ODMDS) was selected to avoid sport and commercial fishing activities, as well as other areas of biological sensitivity. The site does not include any known navigational obstructions and is outside the buffer zones of the navigational channel, the jetties, a fish haven, and the nonsubmerged shipwrecks in the area.
(b) Locations and boundaries of disposal sites will be so chosen that temporary perturbations in water quality or other environmental conditions during initial mixing caused by disposal operations anywhere within the site can be expected to be reduced to normal ambient seawater levels or to undetectable contaminant concentrations or effects before reaching any beach, shoreline, marine sanctuary, or known geographically limited fishery or shellfishery.	Chemical analyses and toxicity studies indicate that the material dredged in the past has been acceptable for ocean disposal under 40 CFR § 227 (i.e., material meets the LPC). The biota in the Zone of Siting Feasibility (ZSF) is healthy, indicating no significant adverse impacts from historical disposal operations in the area. The size of the proposed ODMDS and buffer zones in the DEIS were determined through analyses of sediment transport information and the physical oceanographic characteristics of the Brownsville area. The analyses were conservative to ensure that no perturbations caused by the disposal operations would be detectable outside the boundaries of the site.
(c) If at any time during or after disposal site-evaluation studies it is determined that existing disposal sites presently approved or on an interim basis for ocean dumping do not meet the criteria for site selection set forth in §§ 228.5-228.6, the use of such sites will be terminated as soon as suitable alternate disposal sites can be designated.	Should the proposed monitoring and surveillance program indicate that dredged-material disposal at the proposed BIH 42-Foot Project ODMDS is unsuitable and that the site should be dedesignated, there are other, more distant, nonexcluded areas in the ZSF that are available and suitable for use as an ODMDS.

TABLE I-1. SUMMARY OF GENERAL CRITERIA AS APPLIED TO THE PROPOSED DISPOSAL SITE (continued)

General Criteria as Listed in 40 CFR § 228.5(a-e)	Proposed Disposal Site
(d) The sizes of ocean disposal sites will be limited in order to localize for the identification and control any immediate adverse impacts and to permit the implementation of effective monitoring and surveillance programs to prevent adverse long-range impacts. The size, configuration, and location of any disposal site will be determined as a part of the disposal site evaluation or designation study.	The site is of minimum size to sufficiently meet the requirements of 40 CFR §§ 228.5 and 228.6(a). The size of the proposed ODMDS is 0.55 square mile (0.42 nmi <sup>2</sup> ). The proposed monitoring programs should provide adequate surveillance to identify any potential adverse impacts within the boundaries of the BIH 42-Foot Project ODMDS.
(e) EPA will, wherever feasible, designate ocean dumping sites beyond the edge of the continental shelf and other such sites that have been historically used.	No significant advantages, but many disadvantages were found for the establishment of an ODMDS off the continental shelf. An offshore ODMDS for the BIH 42-Foot Project would result in dramatically higher costs, safety risks, and time factors than for the proposed ODMDS that is nearer the construction site. Additionally, compared to inshore communities, benthic communities off the continental shelf are less resilient to perturbations that may result from disposal operations.

TABLE I-2. SUMMARY OF SPECIFIC CRITERIA AS APPLIED TO THE PROPOSED DISPOSAL SITE

Specific Criteria as Listed in 40 CFR § 228.6(a)(1-11)	Proposed Disposal Site
(1) Geographical position, depth of water, bottom topography, and distance from the coast.	The coordinates of the site are stated on page I-7. The water depth at the proposed ODMDS ranges from 60 to 67 ft. The bottom topography of the site is flat and the closest point to shore is approximately 4 statute miles from the coast.
(2) Location in relation to breeding, spawning, nursery, feeding, or passage areas of living resources in adult or juvenile phases.	The nearest fish haven is approximately 1.5 statute miles WNW of the proposed ODMDS and the Brazos Island Harbor jetties are about 4 statute miles from the SW corner of the site. The protected waters between the jetties allow for migratory passage of brown and white shrimp, blue crab, drum, sheepshead, and southern flounder populations. The jetties, the fish haven, and the nonsubmerged shipwrecks in the area, the last of which also improves fishing, were excluded from the ZSF.
(3) Location in relation to beaches or other amenity areas.	The proposed ODMDS is over 4 statute miles from the nearest beach or amenity area.
(4) Types and quantities of wastes proposed to be disposed of, and proposed methods of release including methods of packaging the wastes, if any.	Only virgin dredged material (1.325 million cubic yards) from the BIH 42-Foot Project will be disposed at the proposed ODMDS. At present, approximately 350,000 cu yd of maintenance material is dredged from the BIH Entrance Channel at roughly 13-month intervals. After completion of the BIH 42-Foot Project, this amount is expected to increase to 480,000 cu yd. The maintenance material will be transported to the BIH Maintenance ODMDS by hopper dredges, but other means of transportation could be used, including a hydraulic-dredge/pipeline.

TABLE I-2. SUMMARY OF SPECIFIC CRITERIA AS APPLIED TO THE PROPOSED DISPOSAL SITE (continued)

Specific Criteria as Listed in 40 CFR § 228.6(a)(1-11)	Proposed Disposal Site
(5) Feasibility of surveillance and monitoring.	<p>The proposed ODMDS is amenable to surveillance and monitoring, owing to its proximity to Brownsville and Port Isabel and its relatively shallow depths. These factors facilitate site accessibility and reduce sampling costs and safety risks. The proposed surveillance and monitoring program for the BIH 42-Foot Project ODMDS consists of water, sediment, and elutriate chemistry; bioassays; bioaccumulation studies; and benthic infaunal analyses.</p>
(6) Dispersal, horizontal-transport, and vertical-mixing characteristics of the area, including prevailing current directions and velocity, if any.	<p>Sediment dispersal, horizontal transport, water-column currents, and vertical mixing in the region of the BIH 42-Foot Project ODMDS were analyzed to (1) develop the necessary buffer zones for the exclusion analysis and (2) determine the minimum necessary size of the proposed ODMDS. The predominant longshore currents are toward the north with a net current flow between 0.1-0.3 kn beyond the 50-ft isobath. The proposed ODMDS was sized based on significant expected mounding.</p>
(7) Existence and effects of current and previous discharges and dumping in the area including cumulative effects.	<p>No previous discharges or dumping has occurred in the area of the proposed ODMDS. Studies employing both chemical tests and bioassays have concluded that there are no water- or sediment-quality problems in the proposed ODMDS or the ZSF. Testing of past maintenance dredged material indicates that it was acceptable for ocean disposal under 40 CFR § 227. Offshore from the BIH Entrance Channel, the sediment becomes sandy silt with a large, irregular pattern of clayey sand within the sandy silt regime. Farther offshore other matrices of sand, silt, and clay are found. On the average, the virgin material to be dredged during the BIH 42-Foot Project contains clayballs (23.9%), silt/clay (67.9%), and sand (8.2%). As the virgin construction material is predominantly silt and</p>

TABLE I-2. SUMMARY OF SPECIFIC CRITERIA AS APPLIED TO THE PROPOSED DISPOSAL SITE (continued)

Specific Criteria as Listed in 40 CFR § 228.6(a)(1-11)	Proposed Disposal Site
(7) (continued)	<p>clay, a silty clay regime is the preferable bottom type for disposal of the material, with a sand-silt-clay regime as the second-best alternative. However, the regimes are in areas excluded by the ZSF and the exclusionary criteria in the regulations. Therefore, the proposed ODMDS will be located in the third choice sediment type, sandy silt.</p>
(8) Interference with shipping, fishing, recreation, mineral extraction, desalination, fish and shellfish culture, areas of special scientific importance, and other legitimate uses of the ocean.	<p>Items from this list that are pertinent to the BIH 42-Foot Project ODMDS are shipping, mineral extraction, commercial and recreational fishing, and recreational and historical areas. The proposed ODMDS will not interfere with other legitimate uses of the ocean because the site-selection process was designed expressly and conducted to avoid interferences and minimize impacts. Past disposal operations at the BIH Historic ODMDS have not interfered with other uses, and no changes are expected at the preferred site that would alter the <i>status quo</i>.</p>
(9) Existing water quality and ecology of the site as determined by available data or by trend assessment or baseline surveys	<p>Monitoring studies at other ODMDSs off the Texas coast have shown that short-term water-column turbidity perturbations, and sometimes increased chemical oxygen demand (COD), result from disposal operations. No short-term sediment-quality perturbations were correlated to disposal operations.</p> <p>Available data show that both water and sediment quality are good in the proposed ODMDS and throughout the ZSF. This indicates that continued dredged-material disposal operations of similar composition present no long-term water-column or benthic impact risk.</p>

TABLE I-2. SUMMARY OF SPECIFIC CRITERIA AS APPLIED TO THE PROPOSED DISPOSAL SITE (continued)

Specific Criteria as Listed in 40 CFR § 228.6(a)(1-11)	Proposed Disposal Site
(10) Potentiality for the development or recruitment of nuisance species in the disposal site.	<p>When dredged material is disposed, the material is recolonized first by opportunistic species. However, these species are not nuisance species in the sense that they interfere with legitimate uses of the ocean or that they might carry human pathogens. The disposal of maintenance material has not been shown to promote the development of nuisance species at the BIH Historic ODMDS, nor is the disposal of virgin material expected to promote the development or recruitment of nuisance species at the BIH 42-Foot Project ODMDS.</p>
(11) Existence at or in close proximity to the site of any significant natural or cultural features of historical importance.	<p>Sixty-two shipwrecks of historical importance are clustered around the BIH Entrance Channel jetties and within the established buffer zones of the jetties. Disposal operations at the preferred BIH 42-Foot Project ODMDS should not impact any known sites of historical importance.</p>



## **PART II. CONSULTATION AND COORDINATION**

This section of the FEIS summarizes the process by which the DEIS was reviewed. Comments received during the review process are acknowledged and responded to as necessary by EPA.

### **A. PUBLIC REVIEW PROCESS**

The Brazos Island Harbor 42-Foot Project, Texas, Ocean Dredged Material Disposal Site Designation Draft EIS was distributed by EPA to interested agencies, officials, public groups, and individuals on April 25, 1991. (EPA 906/04-91-001). All comments received on the DEIS, as well as the FEIS, are considered by EPA when making a final decision on ODMDS designation.

### **B. RESPONSES TO COMMENTS**

During the public review process, eight comment letters concerning the DEIS were received from Federal and State agencies and one private organization. The letters are numbered and listed below. As a matter of information, Letter Number 2 is not a comment letter on the DEIS but an endangered and threatened species list for the project area.

<b>Letter Number</b>	<b>Agency/Organization</b>
1	Department of the Interior, Office of Environmental Affairs, Albuquerque, NM
2	Department of Commerce, National Oceanic and Atmospheric Administration, NMFS, Southeast Region, St. Petersburg, FL
3	State of Texas, Office of the Governor, Austin, TX
4	State of Texas, General Land Office, Austin, TX
5	State of Texas, Texas Parks and Wildlife Department, Austin, TX
6	State of Texas, Texas State Soil and Water Conservation Board, Temple, TX

<b>Letter Number</b>	<b>Agency/Organization</b>
<b>7</b>	<b>State of Texas, Texas Water Commission, Austin, TX</b>
<b>8</b>	<b>State of Texas, Texas Water Development Board, Austin, TX</b>
<b>9</b>	<b>F. Hermann Rudenburg, Sierra Club, Lone Star Chapter, Coastal Affairs Committee, Galveston, TX</b>

**These letters are reproduced in this section. Each comment within each letter is assigned a number in the left margin. EPA's responses to the comments are to the right and are identified by the respective comment number.**

**Only the comments pertaining to the BIH 42-Foot Project ODMDS are addressed in this document. EPA's responses to the other comments are presented in the respective FEISs.**

LETTER NUMBER 1

RESPONSE TO LETTER NUMBER 1



United States Department of the Interior

OFFICE OF THE SECRETARY  
OFFICE OF ENVIRONMENTAL AFFAIRS  
POST OFFICE BOX 449  
ALBUQUERQUE, NEW MEXICO 87106  
July 5, 1991



RECEIVED  
FEDERAL ACTIVITIES BRANCH  
91 JUL -8 AM 11:20  
6 E-F

ER 91/481

Norm Thomas (62-F)  
U.S. Environmental Protection Agency  
First Interstate Bank Tower  
1445 Ross Avenue  
Dallas, Texas 75202-3733

Dear Mr. Thomas:

This responds to your request for our review and comments on the draft Environmental Impact Statement (EIS), Brazos Island Harbor 42-Foot Project, Texas Ocean Dredged Material Disposal Site Designation. The following comments are provided for your consideration.

- 1-1 We find that the EIS adequately reflects existing conditions and impacts that can be anticipated as a result of the proposed action. The Department of the Interior has no objection to designation of this area as a dredge material disposal site.
- 1-2 The opportunity to review the proposed action is appreciated.

1-1 EPA concurs.

1-2 No response is required.

Sincerely,

*Raymond P. Churan*  
Raymond P. Churan  
Regional Environmental Officer

11-3

LETTER NUMBER 2

RESPONSE TO LETTER NUMBER 2



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL MARINE FISHERIES SERVICE  
Southeast Region  
9450 Koger Boulevard  
St. Petersburg, FL 33702

January 2, 1991 F/SER13:TLJ

RECEIVED

JAN 08 1991

Mora Thomas  
Chief, Federal Activities Branch (62-F)  
U.S. Environmental Protection  
Agency  
Region 6  
1445 Ross Avenue, Suite 1200  
Dallas, Texas 75202-2733

Dear Mr. Thomas:

This responds to your letter of December 18, 1990, requesting information on endangered and threatened species under the jurisdiction of the National Marine Fisheries Service (NMFS) which might occur in the vicinity of the proposed Ocean Dredged Material Disposal Site offshore Port Isabel, Texas. The enclosed list contains species under NMFS purview that may occur in the marine environment off Texas.

2-1

If you have any questions, please contact Dr. Terry Henwood, Fishery Biologist, at FTS 826-3366.

Sincerely yours,

*Terry Henwood*  
for Charles A. Gravetz, Chief  
Protected Species Management  
Branch

Enclosure

2-1 No response is required.



LETTER NUMBER 2 (continued)

Endangered and Threatened Species and Critical Habitats  
under NMFS Jurisdiction

Texas

Listed species	Scientific Name	Status	Date Listed
fin whale	<u>Balaenoptera physalus</u>	E	12/02/70
humpback whale	<u>Megaptera novaeangliae</u>	E	12/02/70
right whale	<u>Subalena glacialis</u>	E	12/02/70
sei whale	<u>Balaenoptera borealis</u>	E	12/02/70
spina whale	<u>Physeter catodon</u>	E	12/02/70
green sea turtle	<u>Chelonia mydas</u>	TH	07/28/78
hawksbill sea turtle	<u>Eretmochelys imbricata</u>	E	06/02/70
Kemp's (Atlantic) ridley sea turtle	<u>Lepidochelys kempi</u>	E	12/02/70
leatherback sea turtle	<u>Dermochelys coriacea</u>	E	06/02/70
loggerhead sea turtle	<u>Caretta caretta</u>	TH	07/28/78

SPECIES PROPOSED FOR LISTING

None

CRITICAL HABITAT

None

CRITICAL HABITAT PROPOSED FOR LISTING

None

LETTER NUMBER 3

RESPONSE TO LETTER NUMBER 3



STATE OF TEXAS  
OFFICE OF THE GOVERNOR  
AUSTIN, TEXAS 78711

ANN W. RICHARDS  
GOVERNOR

July 19, 1991

Mr. Norm Thomas (8E-F)  
Environmental Protection Agency  
1445 Ross Ave., First Interstate Bank  
Dallas, Texas 75202

RE: TX-R-91-05-14-0009-50-00 / OCEAN DREDGED MATERIAL DISPOSAL SITE/BRAZOS ISLAND

Dear Applicant:

Your environmental impact statement for the project referenced above has been reviewed. The comments received are summarized below and are attached.

11-6

- 3-1 The General Land Office does not recommend any beach-quality sand generated by this dredging project be used for beach nourishment in the South Padre Island vicinity. The Texas Parks and Wildlife Department recommended the sandy materials should continue to be placed nearshore for beach nourishment. The Soil and Water Conservation Board, Texas Water Commission and Texas Water Development Board had no objections to the proposed project.
- 3-2 The beach-nourishment alternative is discussed in Section 2.3.2.1 of the DEIS. This alternative is considered to be inappropriate owing to the low levels of sand (8.2%) and the high levels of silt/clay (87.9%) in the construction material. In addition, the low quantity of dredged material precludes its use in constructing submerged mounds and feeder berms.
- 3-3 No response is required.

We appreciate the opportunity afforded to review this document. Please let me know if we can be of further assistance.

Sincerely,

*Phyllis Mitchell*  
Phyllis Mitchell  
C. Adams, State Single Point of Contact

TCN/pom

Enclosures

RECEIVED  
GENERAL ACTIVITIES BRANCH  
31 JUL 25 AM 11:01  
G E-F

RESPONSE TO LETTER NUMBER 4

LETTER NUMBER 4

Garry Mauro  
Commissioner  
General Land Office



June 21, 1991

RECEIVED  
JUN 25 1991  
OFFICE OF THE COMMISSIONER

Mr. T. C. Adams  
Governor's Office of Budget and Planning  
P.O. Box 12428  
Austin, Texas 78711  
Re: Ocean Drilled Material Disposal Site/Brazos Island  
SAC/7131; DA-91-05-14-0009-50-00

Dear Mr. Adams:

We have reviewed the above referenced Draft Environmental Impact Statement and would like to offer the following comments.

The General Land Office discourages removal of any Permanent School Fund land from mineral development availability. The mineral development record for this site, however, shows limited future potential and the size of the proposed disposal site will allow directional development should it become necessary. For these reasons we do not object to the project from a mineral development perspective.

We do recommend that any beach-quality sand generated by this dredging project be used for beach nourishment in the South Padre Island vicinity. Coastal erosion is a key concern addressed in the Texas Coastal Management Plan and we would appreciate the cooperation of the U.S. Army Corps of Engineers and the Environmental Protection Agency in monitoring all federal dredging projects for potential beach-quality sands that might be used to reduce this erosion problem.

Thank you for this opportunity to comment. Please call me at 512/463-5053 if I can be of further assistance.

Sincerely,  
  
C. Bruce Smith  
State/Federal Project Coordinator  
Coastal Division

cc: Andy Morgan

Debra J. Austin-Bailey  
1700 West Congress Avenue  
Austin, Texas 78701  
512 463-5258

Printed on recycled paper

4-1 Comment noted.

4-2 Comment noted. See response 3-2.

# LETTER NUMBER 5

# RESPONSE TO LETTER NUMBER 5

To: Larry D. McKinney, Ph.D.  
Director, Resource Protection Division

From: Leland E. Roberts  
Resource Protection Division

Subject: TRACS Review  
TX-R-91-05-14-0009-50-00  
Ocean Dredged Material Disposal Site/Brazos Island

Date: June 18, 1991

5-1 Once the channel is enlarged, maintenance material of sandy materials should continue to be placed nearshore for beach nourishment, as the EIS recommends.

  
Leland E. Roberts

5-1 EPA concurs. The USACE is currently depositing maintenance material (high-quality sand) from the BIH Entrance Channel along the 25-ft contour and north of the jetties at South Padre Island. The mound created by this demonstration project will, hopefully, slow erosional forces by acting as a wave trapping mechanism and by providing sand to the beach as the mound erodes. If this project is successful, the high-quality sand (maintenance material) will offset the effects of erosion. In Section 2.3.4.2.2 of the DEIS, EPA concurs that future maintenance material associated with the BIH 42-Foot Project is suitable for disposal at the BIH Maintenance ODMDS.



LETTER NUMBER 6

RESPONSE TO LETTER NUMBER 6



TEXAS STATE SOIL AND WATER CONSERVATION BOARD

311 North 2nd  
P.O. Box 638  
Temple, Texas 76788  
(817) 773-2250

RECEIVED

MAY 24 1991

WATER & SOIL CONSERVATION

May 23, 1991

T. C. Adams, State Single Point of Contact  
Governor's Office of Budget and Planning  
P.O. Box 12428  
Austin, Texas 78711

Dear Mr. Adams:

We have reviewed a draft copy of the Environmental Impact Statement for Brazos Island Harbor 42-Foot Project, Texas Ocean Dredged Material Disposal Site Designation prepared by the Environmental Protection Agency (SAI/EIS #72-R-91-05-14-0009-30-00). We offer no comment at this time.

Thank you for the opportunity to review and comment on this document.

Sincerely,

*James H. Moore*  
James H. Moore, P.E.  
Engineer

vd

6-1 No response is required.

John Hall, Chairman  
B. J. Wynne, III, Commissioner  
John E. McCrell, Commissioner



TEXAS WATER COMMISSION

PROTECTING PUBLIC HEALTH AND SAFETY BY REGULATING AND MONITORING POLLUTANT  
JUNE 17, 1992

RECEIVED  
JUN 18 1991  
Waterways & Wetlands Unit

Mr. T. C. Adams  
State Single Point of Contact  
Governor's Office of Budget and Planning  
P.O. Box 12428, Capitol Station  
Austin, Texas 78711-2428

Re: Draft Environmental Impact Statement (DEIS) for Ocean Dredged  
Material Disposal Site/Brasos Island Harbor 42-foot Project,  
Cameron, County, Texas; TX-R-91-05-14-0009-50-00

Dear Mr. Adams:

The staff of the Texas Water Commission (TWC) has reviewed the  
referenced DEIS regarding the preferred ocean dredged material  
disposal site for the proposed Brasos Island Harbor Project.

The site selected for offshore disposal of dredged material from  
the Brasos Island Harbor Project appears to be environmentally  
sound. We do not envision any water quality problems and have no  
7-1 objections or comments to offer. If you have any questions  
7-2 regarding this matter, please contact Mr. Dick Reppas of my staff  
at (512) 463-8412.

Sincerely,

*Allen Beinke*

Allen Beinke  
for Executive Director

7-1 EPA concurs.  
7-2 No response is required.

LETTER NUMBER 8

RESPONSE TO LETTER NUMBER 8



Charles W. Jones, Chairman  
Thomas M. Downing, Member  
Vic Fernandez, Member

Craig Pedersen,  
Executive Administrator

Walter E. Prouse, Vice Chairman  
William B. Madden, Member

July 16, 1991

RECEIVED

JUL 18 1991

OFFICIALS & SERVICE UNIT

Mr. Tom Adams  
State Single Point of Contact  
Governor's Office of Budget  
and Planning  
P. O. Box 12428  
Austin, Texas 78711

Dear Mr. Adams: *Tom,*

Re: TRACS Review/Brazos Island Harbor Ocean Dredged Material Disposal Site

Texas Water Development Board staff have reviewed the EPA's designation of an ocean disposal site for construction material to be dredged from the Brazos Island Harbor Entrance Channel by the Corps of Engineers. We find no conflict with existing or proposed future water projects identified in the current Water Plan.

Sincerely,

*Craig D. Pedersen*  
Craig D. Pedersen  
Executive Administrator

8-1

8-1 No response is required.

11-11

# LETTER NUMBER 9

# RESPONSE TO LETTER NUMBER 9

Coastal Committee, Lone Star Chapter, Sierra Club

F. Hermann Rudenbers, Ph.D.  
3327 Avenue G 1/2  
Galveston, Texas 77550  
26 June, 1991

Nora Thomas (6E-F)  
U. S. Environmental Protection Agency  
First Interstate Bank Tower  
1445 Ross Avenue  
Dallas, Texas 75202-2733

RECEIVED  
FEDERAL ACTIVITIES BRANCH  
91 JUN -2 AM 9:52  
F-F

RE: Draft EIS Ocean Dredged  
Material Disposal Site Designation  
Brazos Island Harbor 42-Foot  
Project

Dear Mr. Thomas:

I am pleased that this DEIS appears much improved over the earlier ones concerning other OODMS off the Texas Coast.

9-1 My primary concern is that of MATERIALS MANAGEMENT, or one might call it recycling. ANY MATERIAL that is dredged up represents a resource and it should not be wasted by offshore dumping. Additionally, when a shore-face is eroding, and the erosion places the land structures at greater risk from damage by wind and/or wave, erosion control measures must be employed. Since ANY material, whether it be concrete, sand, wood, stone, clay, or straw, will decrease the wave energy, hence the erosion. Once dredged, the material is free for use to consume this wave energy. It should be used for this purpose.

I disagree with the concept held by the Corps that one must consider grain size. That is a nicety that we can no longer afford. If the material does not match what is on the beach, nature will sort it out in time, meanwhile giving up erosive wave energy. Obviously placement should not be where this material may silt into a dredged channel. But elsewhere, it should be used at all times, even if of the wrong color, grain size, or whatever. The economics dictate the reuse of this material.

The Corps was wrong in 1981, and it is wrong today. There is no such thing as too little a volume, this being about three years worth of maintenance volume. A pipeline dredge should be used to place the dredged material onto or near the beach just north of the northern Jetty at a site where the currents will cause it to be deposited on the beach at some point north of the point of discharge, near or far. This likely will cost less and likely create an economic benefit for the land protection afforded. Perhaps the recreational value of the beach will be enhanced, perhaps degraded (in the minds of some people). In the era of recycling of other natural resources, dredged materials should be included, whether virgin or maintenance.

Clearly therefore, I take issue with item 5) on page iv which excludes areas of recreational use, etc.

9-2 I also take issue with the de facto exclusion of upland sites and further off-shore sites (page 2-1) either because the Corps EIS disagreed with their further consideration, or on economic grounds. That is what ALTERNATIVES are supposed to discuss. And when there are

9-1 As indicated in Table 2-2 of the DEIS, the BIH 42-Foot Project construction material is 67.9% silt/clay and 23.9% clayballs. The silt/clay material will not remain on the beach if placed there. The resultant turbidity and presence of clayballs would be aesthetically displeasing on this major, highly utilized public beach, and would minimally affect the erosion problem. The ongoing demonstration project that uses high-percentage-sand materials collected during the maintenance dredging operations (described in Section 2.3.2.1) is more likely to offset erosion problems.

9-2 The purpose of this document is to designate, based on 40 CFR 228, an OODMS that will provide an environmentally acceptable and economically and physically feasible area for the placement of the virgin material from the BIH 42-Foot Project. Upland alternatives as discussed in the DEIS were reevaluated as part of this document and are still not considered viable for this material. Other offshore disposal areas are discussed in Section 2.3 of the DEIS.

## LETTER NUMBER 9 (continued)

Coastal Committee, Lone Star Chapter, Sierra Club

benthic advantages to far offshore disposal they must be equally documented. But to summarily exclude alternatives as you have done is unacceptable and I believe violates the CEC regulations concerning NEPA. Neither a 1975 nor a 1981 EIS is an acceptable base of reference for a 1991 DEIS: opinions and methods likely have changed and what was concluded then may well not be acceptable today. Opinions must be reweighed!

9-3 Page 2-4, 2.3.2.1 line 2. What "other" beneficial uses?? While the information presented in this paragraph is acceptable, the concerns cited in this letter, above, suggest that the paragraph be vastly extended before use of the material for beach nourishment is discarded.

9-4 Also, next paragraph, deposition of maintenance material at the 25-foot contour may be correct or incorrect for beach nourishment. Heavier, clayey material might need to be placed elsewhere for suitable distribution by currents.

9-5 Page 2-9, 2.3.4.1.4. Para 2. "dredging costs" are unrelated: i.e. the costs of picking up material. Transportation costs of course change with distance, as do safety (possibly a contrived item) monitoring and inspection or surveillance(?) costs.

9-6 2.3.4.3.2 page 2-19. Fine and dandy for the off-shore site, but because of this beach and buffer zone, an alternative of recycling highly valuable beach wave energy absorbers is tossed away.

9-7 Page 3-4, 3.1.4.1 para 2. "except for copper, which only slightly exceeded the criterion." If more than double is "only slightly", my sense of magnitude is off. This editorializing is not factual, and doesn't belong!

9-8 Page 3-4C, 3.4.3. first sentence. This is an 8 year-old reference and MUST be brought up to date. Areas north and south of the entrance channel should be differentiated because the protected zone south is so much larger, and the longshore current is northerly and therefore dictates where disposal might and will (maintenance) occur. Access roads to these sites is also significantly different as there are no bridges (I believe) over the channel. Brazos Island is not identified on any of the maps!

9-10 The DEIS is short on discussion of alternatives. Also, would a site closer to the 90-foot contour be better, perhaps if benthos are considered? Should a site further from the fairway perhaps be considered? Perhaps then sand could be returned to shore for beach nourishment, at greater expense, but less total expense - how serious is the beach erosion? Thank you for this opportunity to comment.

Sincerely yours,

*F. Hermann Ruderberg*

F. Hermann Ruderberg, Ph.D.  
Member, Coastal Committee,  
Lone Star Chapter, Sierra Club

Page - 2

## RESPONSE TO LETTER NUMBER 9 (continued)

9-3 The other beneficial uses are discussed in the second paragraph of Section 2.3.2.1.  
9-4 Only the maintenance materials, and not the clay construction materials, are disposed at the 25-ft contour. The clay materials are proposed to be deposited at the BIH 42-Foot Project ODMDS, where the northward-flowing long-shore drift will erode and disperse the mounds of construction material.

9-5 Dredging costs are the total costs of dredging and disposal, including (1) dredging the materials, (2) transporting the materials to the disposal site, (3) ensuring the materials are disposed in the designated area (surveillance), and (4) monitoring. The costs to dredge the material is dependent on the type of dredge used, and the type of dredge used is dependent on the selected disposal alternative (discussed in Section 2.2 of the DEIS).

9-6 See response to comment 9-1.

9-7 The words *only slightly* are deleted from the paragraph. In addition, copper exceeded the EPA Water Quality Criteria in four (not three), as written in Section 3.2.4 of the DEIS) of the years in which samples were collected (see Part III of the FEIS).

9-8 Although the reference cited is eight years old, the information described is accurate and applicable. The remainder of the comment is unclear.

9-9 Brazos Island is labeled on the maps included in this FEIS.

9-10 Discussions of disposal alternatives are discussed in Section 2 of the DEIS, and included (1) no action alternative, (2) non-ocean disposal alternatives, (3) ocean disposal alternatives, and (4) the preferred alternative. Site-selection criteria are discussed in detail in Section 4 of the DEIS.

9-11 Beach erosion is discussed in Section 3.2 of the DEIS. In general, erosion was estimated to be 0-5 ft/year from the Brazos Santiago Pass jetties to an area approximately one-half mile downstream (to the north), and 5 to 10 ft/year for the next five-mile area to the north.

### PART III. MODIFICATIONS AND CORRECTIONS TO THE DRAFT EIS

The BIH 42-Foot Project, Texas, Ocean Dredged Material Disposal Site Designation Draft EIS was reviewed by EPA and other Federal and State agencies, public groups, and individuals. This section of the FEIS presents minor revisions and some clarifications to the DEIS based on errors identified during the review process. Each amendment is identified by page, paragraph, and line of the DEIS and any amended text is presented in italicized type.

**Page iii, paragraph 2, lines 14 and 15 and page 2-1, paragraph 1, lines 12 and 13:**

"...and 3) decreased recreational benefits to fisherman and other visitors to the jetties." is deleted from the DEIS. Plans to make improvements to the jetties were deleted from this project.

**Page 2-29, paragraph 1, lines 3 and 4:**

Based on EPA's new policy for presenting latitude/longitude coordinates, the BIH 42-Foot Project ODMDS coordinates would read as follows

+26° 04' 47", -97° 05' 07";	+26° 05' 16", -97° 05' 04";
+26° 05' 10", -97° 04' 06";	+26° 04' 42", -97° 04' 09".

**Page 3-4, paragraph 2, lines 2 and 3:**

The words *only slightly* are deleted from the phrase "... which only slightly exceeded the criterion."

**Page 3-7, Table 3-4:**

Two corrections were made to the Water Quality Criteria (WQC) column in Table 3-4. The WQC for nickel should be 75 µg/L and the WQC for toxaphene should be 0.21 µg/L.

**Page 3-18, paragraph 1, line 10:**

The word *slightly* in the phrase "...was slightly higher. ..." is deleted. The word *three* in the phrase "...in three of the years in which samples were taken." is replaced by the word *four*.

#### **PART IV. EPA'S PROPOSED ACTION**

The Environmental Protection Agency's (EPA) proposed action is the designation of an ODMDS for the one-time disposal of virgin (nonmaintenance) construction material dredged from the Brazos Island Harbor 42-Foot Project. The BIH Entrance Channel and the Brownsville Ship Channel provide access for commercial and recreational vessels from the Gulf of Mexico to the Gulf Intracoastal Waterway and Port Brownsville. Because the sediment grain-size regime at the BIH Maintenance Ocean Dredged Material Disposal Site (ODMDS) is inappropriate for receiving construction material from this project, a new ODMDS must be designated. The proposed BIH 42-Foot Project ODMDS was identified based on an evaluation of environmental, economic, and regulatory considerations.

Longshore currents, lunar tides, and storm-induced water movement cause shoaling of the BIH Entrance Channel at approximately 350,000 cu yd annually. This amount is expected to increase to approximately 480,000 cu yd annually after completion of the BIH 42-Foot Project. The United States Army Corps of Engineers (USACE) is responsible for channel construction and maintenance under the Marine Protection, Research, and Sanctuaries Act of 1972 (MPRSA); specifically the Galveston District USACE is charged with maintaining the BIH Entrance Channel.

The no-action alternative provides that EPA refrain from designating an ocean disposal site for the disposal of 1.325 million cubic yards of construction material. Without this ODMDS designation, the USACE would be required to develop an alternative disposal method (e.g., land-based) or modify or cancel the project. Cancellation or modification of the BIH 42-Foot Project would include the following impacts: (1) long-term increases in transportation costs relative to those that would result from project implementation and (2) loss of potential for increased channel usage, because a widened channel would permit vessel traffic during maintenance dredging.

Upland disposal sites were excluded from consideration, based on lack of available sites and technical problems related to transferring material from dredges to land. Midshelf and continental shelf sites were determined unsuitable because of potential impact on the benthic community, greatly increased fuel and manpower requirements, and increased safety risks

associated with long-distance transport. The proposed ODMDS avoids areas of recreational importance and biological sensitivity, and is reasonably nearshore to facilitate site monitoring and surveillance.

While the literature on maintenance-material disposal on the Gulf coast indicates only minor short-term and negligible long-term mounding from disposal activities, the BIH 42-Foot Project ODMDS was sized based on significant expected mounding. The proposed ODMDS was selected so that the temporary reduction in water depth and long-term transport of material from the site would cause no adverse impacts. Extensive monitoring and surveillance of the disposal area is planned.

EPA has determined that the proposed ODMDS is acceptable for disposal of virgin (nonmaintenance) construction material dredged from the BIH Entrance Channel and the Brownsville Ship Channel. A number of unavoidable environmental impacts result from dredged-material disposal: e.g., increase in turbidity and suspended solids; release of minor quantities of heavy metals, oil, grease, and nutrients; a change in dissolved oxygen (DO) content; and smothering of the benthos. These impacts will result from the ocean disposal of dredged material regardless of where the ODMDS is located. The BIH 42-Foot Project ODMDS was selected to minimize impacts on the greatest extent possible; however, certain impacts will occur, such as the temporary burial of the benthic community and the potential for mortality of some of the benthic organisms within the site. Complete ecological recovery can be expected at the virgin site.















8/13/2012



00

HF GROUP - IN



