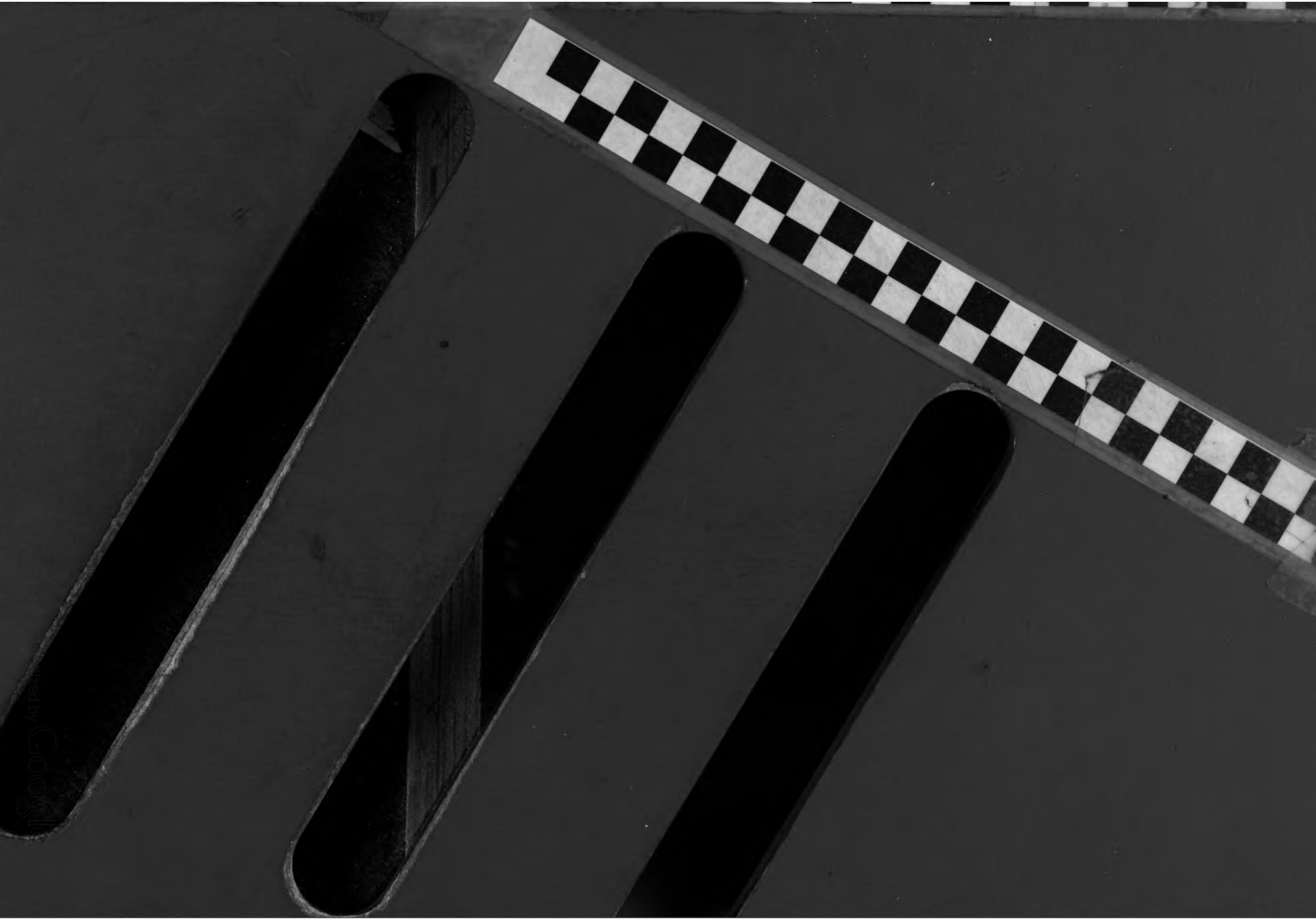

Dallas, TX 75202

EPA

Environmental Impact Statement Final

Corpus Christi Ship Channel Ocean Dredged Material Disposal Site Designation

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1445 ROSS AVENUE, SUITE 1200
DALLAS, TEXAS 75202

APR 7 1989

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's) designation of the Corpus Christi Ship Channel ocean dredged material disposal site. The National Environmental Policy Act does not apply to EPA activities of this type. EPA has voluntarily committed to prepare EISs in connection with its ocean disposal site designation program.

Because changes from the Draft EIS are minor, this Final EIS incorporates the Draft EIS by reference and includes the following: 1) a revised summary: 2) revisions necessary to the Draft as a result of agency and public comments; 3) EPA's responses to comments received on the Draft EIS; and 4) EPA's preferred alternative.

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., P.E.
Regional Administrator

Enclosure

FINAL ENVIRONMENTAL IMPACT STATEMENT
CORPUS CHRISTI SHIP CHANNEL
OCEAN DREDGED MATERIAL DISPOSAL SITE (ODMDS) DESIGNATION

RESPONSIBLE AGENCY: U.S. Environmental Protection Agency, Region 6

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 Parts 220-229).

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

ABSTRACT: The proposed action is the designation of a site for the ocean disposal of 955,000 cubic yards of maintenance material dredged annually from the Corpus Christi Ship Channel by the U.S. Army Engineer District, Galveston, Texas. The major adverse environmental impact of site designation is the burial and high mortality of the benthic infaunal community within the disposal site boundary.

COMMENTS ON THE FINAL EIS DUE: MAY 2 2 1989

RESPONSIBLE OFFICIAL:

Robert E. Layton Jr.

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

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PREFACE

The Draft Environmental Impact Statement (EIS) for the Corpus Christi Ship Channel Ocean Dredged Material Disposal Site (ODMDS) Designation was issued by the U.S. Environmental Protection Agency in September 1988 (EPA 906/09-88-003). The Draft EIS was coordinated with approximately 50 Federal, State, and local agencies and interested individuals. Seven comment letters were received by EPA during the public review process.

This Final EIS consists of four sections which are (1) a summary of the 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 Draft EIS; and (4) EPA's proposed action. A complete environmental analysis of the proposed action is provided by the Draft EIS and Final EIS together.

The Final EIS was prepared with the assistance of Battelle Ocean Sciences of Duxbury, Massachusetts.

PART I. SUMMARY OF THE DRAFT AND FINAL EIS

A. BACKGROUND

The Corpus Christi Ship Channel provides access to the Texas ports of Corpus Christi, La Quinta, Ingleside, Harbor Island, and Port Aransas from the Gulf of Mexico (Figure I-1). The Ship Channel was authorized by the River and Harbor Act of 1958, and deepening and enlargement of the channel was authorized by the River and Harbor Act of 1968. The main channel is 31.2 miles long, with authorized depths of 45 to 47 feet. Shoaling of the Ship Channel occurs at a rate of approximately 955,000 cubic yards per year, resulting in a need for maintenance dredging of the channel at approximately 18-month intervals. A disposal site designated on an interim basis in 1977 has been used for disposal of dredged materials from the Corpus Christi Ship Channel since 1963.

Section 102(c) of the Marine Protection, Research, and Sanctuaries Act (MPRSA) authorizes the U.S. Environmental Protection Agency (EPA) to designate ocean disposal sites for dumping of dredged materials. The Galveston District of the Corps of Engineers (CE) is responsible for maintaining the Corpus Christi Ship Channel to its authorized depth through maintenance dredging and disposal operations. The CE has requested that EPA permanently designate an Ocean Dredged Material Disposal Site (ODMDS) for the material dredged from the Corpus Christi Ship Channel.

B. ALTERNATIVES

EPA's proposed action is the designation of an ODMDS for the maintenance materials from the Corpus Christi Ship Channel. The disposal alternatives that were considered include no action, upland disposal, and ocean disposal at near-shore, mid-shelf, and continental slope sites.

Under the no-action alternative, EPA would not designate a disposal site. This would result in shoaling of the channel and an eventual closure of the channel to ship traffic, which would have severe adverse economic impacts. In addition, the no-action alternative is a violation of the intent of the MPRSA, because interim designation of sites was based on historical usage, not on

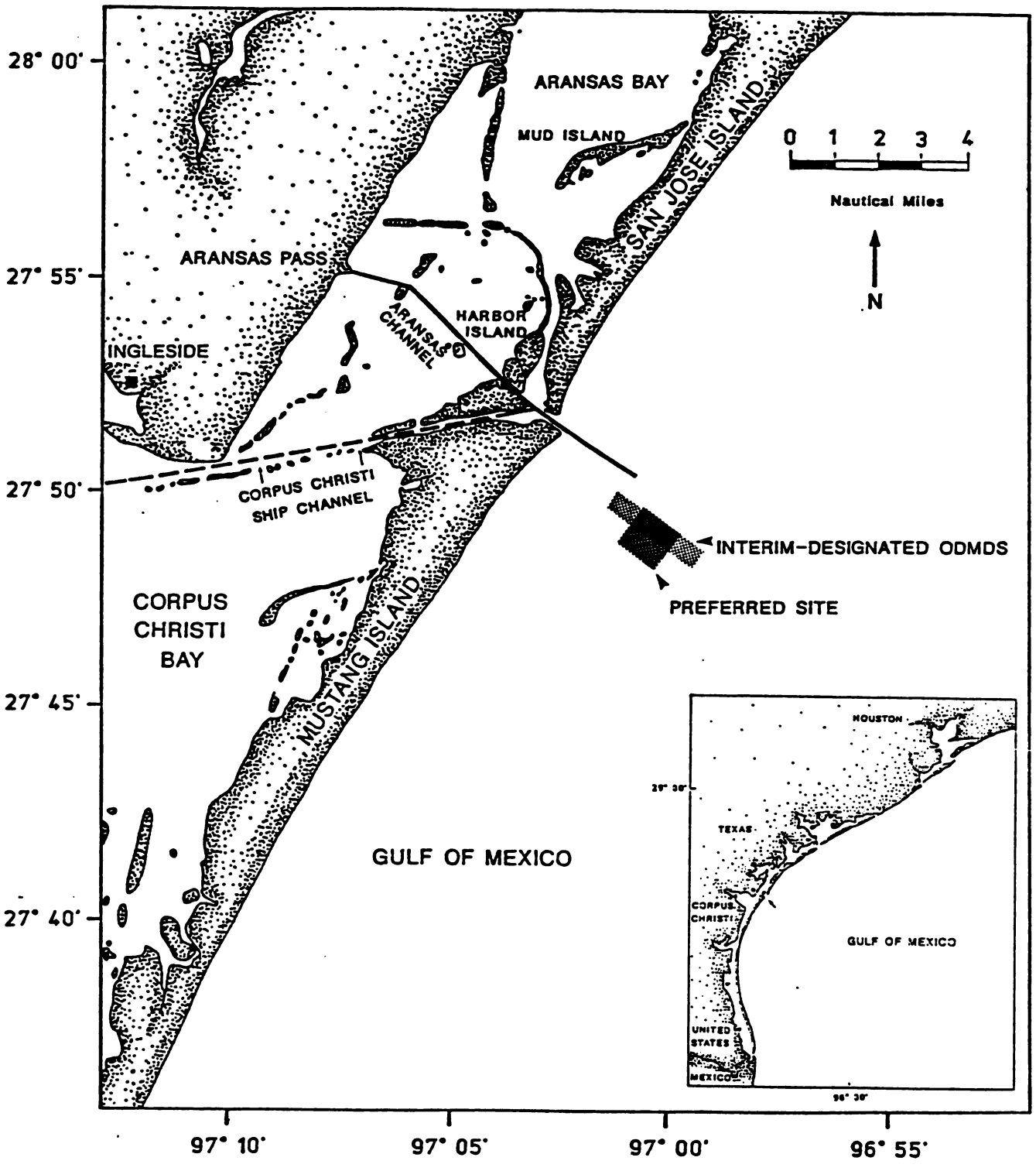


FIGURE I-1. CORPUS CHRISTI AREA SHOWING LOCATION OF PREFERRED AND INTERIM-DESIGNATED ODMDS.

the general and specific criteria for site selection (40 CFR 228.5 and 228.6(a)).

Disposal of the dredged materials at an upland site was found infeasible due to cost and land constraints. The nearest upland disposal area is 4 miles from the project area and its use would result in high costs for transportation of the dredged material. This site is limited in size, and it would be necessary to acquire new disposal areas for the dredged materials. The surrounding land areas consist of wetlands and shallow bay habitats, and it would be difficult to develop these important habitats for disposal purposes.

A mid-shelf, a continental slope, and two near-shore ocean disposal sites were evaluated. The mid-shelf and continental slope sites were determined to be unsuitable for several reasons. The benthic community at these deeper locations is not as well adapted to survival under conditions of temporary burial as their shallow-water counterparts which commonly experience conditions of sediment resuspension due to wave action and storms. The dredged material from the Corpus Christi Ship Channel is of different sediment type than that found further offshore, which could have further impact on the benthic communities at these sites. The increased distance from the shore of the mid-shelf and continental slope sites would result in increased dredging costs and time, as well as safety risks. The feasibility of monitoring and surveillance at the site decreases with increasing distance offshore. In addition, there are no data to indicate that the deep-water sites offer any environmental benefits over near-shore sites. Because of these considerations, the mid-shelf and continental slope sites were eliminated from further evaluation.

Identification of appropriate near-shore sites was accomplished using a Zone of Siting Feasibility (ZSF) approach. This approach involves identification of a specified area in which location of the ODMDS is feasible based primarily on geographical and physical constraints. On the basis of available information, areas within the zone of siting feasibility that would not conform to the five general criteria and eleven specific criteria for site selection (40 CFR 228.5 and 228.6(a)) are excluded. The nonexcluded portions of the ZSF are the areas suitable for location of an ODMDS.

A computerized literature search was conducted to collect information pertaining to the project area. Because no significant reasons were found to

locate the site further offshore, a 10-mile radius from the mouth of the Corpus Christi Harbor Channel was chosen as the outside boundary of the ZSF. There will be no monitoring or surveillance difficulties at any site within the 10-mile boundary because the water is shallow enough to allow efficient benthic sampling. There are no political boundaries that limit the ZSF. The ZSF is approximately 157 square miles, and all areas outside the 10-mile boundary were excluded from further consideration.

The fate of the dredged material after discharge into the disposal area was determined by computer model. The program models the initial behavior and predicts the height and area of the mound produced by the disposal of the dredged material. The model was used to determine the necessary size of the ODMDS and of buffer zones. Using the results from the model, the appropriate sizes for buffer zones around biologically sensitive areas, navigation channels, and beaches and recreational areas were determined and these areas were excluded from the ZSF. Based on patterns of sediment transport, an area was excluded from the ZSF to prevent transport of the disposed materials into the Corpus Christi Ship Channel. Other considerations in developing the ZSF were constraints due to cultural and/or historical resources, nonliving and living resources, environmental quality, and recreational uses.

The computer modeling was used to determine the necessary size of the disposal site. It was determined that the size of the site should be 5,200 feet in the direction parallel with the Corpus Christi Ship Channel and 4,450 feet in the direction perpendicular to the channel.

The next step is to locate a preferred site in the nonexcluded area of the ZSF. The Ocean Dumping Regulations state that preference should be given to historically used sites if these sites meet with all the other criteria (40 CFR 228.5(e)). However part of the interim-designated Corpus Christi Ship Channel ODMDS falls within excluded areas of the ZSF. A preferred site was identified based on minimizing impacts on the biological community, locating the site in appropriate sediments, and locating the site as near as possible to the area historically impacted by dredged material disposal. The preferred site is shown in Figure 1 and is bounded by the following coordinates.

$27^{o}49'11"$ N, $97^{o}01'09"$ W; $27^{o}48'44"$ N, $97^{o}00'20"$ W;
$27^{o}48'06"$ N, $97^{o}00'48"$ W; $27^{o}48'33"$ N, $97^{o}01'36"$ W.

Based on historical data, no long-term detrimental environmental impacts are expected outside the disposal site boundaries, so a limited monitoring and surveillance program is proposed for the preferred site. The program would consist of assessment of channel sediment quality, assessment of water column and sediment quality of the ODMDS, assessment of the health of the biological community at and down current of the ODMDS, elutriate testing of the disposal site sediment, and macrobenthic sampling.

EPA's proposed alternative is the final designation of the preferred site as the Corpus Christi Ship Channel ODMDS based on the following considerations.

- The no-action alternative is not acceptable because taking no action is a violation of the Marine Protection, Research, and Sanctuaries, Act.
- Mid-shelf and continental slope sites were found to be less satisfactory because of safety and economic considerations and limits on monitoring and surveillance.
- The preferred site encompasses much of the interim-designated ODMDS, in compliance with the General Criteria of the ocean dumping regulations (40 CFR 228.5).

C. AFFECTED ENVIRONMENT

Corpus Christi is in a marine environment dominated by the Gulf of Mexico. The Gulf acts as an airmass source region and there is a persistent onshore flow of Gulf air deep into the state. This flow can be interrupted by westerly winds in the winter and by tropical easterly winds in late summer, both of which carry disturbances to the region. Air temperature averages 56°F in the winter and 85°F in the summer, with average monthly rainfalls of 1.8 inches in January, 3.1 inches in May, 2.0 inches in July, and 5.0 inches in September.

The most significant climatological effects on hydrographics result from seasonal precipitation distributions and wind systems that affect circulation and wave motion. The bays along the Texas coast are extremely responsive to meteorological forcing associated with the passing of frontal systems. Meteorological forcing occurs when onshore winds elevate water levels in the bays and force water in through the passes. This is reversed when the frontal

system moves past the area. Inland pressure increases and winds shift, depressing water levels and causing water to be discharged back into the Gulf.

The bathymetry of the coast around Corpus Christi is similar to the rest of the Texas coast, with the vertical:horizontal grade from the beach to 3,300 feet offshore being approximately 5:1,000. Beyond this the continental shelf begins with a vertical:horizontal grade of 5:10,000 and water depths ranging to 80 feet.

In the northwestern Gulf area, a complex interaction of tides, meteorological forces, freshwater inflows, and Coriolis acceleration affect the hydrodynamic regime. The astronomical tides in the Gulf are generally small, varying from diurnal to semidiurnal, with a typical diurnal range of 2-4 feet. These tidal fluctuations can be obscured by meteorological effects. The eastern Gulf is dominated by the Loop Current, which is a continuation of the Yucatan Current. In addition to the Loop Current are two semipermanent currents. One current is in the northwestern Gulf and circulates in a counterclockwise direction; the other current is in the southwestern Gulf and circulates clockwise. The zone of convergence of these patterns occurs south of Corpus Christi in the winter and results in prevailing southerly currents. In the summer, the convergence zone moves northward and northerly currents tend to dominate the Corpus Christi area. The near-shore currents are mostly wind driven, although the near-bottom currents are more complex. Bottom currents are equal to approximately one-half of the surface velocity, and can occur in directions opposite to the surface currents.

The CE performed chemical analyses of water samples taken in the Corpus Christi Entrance Channel, the interim-designated ODMDS, and an undisturbed area to the north of the entrance channel. All parameters tested were below the EPA criteria except for copper in one set of data, but the EPA criterion for copper would be met after allowance is made for initial mixing. Therefore, the results of these studies indicate that there are no water quality problems in these areas.

Chemical analysis of sediments from the interim-designated site indicated no contamination problems of concern for materials dredged from the Corpus Christi Ship Channel in past maintenance activities. Bioassay and bioaccumulation analyses were performed on sediments from the Corpus Christi Ship channel, and chemical analyses were performed on channel sediments and elutriates. The results of the biological and chemical analyses of the Corpus

Christi Ship Channel sediments were acceptable. No particular pollution or toxicological problems were identified for these sediments, indicating that the ship channel sediments are acceptable for ocean disposal.

Analysis of sediments not impacted by dredging or disposal activities near the Ship Channel and ODMDS indicate the Corpus Christi area has no sediment quality problems that would affect the site selection process. Bioassays on unimpacted sediments showed high survival of test organisms, and bioaccumulation tests did not show significant increases in contaminant concentrations. These results indicate that there are no sediment quality problems in the Corpus Christi area. The surficial sediment provinces parallel the beach in the following grading pattern as distance offshore increases: sand, silty sand, sand/silt/clay, and clayey silt. The materials to be dredged from the Ship Channel are primarily sand, most similar to the sand and silty sand provinces close to shore.

The beaches along the coast in the Corpus Christi area are in a general state of sediment deposition. Sediment dispersal on the Texas Continental Shelf primarily results from meteorological events (winds and storms), with tidal events playing a less important role. Sediment transport is dominated by wind-drift currents, with minimal wave-drift transport occurring except during storm events. The net southwesterly longshore drift in the northwestern Gulf is the result of the current regime and predominating southeasterly winds. Previous studies have indicated that although short-term mounding is to be expected at the ODMDS following dredged material disposal, there is no long-term buildup of materials.

To measure plankton abundance, transects were sampled off Matagorda Bay to the north of Corpus Christi, and Port Mansfield and Brownsville to the south. The results indicated that the greatest abundance of phytoplankton, particularly during the summer sampling, occurred off Corpus Christi. The dominant species were mostly diatoms typical of south Texas offshore communities. Zooplankton biomass and density increased consistently from deep offshore stations to shallow near-shore stations, with this trend being most pronounced in the spring and summer. The most abundant group was made up of copepods, representing about 70 percent of the organisms. In contrast to the total number of organisms, species abundance increased with increasing distance from shore.

The benthic community at the interim-designated ODMDS is significantly different than the surrounding natural bottom communities because the sediments at the site are almost pure sand, unlike the sandy-mud environment of the surrounding natural bottom. Sampling stations in and near the interim-designated site exhibited lower species diversity, numbers of taxa, numbers of individuals, and species richness than the surrounding natural bottom areas. The lowest densities were observed in the fall, followed by recruitment of young individuals in the winter and spring, and peak populations occurring from February to April. The natural mixed-bottom habitat provides more ecological niches and was characterized by higher numbers of individuals and taxa, higher species diversity, and higher species richness.

The National Marine Fisheries Service identified 10 species of aquatic vertebrates considered endangered or threatened that may occur in the Texas marine environment. Eleven species of terrestrial and aquatic vertebrates are listed as endangered or threatened by the U.S. Fish and Wildlife Service (50 CFR 17). In addition, the Texas Parks and Wildlife Department and the Texas Organization for Endangered Species identified 13 other species listed as peripheral, threatened, endangered, or protected nongame species that occur in the lower Rio Grande Valley. The five federally protected species of turtles that occur in the area are the leatherback, Kemp's ridley, hawksbill, green, and loggerhead. The Federally protected brown pelican commonly forages along dredged ship channels and near-shore coastal waters. Its nesting area and habitat include Mustang Island, St. Joseph Island, and Brown Pelican Island. Of the five endangered or threatened cetaceans that occur in the waters off the coast of Texas, the sperm whale is the most common. This species prefers deep water and only approaches shores that have a rapid drop off in depth, unlike the gradual slope of the Texas continental shelf. The other threatened or endangered whale species are the fin whale, humpback whale, right whale, and sei whale, none of which occur commonly along the Texas coast.

The most important fishery in the project area is the penaeid shrimp fishery. Other commercially valuable species include black drum, flounder, cobia, and snapper. Catch values for commercial fish in the project area fluctuate significantly from year to year. The Corpus Christi area represents 25 percent of the Texas offshore recreational fishing and provides 15 percent of the total recreational catch.

Other features of note in the Corpus Christi area include several offshore platforms and concentrations of petroleum structures. These represent both a physical obstruction and a source of attraction for fishery species. There are major tourist and recreational beaches located on Padre Island and Mustang Island to the south of Corpus Christi.

Corpus Christi is an active port; the principal commodities passing through it are petroleum and petroleum products, followed by ores, grains, and chemical products. The total annual tonnage through the channel from 1967 to 1982 ranged from a minimum 25,500,000 short tons in 1972 to a maximum 56,000,000 short tons in 1977.

D. ENVIRONMENTAL CONSEQUENCES

The preferred site has been evaluated using the 5 general and 11 specific criteria listed in the Ocean Dumping Regulations. This evaluation is summarized in Tables I-1 and I-2.

E. PROPOSED ACTION

EPA's proposed action is the final designation of the preferred site for the disposal of the maintenance materials dredged from the Corpus Christi Ship Channel.

TABLE I-1. SUMMARY OF THE SPECIFIC CRITERIA AS APPLIED TO THE PREFERRED DISPOSAL SITE.

Specific Criteria as Listed in 40 CFR §228.6(a)	Preferred Disposal Site
1. Geographical position, depth of water, bottom topography and distance from coast.	See Figure I-1. The water depth ranges from approximately 32 to 50 feet, the bottom topography is flat and the site is approximately 1.5 miles from the coast at its closest point.
2. Location in relation to breeding, spawning, nursery, feeding, or passage areas of living resources in adult or juvenile phases.	Fish havens and buffer zones around these features were excluded from the ZSF, as were lighted platforms and non-submerged shipwrecks which improve fishing. A migratory route for white and brown shrimp, blue crab, drum, sheepshead, and southern flounder and a buffer zone around the route were also excluded.
3. Location in relation to beaches or other amenity areas.	The preferred site is roughly 1.5 miles from Mustang Island and San Jose Island beaches or other amenity areas.
4. Types and quantities of wastes proposed to be disposed of, and proposed methods of release including methods of packaging the waste, if any.	Maintenance material from the Corpus Christi Ship Channel is the only material to be disposed of at the site. Historically, an average of 955,000 cubic yards per year of maintenance material has been dredged from the Ship Channel at 18-month intervals. No special location or precautions are necessary based on the results of biological and chemical analyses of materials from the project area.
5. Feasibility of surveillance and monitoring.	Monitoring and surveillance are feasible at the preferred site because it is in close proximity to shore and has water shallow enough for efficient sampling. The proposed program includes monitoring of water, sediment, and elutriate chemistry, bioassays, bioaccumulation studies, and benthic infaunal analyses.
6. Dispersal, horizontal transport, and vertical mixing characteristics of the area, including prevailing current direction and velocity, if any.	The site was sized with these parameters taken into consideration. Longshore transport is predominately to the southwest, and is expected to remove the mounds of disposed material from the site and limit mounding to a short-term effect.

TABLE I-1 (Continued).

7. Existence and effects of current and previous discharges and dumping in the area (including cumulative effects).	Chemical and bioassay testing have indicated no water or sediment quality problems in the ZSF. Past testing of maintenance material indicates that sediment from the Corpus Christi Ship Channel is acceptable for ocean disposal. The benthic community at the interim-designated site is significantly different than the surrounding natural bottom community because of sediment grain-size differences. The preferred site encompasses much of the interim-designated site, and was located as close to shore as possible where the substrate is more similar to the Ship Channel dredged materials.
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.	During the site selection process, areas which would interfere with these uses of the ocean were excluded and the preferred site was located where it will cause no interferences.
9. Existing water quality and ecology of the site as determined by available data or by trend assessment of baseline surveys.	Disposal operations have been associated with short-term water-column perturbations of turbidity and possibly COD, and short- and longer-term impacts on sediment grain size which resulted in impacts on the benthic community at the interim-designated site. The preferred site therefore encompasses as much of the interim-designated site as possible and is located close to shore where the bottom substrate is similar to the Ship Channel materials.
10. Potentiality for the development or recruitment of nuisance species in the disposal site.	There is no indication that nuisance species have developed at the interim-designated site, and there is no reason to expect that they will develop at the preferred site.
11. Existence at or in close proximity to the site of any significant natural or cultural features of historical importance.	All sites of historical importance were excluded in the ZSF analysis, and therefore use of the preferred site will not impact sites of historical importance.

TABLE I-2. SUMMARY OF THE GENERAL CRITERIA AS APPLIED TO THE PREFERRED DISPOSAL SITE.

General Criteria as Listed in 40 CFR §228.5	Preferred 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 in the marine environment, particularly avoiding areas of existing fisheries or shellfisheries and regions of heavy commercial or recreational navigation.	The preferred site was selected to avoid sport and commercial fishing activities, as well as other areas of biological sensitivity and associated buffer zones. The site is located outside the Corpus Christi Ship Channel and the navigation buffer zone and avoids known navigational obstructions.
(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 disposal material is acceptable for ocean disposal. The ODMDS and buffer zones were sized to ensure that perturbations caused by disposal would be reduced to ambient conditions at 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 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.	If the monitoring and surveillance program at the preferred site indicates the potential for any problems and de-designation of the site is indicated, there are other non-excluded areas in the ZSF that are available and suitable for use as an ODMDS.

TABLE I-2 (continued).

(d) The sizes of ocean disposal sites will be limited in order to localize for 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 size of the site is the minimum size sufficient to meet the criteria in 40 CFR 228.5 and 228.6(a). The planned monitoring and surveillance program will detect any potential impacts.
(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.	Use of an ODMDS off the continental shelf was precluded by cost, safety, and time factors, monitoring and surveillance difficulties, and adverse environmental impacts on the off-shelf benthic community. The preferred site encompasses as much of the historically used area of the interim-designated site as ZSF considerations would allow.

PART II. CONSULTATION AND COORDINATION

This section of the Final EIS summarizes the process by which the Draft EIS was reviewed by the public. It presents the comments received during public review and EPA's responses to them.

A. PUBLIC REVIEW PROCESS

The Draft EIS entitled "Corpus Christi Ship Channel Ocean Dredged Material Disposal Site Designation" was filed by EPA on September 13, 1988 (EPA 906/09-88-003). The Draft EIS was coordinated with approximately 50 Federal, State, and local agencies and interested individuals. All comment letters received on the Draft EIS are presented in this Final EIS.

B. RESPONSES TO COMMENTS

During the public review process, a total of seven comment letters concerning the Draft EIS were received during the public review process from the following Federal and State agencies:

Letter Number	Agency
1	U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of the Chief Scientist
2	U.S. Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service
3	U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Office of Charting and Geodetic Services
4	U.S. Department of Health and Human Services, Centers for Disease Control, Center for Environmental Health and Injury Control
5	U.S. Department of the Interior, Office of Environmental Project Review

6	State of Texas, Texas General Land Office
7	State of Texas, Texas Historical Commission

The comment letters received from the agencies listed above are reproduced in this section. Each letter is numbered at the top, and each comment within the letter is numbered in the left margin. EPA's response to the comment is assigned a number corresponding to the comment number and is reproduced in the right margin beside the letter.

UNITED STATES DEPARTMENT OF COMMERCE
The Chief Scientist
National Oceanic and Atmospheric Administration
Washington, D.C. 20230

LETTER NO. 1

November 2, 1988

Mr. Norm Thomas
U.S. Environmental Protection Agency
First Interstate Bank Tower
1445 Ross Avenue
Dallas, Texas 75202-2733

Dear Mr. Thomas:

This is in reference to your Draft Environmental Impact Statement on Corpus Christi Ship Channel Ocean Dredged Material Disposal Site Designation, Texas.

1-0. We hope our comments will assist you. Thank you for giving us an opportunity to review the document.

Sincerely,

David Cottingham

David Cottingham
Ecology and Environmental
Conservation Office

Enclosure

1-0. See next page for specific comments and EPA's responses.

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

OCT 28 1988

MEMORANDUM FOR: David Cottingham
Ecology and Environmental Conservation Office
Office of the Chief Scientist

FROM: Rear Admiral Wesley V. Hull, NOAA
Director, Charting and Geodetic Services

SUBJECT: DEIS 8809.11 - Corpus Christi Dredged Material Disposal Site Designation, Texas

The subject statement has been reviewed within the areas of Charting and Geodetic Services' (C&GS) responsibility and expertise. Since safety of navigation is one of C&GS' primary missions, this proposal was examined with that in mind. C&GS considers the maintenance of navigational channels to be
1-1. extremely important and supports any programs that help accomplish such a task.

From a navigation point of view, it is never desirable to place materials in the ocean in the vicinity of ports, harbors,
1-2. channels, and safety fairways. However, since the proposed site is near an existing charted "Dump Site," and considering all the other factors, the preferred site appears to be the best alternative.

This area is covered on NOS nautical charts 11307, 11309, and 11313, and all changes resulting from this project would be reflected on these charts. If appropriate, the information would be disseminated through chartlets and/or Notices to Mariners.

Should there be any need for further information about this response, please contact Mr. Erich Frey, Mapping and Charting Branch, N/CG22x2, WSC1, room 804, Nautical Charting Division, NOAA, Rockville, Maryland 20852, telephone 301-443-8742.

cc:
N/CG17 - Spencer
N/CG22x2 - Frey

NOV 1 1988

1-1. EPA concurs.

1-2. Careful consideration was given to navigation safety in locating the disposal site. See pages 4-1 and 4-13 of the Draft EIS.

LETTER NO. 2

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

October 17, 1988 /SER23:TAH:td

Mr. Norm Thomas, Chief
Federal Activities Branch
U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202

Dear Mr. Thomas:

This responds to your September 28, 1988, letter regarding the proposed designation of an Ocean Dredged Material Disposal Site for Corpus Christi Ship Channel. An Environmental Impact Statement (EIS) including a biological assessment was transmitted pursuant to Section 7 of the Endangered Species Act of 1973 (ESA).

2-1. We have reviewed the EIS and concur with your determination that populations of endangered/threatened species under our purview would not be adversely affected by the proposed action.

This concludes consultation responsibilities under Section 7 of the ESA. However, consultation should be reinitiated if new information reveals impacts of the identified activity that may
2-2. affect listed species or their critical habitat, a new species is listed, the identified activity is subsequently modified or critical habitat determined that may be affected by the proposed activity.

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

Sincerely yours,

Charles A. Oravetz

Charles A. Oravetz, Chief
Protected Species Management
Branch

cc: F/PR2
F/SER1

2-1. Comment noted.

2-2. EPA concurs.

II-5

LETTER NO. 3

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
OFFICE OF CHARTING AND GEODETIC SERVICES
ROCKVILLE, MARYLAND 20852

December 29, 1988

JAN 0 9 1989

Mr. Norm Thomas (E-F)
EPA Region 6
1445 Ross Avenue
Dallas, Texas 75202

Dear Mr. Thomas:

As per our telephone conversation, I am forwarding two copies of chart sections with attached comments concerning the Dump Sites
3-1. published in the Federal Register Vol. 53, No. 214 for your consideration. If I can be of any further service please do not hesitate to call me at 301-443-8661.

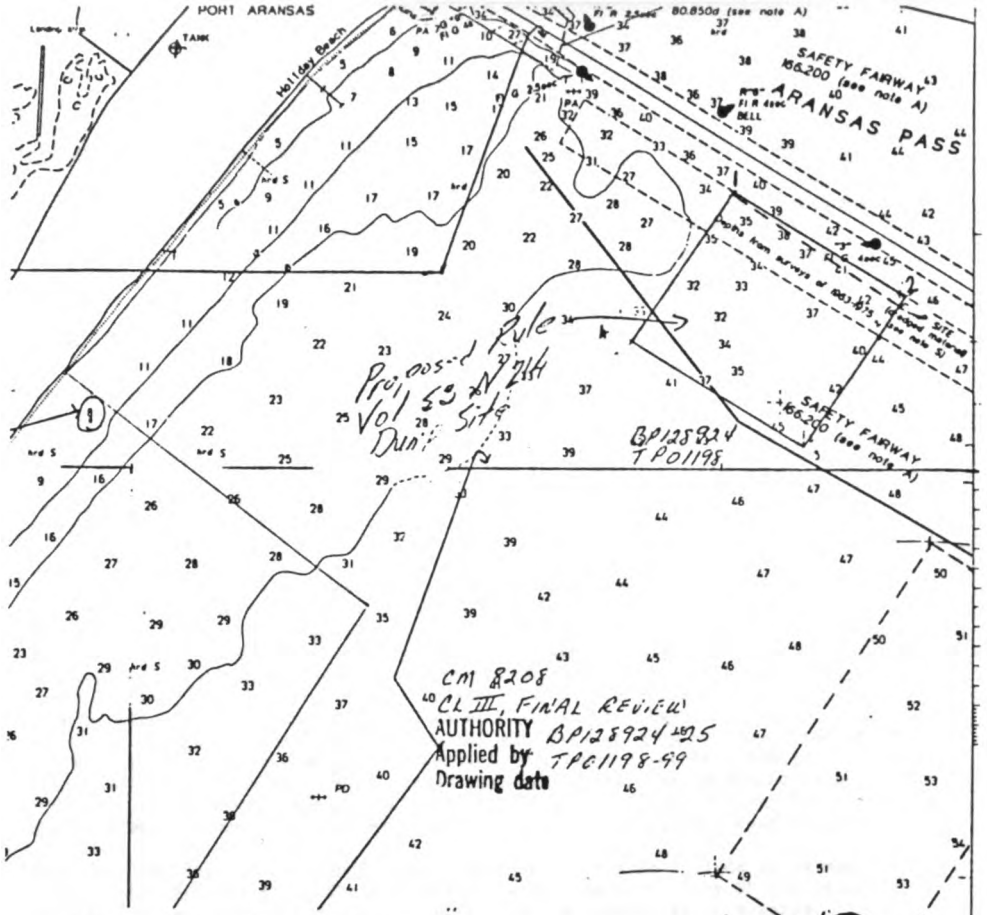
Sincerely,

Hank Borawski
Mapping and Charting Branch
Charting and Geodetic Services

Enclosures

3-1. See next page for specific comments and EPA's responses.

II-6



(a) Mr. Thomas, do you think it was the intent that the limiting line between point #1 and Pt. #2 should coincide with the already existing dump site - If so, the geographic coordinate for Pt. #1 should be 21°49'11"N 97°01'09"W - Pt. #2 should be 27°48'44"N 97°00'20"W

3-2.

(b) The dashed blue line between Pts. 1 and 2 indicates the manner in which the dump site would plot if no changes to the published coordinates were made.

Attn. 32 ft. min depth on chart
35 ft. min depth in Fed. Reg.

3-3.

3-2. EPA concurs, see page III-1 of the Final EIS.

3-3. See page III-1 of the Final EIS.

LETTER NO. 4

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Centers for Disease Control
Atlanta GA 30333

November 8, 1988

RECEIVED
NOV 14 1988
6 ES

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

Dear Mr. Thomas:

We have reviewed the Draft Environmental Impact Statement (DEIS) for "The Corpus Christi Ship Channel Ocean Dredged Material Disposal Site (ODMDS) Designation." We are responding on behalf of the U.S. Public Health Service. We noted that this DEIS considers alternatives for ocean disposal of maintenance material dredged from the Corpus Christi Entrance Channel. Our major concern with this project is the potential toxic contamination of dredged materials. Toward this end, we were pleased to learn that the maintenance material proposed for disposal was found to show no indication of acute toxicity or bioaccumulation potential. We found no other potential significant public health impacts posed by this project. We recommend close adherence to all applicable occupational safety and health guidelines to minimize any potential hazards which might arise during dredging operations. 4-1.

Thank you for the opportunity to review this DEIS. Please include us on your mailing list for the Final EIS for this project as well as other NEPA-related documents on any future BLM projects with potential human health hazards. 4-2.

Sincerely yours,

for Linda Bradley

David E. Clapp, Ph.D., P.E., CIH
Environmental Health Scientist
Special Programs Group
Center for Environmental Health
and Injury Control

II-8

4-1. EPA concurs.

4-2. EPA will continue to send documents developed under NEPA to the Center for Environmental Health and Injury Control for review.

LETTER NO. 5

United States Department of the Interior

OFFICE OF ENVIRONMENTAL PROJECT REVIEW
POST OFFICE BOX 2800 6477
ALBUQUERQUE, NEW MEXICO 87103

ER-88/877

NOV 09 1988

RECEIVED
NOV 14 1988
6 ES

Mr. Norm Thomas
Chief, Federal Activities Branch
U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202-2733

Dear Mr. Thomas:

This responds to Mr. Layton's September 13, 1988 request for agency review and comment on the draft environmental statement for the Corpus Christi Ship Channel Ocean Dredge Material Disposal Site Designation. The following comments are provided for your consideration.

Mineral resource impacts are vital to the economic base of the area, and they are addressed in the document. Of the principal commodities moving through the Port of Corpus Christi, 64% are petroleum and petroleum products and 26% are ores (mainly aluminum). Mineral extraction facilities in the area include petroleum and natural gas offshore platforms, "petroleum structure concentration areas" (p. 3-36), and three gas pipelines that intercept the coast approximately 10 to 11 miles south of the ship channel and adjacent disposal site. The mineral resource discussion (p. 3-36 and 3-37) in the DEIS states that the mineral extraction facilities above would be considered as important "obstructions." With the exception of two of the three pipelines, however, the obstructions map (Figure 2-9, p. 2-22) does not clearly indicate which, if any are
5-1. mineral-related facilities. Without information regarding the exact location of active facilities, the nature and extent of impacts to them is unclear (e.g., are impacts severe enough to warrant relocation?). If severe impacts would occur, the document also leaves unanswered questions regarding plans for compensating petroleum producers for their losses.

The pipelines shown in Figure 2-9 are probably all too distant from the disposal site to be affected. The final EIS should incorporate information concerning the exact nature of impacts to the other petroleum facilities and should show the location of active
5-2. facilities near the proposed and interim disposal sites. If impacts to the facilities would occur, the final EIS should clearly comment on the nature of the impacts, discuss their severity, and state the remedial action planned. If no impacts would occur, the EIS should state so.

If the above comments are adequately addressed, we believe the final statement will satisfactorily describe the existing resources of the project area and the expected impacts that would be realized by the proposed action.

Sincerely,

Raymond P. Churan

Raymond P. Churan
Regional Environmental Officer

II-9

5-1. Figure 2-7 of the Draft EIS shows the location of lighted platforms and recreational sites. Other obstructions are shown on Figure 2-9. The ZSF approach excludes all areas that are not suitable for location of the ODMDS, and therefore no impacts on mineral-related facilities should occur.

5-2. The ZSF approach ensures that the ODMDS is located so that no impacts on petroleum facilities will occur.

LETTER NO. 6

Texas General Land Office

Sally S. Davenport
Director
Coastal Division

Garry Mauro
Commissioner

November 21, 1988

Mr. Norm Thomas
U.S. Environmental Protection Agency
First Interstate Bank Tower
1445 Ross Avenue
Dallas, Texas 75202-2733

RE: Draft Environmental Impact Statement
Corpus Christi Ship Channel
Ocean Dredged Material
Disposal Site (ODMDS) Designation

II-10

Dear Mr. Thomas:

6-1. We appreciate the opportunity to comment on this draft copy. We agree with your selection of the preferred alternative and the reasoning behind this selection.

Thank you for allowing the General Land Office to review and comment.

Sincerely,

Harold D. Irby

Harold D. Irby
Coastal Division

HDI/jlw

6-1. Comment acknowledged.

Stephen F. Austin Building
1700 N. Congress Avenue
Austin, Texas 78701
(512) 463-5059

THE STATE OF TEXAS

CURTIS TUNNELL
EXECUTIVE DIRECTOR

TEXAS HISTORICAL COMMISSION

P.O. BOX 12276 AUSTIN, TEXAS 78711 (512) 463-6100

October 10, 1988

Norm Thomas
Chief, Federal Activities Branch
U.S. Environmental Protection Agency
Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202

Re: EIS - *Corpus Christi Ship Channel*
Ocean Dredged Material Disposal Site
Nueces County
(EPA, A2, A5, D1)

II-11

Dear Sir:

7-1. Thank you for the opportunity to review the project referenced above. Using the information you have provided, we have checked our files and find that we have no record of properties listed or eligible for listing on the National Register of Historic Places within the project or affected area. To our knowledge, a cultural resource survey has never been performed in the area.

7-2. The project may continue without further consultation with this office. However, it is possible that buried cultural materials may be present in the project area. If cultural materials are encountered during construction, work should cease in the immediate area; work can continue in the project area where no cultural materials are present. The Advisory Council on Historic Preservation should be contacted in accordance with 36CFR800.11.b.2. Please also notify the State Historic Preservation Officer (512/463-6096).

If we may be of further service, please advise.

Sincerely,

James E. Bruseth

James E. Bruseth, Ph.D.
Deputy State Historic Preservation Officer

DS/JEB/jkm

7-1. Comment acknowledged.

7-2. Comment acknowledged.

PART III. MODIFICATIONS AND CORRECTIONS TO THE DRAFT EIS

The Corpus Christi Draft EIS was reviewed by the public and internally by EPA. This section of the Final EIS presents minor revisions to the Draft EIS based on errors identified during the review process. For each correction, the page, paragraph, and line of the Draft EIS requiring revision is identified, the necessary correction is indicated, and the actual corrected text is presented in boldface type.

Page vi, paragraph 1, line 1. Correct the coordinates of the preferred site to

$27^{o}49'11"$ N, $97^{o}01'09"$ W; $27^{o}48'44"$ N, $97^{o}00'20"$ W; $27^{o}48'06"$ N, $97^{o}00'48"$ W; $27^{o}48'33"$ N, $97^{o}01'36"$ W.

Page vii, paragraph 3, line 4. Add to the list of recreational fish species **king mackerel.**

Page vii, paragraph 3, line 5. Replace "tigerfish" with **triggerfish.**

Page 2-29, paragraph 1, line 1. Correct the coordinates of the preferred site to

$27^{o}49'11"$ N, $97^{o}01'09"$ W; $27^{o}48'44"$ N, $97^{o}00'20"$ W; $27^{o}48'06"$ N, $97^{o}00'48"$ W; $27^{o}48'33"$ N, $97^{o}01'36"$ W.

Page 3-34, paragraph 1, line 5. Add to the list of recreational fish species **king mackerel.**

Page 3-34, paragraph 1, line 7. Replace "tigerfish" with **triggerfish.**

Page 3-36, paragraph 3, line 3. Replace the sentence beginning "The northern two-thirds of Mustang Island" with **Over one-half of Padre Island, beginning roughly 20 miles south-southwest of the jetties, is designated as national seashore.**

Page 3-36, paragraph 5. At the end of the paragraph add the sentence **There is a designated State and Federal wildlife refuge on Matagorda Island.**

Page 4-4, paragraph 1, line 3. Correct the coordinates of the preferred site to

$27^{o}49'11"$ N, $97^{o}01'09"$ W; $27^{o}48'44"$ N, $97^{o}00'20"$ W;
$27^{o}48'06"$ N, $97^{o}00'48"$ W; $27^{o}48'33"$ N, $97^{o}01'36"$ W.

Page 4-4, paragraph 2, line 1. Correct the beginning of the first sentence in the paragraph to read **The water depth at the preferred site ranges from 32 to 50 feet (Figure 2-3),....**

PART IV. EPA'S PROPOSED ACTION

EPA's proposed action is the final designation of the preferred site for the disposal of maintenance materials dredged from the Corpus Christi Ship Channel. The preferred site was identified following an evaluation of environmental, feasibility, and cost considerations.

The Corpus Christi Ship Channel provides access to a number of ports along the Texas Gulf coast. Shoaling of the ship channel occurs at the rate of 955,000 cubic yards per year. The Corps of Engineers is responsible for maintaining the Corpus Christi Ship Channel, and has requested that EPA permanently designate an ocean dredged material disposal site for the dredged material from the Ship Channel.

The no-action alternative is not acceptable because no disposal site would be designated, resulting in an accumulation of material in the channel and the eventual closure of the channel to ship traffic. Upland disposal of the dredged material is not practical because of the lack of available upland disposal sites. Mid-shelf and continental slope ocean disposal sites were determined to be unsuitable because of significant impacts on the benthic community and increased costs and safety risks. A near-shore site was determined to be the most acceptable.

The preferred site should have minimal environmental impacts. The preferred site encompasses much of the area of the interim-designated site and its down-current impact area to minimize impacts on the benthic infaunal community. The preferred site is located in a bottom sediment province with a grain-size distribution compatible to the Ship Channel dredged materials. The site is not in the safety fairway, is in water deep enough to prevent any impacts on navigational safety, and avoids areas important for recreation and areas that are biologically sensitive. The proximity of the preferred site to shore will reduce transportation costs and will facilitate surveillance and monitoring activities at the site.

EPA has determined, after reviewing the alternatives, that the preferred site is an acceptable location for the disposal of the dredged materials from the Corpus Christi Ship Channel. The primary environmental impact associated with disposal of dredged material at the site is the burial and, therefore, high mortality of the benthic infaunal community in the discharge portion of the site, an area of 0.83 square statute miles.