5. ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED SHOULD THE PROPOSED ACTION BE IMPLEMENTED.

5.01 Loss of Wetlands. Construction of this project would result in varied effects on the wetlands of the project area including the removal of wetlands by construction of the turning basin and realignment of the Channel to Aransas Pass; sedimentation in adjacent wetland areas associated with the actual dredging; and covering wetlands in the proposed inshore disposal areas. Approximately 167 acres of wetlands would be lost from the project area by construction of the turning basin and realignment of the channel to Aransas Pass. Of the several wetland types affected by this aspect of the project, the black mangroves of the north Harbor Island area are most important. One of the most significant effects on the wetlands as a result of the project would be from the proposed disposal operations. The use of disposal area A, C, and D, would result in a loss of the wetlands in these areas to the estuarine system. These areas contain about 2910 acres of wetland area. The loss of these areas would lower primary productivity, reduce nursery grounds for marine species, and reduce wildlife habitat. With respect to wildlife, the loss of wetlands would result in a reduction in nesting and resting areas and food sources. Establishment of terrestrial vegetation on the disposal areas could restore some wildlife habitat area.

5.02 Loss of Benthic Organisms. Dredging and disposal operations associated with construction of the project would have varied effects on bottom dwelling organisms. These effects include the removal and destruction of the benthic organisms existing in the previously undredged areas, coverage of those organisms existing in the disposal areas, and some disruption to organisms in areas adjacent to the dredged channel. Maintenance dredging would possibly be performed every year, a frequency which would prevent benthic recolonization commensurate with the productivity of surrounding undisturbed areas. The bottom of the inshore portions of the docking basin could, at times, be low in dissolved oxygen because of inadequate mixing and tidal action resulting in low benthic populations.

5.03 Materials deposited in the disposal areas during construction would cover approximately 7,000 acres of Gulf bottom and 2,910 acres of inshore wetland and bay bottom. Bottom dwelling organisms in these areas would be covered and perish. The Gulf areas should recolonize and may improve as habitat. The inshore areas, however would be removed from tidal influence and would no longer support benthic life.

5.04 Effects on Fishery Resources. Turbidities, excavation activities, and filling of wetlands, would all have an effect on the fishery resources of the project area. Turbidities, which would result from the dredging and disposal activities would reduce photosynthetic activity in the vicinity of the dredge which would correspondingly reduce the base of the aquatic food chain.

5.05 Large numbers of marine species migrate in and out of the estuaries through Aransas Pass. Prolonged dredging in the entrance channel may affect these migrations. The magnitude of this effect is dependent on the time of year; number, size, and location of dredges; and length of dredging time. The dredging should not preclude the passage of larval, juvenile or adult marine organisms through the channel; however, those organisms approaching too close to the dredge suction pipe may be entrained in the pipe and pumped to the disposal area where they would be either buried in the sediment or consumed. The loss of 3,077 acres of wetlands in the project area would adversely affect the fishery resources of the project area. As discussed in Paragraph 4.132, the wetlands in the project area play a significant role in providing detrital material, a source of energy to the first level consumers of the estuarine system. The loss of this basic energy to the food chain may reduce the number of sport and commercial fish, crustaceans, and mollusks. The loss of protection and food that the wetlands provide for larval, post-larval, and juvenile fishes and crustaceans would also have an effect on the fishery resources. The significance of these changes is unknown.

5.06 Loss of Shellfish. The disposal of dredged material would result in the burial of oyster reefs existing within the boundaries of the disposal areas. Except for a few scattered oysters the largest concentration is in disposal area C. However, scattered oysters extend south along the bay side of Mustang Island, almost to Shamrock Island. All oysters within this disposal area would permanently be buried. A few small scattered oyster reefs also exist among the tidal areas of Harbor Island, and some of these reefs would be physically removed by the realignment of the Channel to Aransas Pass.

5.07 Effects on Wildlife. Disposal of dredged materials would cover vegetation of value to wildlife, and excavation of the docking basin and realignment of the Channel to Aransas Pass would elimate an equivalent area of wildlife habitat. Other effects on wildlife which would result from construction of the project include increased development and human activity in the immediate area and secondary

industrial development. Noise associated with dredging and facility construction would drive some forms of wildlife out of the area and into adjacent areas with relatively little human activity. Once construction has ceased some wildlife could return to the area; however, numbers and diversity of animals might not be as high as formerly.

5.08 Effects on Water Quality Some water quality effects could be expected to result from construction and maintenance of the project. These effects include increased turbidity and possible resuspension of pollutants. During dredging and disposal activities turbidities would affect an area which could extend several hundred feet or more from the source. The significance of this effect depends on dredging time and methods used to control turbidities. It is anticipated that approximately 2 years of continuous dredging would be required. Maintenance dredging would be accomplished annually. Turbidity barriers are often effective in controlling the spread of turbid water around a pipeline dredge, and the use of leveed disposal areas with spillways, if properly maintained, can effectively reduce the amount of suspended sediment returned to the bay system. In the offshore waters where hopper dredges would be used, no method of controlling turbidity exists. Water quality effects resulting from secondary project development should not be significant.