



# **Environmental Impact Statement**

**Final**

## **Wastewater Treatment Facilities Terrebonne Parish, Louisiana**

FINAL  
ENVIRONMENTAL IMPACT STATEMENT

FOR

HOUMA-TERREBONNE  
REGIONAL SEWERAGE FACILITIES

GRANT NO. C-22-0356-01-0

U.S. ENVIRONMENTAL PROTECTION AGENCY  
REGION 6  
DALLAS, TEXAS  
APRIL 1979

APPROVED BY:

  
ADLENE HARRISON  
REGIONAL ADMINISTRATOR

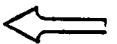
Due to the limited number of changes and modifications required by comments received on the draft EIS, this final EIS contains only those pages that have required revisions or additions, plus the comment letters received on the draft statement with EPA's responses to those comments. The draft and final EIS's in combination provide full analysis of the environmental issues regarding EPA's proposal to award additional grants for the detailed design and construction of Parish-wide wastewater treatment facilities in Terrebonne Parish, Louisiana.

Note: Page numbers followed with the letter "R" denote revised pages.

Page numbers followed with the letters "A - Z" and "AA - II" denote new pages.

## EXECUTIVE SUMMARY

- ( ) Draft Environmental Impact Statement  
(X) Final Environmental Impact Statement



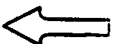
Environmental Protection Agency  
Region 6  
Dallas, Texas

1. Name of Action

Administrative (X)  
Legislative ( )


2. Background

On February 25, 1977 EPA, Region 6, issued a Negative Declaration on a proposed project for a regional sewerage system for Terrebonne Parish. This Negative Declaration covered expansion of both existing plants plus 217 miles of line work for the proposed collection system. Controversy developed during the review of the Negative Declaration concerning potential primary and secondary impacts on wetlands, endangered species, and archeological resources. After evaluating the issues expressed in opposition to the initial Negative Declaration, EPA issued a Modified Negative Declaration on June 20, 1977 which covered only that portion of the project for upgrading of existing sewage treatment facilities within the City of Houma including rehabilitation of existing collection lines. As a result of this decision and in connection with the Modified Negative Declaration, an EIS was prepared on the portions of the project that are intended to serve the presently-unsewered population in the outlying areas of the parish (i.e. the system of force mains and holding basins, the gravity collection system, and expansion of the sewage treatment plants).



3. Environmental Setting

Terrebonne Parish is located on the central Gulf Coast of Louisiana in what was once a Mississippi River delta

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formation. Approximately 86 percent of the parish's area is open water or wetland marsh. The average elevation of the parish is 5 ft above mean sea level, with the higher ground along the natural bayou ridges. Drainage is generally very slow, in a north-to-south direction. In the southern parts of the parish, winds and tide frequently override this pattern. The major flood threat to the parish is from hurricane tidal surges. A large number of local forced drainage projects are presently proposed or being implemented to reduce flooding of developed areas.

The marshes and estuaries support numerous shellfish, fish, and other wildlife. The parish has a large population of American alligators and contains three active Bald Eagle nests. Recreational use of the wetlands is very high. There are over 30 known archaeological sites in the parish, most of them located on the higher ground. A Level I Assessment and Field Survey of archaeological resources has been performed.

The parish population grew rapidly from 1950-1970, but has since slowed to an annual growth rate of 1.8 percent. The 1977 population was nearly 86,000, over two thirds of which reside in the area around the City of Houma and in the corridor northward to Thibodaux. The projected population for the 1995 design year is 118,117.

The area's economy is strong, with petroleum-related industries being the leading employers. Seafood, particularly shrimp, also plays an important role. The area's economy is expected to continue to expand for at least the next two decades.

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#### 4. Water Quality Problems

Terrebonne Parish has a significant surface-water quality problem, particularly south of the Gulf Intracoastal Waterway (GIWW). None of the existing private and public treatment facilities can consistently meet the required effluent limitations, and over 37,000 persons are not presently sewered. Much of the expected population increase will occur in the unsewered areas.

Pollution problems in the parish are compounded by the complex hydrology. Depending on tides and wind, flows can be in any direction, or nonexistent, thus preventing rapid dissipation of pollutants. Saltwater intrusion, caused primarily by the dredging of navigation canals and oil field access channels, is also a major problem.

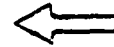
High coliform bacteria concentrations resulting from raw and inadequately-treated sewage discharges and stormwater runoff also cause problems. About 40 percent of the parish's oyster grounds have been closed because of coliform contamination. The City of Houma's water supply is also affected.

#### 5. Alternatives Evaluated.

Alternate plans involved determining the optimum number and siting of treatment plants and selecting the treatment processes for a parish-wide system. Siting alternatives considered involved combinations of 2, 3, 4, 5, and 6 treatment plants at various locations. Process alternatives considered included land application, trickling filters, conventional activated sludge, physical-chemical systems, waste stabilization ponds with dissolved-air flotation, and activated bio-filters. Also evaluated were the "no action" plan and a project less than parish-wide in scope.

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6. Environmental Impacts of EPA's Proposed Action to Award Additional Grants.



Based on the evaluations completed and documented in the draft and final EIS's (i.e., the environmental impact analysis; review and comment on the draft EIS; the public hearing on the draft EIS; and comments from interested individuals) EPA, Region 6, proposes to award Step 2 and 3 grants on the following recommended project for parish-wide sewage treatment facilities in Terrebonne Parish, Louisiana.

The project consist of two plants - an activated bio-filter plant north of the GIWW, and a pond-DAF plant south of the GIWW. Other project components include:

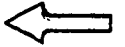
- a) Expanding the proposed North and South treatment plants by 4 and 3 mgd, respectively, to handle future growth in presently-unsewered areas.
- b) Constructing 29 holding basins, two major pumping stations, and about 128 miles of major force main with diameters from 4 to 16 inches.
- c) Constructing a gravity collection system, with 336 minor pump stations, 103 grinder pump stations, 156 miles of minor force mains, and 266 miles of gravity collection sewers.
- d) Constructing a small package wastewater treatment plant at Isle de Jean Charles.

The project will collect sewage and transport it to a holding basin through the gravity sewers and minor force mains. Sewage will then be pumped to the next holding basin and on to a treatment plant through the major force mains. The holding basins will function as flow-equalization ponds so that the pumps can continuously pump the average flow, and not need to be sized for peak flows.



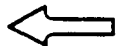
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The following environmental impacts are expected as a result of awarding additional grants on the project as proposed.



Short-term impacts of the proposed project will result from the extensive construction activities required. Dredging required for bayou and wetland crossings will destroy bottom organisms in the immediate construction zone and temporarily increase turbidity and siltation. Sewer line construction will destroy vegetation, and allow erosion, but the areas should revegetate within one or two growing seasons, except for the large trees. Disruptions to traffic and public safety hazards will be significant, since much of the construction will be along highway rights-of-way.

Long-term direct impacts of the proposed project will occur in many areas. The overall parish water quality will improve because of eliminating raw discharges from the presently-unsewered areas. Coliform bacteria pollution will be greatly reduced, perhaps allowing the re-opening of some oyster grounds, and lowering dangers to public health. Minor short-term adverse water quality impacts will occur periodically throughout the project's life as a result of localized discharges of pollutants due to force mains or holding basin levees breaking, pump failures, or hurricanes overtopping holding basins. About 30 acres will be permanently taken by the project, but only a small portion will be wetlands. Permanent adverse impacts on the biological environment will be extremely small. No known endangered or threatened species will be affected by the project. Mitigation measures will be incorporated to ensure that no archaeological resources will be adversely impacted as a condition to the Step 2 Grant.



The greatest direct long-term adverse impact of the project will be economic. At 1978 price levels, over \$71 million of Federal funds and \$33 million of local money will be required for the entire project.



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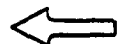


The project will also cause secondary impacts, most of which are related to induced land use changes. A small amount of development will be induced by the project, mostly along higher ground adjacent to existing development. Because of parish land use controls, limited access, poor drainage, and flood hazards, very little of this induced development will occur in wetlands. No large tracts of vacant developable land will be served by the project, and much of any development induced will take place in existing areas, thus providing small increases in the efficiency of the distribution of public utilities and services. No major additions to any public utility distribution systems will be required. Property values in newly-sewered areas will increase, but this will be offset somewhat by the cost of the collection system.

#### 7. Coordination of Draft EIS

Copies of the draft EIS were made available to Federal, State and local interests for review and comment. Comments were received from the following Federal and State agencies:

Advisory Council on Historic Preservation  
Federal Energy Regulatory Commission  
U.S. Department of Agriculture - Soil Conservation Service  
U.S. Department of Commerce - Assistant Secretary for  
Science and Technology  
U.S. Department of Commerce - National Ocean Survey  
U.S. Department of Commerce - National Marine Fisheries  
Service  
U.S. Department of Defense - Army Corps of Engineers  
U.S. Department of Energy



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U.S. Department of the Interior - Heritage Conservation and  
Recreation Service

U.S. Department of the Interior - Office of the Secretary

U.S. Department of Transportation - Federal Highway Administration

State of Louisiana - Executive Department

State of Louisiana - Department of Culture, Recreation and Tourism

State of Louisiana - Department of Natural Resources

State of Louisiana - Department of Transportation and Development

State of Louisiana - Department of Urban and Community Affairs

State of Louisiana - Department of Wildlife and Fisheries

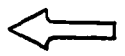
State of Louisiana - Office of Science, Technology and Environmental  
Policy

8. Public Hearing

A Public Hearing on the Draft EIS was held on February 6,  
1979 at 7:00 p.m. in the Police Jury Meeting Room, Courthouse  
Annex, Houma, Louisiana. "Notice of Availability" on the Draft  
EIS was published in the Federal Register dated January 2, 1979.

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The parish has no unusual noise problems at the present time.

## 2.4 BIOLOGICAL SETTING

This section describes the composition and ecological relationships of the major groups of plants and animals in Terrebonne Parish.

### 2.4.1 Botanical Elements

2.4.1.1 Introduction. Most of the project construction will occur along high ground in the northern reaches of the parish and along the natural levee ridges paralleling the major distributaries that drain the area. These ridges support mainly non-wetland vegetation that grades into wetland types away from the bayous.

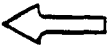
The plant communities can usually be related to physiographic features, drainage patterns, and human encroachment. These communities include bottomland hardwoods, cypress-tupelogum swamps, marshes (grading from fresh to saline in a north-to-south direction), agricultural crops, and cultivated landscape plants occurring in residential areas.

Vegetation on the ridges, in the swamps, and in the marshes directly or indirectly provides habitat, shelter, and food for hundreds of species, notable of which are fur-bearing animals, alligators, waterfowl, deer, rabbits, squirrels, and doves. Shrimp, crabs, oysters, and menhaden thrive in coastal waters enriched by detritus run-off from land areas. As noted by Day, et al. (Reference 23), conditions for developing the greatest possible overall estuarine productivity appear to be present in the Mississippi Delta region, of which Terrebonne Parish is a large part.

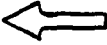
#### 2.4.1.2 Bottomland Hardwoods and Cypress - Tupelogum Swamps.

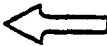
Approximately 111,000 acres or about 7.5 percent of Terrebonne Parish is in bottomland hardwoods and cypress-tupelogum swamps, 90,000 acres of which are classified as forested wetland (Louisiana State Planning Office, 1975). These two vegetative communities are well-known, and usually occur adjacent to one another, with intergradation along the contact. The hardwoods occupy the higher and better-drained soils of the natural levees. The bottomland hardwoods are characterized by such species as live oak, black willow, tallowtree, elms, persimmon, hackberry, swamp-privet, and

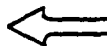
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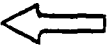
honeylocust. In the cypress-tupelogum swamps, typical vegetative species include tupelogum, bald cypress, black willow, pumpkin ash, bitter pecan, buttonbush, elderberry, palmetto, smartweeds, and alligatorweed. Typical aquatic plant species are coontail, water-lettuce, and pickerelweed. 

2.4.1.3 Marshes. The Louisiana Coastal Marshes have been subdivided by Chabreck (Reference 11) into four vegetative types (determined primarily on salinity). The vegetative-type categories - saline, brackish, intermediate, and fresh - generally parallel the coast in an east-west direction. The plant species designated as characteristic of those marsh areas are listed in Chabreck (Reference 11). Phytoplankton to be expected in these areas are listed in Whitehurst (Reference 107). The variety of species found decreases to the south as the marshes grade from fresh to saline. Approximately 539,000 acres, or 38 percent, of Terrebonne Parish (Louisiana State Planning Office, 1975) is marsh. The extent of the four marsh types is shown in Figure 8.

a. Fresh marshes. Fresh marshes are the most northerly-extending of the marsh types, and are located mostly south of the Intracoastal Waterway. They have an average salinity of 1 ppt and a salinity range of .09-4.54 ppt (Chabreck, Reference 11). Plant species most characteristic of the fresh marshes include maidencane, spikerushes, bulltongue, umbrella pennywort, and giant cutgrass. 

b. Intermediate marshes. The intermediate marshes form a continuous narrow zone (1 to 2.5 miles wide) extending across the parish between the fresh and brackish marshes. The water salinity averages 4.68 ppt, and ranges from 0.34-9.80 ppt (Chabreck, Reference 11). Common plants in the intermediate marsh zones include wiregrass, bearded spangletop, three-cornered grass, deerpea, maidencane, cattails, water hyssop, southern naid, and pluchea. 

c. Brackish marshes. Salinity in the brackish marshes is apparently much influenced by tides, as indicated by the wide salinity range. The average salinity is 7.6 ppt, with a range from 2.42-18.50 ppt (Chabreck, Reference 11). The most important plant species are wiregrass, saltgrass, three-cornered grass, deerpea, and oystergrass. 

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d. Saline marshes. Saline marshes occupy the coast of Terrebonne Parish, and extend more than ten miles inland in some places. Tidal fluctuations cause frequent flooding and draining, and variable high salinity levels. This marsh type has the least plant diversity of the marshes. Plant species most common in the saline marsh are oystergrass, saltgrass, wiregrass, saltwort, black mangrove, and black rush. The average salinity is 17.37 ppt, and the range is from 8.07-32.39 ppt.

2.4.1.4 Croplands and Pasture. According to the Louisiana State Planning Office (1975), 55,000 acres, or 4 percent, of the total acreage in the parish is used for agriculture. The three major crops are sugarcane (the most important), corn, and soybeans. These crops, as well as truck crops, are planted on the narrow levee ridges and on some force-drained land. In the past two years, all remaining sugarcane processing mills in the parish have closed down. The increased costs of trucking cut cane to mills outside the parish have reduced profits to the point that nearly 10,000 acres have been converted from sugarcane to soybeans since 1976. Production of beef cattle is of some importance and is apparently slowly increasing.

2.4.1.5 Rare and/or Endangered Species. There are no known rare and/or endangered plant species in Terrebonne Parish, nor are there any noted unique or unusual plant communities.

#### 2.4.2 Invertebrates

2.4.2.1 General. Freshwater marshes and swamps are extensive in Terrebonne Parish, and support diverse and abundant invertebrate communities. The brackish marshes likewise support phenomenally large populations of invertebrates extremely important to the ecologic community structure and trophic chains. Although crayfish are extremely important in South

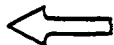
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estimated to be 9,088 alligators occupying 811.5 square miles of suitable habitat, an average of 11.2 individuals per square mile of habitat.

In January, 1977, most populations of the American alligator were reclassified from endangered to threatened status. This status change affected approximately 75 percent of the total alligator population, and included virtually all coastal areas throughout Florida, Georgia, Louisiana, South Carolina, and Texas. The remaining 25 percent of the population is still endangered, and includes some in the inland portions of Louisiana. The new status reflects the alligator's positive response to the strict conservation techniques applied. No commercial hunting is permitted, but they are now available for scientific research if the state authorities are in agreement (Endangered Species Technical Bulletin, 1977). The rapid increase in both local and total numbers is very strong evidence that food is very abundant in the alligator habitat.

2.4.3.3 Birds. About 320 species of birds occur in various parts of Terrebonne Parish during the year (Lowery, Reference 58; Hebrard, unpublished data). These birds may be broadly classified, according to their seasonal occurrence, as winter residents, summer residents, permanent residents, and migratory transients. Table 2 shows the number of species of birds that occur in the major natural habitats of the parish (Hebrard, unpublished data). Of the five endangered bird species that might occur in Louisiana, only three are likely to occur in Terrebonne Parish. The brown pelican is present in very low numbers in Terrebonne Parish.

a. Wading bird nesting colonies. In a 1976 survey (Portnoy, et al., Reference 73), researchers of the Louisiana Cooperative Wildlife Research Unit located 11 active breeding



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c. Peregrine Falcon. This species occurs in Louisiana from September through May, but is not known to have nested in the state in recent years (Lowery, Reference 58). The files in the Museum of Zoology at L.S.U. revealed no records of Peregrine Falcons in Terrebonne Parish. This undoubtedly reflects the bird's general rarity, but probably also reflects the lack of regular coverage of this part of the state by ornithologists. There are fairly regular winter records of Peregrine Falcon sightings in Cameron Parish and the Grand Isle area, both popular birdwatching areas.

2.4.3.4 Mammals. Of the four major wetland types, swamp forest, with 25 species, supports the greatest diversity of mammals. The number of species declines towards the coast. There are 14 species in fresh marsh, 11 in brackish marsh, and 8 in saline marsh. Undisturbed forested ridges of high ground may support up to 32 species of mammals (Hebrard, unpublished data). Whale populations occurring off the coast are protected by the Marine Mammal Act of 1972. They will not be affected by the proposed project. The Red Wolf (Canis rufus) has no known population this far east in Louisiana.

Species of primary commercial importance are nutria, muskrat, raccoon, mink, and otter. An estimated average of 78,000 muskrat pelts and 125,000 nutria pelts are produced each year from Hydrologic Unit V (figures are calculated from catches of muskrat and nutria at Point au Chien Wildlife Management Area). Palmisano (Reference 70) reported on the relative abundance of these five species in saline through fresh marshes in southeastern Louisiana, but was not able to make estimates of abundance in swamp forest. He reported that muskrat abundance was greatest in brackish marsh, while nutria were found more frequently in fresh marsh. Raccoons were also most abundant in fresh marsh, and mink and otter were equally distributed between fresh and brackish marsh.



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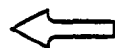
parish-wide referendum held on November 12, 1977, the voters defeated a general parish zoning-ordinance proposal by a margin of about 1.6 to 1. Without such an ordinance, the Parish has very limited ability to control or influence development patterns.

2.6.3 Projects by Others. There are a number of projects at the national, state, and local levels which could interact with the proposed sewerage treatment facilities.

2.6.3.1 Federal Projects. The U.S. Army Corps of Engineers operates and maintains a number of inland navigation projects within Terrebonne Parish, including the Gulf Intracoastal Waterway, the Houma Navigation Canal, and Bayous Grand Caillou, Petit Caillou, and Terrebonne. Some of the proposed sewers are planned to cross these waterways, and coordination will be required to insure that they do not interfere with maintenance and dredging operations. All sewerage facility construction in wetlands or navigable waters requires permits from the Corps of Engineers.

2.6.3.2 State Projects. The State of Louisiana is presently in the process of relocating U.S. Highway 90 north of Houma. This project is expected to attract new residential and commercial development, particularly at interchanges. The proposed alignment for the relocated U.S. Highway 90 is shown on Figure 13.

2.6.3.3 Local Projects. Terrebonne Parish is currently implementing a forced-drainage plan throughout much of the developed area of the parish. This plan includes a total of 47 individual project areas, 14 of which have been constructed and are presently in operation, draining a total area of 19,570 acres. Three more areas are either under construction or soon to be started. These three projects will drain an additional 15,448 acres.



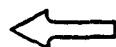
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This program was originally delayed for some time because of concern over the impact of the projects on the wetlands of the parish. The program is now proceeding on a project by project basis with the understanding that the drained area will extend only up to the wetland interface. This will allow development and use of the slightly higher ground which is frequently inundated because of the low relief and poor drainage, but will have much less effect on those lands which are lower and are officially considered to be wetlands. While much of the area included in the forced drainage projects consists of previously developed areas of the parish, a considerable amount of land formerly too poorly-drained for development will be made usable by the projects.

#### 2.6.4 Employment

2.6.4.1 Present Employment. Employment characteristics of Terrebonne Parish are shown in Table 9. Parish employment showed substantial increases in all major occupational sectors between 1972 and 1977. The ten largest employment categories in the parish are shown in Table 10. As this table shows, the extraction of petroleum products and the manufacture of ships and equipment for this extraction play a very major role in the parish economy.

2.6.4.2 Outlook for Major Employment Sectors. This section



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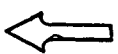

treatment facilities. Eliminating use of poorly-functioning septic tank systems should also reduce existing odors.

5.3.2.3 Noise. Project operation is not expected to produce offensive noise levels at any of the facilities. The treatment plants are not immediately adjacent to any sensitive receptors, and during normal operation do not produce noise levels above approximately 75 dbA. (The 75 dbA sound level does not prevent conversation in normal tones even immediately at the source.) Pumps will all be electrically powered and will be entirely enclosed.

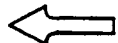
#### 5.4 IMPACTS ON THE BIOLOGICAL ENVIRONMENT

##### 5.4.1 Impacts on Vegetative Resources


Removal of vegetation is an unavoidable adverse impact of construction. Assuming at maximum a 100-ft-wide construction zone along the entire length of the gravity sewers, which includes the parallel installation of the major and minor force mains, up to 3,230 acres could be disturbed by constructing the project. Most of this affected area will be in unvegetated public roads and streets, but about 220 acres of wetlands will be disturbed. Except for the larger trees, natural revegetation will occur within one or two growing seasons in these wetland areas. 

Local aquatic vegetative systems will be slightly affected by the siltation and turbidity resulting from erosion of trenches and plant sites, and from the dredging required for bayou and wetlands crossings. Temporary changes in local drainage patterns may also allow some minor amount of saltwater intrusion before the trenchline is restored to its original contours.   


The total area to be permanently cleared or dredged for all holding basins is approximately 24 acres, no more than 10 acres of which are wetlands. Holding basins most likely to be located in wetland areas are those toward the tips of the southern bayous. An effort will be made in the Step II design process to locate these holding basins out of wetland areas, but since most of the limited upland areas have already been developed,

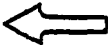
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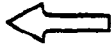
there are few suitable alternative sites. The vegetation at these sites will be destroyed, with no re-growth.

Plant communities permanently affected by pipeline installation will primarily be the bottomland hardwood forest areas and cypress-tupelogum swamps, where cutting of slow-growing woody species will occur along the pipe route. Crossings of previously undisturbed bottomland forests or cypress swamps are expected to extend approximately 95,100 ft, affecting up to approximately 220 acres. Pre-project conditions will be naturally re-established within several seasons, except for replacement of the larger trees and for about 40 acres of permanent maintenance easements, which must be kept clear enough for maintenance access. Typical species to be affected in the bottomland forests are live oak, black willow, tallowtree, elms, persimmon, hackberry, swamp-privet, and honeylocust. In the cypress-tupelogum swamps, common species are tupelogum, bald cypress, black willow, pumpkin ash, bitter pecan, button bush, elderberry, palmetto, smartweeds, and alligatorweed. No threatened or endangered vegetative species is expected to be impacted by the project. 

#### 5.4.2 Impacts on Invertebrates

5.4.2.1 General Comments on Invertebrates. Placing sewer lines along the high ground bordering the major bayous, and within or near highway rights-of-way, will fall within the area of greatest human habitation and coaction. While these areas do support invertebrate communities, the human influence is already an integral part of the system, and disturbance of these grounds will only temporarily interrupt the status quo. No endangered species is involved and no cardinal food chain organism would be involved to the extent of breaking the trophic scheme. In none of these areas, either high- or lowlands, will the dredging reveal any stratum that is likely to render the disturbed area inhospitable to repopulation.

The proposed construction of the holding basins, force mains, and collection lines, and the attendant erosion and siltation, can only temporarily interrupt the invertebrate communities, and every opportunity will be available for quick repopulation of the disturbed area by virtue of the vast aquatic habitat and the fact that this habitat is not isolated from the remainder of the Louisiana marsh. 

 Revised from Draft

5.4.2.2 Oyster Production. The major immediate problem facing the oyster industry in Terrebonne Parish is in the central zone, where encroachment by untreated wastewater has been rapid, and promises to get worse. Operation of the proposed regional sewerage system would undoubtedly go far toward correcting this immediate problem, and might improve fecal coliform readings in the presently-closed oyster grounds to the point that they might be reopened. This cannot be stated with certainty, however, because of the limited water quality data and the area's extremely complex hydrology. Construction of the project will have no effect on oyster grounds.

5.4.2.3 Shrimp Production. Shrimp, crabs, and finfish are mobile forms that are not as closely dependent on water quality in a specific area as are sessile species like oysters. Shrimp can simply avoid regions of low oxygen, etc. In addition, the physiology and food habits of shrimp are unlike those of the oyster, so that concentration of pathogenic organisms in shrimp or crab tissue is not generally a problem from the standpoint of human consumption. In fact, it is possible that increased levels of organic matter resulting from sewage pollution could, under certain conditions, be favorable for shrimp production. For example, the Grass shrimp (Palaemonetes pugio) has recently been shown to depend on nematodes for a major part of its diet. Nematodes are most abundant in sediments high in organic content. For these reasons, operation of the proposed project is not expected to have any appreciable effect on the shrimp fishery in Terrebonne Parish.

Probably the greatest threat to present high levels of coastal Louisiana fishery production in general, and to shrimp production in particular, is the loss of wetland area. To the minimal extent that the proposed project induces growth in or occupies marsh areas, its construction will cause a loss of shrimp habitat.

#### 5.4.3 Impacts on Vertebrates

5.4.3.1. Fishes. There is little likelihood that either construction or operation of the proposed sewage treatment system will directly have significant adverse impacts on fish communities. The elimination of numerous point sources of untreated sewage discharge throughout the central and southern portions of the Parish should generally enhance water quality, and thus benefit the parish fishery.



#### 5.4.3.2 Amphibians and Reptiles.

a. General Comments. There are no apparent negative effects to any of the resident amphibians or reptiles from the proposed project. In fact, other animal groups which constitute food sources for amphibians and reptiles are likely to benefit from this project. It is possible that the local populations of animals inhabiting the area around the effluent discharge will increase because of the localized enrichment. However, this will be balanced by a loss of nutrients at those discharges eliminated by the project.

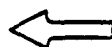
b. American Alligator. There are no studies that directly address the influence of sewage effluent on alligator populations. It seems likely that there will be very little, if any, direct negative or positive effects of the operation of the sewage project on the alligator. Construction activities associated with the proposed project could have minor adverse impacts on alligators. The construction of sewer lines through marsh areas could disturb active nest sites, and pipeline trenches left open overnight could pose a hazard to alligators.

#### 5.4.3.3 Birds.

a. General comments. Because of their highly mobile nature, most bird species will probably not be affected by construction or operation of the proposed sewerage system, particularly those facilities that parallel highways. Where pipelines cross wetlands, summer and permanent residents could be adversely affected by project construction. These species generally nest from April to July, and any nests directly in construction areas would likely be destroyed. The Barred Owl, Great Horned Owl and Bald Eagle nest in the winter months.

Holding ponds and treatment lagoons may be beneficial to some bird species. Concentrations of herons, egrets and some ducks (e.g., Scaup) are sometimes attracted to such ponds, presumably because of concentrations of certain food items.

b. Wading bird nesting colonies. Neither of the two nesting colonies discussed in Section 2.4.3.3 are near enough to the proposed sewerage system to be adversely affected by primary construction impacts.



c. Bald Eagle. Two of the nests described in Section 2.4.3.3 are located near the interface of swamp forest and cleared land, but both are at least 0.8 miles from the nearest proposed sewer lines, so that they should not be negatively impacted by construction activities.

d. Peregrine Falcon. Adverse effects of construction or operation of the proposed sewerage system on wintering populations of Peregrine Falcons are extremely unlikely, since it is a wide-ranging species, and is not known to inhabit the general area.

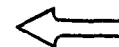
5.4.3.4 Mammals. Since four holding basins will likely be placed in wetlands, the land so used (up to ten acres) will be removed from total furbearer habitat. The levees that will be constructed around the holding ponds may well be used by muskrats, nutria and other furbearers as burrowing or nesting sites (see Lowery, 1974b).

#### 5.4.4 Summary of Biological Impacts

About 30 acres of land will be permanently impacted by the project, and less than 10 acres of this total required for holding basins will be in wetlands. Additional wetlands, up to 220 acres, will be temporarily impacted by collection line construction, and these areas will be allowed to revegetate and regain pre-project conditions. These losses, both temporary and permanent, to this biological resource constitute an adverse impact because of the important value wetlands provide to biological production and water quality. There will also be some loss of common wildlife habitat and species due to expansion at the plant sites and construction of collection lines. Although many of the larger, more mobile species can be expected to relocate to similar adjacent areas, local populations will ultimately be reduced by an amount equal to the carrying capacity of the areas lost. In conclusion, however, when these impacts are considered in relationship to the vast amount of natural habitat (primarily wetlands) and species not affected by the project within the parish, the net primary effect of the proposed project on the biological resources in Terrebonne Parish are assessed as very minimal.

#### 5.5 EFFECTS ON ARCHAEOLOGICAL AND HISTORIC SITES

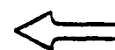
As a part of the EIS study, a Level I Archaeological Assessment and Preliminary Field Survey was conducted in Terrebonne parish in the spring of 1978. This report is contained in the Technical Support Document. The purpose of this survey was to locate and evaluate all known historic and prehistoric sites which might be affected by the proposed project.



Revised from Draft



The archaeological survey located twenty prehistoric and four historic sites within the vicinity of the proposed project. In addition, seven localities where sites had been previously reported were examined, but no evidence of cultural activity was found. Of the twenty-four sites located, twelve were deemed to be highly significant and in need of preservation in some fashion, while two were found to require further testing, as access to them was denied by the property owners.



problem would be to serve these plants with regional sewerage facilities.

## 5.7 CUMULATIVE IMPACTS

The proposed regional sewerage plan is only one of several major projects either underway or being planned that will have cumulative impacts on wetlands in Terrebonne Parish. Maintaining and enlarging the navigation canals, and constructing and operating additional forced-drainage areas will have cumulative effects on the parish's wetland resources.

### 5.7.1 Forced Drainage Projects

The implementation of the forced drainage program proposed for the parish could have a major impact on the rate and location of development. The availability of a large amount of well-drained, flood-free vacant land provided with regional sewerage service could lead to significant increases in development. Because of the difficulties and expense of construction in poorly-drained areas of the parish, lack of adequate drainage comprises a much greater impediment to development than the lack of sewerage facilities. Thus it is felt that the provision of drainage is a much greater stimulus to development than the provision of only sewerage service.

As originally proposed, the forced drainage projects were to have drained large areas of the parish presently classified as wetlands. Because of the concerns about impacts on these wetlands, the proposed forced drainage projects are being revised to drain only the higher ground from the bayou ridges back to the wetland interface. If all future forced drainage projects for which definite plans have not yet been prepared are likewise limited in the amount of wetlands they will drain, impacts of the forced drainage projects will be significantly reduced, as will the potential cumulative effects of the drainage and sewerage projects.

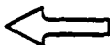
Forced-drainage projects may increase the possibilities of sewer line breakage by draining soils with high subsidence potential. Where the soils exhibit a wide range of subsidence potential, differential settlement initiated by the forced-drainage project could lead to breakage of sewer lines.

← Revised from Draft

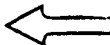
### 5.7.2 Navigation Canals

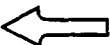
Dredging new navigation canals and expanding existing ones will adversely affect the parish wetlands. Besides the direct taking of wetlands for canal right-of-way and spoil areas, the canals increase fresh water run-off and allow saltwater intrusion during periods of low rainfall and high tides. The canals also cut off the area's natural hydrologic flow patterns, depriving certain areas of fresh water flows. All these factors combine to destroy or alter adjacent wetland areas and their resident biological communities.

### 5.7.3 Summary of Cumulative Impacts

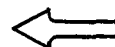
The combined effect of these three projects constitutes a significant adverse impact on the wetland resources of Terrebonne Parish. While the regional sewerage plan will directly and indirectly cause minor impacts on wetlands, this effect will be extremely small when compared to the primary impacts of the other two projects. 

## 6.2 COORDINATION OF THE EIS

A public hearing on the Draft EIS was held on February 6, 1979 in Houma, Louisiana, and was attended by approximately 40 people. Every statement made at the hearing expressed support for the proposed project. 

Copies of the Draft EIS were distributed to Federal, State, and local agencies and interested individuals for review and comment.   
Comments received from these parties have been reviewed and incorporated into the Final EIS where appropriate. Copies of all comments received and EPA's responses to those comments are presented as follows:

<u>Comments From</u>	<u>Page</u>
Advisory Council on Historic Preservation (1/22/1979)	123-B
Advisory Council on Historic Preservation (2/1/1979)	123-D
Federal Energy Regulatory Commission	123-F
U.S. Department of Agriculture - Soil Conservation Service	123-G
U.S. Department of Commerce - Assistant Secretary for Science and Technology	123-J
U.S. Department of Commerce - National Ocean Survey	123-K
U.S. Department of Commerce - National Marine Fisheries Service	123-L
U.S. Department of Defense - Army Corps of Engineers	123-O
U.S. Department of Energy	123-Q
U.S. Department of the Interior - Heritage Conservation and Recreation Service	123-R
U.S. Department of the Interior - Office of the Secretary	123-S
U.S. Department of Transportation - Federal Highway Administration	123-U
State of Louisiana - Executive Department	123-V

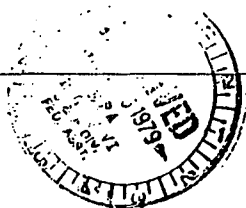


Revised from Draft

<u>Comments From</u>	<u>Page</u>
State of Louisiana - Department of Culture, Recreation and Tourism (12/22/1979)	123-X
State of Louisiana - Department of Culture, Recreation and Tourism (1/31/1979)	123-Y
State of Louisiana - Department of Natural Resources	123-BB
State of Louisiana - Department of Transportation and Development	123-DD
State of Louisiana - Department of Urban and Community Affairs	123-EE
State of Louisiana - Department of Wildlife and Fisheries	123-FF
State of Louisiana - Office of Science, Technology and Environmental Policy	123-II

**Advisory  
Council on  
Historic  
Preservation**

1522 K Street NW.  
Washington D.C.  
20005



January 22, 1979

Mr. Clinton B. Spotts  
Regional EIS Coordinator, Region 6  
Environmental Protection Agency  
1201 Elm Street  
Dallas, Texas 75270

Dear Mr. Spotts:

This is to acknowledge receipt of the draft environmental statement for the Wastewater Treatment Facilities, Terrebonne Parish, Louisiana on December 20, 1978. We regret that we will be unable to review and comment on this document in a timely manner pursuant to Section 102(2)(C) of the National Environmental Policy Act of 1969.

Nevertheless, the Environmental Protection Agency is reminded that, if the proposed undertaking will affect properties included in or eligible for inclusion in the National Register of Historic Places, it is required by Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. 470f, as amended, 90 Stat. 1320) to afford the Council an opportunity to comment on the undertaking prior to the approval of the expenditure of any Federal funds or prior to the issuance of any license. The "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800.4) detail the steps an agency is to follow in requesting Council comment.

Generally, the Council considers environmental evaluations to be adequate when they contain evidence of compliance with Section 106 of the National Historic Preservation Act, as amended. The environmental documentation must demonstrate that either of the following conditions exists:

1. No properties included in or that may be eligible for inclusion in the National Register of Historic Places are located within the area of environmental

Page 2  
Mr. Clinton B. Spotts  
Terrebonne Parish  
January 22, 1979

impact, and the undertaking will not affect any such property. In making this determination, the Council requires:

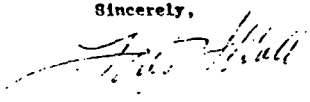
--evidence that the agency has consulted the latest edition of the National Register (Federal Register, February 7, 1978, and its monthly supplements);

--evidence of an effort to ensure the identification of properties eligible for inclusion in the National Register, including evidence of contact with the State Historic Preservation Officer, whose comments should be included in the final environmental statement.

2. Properties included in or that may be eligible for inclusion in the National Register are located within the area of environmental impact, and the undertaking will or will not affect any such property. In cases where there will be an effect, the final environmental statement should contain evidence of compliance with Section 106 of the National Historic Preservation Act through the Council's "Procedures for the Protection of Historic and Cultural Properties".

Should you have any questions, please call Michael C. Quinn at (303) 234-4946, an FTS number.

Sincerely,

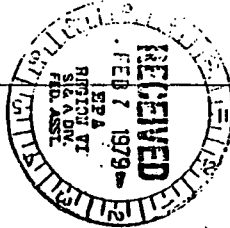
  
Louis S. Wall  
Assistant Director  
Office of Review and Compliance, Denver

#### EPA RESPONSE

As a condition to the Step 2 grant, mitigation measures to alleviate adverse impacts to archeological resources, developed in cooperation with the Louisiana Historical Preservation Officer, will include realignment of collection lines to avoid known sites located and evaluated during the Level I Survey. Additional measures include protection and investigation prior to construction and/or monitoring of construction activities by a professional archeologist. Should any presently unknown cultural resources be discovered during construction, work will be stopped and the properties will be evaluated in consultation with the State Historical Preservation Officer. The Advisory Council on Historic Preservation will be afforded the opportunity to comment if any property is subsequently determined eligible for inclusion to the National Register (pursuant to Section 800 CFR 36).

**Advisory  
Council On  
Historic  
Preservation**

1522 K Street NW.  
Washington D.C.  
20005



February 1, 1979

Mr. Clinton B. Spotts  
Regional EIS Coordinator  
Environmental Protection Agency  
Region 6  
1201 Elm Street  
Dallas, Texas 75270

Dear Mr. Spotts:

This is in response to your request of December 18, 1978, for comments on the draft environmental statement (DES) for the proposed Wastewater Treatment Facilities, Terrebonne Parish, Louisiana. We have reviewed the DES and note that the undertaking may affect Southdown Plantation, a property included in the National Register of Historic Places, as well as twenty-four archaeological sites that may be eligible for inclusion in the National Register.

Pursuant to Section 106 of the National Historic Preservation Act of 1966 (16 U.S.C. Sec. 470f, as amended, 90 Stat. 1320) Federal agencies must, prior to the approval of the expenditure of any Federal funds or prior to the granting of any license, permit, or other approval for an undertaking, afford the Council an opportunity to comment on the effect of the undertaking upon properties included in or eligible for inclusion in the National Register.

Until the requirements of Section 106 are met, the Council considers the DES incomplete in its treatment of historical, archaeological, architectural and cultural resources. To remedy this deficiency, the Council will provide, in accordance with its "Procedures for the Protection of Historic and Cultural Properties" (36 CFR Part 800), substantive comments on the effect of the undertaking on these properties.

**EPA RESPONSE**

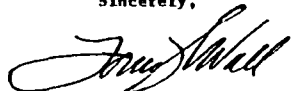
To alleviate any adverse impacts to archeological resources, the Step 2 grant will include a condition that collection lines be realigned as necessary to avoid the sites located and evaluated in the Level 1 Survey.



Page 2  
Mr. Clinton B. Spotts  
Southdown Plantation  
February 1, 1979

Please call Mrs. Jane King at (303) 234-4946, an FTS number,  
to assist you in completing this process.

Sincerely,

A handwritten signature in cursive script, appearing to read "Louis S. Wall".

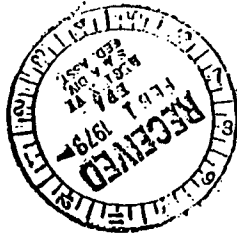
Louis S. Wall  
Chief, Western Office  
Review and Compliance

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

IN REPLY REFER TO:

January 29, 1979

Mr. Clinton B. Spotts  
Regional EIS Coordinator  
Environmental Protection Agency, Region 6  
1201 Elm Street  
Dallas, Texas 75270



Dear Mr. Spotts:

I am replying to your request of December 18, 1978 to the Federal Energy Regulatory Commission for comments on the Draft Environmental Impact Statement for the Wastewater Treatment Facilities in Terrebonne, Louisiana. This Draft EIS has been reviewed by appropriate FERC Staff components upon whose evaluation this response is based.

The staff concentrates its review of other agencies' environmental impact statements basically on those areas of the electric power, natural gas, and oil pipeline industries for which the Commission has jurisdiction by law, or where staff has special expertise in evaluating environmental impacts involved with the proposed action. It does not appear that there would be any significant impacts in these areas of concern nor serious conflicts with this agency's responsibilities should this action be undertaken.

Thank you for the opportunity to review this statement.

Sincerely,

A handwritten signature in cursive script, appearing to read "Jack M. Heinemann".

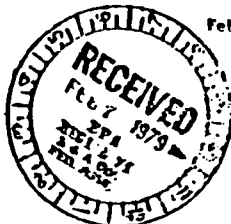
Jack M. Heinemann  
Advisor on Environmental Quality

NO EPA RESPONSE NECESSARY

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Post Office Box 1630, Alexandria, La. 71301

Mr. Clinton B. Spotts  
Regional EIS Coordinator  
EPA, Region 6  
1201 Elm Street  
Dallas, Texas 75270



February 5, 1979

Dear Mr. Spotts:

Re: Draft EIS For Wastewater Treatment Facilities, Terrebonne Parish, La.

We appreciate the opportunity to review this draft EIS and offer these comments.

The EIS points out on page V that 30 acres of land will be taken by the project action. The statement also points out that some impacts related to induced land use changes will occur. No detailed location maps of these areas to be committed to project uses were presented in the EIS. Therefore, identification could not be made of how much of this land would be prime or unique farmland. The irreversible commitment of these resources should be addressed.

The Soil Conservation Service recognizes that the National Environmental Policy Act (NEPA) establishes a Federal policy to preserve important historic, cultural, and natural aspects of our national heritage and mountains, wherever possible, an environment which supports diversity and variety of individual choice. This policy is understood to include highly productive farmlands. Prime farmlands are those whose value derives from their general advantage as cropland due to soil and water conditions. Prime farmland can be cropland, pastureland, forestland, or other land, but not urban builtup land. Unique farmland is land other than prime farmland that is devoted to one of the following uses: sugarcane, citrus, catfish ponds, or crawfish ponds.

Detailed soil maps are published in the Soil Survey of Terrebonne Parish, February 1960. Enclosed is a copy of this report, along with a list of those soil mapping units classified as prime farmland. An assessment should be made of the irreversible commitment of prime or unique farmland resulting from the project.

EPA RESPONSE

Of the 30 acres total that will be permanently taken by the proposed project, at most 15 acres will be agricultural land. These areas, because of their soil types or the fact that they are used primarily for raising sugarcane, are considered to be prime or unique farmlands. It is recognized that the loss of the productive use of these lands represents an adverse impact, and special effort will be made in the Step II design process to locate the proposed holding basins out of these valuable areas. It must be realized however, that because of the relatively limited amount of higher ground available in the parish, there are very few non-wetland areas that are not either developed or used for agricultural purposes.



Clinton Spotts

-2-

February 5, 1979

The primary and secondary impacts on erosion and water quality have been addressed. The discussion of alternatives considered is well organized and presented.

Sincerely,

  
Alton Hanzum Acting  
State Conservationist

Enclosure

cc: Director, Office of Federal Activities (Mail Code A-104)  
Environmental Protection Agency  
Room 537, W. Tower, 401 M. Street, S.W.  
Washington, D.C. 20460

Director, Environmental Services  
SCS, Washington, D.C.

Office of the Coordinator of Environmental Quality Activities  
Office of the Secretary, USDA, Washington, D.C.

Administrator, USDA-SCS, Washington, D.C.

123-H

Terrebonne Parish Prime Farmlands

Baldwin silty clay and silty clay loam  
Commerce silt loam, level phase  
Commerce silt loam, nearly level phase  
Commerce silty clay loam, level phase  
Cypremort silt loam and very fine sandy loam  
Mhoon silt loam  
Mhoon silt loam, low phase  
Mhoon-Sharkey clays  
Sharkey clay  
Sharkey clay, low phase



UNITED STATES DEPARTMENT OF COMMERCE  
The Assistant Secretary for Science and Technology  
Washington, D.C. 20230  
(202) 377-8888 4335



January 31, 1979

Ms. Adlene Harrison  
Regional Administration (6A)  
U.S. Environmental Protection Agency  
1201 Elm Street  
Dallas, Texas 75270

Dear Ms. Harrison:

This is in reference to your draft environmental impact statement entitled, "Wastewater Treatment Facilities Terrebonne Parish, Louisiana." The enclosed comments from the National Oceanic and Atmospheric Administration are forwarded for your consideration.

Thank you for giving us an opportunity to provide these comments, which we hope will be of assistance to you. We would appreciate receiving eight (8) copies of the final environmental impact statement.

Sincerely,

*Sidney R. Geller*

Sidney R. Geller  
Deputy Assistant Secretary  
for Environmental Affairs

Enclosures

Memos from:

Mr. Gordon Lill  
National Ocean Survey

Mr. Kenneth R. Roberts  
National Marine Fisheries Service

NO EPA RESPONSE NECESSARY

123-7



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SURVEY  
Rockville, Md. 20852

0A/C52x6

JAN 25 1979

JAN 25 1979

TO: PP - Richard L. Lehman,  
FROM: OA/Cx1 - Gordon Lill *Gordon Lill*  
SUBJECT: DEIS #7812.31 - Wastewater Treatment Facilities,  
Terrebonne Parish, Louisiana

The subject statement has been reviewed within the areas of NOS responsibility and expertise, and in terms of the impact of the proposed action on NOS activities and projects.

The following comment is offered for your consideration.

Geodetic control survey monuments may be located in the proposed project area. If there is any planned activity which will disturb or destroy these monuments, NOS requires not less than 90 days' notification in advance of such activity in order to plan for their relocation. NOS recommends that funding for this project includes the cost of any relocation required for NOS monuments.

EPA RESPONSE

If it is determined during detailed design of the project that any geodetic control survey monuments would be impacted by construction, the National Ocean Survey (NOS) will be notified at least 90 days in advance to plan for their relocation. Cost of any relocation required for NOS monuments is a grant eligible item, reimbursable by EPA.

123-K



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

January 24, 1979

TO: Richard L. Lehman, Acting JAN 29 1979

THRU: *John P. Roberts* - Kenneth R. Roberts

FROM: Regional Director, FSE

SUBJECT: Comments on Draft Environmental Impact Statement  
(Wastewater Treatment Facilities Terrebonne Parish  
Louisiana) (EPA) (DEIS #7812.31)

The draft environmental impact statement for Wastewater Treatment Facilities Terrebonne Parish, Louisiana, that accompanied your memorandum of January 3, 1979, has been received by the National Marine Fisheries Service for review and comment.

The statement has been reviewed and the following comments are offered for your consideration.

GENERAL COMMENTS:

The proposed project is justified in the draft EIS (DEIS) by its intended contribution toward upgrading overall water quality in Terrebonne Parish. However, there is a general tendency throughout the DEIS to dismiss wetland destruction and alteration associated with some aspects of the proposed action as being insignificant, based on the small acreage of wetlands involved.

Although the total acreage of wetlands affected by the proposed action may appear small, we disagree that their loss can be judged insignificant. For example, a recent study of the relationship of size to ecological value of some wetlands noted that governmental agencies need to revise their surveillance, assessment, and regulatory procedures to preserve and enhance the functions of small wetland units (Gucinski, 1978). Also, the U.S. Army Corps of Engineers, in their regulations for wetland alterations (33CFR 320, 4(b) (3); 42, FR 37136-37137, July 19, 1977) acknowledge the adverse environmental impacts associated with the cumulative destruction of wetlands.

EPA RESPONSE

The evaluations regarding impacts on wetlands in the draft EIS were not intended to infer any general tendency to dismiss wetland destruction as being insignificant, regardless of the acreage of wetlands involved. On the contrary, EPA agrees that the loss of wetlands required for the four holding basins (about 10 acres) constitutes a significant adverse impact. Also, that the value of the wetland areas relates to their importance to biological production and water quality. To help clear up this misunderstanding, a paragraph was added to the Section on Impacts (i.e., 5.4.4 Summary of Biological Impacts, page 107) to better explain the anticipated net effects on the biological elements of the parish.



Additionally, the U.S. Environmental Protection Agency, in their statement on protection of the Nation's Wetlands originally issued in March, 1973 (38 FR 10834, March 20, 1973), noted that wetlands need to be preserved when siting waste water treatment facilities. Moreover, we note that vegetated wetlands are important for water quality since they provide some secondary and tertiary treatment of domestic sewage. (Gosselink et al, 1974).

In view of the above, the final EIS should thoroughly discuss the rationale for determining that the proposed wetland destruction is insignificant, especially in light of the cumulative effects of many such water development projects that impact wetlands. Also, the sections on development in wetlands, especially the holding basin locations, should be discussed in more detail in the FEIS. This discussion should include the acreage and type of wetlands involved and the value of even small units of wetlands to biological production and water quality. We further suggest that the section on alternatives be expanded to discuss the use of upland sites for the development now proposed in wetland areas.

#### EPA RESPONSE (continued)

As requested, the alternative to utilize upland areas for holding basins was investigated and only four of the proposed 29 holding basins will be located in wetland areas. In these cases, certain factors preclude the use of upland sites. Because of the extremely limited amount of high ground along the southern bayous there are few, if any, holding basin sites. Much of the higher land has been taken for residential development, and use of adjacent areas for sewage holding basins would create serious social and aesthetic impacts on neighboring residents. It is also important to note that the anticipated impacts on these wetlands will be minimized by adjusting the actual placement of each holding basin during detailed design so that as little of the 10 acres as possible will be permanently impacted.

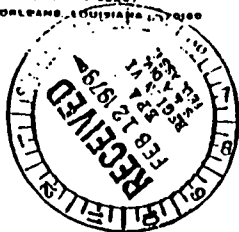
#### LITERATURE CITED

- Gosselink, J.G., E.P. Odum, and R.M. Pope. 1974.  
The value of the tidal marsh. Cent. Wetland  
Resources, LA State Univ. LSU Sea Grant Publ.  
LSU-SG-74-03 30 p.
- Gucinski, H. 1978. A note on the Relation of Size to  
Ecological Value of Some Wetlands. Estuaries.  
1(3) p. 151-156.



DEPARTMENT OF THE ARMY  
NEW ORLEANS DISTRICT, CORPS OF ENGINEERS  
P. O. BOX 50207  
NEW ORLEANS, LOUISIANA 70150

LHMDD-K



7 February 1979

Mr. Clinton B. Spotts  
Regional EIS Coordinator  
EPA, Region 6  
1201 Elm Street  
Dallas, Texas 75270

Dear Mr. Spotts:

Reference is made to your letter dated 18 December 1978 requesting comments on the draft environmental impact statement (EIS) for the Wastewater Treatment Facilities, Terrebonne Parish, Louisiana.

This draft EIS has been reviewed in accordance with the applicable provisions of Part 1503 of the Council on Environmental Quality Implementation of Procedural Provisions, Title 40, Chapter V, published in the Federal Register dated 29 November 1978.

The following comments are provided in response to your request:

- a. Suggest inclusion of site specific general water quality data which has been omitted from this draft. Such normally provided data is necessary for proper analysis and evaluation of predictable impacts on area water quality that can be attributable to this proposed project.
- b. Suggest that those aspects of the proposed project that are substantive to a Federal Water Pollution Control Act Section 404b evaluation be clearly designated and adequately discussed. While most major points are included, they are neither clearly designated nor discussed.
- c. Suggest that the discussion of the Forced Drainage Projects under paragraph 5.7.1 be revised to reflect any substantive changes in evaluation of features that may arise from a Parish-sponsored restudy that is ongoing. The restudy is understood to include both the scope and alternatives which have not, heretofore, been considered. The reference to Item 74 and/or 26, its supplanter, in the list of REFERENCES

#### EPA RESPONSE

EPA does not believe that inclusion of site specific water quality data is warranted at this time. General water quality improvements will occur across the entire parish as a result of the operation of a parish-wide collection and treatment system. Because of the complex hydrology in the parish and the difficulty in quantifying specific water quality effects resulting from the elimination of widely distributed malfunctioning septic systems and direct raw discharges, the collection of even a large amount of data on present water quality would not allow the analysis and prediction of future water quality throughout the parish.

Detailed site specific water quality impacts resulting from construction of the proposed facilities would also be unobtainable since the actual alignments for sewer line work will not be finalized until the Step II design work is completed. If the Corps of Engineers requires a routine Section 404 permit application and negates the "nationwide" permit, the permit evaluation could consider the probable effects of site specific discharges of fill material since more detailed information would be available during Step II design.

- b. Where Section 404 is applicable to sewer line construction, issuance of the permit should proceed under the "nationwide" permit concept for placement of dredged or fill material as backfill or bedding for utility line crossings, provided there is no change in pre-construction bottom contours. (Excess material would be removed to an upland disposal area.) The evaluation of the proposed project presented in the EIS reveals that there would be no adverse impacts on the specific environmental elements outlined as possible conditions to this procedure [42 CFR Part 323, 323.4 - 3 (b)].

LHNOD-K  
Mr. Clinton B. Spotts

7 February 1979

will be affected, inasmuch as neither document has been released for public review, pursuant to Corps of Engineers regulations or the Council of Environmental Quality guidelines or procedural provisions.

d. Suggest that the content of paragraph 5.6.3.3 be adequately expanded to reflect the synergistic effects of this proposal and the proposed and completed subprojects of the Forced Drainage Project on secondary developments. Development of updated sewerage treatment facilities for the Houma-Terrebonne area is not planned to maintain the status quo of meeting existing sewerage needs, but also to satisfy future demand as well. This connotes project-induced development and would certainly complement the planned Forced Drainage Projects for the parish.

If we can be of further assistance in this matter, please advise.

Sincerely yours,

*C. J. Nettles*

C. J. NETTLES  
Chief, Operations Division

EPA RESPONSE (continued)

Specific sewer line location information is not available during Step I planning to adequately consider either selection of disposal sites or possible degradation of water uses and the aquatic environment which are applicable to Section 404 (b). However, if a "nation-wide" permit is not appropriate and a routine application for a 404 permit is required by the Corps of Engineers, this permit evaluation could consider the probable effects of the proposed placement of fill material for Section 404 (b) in accordance with Environmental Protection Agency Guidelines (40 CFR 230, September 5, 1975) during the Step II detailed design of the project and before actual construction.

Section 2.6.3 (page 55) and Section 5.7.1 (page 119) have been revised to reflect the changes made in the parish forced drainage projects.

The cumulative impacts of the proposed sewerage project and the several completed and proposed forced drainage projects are discussed in revised Section 5.7.1. We agree that the proposed sewerage facilities would certainly complement the planned forced drainage projects, as discussed in Section 5.7.1. However, EPA does not agree that the provision of collection and treatment capacity for reasonable future growth necessarily connotes project-induced development. Terrebonne Parish has grown considerably in the past 15 years without regional sewerage facilities, and economic forces which have driven this growth will continue to act on the parish regardless of what actions are taken to alleviate sewerage problems.



Department of Energy  
P.O. Box 35228  
2626 W. Mockingbird Lane  
Dallas, Tx. 75235

JAN 9 1979



Ms. Adriene Harrison  
Regional Administrator  
Environmental Protection Agency, Region VI  
1201 Elm Street  
Dallas, Texas 75270

Dear Ms. Harrison:

As requested, we have reviewed the draft Environmental Impact Statement for Wastewater Treatment Facilities, Terrebonne Parish, Louisiana and have no comments.

Sincerely,

*G. Dan Rambo*

G. Dan Rambo  
Regional Representative

cc: Bob Stern, Acting Director, Division of NEPA Affairs

NO EPA RESPONSE NECESSARY

123-0

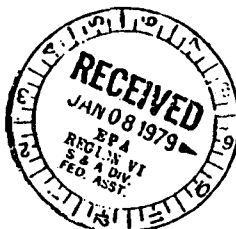


IN REPLY REFER TO:

H2415-IAS-A

**United States Department of the Interior**  
**HERITAGE CONSERVATION AND RECREATION SERVICE**  
**INTERAGENCY ARCHEOLOGICAL SERVICES-ATLANTA**  
1895 Phoenix Boulevard  
Atlanta, Georgia 30349

JAN 8 1979



Clinton B. Spotts  
Regional E.I.S. Coordinator  
Environmental Protection Agency  
Region 6  
1201 Elm Street  
Dallas, Texas 75270

Dear Mr. Spotts:

We have reviewed the draft Environmental Impact Statement concerning the Wastewater Treatment Facilities, Terrebonne Parish, Louisiana.

Paragraphs 2.51 and 5.3 which deal specifically with impact on cultural resources adequately address the problem.

Implementation of the archeological survey recommendations in the step 2 grant will satisfy those conditions concerned with the protection of the cultural resources of Louisiana. However, full compliance with 36 CFR 800 should be accomplished prior to the initiation of any investigations.

We appreciate the opportunity to review the Environmental Impact Statement.

Sincerely,

*Bennie C. Keel*  
for Bennie C. Keel  
Chief

**EPA RESPONSE**

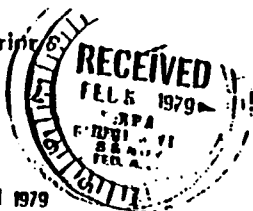
Implementation of the recommendations of the Cultural Resources Survey will be made a condition of the Step II grant.

123-R



United States Department of the Interior

OFFICE OF THE SECRETARY  
SOUTHWEST REGION  
POST OFFICE BOX 2000  
ALBUQUERQUE, NEW MEXICO 87103



CR-70/1275

FEB 01 1979

Mr. Clinton B. Spotts  
Regional EIS Coordinator  
Environmental Protection Agency  
1201 Elm Street  
Dallas, Texas 75270

Dear Mr. Spotts:

We have reviewed the draft environmental impact statement for Wastewater Treatment Facilities, Terrebonne Parish, Louisiana, and offer the following comments.

General Comments

We find that the statement is deficient in providing adequate biological information. The statement could be substantially improved with the addition of more site-specific information on the flora and fauna to be affected by the project.

Terrebonne Parish, an area of deltaic sediments within the Mississippi Deltaic Plain, has yielded more than 15 percent of the State's mineral values in recent years and also has had the second highest value for mineral production in Louisiana. The parish produces, in order of value, petroleum, natural gas, natural gas liquids, sulfur and salt. Although some lands will be removed from mineral exploration and possible production when the treatment facilities, pipelines, etc., for the wastewater system are built, the overall impact on the mineral industry should not be significant. Proper well spacing, directional drilling, and other environmentally sensitive exploration and production drilling practices could offset or minimize any such impacts.

The statement properly indicates the anticipated beneficial impacts from reduction in the use of septic tanks and inadequate small treatment plants. However, because much of the proposed system would be in areas of potable and useful ground water (see Figures 5 and 14), it should also address mitigation of ground water impacts from sewer exfiltration and from holding-basin leakage.

There is no discussion in the statement of whether the project will have any impact on recreational resources in the area. This should be clarified in the final statement.

EPA RESPONSE

Additional biological information was included in Section 2.4, Botanical Elements, pages 23, 24, and 26. More site specific information on the flora and fauna to be affected by the project was included in Section 3.4, Impacts on the Biological Environment, pages 101-107.

Concur. Since only four acres at most will be required at any one project site, modern exploration and production techniques should make any impact on the parish's mineral resources negligible.

Figure 5 shows that only in the extreme northern and southern sections of the parish do supplies of potable water exist. Since these supplies exist at depths of 200 to 300 feet below sea level, impacts to the potable ground water regime from sewer exfiltration are expected to be negligible. All holding basins will be lined to prevent leakage.

The 0.7 acre Pointe Au Chien holding basin will be located either immediately adjacent to or just inside the boundary of the Pointe Au Chien Wildlife Management Area. There will also be a small length of fence main in the area, to be located entirely within highway right-of-way. Aside from this, there should be no effect on specific recreation facilities. General recreational fishing in the parish should be enhanced.

Specific Comments

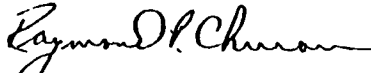
Section 2 - Environmental Setting - This section should contain site-specific biological data for each of the project's major construction components. Description of the environmental setting at the proposed North and South plants, the Isle de Jean Charles package plant, the holding basin systems, and along the gravity pipeline system should be included.

Page 103, Paragraph 5.4.1 - The statement indicates that project construction will disturb about 220 acres of wetlands, and that this disturbance is of minor adverse impact. As this disturbance will actually include the destruction of some wetland acreage, these impacts should not be termed minor. This subsection should discuss the varying degree of disturbance upon the 220 acres of wetlands. Wetland acreages which will be permanently impacted and those acreages which will only be temporarily affected, should be shown for each major project element.

Page 109, Paragraph 5.5 - Documentation of the contact with the State Historic Preservation Officer should be included in any final statement.

Thank you for the opportunity to comment on this statement.

Sincerely,



Raymond P. Churan  
Regional Environmental Officer

Less than 10 acres of wetlands will be permanently impacted by the project (i.e., required for four holding basins) and as a worse case condition approximately 220 acres will suffer short-term impacts from construction of collection lines. Section 5.4.1, pages 103-107, was revised to indicate the varying degrees of disturbances as requested.

Documentation of the coordination with the Louisiana State Historic Preservation Officer is presented on page 123-Y.





U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION  
WASHINGTON, D.C.

750 Florida Boulevard  
Baton Rouge, Louisiana 70801

December 22, 1978



NO POST NEEDED

Mr. Clinton B. Spotts  
Regional EIS Coordinator  
U.S. Environmental Protection Agency  
1201 Elm Street  
Dallas, Texas 75270

Dear Mr. Spotts:

Reference is made to Ms. Adlene Harrison's letter of December 18, 1978, transmitting a copy of the DEIS for the upgrading of existing wastewater treatment facilities of Terrebonne Parish, Louisiana, and requesting FHWA review. The following comments are offered for your consideration:

1. It appears that a major portion of the force main system will be located on Louisiana DOTD highway right-of-way. The DEIS makes no reference to any coordination or consultation with them. Since the DOTD will have to issue permits for any work done on their right-of-way, it is recommended that they be provided an opportunity to review and comment on the DEIS.

2. The installation of the various force and gravity lines will have a substantial impact on the safe and efficient operation of the area's roads and highways during construction. Some mention of the mitigation measures that will be used to protect the motoring public should be noted.

Sincerely yours,

*H. C. Reinhardt*  
H. C. Reinhardt  
Division Administrator

EPA RESPONSE

The Louisiana Department of Transportation and Development (LA DOTD) was contacted and provided with a copy of the Draft EIS. Permits will be obtained from the LA DOTD for any work affecting Louisiana State highway facilities or rights-of-way.

All safety measures recommended by the American Association of State Highway Officials, such as warning signs, flashers, flagmen, and temporary fencing will be implemented as mitigation measures to protect the motoring public.



EDWIN EDWARDS  
GOVERNOR

February 9, 1979

State of Louisiana

EXECUTIVE DEPARTMENT

Baton Rouge



Mr. Clinton B. Spotts  
Regional EIS Coordinator  
U. S. Environmental Protection Agency  
Region 6  
1201 Elm Street  
Dallas, Texas 75270

Dear Mr. Spotts:

In response to the draft Environmental Impact Statement for Houma-Terrebonne Regional Sewerage Facilities, Grant No. C-220356-01, the following comments are provided.

I fully support the award by EPA of the cited grant, and the commencement of the regional sewerage facilities as expeditiously as possible.

The project is urgently needed for protection of the health of the residents of Terrebonne Parish, and to protect the quality and productivity of the wetlands, which are extremely important to the people and the economy of the parish. The long delays which have been encountered by municipal and parish government in their attempts to reduce pollution and protect the productivity of oyster beds and other wildlife and fisheries resources, have resulted in a perpetuation of those problems, and a rapid escalation of the costs of the project. If, therefore, the people of Houma and Terrebonne Parish have remained willing to contribute the many millions of dollars of local funding required, in spite of long delays and escalating costs, I must commend and support them.

In the face of well-documented information as to the extent of the public health and water quality problems that the proposed project is designed to relieve, and the physical geography of Terrebonne Parish, several objections to EPA's previous announcement of intent to issue a negative declaration on the project were raised. The draft E.I.S. makes it abundantly clear that the original judgment of your agency was rational and well-founded, and that the objections were trivial in the light of the problems being addressed by the proposed project, and the benefits of the project for protection of public health, water quality, and wetlands productivity.


Mr. Clinton B. Spotts  
February 9, 1979  
Page Two

I must observe that, although your agency's decision to require an E.I.S. for a portion of the proposed project has once again demonstrated the value of rapid action to implement the grant award and complete the project, it has also resulted in a delay and further cost increases.

Therefore, I should like to suggest that in similar future circumstances, where a small number of objections of a similar nature may be raised, greater efforts be made to respond to requests for information prior to making the decision to apply the procedures of the National Environmental Policy Act. In this case, and perhaps in future cases, it appears possible that a thorough briefing of the groups who sought the provision of additional information by means of an E.I.S. might have been satisfied in a more timely fashion, and that the resulting delays and cost increases might have been minimized.

I appreciate the opportunity you have provided for comment on the draft E.I.S., and anticipate expeditious action to proceed with the award of the grant sought by Houma and Terrebonne Parish.

Sincerely,

123-#  
  
EDMOND EDWARDS

EE:dip

c: The Louisiana Congressional Delegation

The Honorable Charles A. Duet, Sr.  
President of the Terrebonne Parish Police Jury  
Post Office Box 4035  
Houma, Louisiana 70361

The Honorable Edward P. "Bubba" Lyons  
Mayor of the City of Houma  
108 Jane  
Houma, Louisiana 70360

#### EPA RESPONSE

EPA agrees fully with your suggestion that in the future, a decision should be reached at the earliest possible time concerning EIS preparation. On future wastewater treatment facilities planning grant actions in Louisiana where an EIS might be required, we are encouraging the "piggybacking" method of EIS preparation. This involves the preparation of an EIS simultaneously with the preparation of the facility plan, thus eliminating the need for an environmental assessment. EIS preparation commences at the onset of facilities planning and is completed before the facilities plan is approved by the State and EPA.

The "piggyback" method of EIS preparation has been proven to be efficient, timely, responsive to public participation and environmental concerns and has reduced delays and cost increases to grant applicants. On the average, about 9 to 12 months can be saved utilizing this approach. It is our desire to apply this method of impact analysis in the earliest stages of 201 facilities planning, and we would appreciate your support in its implementation in Louisiana.



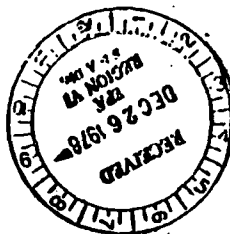
EDWIN W. EDWARDS  
Governor

STATE OF LOUISIANA  
DEPARTMENT OF CULTURE, RECREATION AND TOURISM  
OFFICE OF PROGRAM DEVELOPMENT

E. BERNARD CARRIER, PhD  
Assistant Secretary

J. LARRY CRAIN, PhD  
Secretary

December 22, 1978



Mr. Clinton B. Spotts  
Regional EIS Coordinator  
EPA  
1201 Elm Street  
Dallas, Texas 75270

Re: Draft Environmental Impact  
Statement, Wastewater Treatment  
Facilities, Terrebonne Parish,  
Louisiana

Dear Mr. Spotts:

My staff has reviewed the above referenced draft environmental impact statement. We have not received yet the cultural resources impact assessment conducted for this DEIS. We request that this assessment be sent to us as soon as possible so that we may initiate our review.

If you have any questions, please contact my staff in the Division of Archaeology and Historic Preservation at (504)342-6682.

Sincerely yours,

*E. Bernard Carrier*  
E. Bernard Carrier  
State Historic Preservation Officer

EBC:CEP:mp

*Mr. Spotts*  
*12/28/78*

DIVISION OF ARCHAEOLOGY AND HISTORIC PRESERVATION  
P. O. Box 44247 Baton Rouge, La. 70804 504 342-6682

NO EPA RESPONSE NECESSARY

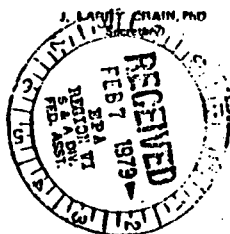
123-X



EDWIN W. EDWARDS  
Governor

STATE OF LOUISIANA  
DEPARTMENT OF CULTURE, RECREATION AND TOURISM  
OFFICE OF PROGRAM DEVELOPMENT

E. BERNARD CARRIER, PhD  
Assistant Secretary  
January 31, 1979



Mr. Clinton B. Spotts  
Regional EIS Coordinator  
Environmental Protection Agency, Region 6  
1201 Elm Street  
Dallas, Texas 75270

RE: Cultural Resources Impact  
Assessment, Houma-Terrebonne  
Regional Sewerage Plan

Dear Mr. Spotts:

My staff has reviewed the above referenced cultural resources report by Mr. Jeffrey H. Altschul of New World Research and offers the following comments:

1. This report is considered totally adequate as a Level 1 survey. In fact, the field work and report preparation can be considered an excellent example of archaeological research. I do not, however, concur in full with Mr. Altschul's recommendations concerning the significance of several of the sites located during the survey. Archaeological sites may be considered eligible for inclusion in the National Register of Historic Places if they "have yielded, or may be likely to yield, information important to prehistory or history." Generally, these properties must have maintained their integrity to the extent that they exhibit in situ and potentially interpretable cultural remains. The survey report (p.194) states that 5 sites meet the criteria of eligibility for inclusion in the National Register. These are: 16Tr19/3, 16Tr37, 16Tr38, 16Tr86, and 16Lf33. Based on the data provided in the survey report, I suggest that four additional sites meet the criteria of eligibility for inclusion in the Register. These sites are 16Tr7, 16Tr33, 16Tr52, and 16Tr93 (Magnolia Plantation).

All of these sites display evidence of intact and potentially interpretable cultural material. In the case of the prehistoric sites this is in the form of mounds or midden material. At 16Tr93, the Magnolia Plantation, this is in the form of historic plantation home. The prehistoric sites are considered significant in that they can yield information concerning a variety of aspects of prehistoric adaptations in the area. Additionally, these sites can provide data on the complex geomorphology of southern Louisiana.

DIVISION OF ARCHAEOLOGY AND HISTORIC PRESERVATION  
P. O. Box 44247 Baton Rouge, La. 70804 504 342-6002

NO EPA RESPONSE NECESSARY

123-3

Two sites, 16Tr63 and 16Tr72, may be eligible for inclusion in the Register, however, the data provided is insufficient to make a determination.

2. When plans for the sewer line rights-of-way have been finalized, a Level II on-the-ground survey of construction areas will be required. At that time a determination of effect will have to be made for those known sites considered eligible for inclusion in the National Register, as well as for any additional significant sites located during the survey. I concur with Mr. Altschul's recommendation that, where possible, avoidance of significant sites is the preferred action.

The following comments are directed at the archaeological and anthropological interpretations presented in the report. These comments do not impinge upon the report's adequacy as a Level I survey or in terms of its fulfillment of contract expectations. Rather, these comments are given in consideration of this office's commitment to the discipline of anthropology.

1. The term "culture" is undefined. The report states that a "culture" or several "cultures" may have coexisted in the survey area. Mr. Altschul is dealing with the material manifestations of the behavior of a or several prehistoric populations. It is not demonstrated that this population (s) represents a unified or whole social cultural entity, a portion of such an entity or several such entities. There are no reasons given to support the assumption that the survey area constituted a pre-historically "confined region" associated with a bounded socio-cultural unit.
2. Based upon available data concerning late prehistoric settlement systems, among the most logical interpretations of the observed variability in settlement types is that they represent the range of types of settlements occupied by the same population. This hypothesis is only casually pursued in the report.
3. There are several questions which may be raised concerning the report's ceramic analysis, especially the seriation. The available ceramic collections are small and there seems to be no reason to assume that the collections from most sites are representative of the ceramic population at those sites. The author (p. 179) points out the problems inherent in using small, possible unrepresentative collections in seriation, and then, without justification, proceeds to use the available collections.

To use seriation as a chronological indicator, one must select ceramic variables which will vary predictable over time. There is little data available which would indicate that the three pottery types selected are reliable temporal indicators within the brief time span considered. It is also apparent that the similarity in the results of the Meighan and the Brainard-Robinson seriation techniques is that they essentially deal with the same ceramic information. The three pottery types used in the Meighan

Page Three  
January 31, 1979

seriation techniques comprise 82% of the total ceramic collection used in the Brainerd-Robinson analysis. Since there is little difference in the information content of the data used in the two analyses one would expect little difference in their results. Although the results of the two techniques support one another, they can not be considered supportive of a proposed chronological arrangement.

4. Faunal data are used to tentatively support hypotheses about seasonality and site function. The available faunal collection is simply too small to meaningfully support these contentions. In addition to its small size, a difficulty with the faunal data and the interpretations placed upon it stem from this site (98%) and, in fact a substantial proportion (47%) of the total faunal collection from all sites, comes from the dredge spoil. The collection from the dredge can not be considered comparable with that from the remainder of site 16LF33 or with those from other sites. Therefore, interpretations placed upon the faunal collection from this site as it relates to other sites are seriously marred because of the non-comparability of the collections due to preservation and collecting condition.

The comments given are mainly related to what is considered an insufficient or weak data base. Despite these comments, Mr. Altschul's report can be considered an excellent example of field research and one of the few reports of this type which attempts anthropological interpretations beyond site descriptions and listings.

I would appreciate your sending another copy of this survey report to this office to be placed in the Louisiana State Library.

If you have any questions concerning this matter, please do not hesitate to contact my staff in the Division of Archaeology and Historic Preservation telephone number (504) 342-6682.

Sincerely,



E. Bernard Carrier  
State Historic Preservation Officer

EBC:CEP:esa

123-44



WILLIAM C. HULS  
SECRETARY

DEPARTMENT OF NATURAL RESOURCES  
OFFICE OF FORESTRY

(LOUISIANA FORESTRY COMMISSION)

January 29, 1979



Mr. Clinton B. Spotts  
Regional EIS Coordinator  
U. S. Environmental Protection Agency  
Region 6  
1201 Elm Street  
Dallas, Texas 75270

Re: Draft Environmental Impact Statement  
Wastewater Treatment Facilities  
Terrebonne Parish, Louisiana

Dear Sir:

We are in receipt of Mrs. Harrison's letter and attachments of December 18, 1978, in connection with the above captioned project, and the request for comments on same.

A detailed review of the subject document reveals that approximately 220-260 acres of bottomland hardwoods and cypress-tupelo gum timber will be cleared to provide for installation of this project.

We are certainly in favor of wastewater and sewage treatment, and maintenance of the public health parameters which are dependent upon such treatment.

At the same time, any timber which must be removed, and is, in fact, merchantable, should be liquidated prior to construction by commercial sale for the highest product and price possible, rather than by piling and burning, which is a wasteful practice. This should be made a condition of project approval.

In addition, great care should be exercised during construction to avoid long-term or permanent interruption or alteration of surface and internal drainage patterns and water regimes, to the extent that stresses are introduced which may result in degradation and deterioration of adjacent wetlands and downstream plant communities.

EPA RESPONSE

The estimate that approximately 220 acres of bottomland hardwoods and cypress-tupelogram will be cleared in construction of the proposed project was based on an assumed construction right-of-way width of 100 feet over a length of about 18 miles. In these wetland areas, both economic and ecologic factors will dictate a minimization of the amount of wetland actually cleared. It is therefore likely that considerably less than 220 acres of bottomland hardwoods and cypress-tupelogram will actually be affected by construction of the proposed sewer lines.

All merchantable timber which must be cleared will be made available for public sale whenever economically feasible.

Backfilling of all sewer line trenches will be performed with care to insure that no permanent changes are made to surface drainage patterns.



Mr. Clinton B. Spotts  
January 29, 1979  
Page 2

If the concerns expressed herein are properly addressed, I would have no further comments on or objections to the project as outlined.

We would be happy to provide on the ground assistance in any area of our expertise, and to secure same those involved should contact our local district forester as follows:

E. George Miller  
District Forester  
District 11  
Office of Forestry  
Dept. of Natural Resources  
302 Jefferson Street  
Lafayette, La. 70502

Telephone: 264-5433

Thank you for the opportunity of reviewing this draft environmental impact statement.

13-03

VERNON E. ROBINSON - CHIEF, ENVIRONMENTAL RELATIONS

JW

cc: District Forester Miller

State of Louisiana  
Department of Transportation and Development



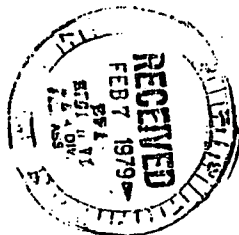
EDWIN EDWARDS  
GOVERNOR

GEORGE A. FISCHER  
SECRETARY

Office of Public Works

P. O. Box 44153 Capitol Station Baton Rouge, Louisiana 70804

January 31, 1979



Ms. Adlene Harrison  
Regional Administrator (6A)  
United States Environmental  
Protection Agency  
Region 6  
1201 Elm Street  
Dallas, Texas 75270

RE: Draft Environmental Impact  
Statement, Wastewater Treatment  
Facilities, Terrebonne Parish

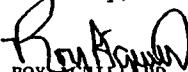
Dear Ms. Harrison:

Reference is made to the draft environmental impact statement for the above referenced proposed project enclosed with your memorandum of December 18, 1978, which requested our review and comments.

This is to advise that we have no comments to offer in regard to this statement for this project at this time.

We appreciate the opportunity to review and comment on your draft environmental impact statement.

Sincerely,

  
ROY AGUILARD  
Assistant Secretary

RA/dmr

NO EPA RESPONSE NECESSARY

123-DD



EDWIN EDWARDS  
GOVERNOR  
LEON R. TAYLOR, JR.  
SECRETARY

State of Louisiana  
Department of Urban and Community Affairs  
Office of Planning and Technical Assistance  
JAN 31 11 11 AM '79  
January 29, 1979

*copy*

OFFICE OF PLANNING AND TECHNICAL ASSISTANCE

CARL WILKINS  
ASSISTANT SECRETARY



Ms. Adlene Harrison  
Regional Administrator  
Environmental Protection Agency  
1201 Elm Street  
Dallas, Texas 75270

Re: EIS, Upgrading of Existing  
Wastewater Treatment Facilities  
in Terrebonne Parish.

Dear Ms. Harrison:

We are in receipt of the above referenced environmental assessment and have reviewed it for state and local agency review responsibilities. Those agencies selected to receive and review a copy of the statement are listed below. Any comments forthcoming from these agencies will be forwarded to you prior to the comment closing date.

A copy of the statement will be kept on file in our library for public inspection.

We appreciate the opportunity to review this proposal.

Sincerely,

*George P. Gullett*

George P. Gullett  
Environmental Coordinator  
Office of Planning and  
Technical Assistance

GPC/ew:dn

Copies of Statement sent to: Houma Terrebonne Regional Planning Commission  
South Central Regional Planning Commission  
Office of Science, Technology & Environmental Policy

NO EPA RESPONSE NECESSARY

# State of Louisiana



DEPARTMENT OF WILDLIFE AND FISHERIES  
400 ROYAL STREET  
NEW ORLEANS 70130

J. BURTON ANGELE  
12-11-1979

EDWIN EDWARDS  
12-11-1979

7 February 1979



Mr. Clinton B. Spotts  
Regional EIS Coordinator  
EPA, Region 6  
1201 Elm Street  
Dallas, Texas 75270

RE: Draft Environmental Impact Statement  
Wastewater Treatment Facilities  
Terrebonne Parish

Dear Mr. Spotts:

Personnel of the Louisiana Department of Wildlife and Fisheries have reviewed the above referenced project and offer the following comments.

1. Page 34, 2nd paragraph. The brown pelican is not extinct in Terrebonne Parish.
2. Page 37, Item 2.4.3.4. The Marine Mammal Act of 1972 protects some species occurring in this area.
3. Page 86, Figure 14. This map should include the location of the Pointe Au Chien Wildlife Management Area (map enclosed).
4. Every effort should be made to relocate, where possible, proposed wetland portions of the project to nonwetland areas.
5. All structures and/or construction activities on the Pointe Au Chien Wildlife Management Area must be reviewed by the Refuge and Fur Division of this agency for possible conflicts with management plans.

## EPA RESPONSE

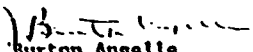
1. Concur. The brown pelican was at one time extinct in the parish, but has since been re-introduced.
2. Concur. Page 37 has been revised.
3. Figure 14 has been revised to show the location of the Pointe Au Chien Wildlife Management Area.
4. Every effort will be made in the Step II design process to locate project facilities in non-wetland area. In the southern sections of the parish, the bayou ridges become increasingly narrow and the amount of developable land is quite limited, with much of it being devoted to residential use. Therefore, the amount of available non-wetland ground suitable for sewerage facilities is quite limited.
5. The proposed Pointe Au Chien holding basin will be located either just within or immediately adjacent to the Pointe Au Chien Wildlife Management Area. Final location and design of the facility will be coordinated with the Refuge and Fur Division of the Department of Wildlife and Fisheries.

Mr. Clinton B. Spotts  
Draft EIS - Wastewater Treatment Facilities - Terrebonne Parish  
7 February 1979

6. Page 103, 2nd paragraph. The 100 foot wide construction zone should be reduced to minimal area needed.
7. Page 103, 3rd paragraph. Saltwater intrusion from trench construction can be prevented by using modern construction methods. Any saltwater intrusion from these activities should be reported to U. S. Fish and Wildlife Service, landowner, sponsors of the project, and this agency.
8. Page 104, 1st paragraph. Trees should be harvested, not windrowed and burned. Mitigation and/or compensation for lost wetlands should also be clearly stated. We suggest that you contact the U. S. Fish and Wildlife Service in Lafayette during the early stages of planning concerning any construction in the wetlands.
9. All state and federal rules and regulations are to be followed.
10. No untreated effluents from plants should be introduced into St. Louis Canal or Terrebonne Bay or their tributaries.
11. Use modern construction methods to reduce silt and sediments during and after construction, especially at the sewage plant site.

We appreciate the opportunity to review and comment on this project during the early planning stages.

Sincerely,

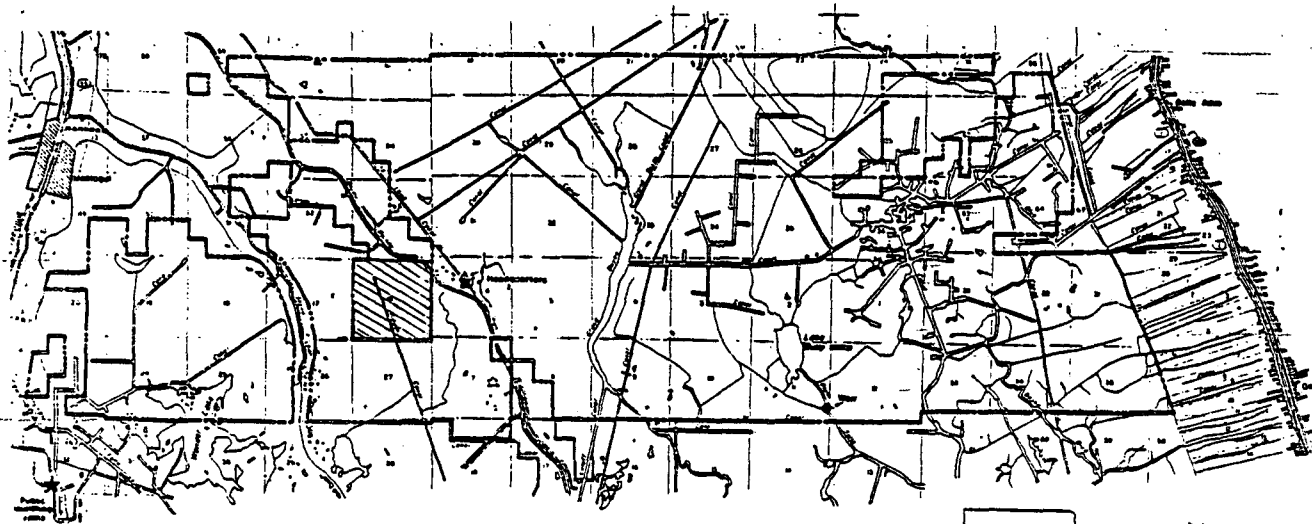
  
J. Burton Angelle  
Secretary

JBA:FOD:ms.

cc: George Gullett  
Len Leonard

EPA RESPONSE (continued)

6. The assumption of a 100-foot wide construction zone was used in order to provide a conservative upper limit estimate of the area to be impacted by construction activities. In actual practice, ecologic and economic considerations will limit this area to the minimum necessary to efficiently carry out construction of the project.
7. Concur.
8. All merchantable timber which must be cleared will be made available for public sale whenever economically feasible.  
  
Coordination with and comments from the U.S. Department of Interior, including U.S. Fish and Wildlife Service, are included on pages 123 S and T.
9. Concur.
10. No bypassing of untreated effluents will be necessary.
11. Concur.

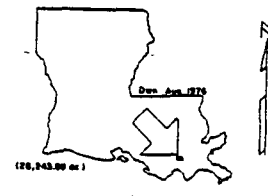
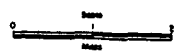


LEGEND

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# POINTE AU CHIEN WILDLIFE MANAGEMENT AREA

— Areas under lease and  
not to be used





OFFICE OF SCIENCE, TECHNOLOGY & ENVIRONMENTAL POLICY

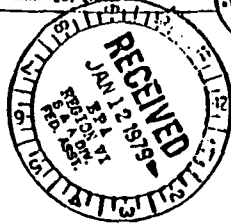
Edwin W. Edwards, Governor

Lee W. Jennings, Director



January 3, 1979

Mr. Clinton B. Spotts  
Regional EIS Coordinator  
EPA, Region VI  
1201 Elm Street  
Dallas, Texas 75270



RE: Houma-Terrebonne  
Regional Sewerage Facilities  
Terrebonne Parish  
Louisiana

Dear Mr. Spotts:

The above-referenced matter concerning environmental quality has been received and reviewed by the staff of the Office of Science, Technology and Environmental Policy. From the information contained in the package sent to our office, the staff of OSTEP issues a no objection on this particular project. The rules and regulations governing this project should continue to be in full compliance with all State and Federal regulatory agencies.

The staff of OSTEP appreciates this opportunity to participate in the review process.

Sincerely,

*William J. Mollere*  
William J. Mollere  
Manager, Administration and  
Operations

WJM/cdh

cc: Mr. George Gullett, Environmental Coordinator  
Office of Planning and Technical Assistance  
Department of Urban and Community Affairs

STATE CAPITOL BUILDING POST OFFICE BOX 4093 BATON ROUGE, LA. 70804 (504) 319-3149

NATIONAL SPACE TECHNOLOGY LABORATORIES, NSTL, BATON ROUGE, MISSISSIPPI 39329 (601) 486-2000

NO EPA RESPONSE NECESSARY