In Reply Refer To: RP-2-1

Aminoil USA
Attention: Mrs. Mary E. Hungate
Post Office Box 94193
Houston, Texas 77292

Gentlemen:

Reference is made to your Initial Plan of Exploration and Environmental Report received August 27, 1984, for Lease OCS-G 6187, Block A-69, High Island Area. This plan includes the activities proposed for Wells A, B, C, D and E.

In accordance with 30 CFR 250.34, revised December 13, 1979, and our letter dated January 29, 1979, this plan has been determined to be complete as of September 10, 1984, and is now being considered for approval.

Your plan control number is N-1901 and should be referenced in your communication and correspondence concerning this plan.

Sincerely yours,

(Orig. Sgd.) D.W. Solanas

D. W. Solanas
Regional Supervisor
Rules and Production

bcc: Lease OCS-G 6187 (OPS-2-3) (FILE ROOM)
(OPS-2-5 w/Public Info. Copy of the plan and ER (PUBLIC RECORDS ROOM)
DO-3

ADGobert:gcw:8/28/84 Disk 3a
August 22, 1984

Mr. D.W. Solanas
U.S. Department of the Interior
Minerals Management Service
P.O. Box 7944
Metairie, Louisiana 70010

RE: Plan of Exploration
High Island Block A-69
OCS-G-6187

Dear Mr. Solanas:

Pursuant to requirements set forth in 30 CFR 250.34, enclosed is a
Plan of Exploration, Environmental Report, Air Emissions Calculations,
and Coastal Zone Consistency Statement for proposed exploratory
activities in High Island Block A-69, OCS-G-6187. Five proprietary
copies and six public information copies are provided for your use.

Arrangements will be made with the Baton Rouge State Times to publish
notice of the proposed activities on or about August 29, 1984. A
copy of the notice to be published is enclosed for your information.

As the anticipated spud date for the first well is September 24, 1984,
your expediency in processing the enclosed plan will be appreciated.

If you have any questions or require additional information, please
contact me at 713/827-2238.

Sincerely yours,

Mary E. Hungate
Environmental Representative

Enclosures
I. HISTORY AND DESCRIPTION OF WORK TO BE PERFORMED

A. High Island Block A-69 was acquired by Aminoil Inc. (100%) effective October 1, 1983 (Lease Sale 74). The expiration date of this lease is September 30, 1988. Five locations are proposed for exploratory drilling in this block.

II. SCHEDULE

Aminoil plans to drill the first of the five wells beginning in late September, 1984. Additional exploratory well should be drilled by year end 1986. However, contingent upon data obtained from each well, exploratory activities could take place up and until the expiration of the lease.

III. RESULTS OF GEOLOGICAL AND GEOPHYSICAL SURVEYS

A. Shallow Hazards Report and Suspected Anomalies For Each Well Site
   See Attachment 1

B. Structure Map of Appropriate Sands/Depth
   See Attachment 2

C. Surface Location and TVD of Each Well

1. OCS-G-6187 "A"
   Surface Location: 7,350' FNL and 4,200' FEL

2. OCS-G-6187 "B"
   Surface Location: 3,900' FNL and 6,750' FEL

3. OCS-G-6187 "C"
   Surface Location: 5,400' FSL and 850' FVL

4. OCS-G-6187 "D"
   Surface Location: 4,800' FSL and 5,750' FEL

5. OCS-G-6187 "E"
   Surface Location: 5,200' FNL and 750' FEL
PLAN OF EXPLORATION
OCS-G-6187
HIGH ISLAND BLOCK A-69
OFFSHORE TEXAS

AMINOIL INC.
AUGUST 1984
IV. LOCATION

A. Location Map of Lease Block Relative to Shoreline
   See Attachment 3

B. Description of Onshore Support Base Facility

Aminoil will utilize its existing base in Grand Chenier, Louisiana as the support base for operations in this block. The facility is equipped with loading docks and cranes sufficient to engage in operations to implement the Plan of Exploration for High Island Block A-69. Activities resulting from operations in this block should not cause any increase in the size or number of onshore support facilities, storage facilities, or land personnel.

C. Location Map Showing Each Proposed Well Surface Location
   See Attachment 4

V. OIL SPILL CLEANUP INFORMATION

Aminoil's Oil Spill Contingency Plan, last revised in September, 1983, is on file with the Minerals Management Service (MMS). As a member of the Clean Gulf Associates, spill cleanup equipment is available on a twenty-four hour per day basis from Clean Gulf stockpiles located across the Gulf Coast. The closest stockpile to High Island Block A-69 is in Galveston, Texas, approximately 50 miles from the lease. Aminoil has secured a written commitment from Peterson Maritime Services to supply sufficient manpower and additional equipment as necessary to implement cleanup operations. Oil spill cleanup equipment can be deployed at the lease within twelve hours of the initial call to the Clean Gulf Associates.

VI. SUPPLEMENTAL INFORMATION

A. List of Mud Additives

The following is a list of mud additives for use in the proposed drilling operations:

<table>
<thead>
<tr>
<th>TRADE NAME</th>
<th>COMMON NAME</th>
<th>CHEMICAL TRADE NAME OF COMPONENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black Magic SFT</td>
<td>SFT</td>
<td>Air Blown Asphalt, lime, fatty acids and surfactants, mixed with diesel oil.</td>
</tr>
<tr>
<td>Caustic Soda</td>
<td>Caustic</td>
<td>Sodium Hydroxide</td>
</tr>
<tr>
<td>--------------</td>
<td>---------</td>
<td>------------------</td>
</tr>
<tr>
<td>Chemical &quot;V&quot;</td>
<td>Chemical &quot;V&quot;</td>
<td>Naphtenic Acid</td>
</tr>
<tr>
<td>Chemical &quot;W&quot;</td>
<td>Chemical &quot;W&quot;</td>
<td>Rosin Acids</td>
</tr>
<tr>
<td>OMC</td>
<td>OMC</td>
<td>Sodium Carboxyl, Methyl Cellulose</td>
</tr>
<tr>
<td>Cypan</td>
<td>Cypan</td>
<td>Sodium Ployacrylonitrile</td>
</tr>
<tr>
<td>Drispac</td>
<td>Drispac</td>
<td>Polyanionic Cellulose</td>
</tr>
<tr>
<td>Formaseal</td>
<td>Formaseal</td>
<td>Air Blown Asphalt</td>
</tr>
<tr>
<td>OB Bengal</td>
<td>Gel</td>
<td>Bentonite (Sodium Montmorilinite)</td>
</tr>
<tr>
<td>OB CLS</td>
<td>Lignosulfonate</td>
<td>Chrome Lignosulfonate</td>
</tr>
<tr>
<td>OB Chlonogel</td>
<td>Salt Gel</td>
<td>Attapulgite</td>
</tr>
<tr>
<td>OB Clay</td>
<td>Soap</td>
<td>Anionic Surfactant</td>
</tr>
<tr>
<td>OB Dry</td>
<td>Oil Sorb</td>
<td>Diatomaceous Earth</td>
</tr>
<tr>
<td>OB Gel</td>
<td>OB Gel</td>
<td>Air Blown Asphalt and Calcium Hydroxide</td>
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<tr>
<td>OB Heavywate</td>
<td>Barite</td>
<td>Barium Sulfate</td>
</tr>
<tr>
<td>OB Hical</td>
<td>Hydrate of Lime</td>
<td>Calcium Hydroxide</td>
</tr>
<tr>
<td>OB Lignite</td>
<td>Lignite</td>
<td>Lignite</td>
</tr>
<tr>
<td>OB Wate</td>
<td>Limestone</td>
<td>Calcium Carbonate</td>
</tr>
<tr>
<td>Petrospere</td>
<td>Petrospere</td>
<td>Surfactant and Solvent</td>
</tr>
<tr>
<td>Pipe Loose</td>
<td>Pipe Loose</td>
<td>Surfactants in Diesel Oil</td>
</tr>
<tr>
<td>Protectomagic (Liquid)</td>
<td>Protectomagic</td>
<td>Air Blown Asphalt and Diesel Oil</td>
</tr>
<tr>
<td>Protectomagic M</td>
<td>Protectomagic M</td>
<td>Air Blown Asphalt and Anionic Surfactant</td>
</tr>
<tr>
<td>Protectomagic S</td>
<td>Protectomagic S</td>
<td>Air Blown Asphalt</td>
</tr>
<tr>
<td>SAPP</td>
<td>SAPP</td>
<td>Sodium Acid Pyrophosphate</td>
</tr>
<tr>
<td>Special Additive 58</td>
<td>58</td>
<td>Aliphatic Carboxylic</td>
</tr>
</tbody>
</table>
Special Additive 81 Non-ionic Surfactants and Solvent
Supermix Thinner Thinner Diesel Oil & Surfactants
SuperTreat Causticized Lignite Causticized Lignite

B. Water Depth

Water depth in High Island Block A-69 ranges from 83 feet along the southern boundary on the block to 91 feet along the northern boundary.

C. Description of Drilling Rig and Pollution Prevention Equipment

A jack-up drilling rig will be utilized to drill the exploratory wells in High Island Block A-69. The rig will be equipped with all required pollution equipment. Should a spill occur, measures to correct the problem will commence immediately and will be reported in accordance with OCS Order No. 7 and guidelines set forth in Aminoil's Oil Spill Contingency Plan.

Attachment 5 contains a drawing of a typical jack-up drilling rig.

D. Calculations for Air Emissions

See attached Environmental Report

E. Environmental Safeguards

1. Solid Wastes
   a) Drill cuttings containing oil will be washed and cleaned prior to discharge into Gulf waters.
   b) Solid man-made wastes shall be incinerated in burning baskets or transported to shore for disposal.

2. Liquid Wastes
   a) Drilling mud containing oil will be transported to shore for disposal.
   b) Sanitary wastes shall be treated as required prior to discharge.
   c) All lubricating oils utilized in the operation of machinery associated with operations to be conducted under this plan shall be collected and transported to shore for disposal. All curbs, drains and gutters will be periodically checked to insure that collection of these pollutants will not result in discharge into the waters of the Gulf of Mexico.
3. Gaseous Wastes
   
a) Gaseous wastes generated by the operation of machinery utilized under this plan will be vented to the atmosphere.

b) Shale gases and natural gases which infiltrate the drilling mud during the course of drilling operations will be vented to the atmosphere.

4. Fuel
   
a) Fuel utilized for equipment at the site shall be transported in U.S. Coast Guard-approved vessels.

b) Fuel transfers between the platform/drilling unit and delivering/receiving vessel shall be monitored. Any leak observed resulting in discharge into Gulf waters during the transfer will be immediately reported and the problem corrected before fuel transfer is resumed.

F. Safety Standards

Simultaneous operations will be conducted as per Aminoil's "Simultaneous Operations Contingency Plan" on file with the appropriate MMS District office. Additionally, all welding and burning operations will be conducted as per Aminoil's "Welding and Burning Safe Practices and Procedures Plan" on file with the appropriate MMS District office.

All operators, representatives, contract toolpushers and drillers will be trained and qualified in accordance with OCS Order No. 2, Paragraph 7.
ENVIRONMENTAL REPORT FOR
PLAN OF EXPLORATION
GULF OF MEXICO: OFFSHORE TEXAS
HIGH ISLAND
BLOCK A-69 OCS-G-6187

AUGUST 1984

AMINOIL INC.
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<table>
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<th>TABLE</th>
<th>DESCRIPTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
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<td>5</td>
</tr>
<tr>
<td>2</td>
<td>TOTAL ONSHORE EMISSIONS</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
<td>TOTAL EMISSIONS EXPECTED AT THE DRILLING RIG</td>
<td>24</td>
</tr>
<tr>
<td>FIGURE</td>
<td>DESCRIPTION</td>
<td>PAGE</td>
</tr>
<tr>
<td>--------</td>
<td>------------------------------------------------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>1</td>
<td>HIGH ISLAND BLOCK A-69 IN RELATION TO THE TEXAS COAST</td>
<td>21</td>
</tr>
</tbody>
</table>
2. DESCRIPTION OF THE PROPOSED ACTION

A. DESCRIPTION OF PROPOSED TRAVEL MODES AND ROUTES AND FREQUENCY FOR MOVING SUPPLIES AND PERSONNEL TO AND FROM THE OFFSHORE ACTIVITY SITE AND THE ONSHORE BASES

The proposed travel modes will include a crew boat, a supply boat, and two helicopters.

Normally, the route utilized by all craft will be in a straight line from the shoreline to the location. The vessel used on some trips may be scheduled for deliveries to other platforms or rigs in the Gulf, making it impossible to determine the route to be used on these trips.

The two helicopters will make a total of 28 trips per week. The crewboat and supply boat will each make 5 trips per week.

B. IDENTIFICATION OF SUPPORT BASES AND NUMBER AND TYPES OF NEW WORKERS ASSOCIATED WITH THE PROPOSED ACTIVITY.

High Island Block A-69 is located approximately 50 miles off the Texas coast (Figure 1). Operations will be served by Aminoil's onshore base in Grand Chenier, Louisiana. This shore base serves the following purposes: 1) loading for tools, equipment, and machinery to be delivered to the offshore location; 2) crew change and transportation base; and 3) temporary storage for materials and equipment. The base is equipped with the necessary loading docks and cranes for convenient and safe operations. Full time dispatchers are employed at this onshore base in order to maintain 24-hour contact with offshore personnel. Helicopters will originate from the heliport of Petroleum Helicopters in Cameron, Louisiana. No new personnel will be needed for the proposed activities.
C. IDENTIFICATION OF THE NUMBER, LOCATION, AND SIZE OF ANY NEW SUPPORT FACILITIES THAT WILL NEED TO BE PROVIDED FOR THE PROPOSED ACTIVITY

No new support facilities will be needed for the proposed activities.

D. DESCRIPTION OF ANY NEW TECHNIQUES OR UNUSUAL TECHNOLOGY THAT MAY AFFECT COASTAL WATERS.

No new techniques or unusual technology will be used during the proposed activities.

E. MAPS SHOWING LOCATION OF THE PROPOSED ACTIVITY IN RELATION TO EACH OF THE AFFECTED STATE'S COASTAL ZONES

See Figure 1. Onshore support activities will take place in the coastal zone of the state of Louisiana. The drilling operations will take place in OCS waters adjacent to the State of Texas.

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT AND IMPACTS

A. PHYSICAL AND ENVIRONMENTAL

(1) Commercial Fishing

The lease area lies approximately 50 miles offshore and is located within productive fishing grounds in the Gulf of Mexico. National Marine Fisheries Service statistics indicate that the waters of Fishing Zone 18, which contains Block A-69, accounted for approximately 5% of the poundage caught in the eastern, western, and central Gulf of Mexico during the 1968-1974 period (USDI, 1979, Visual 5) Gulf waters account for approximately 33% of the total annual U. S. fisheries harvest (USDI, 1979).

The Gulf fishery is dominated by the shellfish fisheries. Shrimp, crabs, and oysters (with smaller amounts of clams and scallops) are the most valuable fisheries and are usually three to four times more lucrative than the greater volume of finfish catch (USDI, 1979).
The shrimp fishery in the Gulf of Mexico includes the brown (Penaeus aztecus), white (P. setiferus), and pink (P. duorarum) shrimp. These commercially valuable species are taken almost exclusively by trawls in depths ranging from approximately 6 to 140 feet. These shrimp are estuarine-dependent species which spawn in the open ocean, pass through a series of larval phases in the plankton, migrate during post-larval phase to the estuarine nursery areas, then return to the open Gulf as adults. The lease area lies outside the main spawning grounds and migration routes of the white shrimp in the northern Gulf (USDI, 1977, Visual 5; USDI, 1979, Visual 5). However, planktonic eggs and larval stages of both brown and white shrimp species may occur in the area periodically.

The blue crab (Callinectes sapidus) makes up 98% of the crab harvest in the Gulf of Mexico (Riley, 1970). Their life cycle is similar to the shrimp in that there are planktonic, estuarine, and open ocean phases. Adult blue crabs remain in the estuaries for the majority of their life span and thus are harvested inshore of the lease area. Gravid females migrate into open Gulf waters to release eggs during spring and summer and probably do not appear in the lease area. Planktonic larvae may appear very sporadically within the lease area. (Personal communication National Marine Fisheries Service, Galveston, Texas, November, 1981).

The lease area is within the commercially important finfish fishing grounds (USDI, 1979, Visual 5). The 3 species of menhaden found in the Gulf, Brevoortia patronus, B. gunteri, and B. smithi, make up the major finfish tonnage taken. Brevoortia patronus comprises most of the Gulf catch. Purse seining is the major capture method used in this fishery (Lindall et al., 1972).
Red snapper (*Lutjanus campechanus*) and various species of grouper (i.e., the red grouper *Epinephelus morio* and gag *Mycteroperca microlepis*) compose the commercial hook and line fishery of Louisiana. The fishes may be taken over irregular bottom areas in depths of 5 to 1,000 feet (TerEco, 1976).

The striped mullet (*Mugil cephalus*) is generally found in nearshore areas such as harbors, estuaries, bays, and along beaches. It is a schooling fish and is generally taken with seines and trawls.

The Atlantic croaker (*Micropogon undulatus*) is an abundant fish in Louisiana estuarine waters. Perret et al. (1971) found croaker to be the most abundant juvenile commercial fish seen in the estuaries. Croakers are harvested and marked as both food fish and industrial bottom fish (Lindall et al., 1972).

The Spanish mackerel (*Scomberomorus acutus*) migrates seasonally along the Gulf coast. They are generally taken inshore of the lease area.

The red drum (*Sciaenops ocellata*) is taken predominantly in nearshore habitats, as are the sheepshead (*Archosargus probatocephalus*), flounder, and the black drum (*Pogonias cromis*).

Seatrout, both the silver (*Cynoscion nothus*) and the white (*C. arenarius*), are important to the bottom fish fisheries in the northern Gulf (Lindall et al., 1972). They are usually taken in offshore areas with bottom trawls.

Additional fishes of the northern Gulf which are important to commercial and/or sport fishermen are listed in Table 1. Most of the northern Gulf fishes are temperate, with some incursions from the Caribbean fauna. They
<table>
<thead>
<tr>
<th>Common Name</th>
<th>Scientific Name</th>
<th>Capture Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Round Herring</td>
<td>Etrumeus teres</td>
<td>Midwater Trawl</td>
</tr>
<tr>
<td>Round Shad</td>
<td>Trachurus lathami</td>
<td>Midwater Trawl</td>
</tr>
<tr>
<td>Skipjack Tuna</td>
<td>Euthynnus pelamis</td>
<td>Longline or Purse Seine</td>
</tr>
<tr>
<td>Yellowfin Tuna</td>
<td>Thunnus aibacares</td>
<td>Longline or Purse Seine</td>
</tr>
<tr>
<td>Blackfin Tuna</td>
<td>Thunnus atlanticus</td>
<td>Longline or Purse Seine</td>
</tr>
<tr>
<td>Bluefin Tuna</td>
<td>Thunnus thynnus</td>
<td>Longline or Purse Seine</td>
</tr>
<tr>
<td>Rainbow Runner</td>
<td>Elagatis bipinnulata</td>
<td>Hook &amp; Line</td>
</tr>
<tr>
<td>Dolphin</td>
<td>Coryphaena hippurus</td>
<td>Hook &amp; Line</td>
</tr>
<tr>
<td>Wahoo</td>
<td>Acanthocybium solanderi</td>
<td>Hook &amp; Line</td>
</tr>
<tr>
<td>Atlantic Bonito</td>
<td>Sarda sarda</td>
<td>Hook &amp; Line</td>
</tr>
<tr>
<td>Swordfish</td>
<td>Xiphius gladius</td>
<td>Hook &amp; Line</td>
</tr>
<tr>
<td>Sailfish</td>
<td>Istiophorus platypterus</td>
<td>Hook &amp; Line</td>
</tr>
<tr>
<td>Blue Marlin</td>
<td>Makaira nigricans</td>
<td>Hook &amp; Line</td>
</tr>
<tr>
<td>White Marlin</td>
<td>Tetraprurus albidus</td>
<td>Hook &amp; Line</td>
</tr>
</tbody>
</table>

Eggs and larvae (ichthyoplankton) of various commercially important fish species are probably also present in the lease area on occasion. Sixty-nine fish species have been identified from zooplankton samples along the Gulf Coast. Dominant taxa were the families Sparidae, Lutjanidae, Triglidae, Serranidae, and Synodontidae. Stenomus caprinus, Pristipomoides aquilonaris, Prionotus paralatus, Serranus atrobranchus, and Synodus foetens were the most important species (Chittenden and Moore, 1976). Since the majority of ichthyoplankters are at the mercy of water movements, their distributions vary considerably with space and time. The primary factors influencing ichthyoplankton in the northern Gulf are the Loop Current, the
Mississippi River, and local runoff. Due to "patchiness" in distributions, presence and abundance of ichthyoplankton at any given instance cannot be predicted.

Drilling may temporarily degrade the water quality in the immediate vicinity of the lease site, possibly causing certain fish species to avoid the area. Commercial fishing may be affected temporarily. The situation should revert to normal as soon as the drilling is completed. Cumulative effects of increasing oil and gas activities off the Texas coast on annual catches are as yet unknown. However, there is no evidence to link offshore oil and gas activities with declining yield per hectare of sea bottom (USDI, 1979, p. 181).

Any oil spill reaching the sea floor could conceivably kill benthic organisms such as shrimp or cause a variety of sublethal effects. The potential long-term effects of a spill on the benthos are unclear because it is not known whether petroleum hydrocarbons accumulate in the bottom sediments (1979, p. 160).

An oil spill would degrade water quality and introduce toxins into the water. Ichthyoplankton, if present, might be killed or functionally impaired. Most adult fish encountering a spill and associated toxic water would probably exhibit avoidance behavior. Getter et al. (1980) documented the avoidance, by dolphin and mullet, of oiled nearshore waters caused by the Ixtoc I oil spill in 1979. However, this effect would be temporary and fish should return to the area after dispersal of the spill. No significant or persistent direct effects from an oil spill on fish populations would be expected. Recruitment from surrounding areas should quickly replenish any affected ichthyoplankton populations once the spill has dispersed.
(2) **Shipping**

High Island Block A-69 lies outside of all major shipping fairway in (USDI, 1982, Visual No. 11); thus, proposed activities in this block should have minimal impact on shipping operations.

Coastal fog causes low visibility in the lease area from November through April. Generally, these coastal fogs last 3 to 4 hours. However, particularly dense sea fogs may persist for several days (USDI, 1979, p. 48). The number of days per month when visibility can be expected to be equal or less than one-quarter of a nautical mile is as follows (USDI, 1979):

<table>
<thead>
<tr>
<th>Month</th>
<th>Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>January</td>
<td>7</td>
</tr>
<tr>
<td>February</td>
<td>4</td>
</tr>
<tr>
<td>March</td>
<td>4</td>
</tr>
<tr>
<td>April</td>
<td>2</td>
</tr>
<tr>
<td>May</td>
<td>1</td>
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<td>0</td>
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<tr>
<td>October</td>
<td>2</td>
</tr>
<tr>
<td>November</td>
<td>4</td>
</tr>
<tr>
<td>December</td>
<td>6</td>
</tr>
</tbody>
</table>

(3) **Small Craft Pleasure Boating, Sport Fishing, and Recreation**

Recreational boat traffic is expected to be minor in this area. The proposed activities scheduled for this block should have a minimal effect upon them since the drilling rig should not prove a significant obstacle for recreational boating. Certain pleasure boats (i.e., sailboats, pleasure yachts, and/or open ocean racing power boats) may be slightly inconvenienced by having to maneuver around the structure and its support vessels. The inconvenience is considered extremely minor since offshore structures can easily be avoided and ample maneuvering room is available.
Any sport fishing which might occur in the lease area could be affected by degradation of water quality during drilling. Such a change in water quality could cause some desirable species to avoid the immediate area of the drill site. However, any such effects are expected to be temporary and should not affect fishery potential in the area as a whole. Populations should return once drilling is completed.

Some larvae and eggs of certain species important to commercial and sport fishermen could be adversely affected in the immediate area of the drill site due to temporary degradation of water quality. However, such localized effects from the temporary operations are not expected to exert a measurable influence on any fishery. Migrations of adults of important species will not be affected because the migrators should not find the drilling operation an unavoidable or interfering obstruction.

(4) Cultural Resources

Coastal Environments, Inc. (1977) has identified 2 types of cultural resources which may be found in the northern Gulf of Mexico area: 1) historic cultural resources or shipwrecks and 2) prehistoric cultural resources or traces of previously undescribed human civilizations (USDI, 1979, p. 90-91). High Island Block A-6S lies outside the line of high probability of historic cultural resources, but within the line of high probability of prehistoric cultural resources (USDI, 1983, Visual No. 11). However, an archaeological survey was conducted and no evidence of prehistoric or historic sites was discovered. The Archaeological Survey Report is included with the Plan of Exploration for this block.
(5) Ecologically Sensitive Features

Biologically sensitive areas of the north-central Gulf area include estuarine and coastal ecosystems comprised of salt marshes, oyster beds, grass beds, barrier beaches, and dunes (Coastal Environments, Inc., 1980). These coastal ecosystems contain nursery areas for many species of economic importance as well as habitat, rookeries, and nesting areas for many endangered and threatened species, such as the southern bald eagle, brown pelican, golden eagle, osprey, red cockaded woodpecker, American peregrine falcon, and various marine turtles (USDI, 1979, Visual 3; Coastal Environments, Inc., 1980; USDC and LDNR, 1980).

Conspicuous areas of concern for Louisiana and Texas are depicted by the USDI (1979, Visual 4). Specific recreational and conservation sites onshore from the lease area are as follows:

<table>
<thead>
<tr>
<th>NAME</th>
<th>COUNTY</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galveston Island</td>
<td>Galveston</td>
<td>Recreational Beaches</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fishing Piers</td>
</tr>
<tr>
<td>Anahuac National Wildlife</td>
<td>Chambers</td>
<td>Wildlife Refuge</td>
</tr>
<tr>
<td>Refuge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazoria National Wildlife</td>
<td>Brazoria</td>
<td>Wildlife Refuge</td>
</tr>
<tr>
<td>Refuge</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bryan Beach</td>
<td>Brazoria</td>
<td>Recreational Beaches</td>
</tr>
<tr>
<td>San Bernard National</td>
<td>Brazoria</td>
<td>Recreational Beaches</td>
</tr>
<tr>
<td>Wildlife Refuge</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The coastal zone area is of recreational importance to residents and tourists. Most recreational activities focus on the area's water resources which include beaches, boating areas, and fishing areas.

While oil spills during drilling and production operations are rare (Daneberger, 1976), the possibility of a spill does exist. Oil fouling in any coastal area could directly or indirectly affect a variety of species, including threatened or endangered species or species important to commercial and sport fisheries. Direct effects on biota would include fouling (particu-
larly fishes and turtles), and toxicity from contact or from the ingestion of oil or contaminated food. Any of these effects could kill directly or cause weakening and a greater susceptibility to predation or other adverse conditions. Indirect effects would include the destruction of habitat, especially breeding and nursery areas. Any effects on endangered or threatened species would be significant.

Oil fouling of the coastal area could also have adverse socio-economic effects. Tourism is an important part of Gulf coast economics. Removal of beach or other coastal areas from recreational use by oil fouling would significantly decrease tourism in the affected area, causing loss of income and a variety of ripple effects in local economies.

There are numerous factors unique to each lease block which would either intensify or reduce the effects of a major oil spill. The USDI (1979, p. 143) has developed a sensitivity rating system which can be applied to any lease block. This system assigns a sensitivity rating to each block for environmental resources which might be affected by an oil spill. These ratings are assigned based upon the site's distance from a particular resource and vary depending upon the type of resource being rated. Ratings are: 1-minimum; 2-moderate; and 3-maximum. The sensitivity ratings that may be assigned to this specific block are as follows:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Distance from Resource</th>
</tr>
</thead>
<tbody>
<tr>
<td>Littoral Systems</td>
<td>1</td>
</tr>
<tr>
<td>Reefal Systems</td>
<td>1</td>
</tr>
<tr>
<td>Other Benthic Systems</td>
<td>1</td>
</tr>
<tr>
<td>Endangered Species</td>
<td>1</td>
</tr>
<tr>
<td>Commercial Fishing</td>
<td>1</td>
</tr>
<tr>
<td>Aesthetics</td>
<td>1</td>
</tr>
<tr>
<td>Cumulative Impact</td>
<td>6/18</td>
</tr>
<tr>
<td>Impact Index</td>
<td>.33</td>
</tr>
</tbody>
</table>
Evaluation of the Impact Index rating is as follows:

| Impact Index | 0.33 - 0.55 minimum | 0.56 - 0.77 moderate | 0.78 - 1.00 maximum |

This specific block is rated as an area of minimum potential impact from a possible oil spill (USDI, 1979).

Safety in drilling operations will be accomplished through: 1) adequately designed casing programs, 2) the use of blowout preventers and associated well equipment of adequate rating to contain anticipated pressures, 3) the use of sufficient mud volumes to insure control of the well, 4) the use of mud-monitoring equipment, and 5) the use of supervisory personnel properly trained in pressure control. A spill, should it occur, would be subject to containment and clean-up efforts, according to a MMS-approved oil spill contingency plan. Thus, it is unlikely that a spill occurring during operations would affect any nearshore or onshore areas or resources.

(6) **Existing Pipelines and Cables**
Refer to Visual No. 7 USDI 1984

(7) **Other Mineral Uses**
There are no other known mineral resources in the lease area.

(8) **Ocean Dumping Activities**
The block does not lie in an area designated for any ocean dumping activity.
Endangered or Threatened Species

Endangered or threatened cetaceans most likely to be encountered at the lease site are the sperm whale (Physeter catodon), sei whale (Balaenoptera borealis), fin whale (Balaenoptera physalus), blue whale (Balaenoptera musculus), and black right whale (Balaena glacialis). Several endangered or threatened species of sea turtles, including the Atlantic ridley (Lepidochelys kempii), hawksbill (Eretmochelys imbricata), leatherback (Dermochelys coriacea), loggerhead (Caretta caretta), and green (Chelonia mydas), may occasionally visit the lease site. No critical habitat for any of these species is known to exist at the lease site (USDI, 1979, p. 73-74). The Bureau of Land Management identifies oil spills and marine traffic as OCS activities with possible impacts on marine mammals (USDI, 1979, p. 164). Mammals (cetaceans) near the lease area are not considered to be threatened by possible collisions with support vessels (USDI, 1979, p. 164). There is no evidence that collisions with any cetacean species have occurred during previous lease activities. Oil from a spill could foul marine mammals (primarily whales) and could irritate the skin and eyes, cause internal disorders, clog or inflame respiratory passages, and foul baleen plates. Respiratory inflammation could lead to pneumonia and death, although evidence linking whale mortalities to oil is not available (USDI, 1979, p. 164). Indirect effects of an oil spill on marine mammals would include contamination or other alterations of food supplies. However, such effects would be temporary, with a return to normal conditions after dispersal of a spill.

The primary danger to marine turtles from offshore operations will be possible collisions with boats. Adult turtles, especially loggerheads, seem to be attracted to platforms for feeding and resting (USDI, 1979, p. 165), increasing the probability of collisions. An oil spill reaching turtle
nesting areas could suffocate the embryos in the eggs by sealing the sand over the nests. Clean-up activities could destroy nests or compact sand over them, preventing hatchlings from escaping. Offshore, turtle hatchlings and adults would be susceptible to oil fouling when they surface for breathing. Clogging of the nostrils (direct suffocation) and respiratory or eye inflammation could occur, although such effects have not been quantified. Lights on drilling platforms near shore could disorient turtle hatchlings, rendering them susceptible to predation or collisions with boats (USDI, 1981, Pg. 417). Any impact on endangered or threatened marine turtles would be considered significant and cumulative.

The USFWS (1979) considers possible impacts of lease activities on endangered species in this area of the Gulf to be temporary, localized, and chance occurrences. They have judged the potential impacts on endangered species to be remote possibilities without major potential for direct effects on any single species. In addition, it has been determined that lease activities will not result in destruction or modification of designated critical habitats or potential critical habitats. Onshore facilities are located in a previously developed area and pose no new or additional threats to endangered or threatened species.

B. SOCIO-ECONOMIC

No new personnel will be needed for the proposed activities.
4. UNAVOIDABLE ADVERSE IMPACTS

A. SUMMARY OF THE UNAVOIDABLE ADVERSE IMPACTS

Briefly summarizing, unavoidable adverse environmental effects may occur in the following areas:

1. **Water Quality**
   
   Drilling activities will temporarily reduce water quality adjacent to the platform due to discharges of drilling fluids and cuttings. These discharges will increase turbidity in a plume down-current from the drill site.

2. **Marine Organisms**
   
   Some marine organisms will be killed and some will be temporarily functionally impaired as a result of drilling operations. The most affected groups will be plankton and benthos immediately around the drilling rig. Damage will be both mechanical and toxicological. Discharge of drill muds and cuttings will damage plankton within the plume. Disposal of cuttings and muds will bury some of the less motile benthic infauna and epifauna. These impacts are considered to be localized, short-term, and reversible at the population level. An oil spill could affect a broad spectrum of marine organisms. However, most effects would be localized and short-term. Any effects on mammals and turtles could be significant.

3. **Wetlands and Beach**
   
   There should be no adverse impacts on wetlands or beaches from normal activities in the lease area. In the unlikely event of an oil spill occurring and reaching shore, a number of adverse impacts would occur (see Section 3.2.(5)).

4. **Commercial Fishing**
   
   Some sea floor will temporarily be removed from the use of fishermen by operations in the lease area. Any effect that this operation will have on stocks of important species is considered minor.
(5) **Ship Navigation**

Little interference is expected between the offshore structure and ships that use established fairways. However, at night and during rough weather, fog, and heavy seas, there is an increased possibility that ships using established fairways could collide with the offshore structure is increased. The structure will contain all MMS and U.S. Coast Guard - required lighting and signaling equipment to alert ships of its presence in all weather conditions.

(6) **Cultural Resources**

There is very little possibility that an unknown cultural resource exists in the lease area. Any wells drilled in this program will be located in such a manner as to pose minimum possible impact on any potential cultural resource located in this block.

(7) **Recreation and Aesthetic Values**

The offshore structure may represent an obstacle to some sport fishermen and recreational boaters, but such an effect is considered to be negligible.

The detrimental effects that normal operations or an oil spill would have on any fish stocks important to sport fishermen are also considered to be negligible. In fact, studies have shown offshore petroleum rigs to be the most popular fishing destinations in the western-central Gulf of Mexico (Ditzon and Graefe, 1978; Dugas, et al., 1979).

**B. STATEMENT CONCERNING THE UNAVOIDABLE ADVERSE IMPACTS**

None of the consequences expected during normal operations should produce significant or cumulative adverse environmental effects. The lease area is rated as an area of minimum potential impact from a possible oil spill. The effects of a possible oil spill should have no overall cumulative or long term
effect on the environment, except in the possible event of contamination of endangered marine species, i.e. turtles and/or whales. A spill would be subject to containment and clean-up efforts, according to a MMS-approved oil spill contingency plan. Thus, it seems unlikely that a spill will occur during operations and affect any nearshore or onshore areas or resources. Geophysical, archaeological, and environmental studies indicate that there is no clear or present reason not to proceed with the proposed activities in the lease area. Withdrawal of the plan would result in the loss of possible hydrocarbon production from the area. The only reason to delay implementation of the plan would be for possible development of a technological advance in offshore drilling techniques which would offer a significant advantage, either economically or environmentally, over the proposed techniques. To the best knowledge of Aminoil Inc., no such technological innovations will be available in the foreseeable future.
5. REFERENCES


Coastal Environments, Inc. 1980. CPA-2, Offshore Mississippi-Alabama-Florida, biologically sensitive areas. 1260 Main Street, Baton Rouge, Louisiana.

Conoco, Inc. 1981. Shallow Hazards to Drilling, West Cameron Block 97, Number 1.


REFERENCES CONT'D.

TerEco Corporation. 1976. Ecological aspects of the upper continental slope of the Gulf of Mexico. A report to the Bureau of Land Management (Contract No.08550-CT4-12).


United States Department of Commerce and Louisiana Department of Natural Resources. 1980. Louisiana coastal resources program final environmental impact statement. Louisiana Department of Natural Resources, P.O. Box 44396, Baton Rouge, Louisiana.


6. FINAL STATEMENT

To the best of our knowledge, the set of findings included in the Environmental Report and Plan of Exploration indicates that each of the proposed activities, their associated facilities, and effects are all consistent with, and comply with, the provisions and guidelines of the Louisiana-approved Coastal Management Program. The proposed activities will be conducted in a manner consistent with the Louisiana Coastal Resources Program as outlined in USDC and LDNR (1980).

The proposed activity will be carried out and completed with the guarantee of the following items:

1. The best available and safest technologies will be utilized throughout the project. This includes meeting all applicable requirements for equipment types, general project layout, safety systems, and equipment and monitoring systems.

2. All operations will be covered by a MMS-approved oil spill contingency plan.

3. All applicable Federal, State, and local requirements regarding air emission and water quality and discharge for the proposed activities, as well as any other permit conditions, will be complied with.
CALCULATIONS FOR AIR EMISSIONS

As per the Air Quality Regulations published in 30 CFR 250.57 (Federal Register, March 7, 1980), the following tables list the projected emissions resulting from activities in High Island Block A-69. All calculations are based on worst case situations, using EPA estimates from the publications referenced in each table. Actual emissions are expected to be considerably lower than those estimated here.

It is clear from these data that the activities in <area> Block <BLOCK> will have no significant impact on air quality either at the shore base or at the lease site. Total emissions will be well below the calculated exemption levels, qualifying these activities for exemption from further air quality review (Federal Register, March 7, 1980).
## TOTAL ONSHORE EMISSIONS

<table>
<thead>
<tr>
<th></th>
<th>CO (Pounds/Day)</th>
<th>CO (Tons/Year)</th>
<th>SO₂ (Pounds/Day)</th>
<th>SO₂ (Tons/Year)</th>
<th>NOₓ (Pounds/Day)</th>
<th>NOₓ (Tons/Year)</th>
<th>VOC (Pounds/Day)</th>
<th>VOC (Tons/Year)</th>
<th>TSP (Pounds/Day)</th>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helicopter</td>
<td>45.60</td>
<td>8.32</td>
<td>1.44</td>
<td>0.26</td>
<td>4.56</td>
<td>0.83</td>
<td>4.16</td>
<td>0.76</td>
<td>2.00</td>
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</tr>
<tr>
<td>Crew Boat (2550 HP)</td>
<td>5.69</td>
<td>1.04</td>
<td>1.22</td>
<td>0.22</td>
<td>14.68</td>
<td>2.68</td>
<td>0.66</td>
<td>0.12</td>
<td>1.22</td>
<td>0.22</td>
</tr>
<tr>
<td>Supply Boat (3000 HP)</td>
<td>5.69</td>
<td>1.04</td>
<td>1.22</td>
<td>0.22</td>
<td>14.68</td>
<td>2.68</td>
<td>0.66</td>
<td>0.12</td>
<td>1.22</td>
<td>0.22</td>
</tr>
<tr>
<td>TOTALS</td>
<td>56.98</td>
<td>10.40</td>
<td>3.88</td>
<td>0.70</td>
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<td>6.19</td>
<td>5.48</td>
<td>1.00</td>
<td>4.44</td>
<td>0.81</td>
</tr>
</tbody>
</table>

*Values derived from the following:

**Helicopter:** Table 3.2.1-3, EPA Publication AP-42, "Compilation of Air Pollutant Emission Factors". Assumed four landing-takeoff cycles per day.

**Crew Boat and Supply Boat:** Tables 3.2.3-3 and 3.2.3-4, EPA Publication AP-42. Assumed 55 gallons diesel fuel consumed per day by each boat.

*Values derived using calculated values in Table 3.2.3-4, EPA Publication AP-42. Based on total sulphur content of fuel.

Values estimated, assuming rough equivalence to SO₂ values.

Maximum expected for one day, assuming that all sources are at the onshore base at the same time.
<table>
<thead>
<tr>
<th></th>
<th>CO (Pounds/Day, Tons/Year)</th>
<th>SO₂ (Pounds/Day, Tons/Year)</th>
<th>NOₓ (Pounds/Day, Tons/Year)</th>
<th>VOC (Pounds/Day, Tons/Year)</th>
<th>TSP (Pounds/Day, Tons/Year)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Helicopter</strong></td>
<td>45.60, 8.32</td>
<td>1.44, 0.26</td>
<td>4.56, 0.83</td>
<td>4.16, 0.76</td>
<td>2.00, 0.37</td>
</tr>
<tr>
<td><strong>Crew Boat</strong></td>
<td>5.69, 1.04</td>
<td>1.22, 0.22</td>
<td>14.68, 2.68</td>
<td>0.66, 0.12</td>
<td>1.22, 0.22</td>
</tr>
<tr>
<td><strong>Cargo Boat</strong></td>
<td>5.69, 1.04</td>
<td>1.22, 0.22</td>
<td>14.68, 2.68</td>
<td>0.66, 0.12</td>
<td>1.22, 0.22</td>
</tr>
<tr>
<td><strong>Platform</strong></td>
<td>26.74, 4.88</td>
<td>12.31, 2.25</td>
<td>182.04, 33.22</td>
<td>6.08, 1.11</td>
<td>12.31, 2.25</td>
</tr>
<tr>
<td><strong>Diesels</strong></td>
<td>26.74, 4.88</td>
<td>12.31, 2.25</td>
<td>182.04, 33.22</td>
<td>6.08, 1.11</td>
<td>12.31, 2.25</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>83.72, 15.28</td>
<td>17.63, 2.95</td>
<td>215.96, 31.41</td>
<td>11.56, 2.11</td>
<td>16.75, 3.06</td>
</tr>
</tbody>
</table>

**Exemption Levels**: 44,957^e, 1,665^e, 1,665^e, 1,665^e, 1,665^e

---

^a Values derived from the following:
   Helicopter: Table 3.2.1-3, EPA Publication AP-42, "Compilation of Air Pollutant Emission Factors". Assumed four landing-takeoff cycles per day.
   Crew Boat, Cargo Boat: Tables 3.2.3-3 and 3.2.3-4, EPA Publication AP-42. Assumed 65 gallons per day (one hour) of diesel fuel consumed for each boat. Worst case values were used.
   Platform Diesels: Table 4.4, EPA Publication 450/3-77-026.

^b Values derived using calculated values in Table 3.2.3-4, EPA Publication AP-42. Based on total sulfur content of fuel.

^c Values estimated, assuming rough equivalence to SO₂ values.

^d Maximum expected for one day, assuming that all sources are operating at the rig at the same time.

^e Exemption levels calculated using the formula: For CO: \( E = 3400 \cdot (D)^{2/3} \)
   For TSP, SO₂, NOₓ, and VOC: \( E = 23.3 \cdot (D) \)
   where \( D \) = distance from nearest land (50 miles)
The proposed activities described in detail in this Plan comply with the Louisiana-approved Coastal Management Program and will be conducted in a manner consistent with the Program.

Arrangements have been made with the State-Times in Baton Rouge, Louisiana to publish a public notice of the proposed activities no later than August 29, 1984.

AMINOIL INC.
Lessee or Operator.

Certifying Official

Date

9-22-84