UNITED STATES DEPARTMENT OF THE INTERIOR

MINERALS MANAGEMENT SERVICE

Gulf of Mexico OCS Region

New Orleans, Louisiana

FINAL

SITE-SPECIFIC ENVIRONMENTAL ASSESSMENT

No. R-2600

NOTED — KRAMER

Exploratory Activity

High Island Area, East Addition,

South Extension, Blocks A-378 and A-379

Leases OCS-G 8573 and 8574

October 1990

Commodity Oil and Gas

SEA No. R-2600

United States Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region
New Orleans, Louisiana

OCS SITE-SPECIFIC ENVIRONMENTAL ASSESSMENT

October, 1990

Operator Oryx Energy Company
Plan Type Revised Exploration Plan
Area High Island, East Addition, South Extension, Blocks A-378 and A-379
Leases OCS-G 8573 and 8574
Date Submitted August 28, 1990
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Prepared by Ken Graham

Related Environmental Documents:

Final EIS for OCS Lease Sale Nos. 81, 84, 94, 98, 102, and 104, 105, 110, 112, 118, 122, 125, and 135

EA Nos. 500, 504, 505, 506, 507, N-1730, N-1798, N-1845, N-1883, N-1917, N-2188, N-2200, N-2201, N-2624, S-1924, N-2758, N-3306, and N-3652

Areawide EA for Exploration and Production Activities within the Four-Mile Zone of the East and West Flower Garden Banks

FINDING OF NO SIGNIFICANT IMPACT

I have considered the Revised Exploration Plan for Oryx Energy Company, High Island Area, East Addition, South Extension, Blocks A-378 and A-379 (OCS-G 8573 and 8574), SEA No. R-2600. Based on the environmental analysis and mitigative measures contained in the site-specific environmental assessment, there is no evidence to indicate that the proposed action will significantly (40 CFR 1508.27) affect the quality of the human environment if the permit/application is approved subject to all of the mitigative measures. Preparation of an environmental impact statement is not required.

_____ _____

Regional Supervisor
Leasing and Environment
Gulf of Mexico OCS Region

Date

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ABBREVIATIONS AND ACRONYMS

AEA	Areawide Environmental Assessment for Exploration and Production Activities within the Four-Mile Zone of the East and West Flower Garden Banks
CGA	Clean Gulf Associates
COE	Corps of Engineers
EP	Exploration Plan (formally Plan of Exploration)
FWS	U.S. Fish and Wildlife Service
GOM	Gulf of Mexico
H_2S	Hydrogen Sulfide
MMS	Minerals Management Service
NCSC	Naval Coastal Systems Center
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NTL	Notice to Lessees and Operators
OCS	Outer Continental Shelf
SEA	Site-Specific Environmental Assessment
SER	Site-Specific Environmental Report
USEPA	U.S. Environmental Protection Agency

INTRODUCTION

This Site-Specific Environmental Assessment (SEA), submitted in support of an Area-Wide Environmental Assessment (AEA), is written for exploration activity proposed for High Island Area, East Addition, South Extension, Blocks A-378 and A-379. The SEA contains site-specific and updated information for the proposed action in Blocks A-378 and A-379 that is not contained in the AEA. The SEA was prepared using the AEA dated October 1984, entitled "Area-Wide Environmental Assessment for Exploration and Production Activities within the Four-Mile Zone of the East and West Flower Garden Bank," as a base document. This base document can be obtained through the Public Records office of the Minerals Management Service, Gulf of Mexico Region, Outer Continental Shelf Office. Those sections of the AEA that are referenced in the SEA are indicated throughout the text.

In compliance with the National Environmental Policy Act (NEPA), this AEA/SEA concept implements the tiering process outlined in 40 CFR 1502.20 which encourages agencies to tier environmental documents to eliminate repetitive discussions of the same issue. By use of reference to the AEA, the SEA concentrates on the issues specific to the proposed action. The SEA conforms to the MMS and other appropriate guidelines for preparing environmental assessments in compliance with the requirements of NEPA, using information presented in the AEA.

I. DESCRIPTION OF PROPOSED ACTION

A. GENERAL

A Revised Exploration Plan (EP) for activity in High Island Area, East Addition (E.A.), South Extension (S.E.), Blocks A-378 and A-379, Leases OCS-G 8573 and 8574 was filed by Oryx Energy Company (Oryx), on August 28, 1990. The original EP was filed by Exxon Corporation on March 25, 1988. Blocks A-378 and A-379 are located approximately 174 km (108 mi) southeast of the nearest coastline on Galveston Island, Texas. The water depth in the blocks is approximately 91-113 m (300-370 ft). The designated operator of OCS-G 8573 and 8574 is Oryx Energy Company.

The objective of the proposed activity is to explore for oil and gas reserves in High Island Area, E.A., S.E., Blocks A-378 and A-379. A semi-submersible drilling rig, such as the Ocean Scout would be used to conduct the exploratory drilling of the two wells in Blocks A-378 and A-379. Location A is proposed at 3,298' FNL and 2,171' FWL in Block A-378 (Figure I-1). Well B is proposed at 3,600' FNL and 3,990" FWL in Block A-379 (Figure I-2). The two wells will commence upon approval in October, 1990, and will take approximately 100 days to complete. This action is considered routine for the Gulf of Mexico. For additional information concerning the proposed action, refer to Oryx' EP.

B. EQUIPMENT AND SUPPORT SYSTEMS

The equipment associated with the proposed drilling rig is described in the operator's plan. The rig is required to be equipped with safety and monitoring systems so as to comply with OCS operating regulations and other regulations.

No H_2S is expected based on previous drilling experience near this area (Appendix B).

The rig used would be equipped with all safety and pollution-prevention equipment and standards required by MMS OCS Operating Regulations, COE, USCG, OSHA, and EPA.

The onshore support facilities are located in Sabine Pass, Texas. The proposed activity would not require any new construction (Oryx, 1990).

C. SCHEDULE OF ACTIVITIES

Two exploratory wells are proposed. Drilling of the wells is scheduled to start upon approval in October, 1990. The drilling of the wells is expected to take 100 days. Should the wells prove productive, Oryx would be required to submit a Development Operations Coordination Document to cover production.

D. TRANSPORTATION ROUTES

Helicopters and boats would be used to transport personnel and equipment between High Island Area, E.A., S.E., Blocks A-378 and A-379 and Cameron, Louisiana. A helicopter would make an estimated 7 round trips per week using the most direct route feasible from Galveston. A crew boat or supply boat would make an estimated 7 round trips per week (Oryx, 1990).

E. PERSONNEL REQUIREMENTS

The operator stated that existing employees would be adequate for the proposed operations. There would be no additional personnel required (Oryx, 1990).

F. TECHNOLOGY

No new or unusual technology would be used in the proposed drilling activities (Exxon, 1988).

G. CONTINGENCY PLANS

Oryx has filed an Oil Spill Contingency Plan with the MMS. Oryx, as a member of Clean Gulf Associates, would use the CGA equipment in the event of an oil spill. In case of an emergency,

personnel will be dispatched from the Oryx land support base in Sabine Pass, TX (Oryx, 1990).

The cleanup equipment available to Oryx is the entire equipment inventory of Clean Gulf Associates. Clean Gulf facilities are maintained at Intracoastal City, Venice, Grand Isle and Cameron, La as well as Galveston and Texas City, TX. Response time for the major pieces of oil spill containment equipment to High Island Area, E.A., S.E., Blocks A-378 and A-379, is 12.5 hours (Oryx, 1990).

H. DISCHARGES AND EMISSIONS

1. General

Solid and liquid discharges and gaseous emissions would be generated by offshore and onshore activities and transportation operations resulting from the proposed plan of operation. At the drill site, High Island Area, E.A., S.E., Blocks A-378 and A-379, all discharges to the GOM would be under a National Pollutant Discharge Elimination System (NPDES) permit regulated by the U.S. Environmental Protection Agency (USEPA).

2. Solid Wastes

Drill Cuttings - Approximately 2,057 gallons per day of drill cuttings would be generated. These cuttings would consist of natural subsurface sediments. The estimated volume was determined from the hole geometry. Drill cuttings would be disposed of by shunting (Oryx 1990 and Exxon, 1988).

Other Solid Wastes - Other solid wastes generated both offshore and at the supply base would be be disposed of according to EPA and other applicable regulations at an approved onshore disposal facility (Exxon, 1988).

3. Liquid Waste

Treatment of liquid waste effluents would be in compliance with the NPDES permit. No free oil would be discharged into the Gulf. The estimated daily quantity, content, and description of the discharges are given below. The quantity of discharged drill muds was calculated using hole geometry (Oryx, 1990).

Drilling Muds - Oryx estimates that a maximum of 1,000 bbls/hr of muds would be discharged. The muds proposed for use are listed in Oryx's EP. If any oil based mud were to be used, it would be hauled to shore for disposal. Otherwise the muds would be discharged by shunting as directed in the lease stipulation (Oryx, 1990).

Sanitary Wastes and Domestic Wastes - A maximum of 15,150 gallons/day of treated sanitary and domestic wastes would be discharged overboard (Oryx, 1990).

Deck Drain Waste - Deck drain waste consists of rig wash water, rain water and other substances that are washed from the floor of the rig. On a typical semi-submersible rig approximately 40 to 60 bbls-per-day of wash water would be discharged. It is anticipated that 0 to 600 gallons/day of rainwater would be discharged. Deck drain waste is treated in a sump to remove any oil and grease prior to overboard discharge (Oryx, 1990).

4. Gaseous Wastes

The EP indicates that the wells will be drilled in 100 days. Gaseous wastes generated from the proposed activity both onshore and offshore would come from helicopters, boats, and the drilling rig. Oryx proposes using a semi-submersible drilling rig. The total emissions expected at the lease site and from transportation for the life of the project are given in Table 1.

Table I-1

Gaseous Emissions

Pollutant	Projected Total Emissions (tons/well)
Total Suspended Particulates (TSP)	0.09
Sulfur Dioxides (SO_2)	5.80
Carbon Monoxide (CO)	6.70
Hydrocarbons/Volatile Organic Compounds (VOC)	1.40
Nitrogen Oxides (NO_x)	40.60

Source: Oryx's Air Quality Report (Exxon, 1988).

The basis for calculating the values for pollutants from the boat and air traffic was explained in Exxons' original DP (Exxon, 1988).

I. STATE CERTIFICATION

A shore base located in Texas is proposed; therefore, no Certificate of Coastal Zone Consistency is required for the proposed activities.

J. MEASURES FOR COMPLIANCE

No special monitoring programs, over and above those required by OCS Operating Regulations, Notices to Lessees and Operators, and applicable regulations, are required for the proposed action. These regulations provide for training of employees and the design, installation, operation, and maintenance of equipment in a manner which conserves and protects other resources or activities. Inspections are conducted regularly by MMS personnel to enforce all OCS Operating Regulations, Notices to Lessees and Operators, etc.

Compliance with OCS Operating Regulations for these wells compared to other OCS wells is not different. The OCS Operating Regulations do require pollution prevention equipment such as drip pans. Pollution control equipment and materials are available to Oryx through its membership in Clean Gulf Associates. Through Clean Gulf Associates, training sessions for familiarization with the pollution prevention and control requirements are all part of the standard procedure for compliance with the OCS Operating Regulations for any OCS well.

No special requirements for NPDES permits are involved for this block. The general NPDES permit is applicable to this block. There will be activities within the four-mile shunt zone. All drilling fluid and drill cutting discharges will be disposed of through a shunt that will end within 10 m (33 ft) of the ocean floor. Oryx will not dispose of well fluids containing free oil in the GOM. Any such fluid will be brought to shore for proper disposal. Oryx has stated its intended compliance with all applicable regulations of the MMS, USEPA, and U.S. Coast Guard (Exxon, 1988).

K. NEARBY PENDING ACTIONS

Presently in the AEA area there are several proposed actions. Oryx has an approved exploration plan in High Island Block A-380 Oryx has an approved exploration plan in Garden Banks Block 96 and an approved DOCD in High Island Block A-384. Santa Fe International has an approved exploration plan in High Island Block A-373. CNG Producing Company also has an approved exploration plan in High Island Block A-402.

II. ALTERNATIVES TO THE PROPOSED ACTION

Alternatives including approval of the proposal as originally submitted are:

Nonapproval of the Proposal - Oryx Energy Company, would not be allowed to undertake the proposed exploratory activities in High Island Area, E.A., S.E., Blocks A-378 and A-379. This alternative could prevent discovery and development of much needed hydrocarbon resources and would result in loss of royalty income for the United States. Considering this aspect and the fact that minimal impacts are anticipated, this alternative was not deemed necessary.

Approval with Existing Mitigation - Due to the location of the wells within the four-mile zone, shunting of all drill cuttings to within 10 m (33 ft) of the ocean floor is required. In addition, protective measures will be required to ensure that air traffic generated by the proposed work does not disturb the Texas Point NWR. Other measures which Oryx proposes to implement to limit pollution effects are discussed in the originally submitted Exploration Plan. Outer Continental Shelf Operating Regulations, Notices to Lessees and Operators, and Sale 122 Lease Stipulation Nos. 1 and 2 were identified throughout this assessment as existing mitigation for potential environmental impacts associated with the proposed EP.

III. DESCRIPTION OF THE AFFECTED ENVIRONMENT

A. PHYSICAL ENVIRONMENT

1. Environmental Geology and Hazards

a. General Description of Geology

The water depths in Blocks A-378 and A-379 range from 91-113 m (300-370 ft). Sediments in this block are composed primarily of mud, sandy mud (USDOI, 1986, Visual No. 4). Additional information is included in Section III. A.1.a. of the AEA.

b. Potential Geologic Hazards

Surface outcrops, fault scarps, shallow faulting, and possible shallow gas pockets are potential hazards or constraints of a local geologic nature.

Additional information is included in Section III.A.1.b of the AEA.

c. Petroleum Geology

Information on this section is included in Section III.A.1.c

of the AEA. Additional site-specific information provided by Oryx and the Lake Jackson District of MMS is considered proprietary.

2. Meteorological Conditions

Information in the following sections is included in Section III.A.2 of the AEA.

a. Temperature

b. Cloudiness and Visibility

c. Wind

d. Precipitation

e. Severe Weather

3. Physical Oceanography

Information in the following sections is included in Section III.A.3 of the AEA.

a. Sea Temperature and Salinity

b. Currents

c. Tides and Sea State

4. Water Quality

Information in this section is included in Section III.A.4 of the AEA.

5. Air Quality

Onshore - The onshore area affected by this proposed activity would include the support base area at Sabine Pass in Jefferson County, Texas. The nearest coastal area to the offshore operations is located in Galveston County, Texas. Galveston and Jefferson Counties do not meet the primary standard for O_x established by the National Ambient Air Quality Standards and is therefore classified as a nonattainment area for these pollutants. Otherwise, the counties are classified as better than national standards or cannot be classified for the criteria established by NAAQS for: TSP, SO_2, CO, and No_2. The areas are not designated as a Prevention of Significant Deterioration (Class I) Area (40 CFR 81). Additional information is included in Section III.A.5. of the AEA.

Offshore - The air quality of the offshore area is

considered better than the national standards for all air pollutants; however, due to the lack of data the area is unclassified.

B. BIOLOGICAL ENVIRONMENT

1. Coastal Habitats

Information in this section is included in Section III.B.1 of the AEA.

2. Offshore Habitats

a. Pelagic Environment

Information in this section is included in Section III.B.2.a of the AEA.

b. Benthic Environment

Information in this section is included in Section III.B.2.b of the AEA.

c. Sensitive Underwater Features

Locations A and B are within the four-mile zone of the West Flower Garden Bank. The biota and importance of the Bank are discussed in Section III.B.2.c of the AEA.

3. Endangered or Threatened Species

Information in this section is included in Section III.B.3. of the AEA.

4. Breeding Habitats and Migration Routes

Information in this section is included in Section III.B.4. of the AEA.

5. Protected Areas of Biological Concern

Information in this section is included in Section III.B.5 of the AEA.

C. SOCIOECONOMIC CONDITIONS AND CONCERNS

1. Economic and Demographic Conditions

Oryx does not propose to hire additional employees for the proposed activities in Blocks A-378 and A-379. Information in this section is included in Section III.C.1 of the AEA.

2. Land Use

Information in this section is included in Section III.C.2 of the AEA.

3. Onshore Support Facilities

Oryx's support base for the proposed activity will be in Sabine Pass, Texas (see Figure B of AEA). Oryx's support terminal includes a boat dock and a helicopter base (Oryx, 1990).

4. Public Opinion

A public hearing was held concerning the proposed OCS Oil and Gas Lease Sale No. 105, which included High Island Blocks A-378 and A-379. Concerns from the public were addressed in the EIS for this lease sale.

5. Navigation

High Island Area, E.A., S.E., Blocks A-378 and A-379 are located approximately 11 miles north of a shipping fairway. Additional information is included in Section III.C.5. of the AEA.

6. Military Warning/Use Areas

High Island Area, E.A., S.E., Blocks A-378 and A-379 are not located within a designated military warning or use area. Boat and air traffic associated with the proposed plan is not expected to enter any military areas. Additional information is included in Section III.C.6 of the AEA.

7. Commercial Fishing

Information in this section is included in Section III.C.7 of the AEA.

8. Recreation

Information in this section is included in Section III.C.8 of the AEA.

9. Cultural Resources

Information in this section is included in Section III.C.9 of the AEA.

10. Other Commercial Uses

Information in this section is included in Section III.C.10 of the AEA.

11. Other Mineral Uses

Information in this section is included in Section III.C.11 of the AEA.

12. Pipelines and Cables

The proposed wells would not be within 500 feet of any existing pipeline. Since the proposed operations are exploratory, there would be no pipelines constructed as a result of this activity. Additional information is included in Section III.C.12 of the AEA.

13. Ocean Dumping

Information in this section is included in Section III.C.13 of the AEA.

IV. ENVIRONMENTAL CONSEQUENCES

A. ACCIDENTAL HYDROCARBON DISCHARGES

1. Oil Spill Accidents

A complete discussion of the causes of both major and minor oil spills resulting from exploration activity in the Gulf of Mexico is included in Section IV.A.1. of the AEA.

2. Vulnerability of Coastal Land Segments to Oil Spills

A Summary of the trajectory analysis (for 10 days) simulated as a part of the Oil Spill Risk Analysis is presented in Table IV-3 of the AEA. Refer to Section IV.A.2. of the AEA for background information concerning these hypothetical oil spill trajectories. High Island Area, E.A., S.E., Blocks A-378 and A-379 fall within oil spill Area 29 (see Figure A of the AEA). An oil spill occurring within this area has a 3% chance of contacting Galveston and Chambers Counties, Texas, and a 1.1% chance of contacting Jefferson County, Texas (Figure B of the AEA), within ten days. Impacts from an oil spill occurring in this oil spill area are discussed in the AEA. An oil spill in Area 29 would have a 34% chance of passing over the Flower Garden Banks. Potential impacts from an accidental spill or blowout at this location are discussed in Section IV.A.3 of the AEA. Refer to Section IV.B.3.d. of the Final Regional Environmental Impact Statement (USDI, MMS, 1983b) for a discussion of the factors affecting the severity of an oil spill.

The prospect of there being an oil spill is guarded mitigated utilization of state-of-the-art drilling and blowout prevention equipment and through the use of best possible drilling practices by thoroughly trained personnel. These

safeguards would be reinforced by operators curtailment programs enforced whenever sea state and weather conditions require. In the unexpected event that an accidental oil spill should occur, Oryx would conduct an emergency response to contain and cleanup the spilled oil. General resource mobilization and response plans are outlined in Oryx's approved Oil Spill Contingency Plan for the Gulf of Mexico, along with the CGA spill plan, and in Oryx's EP (Oryx, 1990).

In summary, the risk due to the proposed activity appears small. Most spills would be naturally dispersed within 60 days. In addition, most spills would be subjected to containment and cleanup efforts. The operator is a member of CGA which has spill containment and cleaning equipment strategically located along the Gulf Coast. Details of Oryx's alert, reporting, and cleanup procedures are contained in the EP (Oryx, 1990) and Oryx's Oil Spill Contingency Plan. In addition, MMS conducts reviews of the various applications for compliance with OCS Orders, Notices to Lessees, etc. to insure safe drilling operations.

3. Assumptions about the Characteristics and Fates of an Accidental Oil or Gas Discharge at the Flower Garden Banks.

Information is included in Section IV.A.3 of the AEA.

4. Effects of Oil Spills on the Environment

Refer to Section IV.A.3. of the AEA for discussions of oil spill impacts to coastal habitats, benthic communities, endangered or threatened species, other wildlife including migratory waterfowl, commercial fishing, recreation/tourism, cultural resources, water quality, and air quality.

5. Oil Spill Containment/Cleanup Capabilities and Effectiveness

Information is included in Section IV.A.5 of the AEA and in Section I.G. of this SEA.

B. IMPACTS CONCERNING THE PHYSICAL ENVIRONMENT

1. Impacts Concerning Geology

The well locations are clear of any of the potential geologic hazards mentioned in Section III.A.1.b (Oryx, 1990).

In order to identify potential geological hazards, the available geological and geophysical data for High Island Area, E.A., S.E., Blocks A-378 and A-379 were reviewed by the Technical Assessment and Operations Support Section which resulted in a recommendation of approval (Appendix B). An MMS hazards review

Oryx's proposed work indicated that normal precautions would adequate while conducting the proposed activities.

2. Impacts Concerning Meteorology

Mitigation to be taken during hurricanes, is discussed in Section IV.B.3. of this SEA. In conditions of high winds and reduced visibility due to fog or rain, helicopter traffic and/or boat traffic between the rig and shore base would be temporarily suspended.

Interferences due to weather conditions are expected to be short-term and infrequent, producing only an insignificant effect on the movement of supplies and personnel to and from the facilities. The effect on offshore operations should be minimal. Additional information is included in Section IV.B.2 of the AEA.

3. Impacts Concerning Physical Oceanography

Oceanographic conditions which could adversely affect the operation have been taken into consideration during the planning and designing of the proposed action. However, although drilling rigs are designed to operate in rough sea conditions, precautions would be taken by Oryx if a hurricane approached Blocks A-378 and A-379. Activities would be halted, protective measures taken, and facilities secured. No significant impacts from normal physical oceanographic conditions would be expected during the implementation of this exploration plan.

4. Impacts on Water Quality

Since water quality is expected to quickly return to normal in the area after drilling operations have been completed, no significant impacts to the water quality of the area are expected as a result of the proposed activities. As discussed in Section I.J., all discharges are required to adhere to the standards imposed by the NPDES Permit. Refer to Section IV.A. of this SEA and the corresponding section of the AEA for a discussion of oil spill impacts to water quality. Additional information is included in Section IV.A.4 of the AEA.

5. Impacts on Air Quality

Onshore - The effects of the air emissions onshore would be negligible due to the distance of the drill sites to the coast. The percent increases in ambient concentrations contributed by the onshore secondary emissions from the proposed activities would be insignificant. Additional information is included in Section IV.B.5 of the AEA and in the original Exploration Plan (Exxon, 1988).

Offshore - Data presented in Table I-1 of this SEA and in the operator's plan indicate that the total emissions expected from the proposed activities in Blocks A-378 and A-379 would be well below the calculated exemption levels, qualifying these activities for exemption from further air quality review. The site-specific air quality review conducted by MMS for the original Exploration Plan concluded that there could be no significant affect on air quality from the proposed action (Appendix B). Additional information is included in Section IV.B.1 of the EA and in the original Exploration Plan.

C. IMPACTS ON THE BIOLOGICAL ENVIRONMENT

Due to the distance of Blocks A-378 and A-379 from shore [174 km (108 mi)] and the use of an established onshore support base requiring no new construction, dredging, or filling, impacts other than those from oil spills on the area's biological environment would be insignificant. Further site- specific discussion of potential impacts to the benthos and sensitive underwater features are included under their respective headings. Refer to Section IV.A. of this SEA and the corresponding section in the AEA for a discussion of oil spill impacts to the biological environment.

1. Impacts on Coastal Habitats

Protective measures will be required to ensure that air traffic generated by the proposed work does not disturb the Texas Point NWR. No significant impact is expected on coastal habitats.

Additional information is included in Section IV.C.1 of the AEA.

2. Impacts on Offshore Habitats

a. Impacts on the Pelagic Environment.

No significant impact is expected on the Pelagic Environment

Additional information is included in Section IV.C.2.a. of the AEA.

b. Impacts on the Benthic Environment.

The impacts to the benthic environment are generally discussed in Section IV.C.2.b of the AEA. Impacts to the benthos of the Flower Garden Banks are discussed in the Impacts to Sensitive Underwater Features, Section IV.C.2.c of this SEA.

c. Impacts on Sensitive Underwater Features

The biota of the East Flower Garden Bank has been determined to be worthy of protection. MMS has attached a special lease stipulation to Leases OCS-G 8573 and 8574 in order to insure protection (Appendix A). The proposed well locations are within the four-mile zone established by the stipulation. This stipulation requires that all drill cuttings and fluids generated within the four-mile zone be disposed of by shunting them to within 10 m (33 ft) of the seafloor. Oryx has outlined its methods in the EP of complying with the stipulation regarding disposal of drill cuttings and drilling fluids by shunting (Oryx, 1990 and Exxon, 1988).

The National Research Council (1983) concluded t[illegible]ost of the drilling discharge deposition is limited to with[illegible] (3,300 ft) of the drill site. The proposed well loc[illegible] be greater than 6,599 m (21,650 ft) from the No Act[illegible] the East Flower Garden Bank. Shunting has been four[illegible] effective mitigative measure in areas near topograph[illegible] since the effluent is generally confined to depths gre[illegible] where the sensitive organisms are (Ibid). Water (and t[illegible] effluent) cannot flow from the base of the bank to the level of the living reef [USDI, MMS, (1983b)]. Oryx proposes using a semi-submersible drilling rig. Since the wells would be located over 3 mi from the No Activity Zone of the East Flower Garden Bank, no anchoring impacts are expected. Therefore, impacts to the West Flower Gardens are not expected to be significant. The Fish and Wildlife Service has reviewed the proposed activity in High Island Blocks A-378 and A-379. Their comments are included in Appendix C. A discussion of their comments is included in Section V of this SEA. Additional information in this section is included in Section IV.C.2.c of the AEA.

3. Impacts on Endangered or Threatened Species

No significant impact is expected on endangered or threatened species.

Additional information is included in Section IV.C.3 of the AEA.

4. Impacts on Breeding Habitats and Migration Routes

No significant impact is expected on breeding habitats or migration routes.

Additional information is included in Section IV.C.4 of the AEA.

5. Impacts on Protected Areas of Biological Concern

No significant impacts are expected on protected areas of biological concern.

Additional information is included in Section IV.C.5 of the AEA.

D. IMPACTS ON SOCIOECONOMIC CONDITIONS AND CONCERNS

1. Impacts to Economic and Demographic Conditions

No significant impacts are expected to economic and demographic conditions.

Information in this section is included in Section IV.D.1. of the AEA and in the original EP (Exxon, 1988).

2. Impacts on Land Use

No significant impact is expected on land use.

Information in this section is included in Section IV.D.2 of the AEA.

3. Impacts of Construction of Onshore Support Facilities

No impacts of construction of onshore support facilities can be expected since Oryx proposes using existing facilities (Oryx, 1990).

4. Impacts of Public Opinion

No significant public opposition to the planned operation has surfaced to date.

5. Impacts on Navigation

Exploratory activities in Blocks A-378 and A-379 should have a insignificant effect on shipping. The blocks lie outside of any major shipping lanes or anchorage areas in the Gulf of Mexico (USDI, MMS, '83a Visual No. 11). Marine traffic in support of the proposed activities is not expected to significantly affect shipping activities in the Cameron area, in part, because of the established support facilities already in existence and the temporary nature of the proposed activities. The impacts of the drilling rig on marine transportation (fishing and pleasure boating) could be both adverse and beneficial. Stationary structures could represent obstacles to navigation, but they also could serve as navigational aids. The operator is required to comply with U.S. Coast Guard regulations related to the safety of personnel and the display of prescribed navigational lights and

signals for the safety of navigation. Oryx is also required to obtain permits from the U.S. Army Corps of Engineers to prevent obstructions to navigation. Additional information is included in Section IV.D.5 of the AEA.

6. Impacts Concerning Military Use

No impacts to or from military use of the Gulf are expected since the drilling operations and associated traffic are not expected in any of the designed military warning areas.

7. Impacts on Commercial Fishing

Direct effects of exploratory operations on commercial fishing in Blocks A-378 and A-379 would be the removal of a limited area of seafloor from use and the temporary degradation of water quality at the immediate area of each drill site. Although some commercial fishing could occur within the vicinity of Blocks A-378 and A-379 no significant conflict of use is expected to develop in the area of the proposed action due to the distance from shore. Refer to Section IV.A. of this SEA and the corresponding section of the AEA for a discussion of oil spill impacts to commercial fishing. Additional information is included in Section IV.D.7 of the AEA.

8. Impacts on Recreation/Tourism

Due to the distance offshore and the temporary nature of the proposed activities, impacts to the aesthetics and recreational resources of the coastal and offshore area would be insignificant. Refer to Section IV.A. of this SEA and the corresponding section of the AEA for a discussion of oil spill impacts to recreation/tourism. Additional information is included in Section IV.D.8 of the AEA.

9. Impacts on Cultural Resources

The operator states that existing onshore support facilities would be utilized; therefore, no impacts to onshore cultural resources are anticipated. Stipulation No. 1 of Lease Sale 84 (Appendix A) provides further safeguards for the protection of presently unknown cultural resources. The operator is required to report, upon discovery of any site, structure or object of historical or archaeological significance, to the Regional Director, MMS, and to make every reasonable effort to preserve and protect that cultural resource. Additional information is included in Section IV.D.9 of the AEA.

10. Impacts on Other Commercial Uses

There are no other commercial uses in Blocks A-378 and A-379 to be affected by the exploration activity.

11. Impacts on Other Mineral Uses

There are no plans or proposals for mining other mineral resources other than oil and gas in Blocks A-378 and A-379; therefore, no conflict of use is expected.

12. Impacts Concerning Pipelines and Cables

No conflict of use is expected because the proposed wells would be greater than 500 feet from any existing pipelines in Blocks A-378 and A-379, and because pipelines cannot be proposed as a part of this exploration activity.

13. Impacts of Ocean Dumping

No conflict of use is expected because there are no existing ocean dumping areas designated in the area of the Flower Gardens. The operator has stated that compliance with the USEPA NPDES permit will be maintained. Additionally, OCS Operating Regulations require that the operator locate and retrieve any large debris lost overboard as a result of the proposed activities.

E. UNAVOIDABLE ADVERSE IMPACTS

Information in this section is included in Section IV.E of the AEA.

V. CONSULTATION AND COORDINATION

In accordance with provisions of DM 655, a copy of the plan was forwarded to the U.S. Fish and Wildlife Service. A copy was also furnished to the National Marine Fisheries Service. The comments of these agencies are included in Appendix C. No controversial issues were identified relative to Oryx's proposed activity in Blocks A-378 and A-379.

VI. BIBLIOGRAPHY

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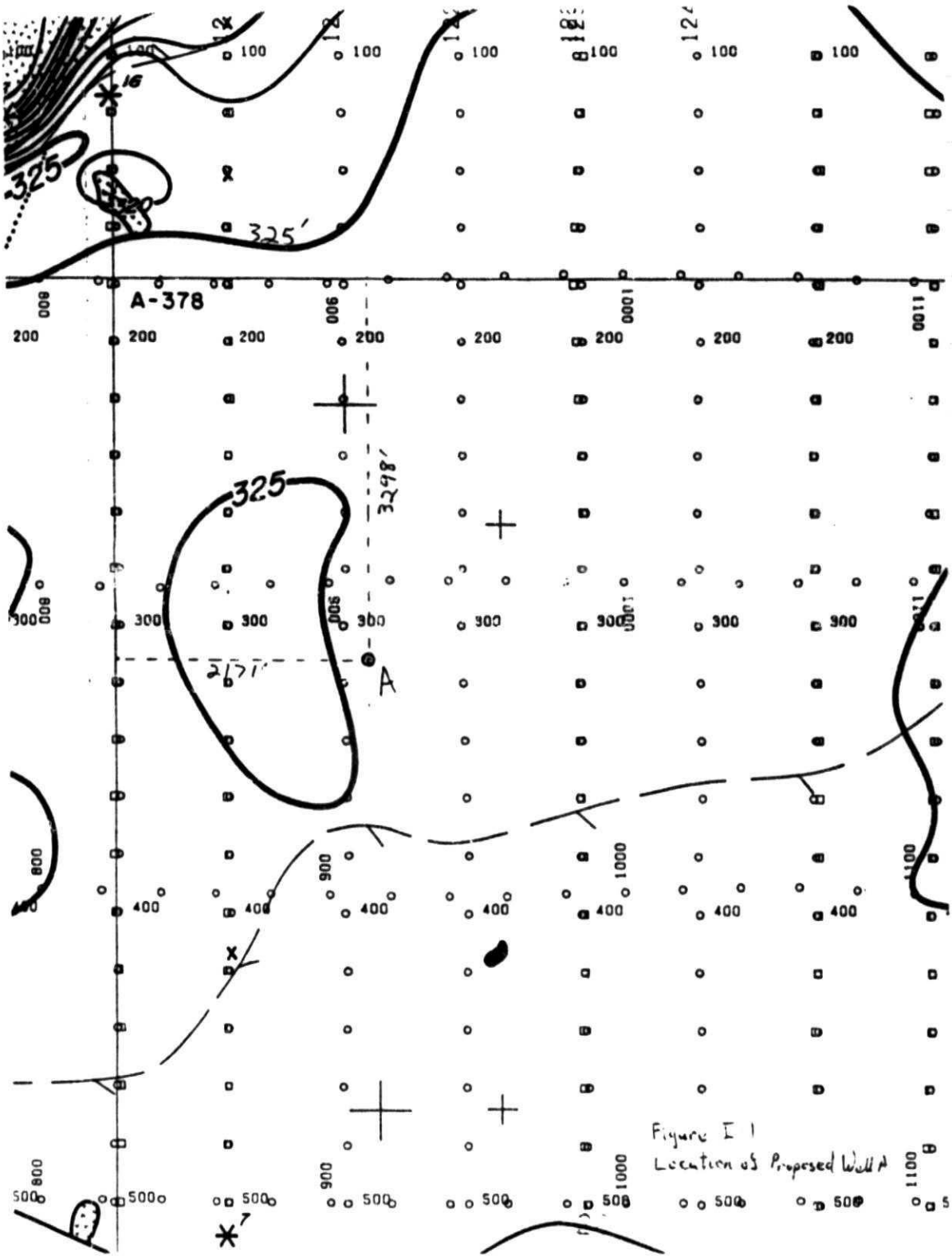


Figure I 1
Location of Proposed Well A

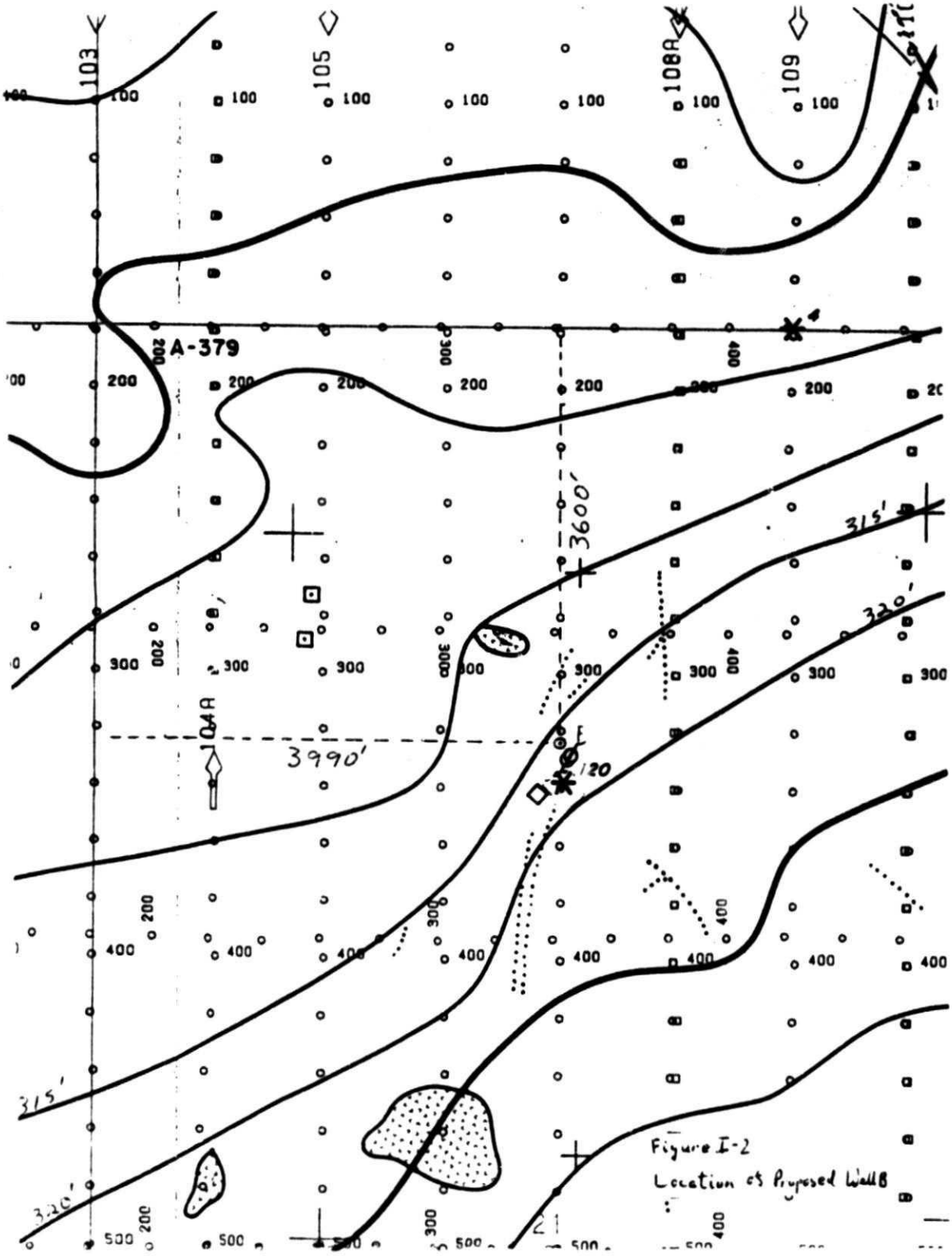


Figure I-2
Location of Proposed Wells

VII. PREPARERS

Author:

Ken Graham - Biologist

Typist:

Anne Maranto - Clerk Typist

VIII. APPENDICES

APPENDIX A - LEASE STIPULATIONS

APPENDIX B - REVIEWS FROM MMS

APPENDIX C - REVIEWS FROM OTHER AGENCIES

APPENDIX A

LEASE STIPULATIONS

UNITED STATES
DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE

OCS-G 9573

Outer Continental Shelf, Western Gulf of Mexico
Oil and Gas Lease Sale 105

Stipulation No. 1-- Protection of Archaeological Resources.

(a) "Archaeological resource" means any prehistoric or historic district, site, building, structure, or object (including shipwrecks); such term includes artifacts, records, and remains which are related to such a district, site, building, structure, or object (Section 301(5), National Historic Preservation Act, as amended, 16 U.S.C. 470w(5)). "Operations" means any drilling, mining, or construction or placement of any structure for exploration, development, or production of the lease.

(b) If the Regional Director (RD) believes an archaeological resource may exist in the lease area, the RD will notify the lessee in writing. The lessee shall then comply with subparagraphs (1) through (3).

(1) Prior to commencing any operations, the lessee shall prepare a report, as specified by the RD, to determine the potential existence of any archaeological resource that may be affected by operations. The report, prepared by an archaeologist and a geophysicist, shall be based on an assessment of data from remote-sensing surveys and of other pertinent archaeological and environmental information. The lessee shall submit this report to the RD for review.

(2) If the evidence suggests that an archaeological resource may be present, the lessee shall either:

(i) Locate the site of any operation so as not to adversely affect the area where the archaeological resource may be; or

(ii) Establish to the satisfaction of the RD that an archaeological resource does not exist or will not be adversely affected by operations. This shall be done by further archaeological investigation, conducted by an archaeologist and a geophysicist, using survey equipment and techniques deemed necessary by the RD. A report on the investigation shall be submitted to the RD for review.

(3) If the RD determines that an archaeological resource is likely to be present in the lease area and may be adversely affected by operations, the RD will notify the lessee immediately. The lessee shall take no action that may adversely affect the archaeological resource until the RD has told the lessee how to protect it.

(c) If the lessee discovers any archaeological resource while conducting operations in the lease area, the lessee shall report the discovery immediately to the RD. The lessee shall make every reasonable effort to preserve the archaeological resource until the RD has told the lessee how to protect it.

Stipulation No. 2--Protection of Topographic Features.

Bank Name	Isobath (meters)	Bank Name	Isobath (meters)
Mysterious Bank[1]	74, 76, 78, 80, 84	Coffee Lump[1]	Various
Blackfish Ridge[1]	70	West Flower Garden Bank[4]	100 (defined by 1/4, 1/4, 1/4 system)
Dream Bank[2]	78, 82	East Flower Garden Bank[4]	100 (defined by 1/4, 1/4, 1/4 system)
Southern Bank[2]	80	MacNeil Bank	82
Hospital Bank[2]	70	29 Fathom Bank	64
North Hospital Bank[2]	68	Rankin Bank	85
Aransas Bank[2]	70	Geyer Bank	85
South Baker Bank[2]	70	Elvers Bank	85
Baker Bank[2]	70	Bright Bank[3]	85
Big Dunn Bar[1]	65	McGrail Bank[3]	85
Small Dunn Bar[1]	65	Rezak Bank[3]	85
32 Fathom Bank[1]	52	Sidner Bank[3]	85
Stetson Bank	62	Parker Bank[3]	85
Claypile Bank[1]	50		
Applebaum [illegible]	85		

[1]Low Relief Banks - only paragraph (a) of the stipulation applies.
[2]Other South Texas Banks - paragraphs (a) and (b) of the stipulation apply; in addition, paragraph (c)(1) shall apply for production and development operations only.
[3]Central Gulf of Mexico bank with a portion of its "1 Mile Zone" and/or "3 Mile Zone" in the Western Gulf of Mexico.
[4]Flower Garden Banks - has a "4 Mile Zone" rather than a "3 Mile Zone"; in the "1 Mile Zone," paragraph (c)(2) of the stipulation shall apply in addition to paragraph (b); in the "4 Mile Zone," only paragraph (b) shall apply.

(a) No structures, drilling rigs, pipelines, or anchoring will be allowed within the listed isobath ("No Activity Zone") of the banks as listed above.

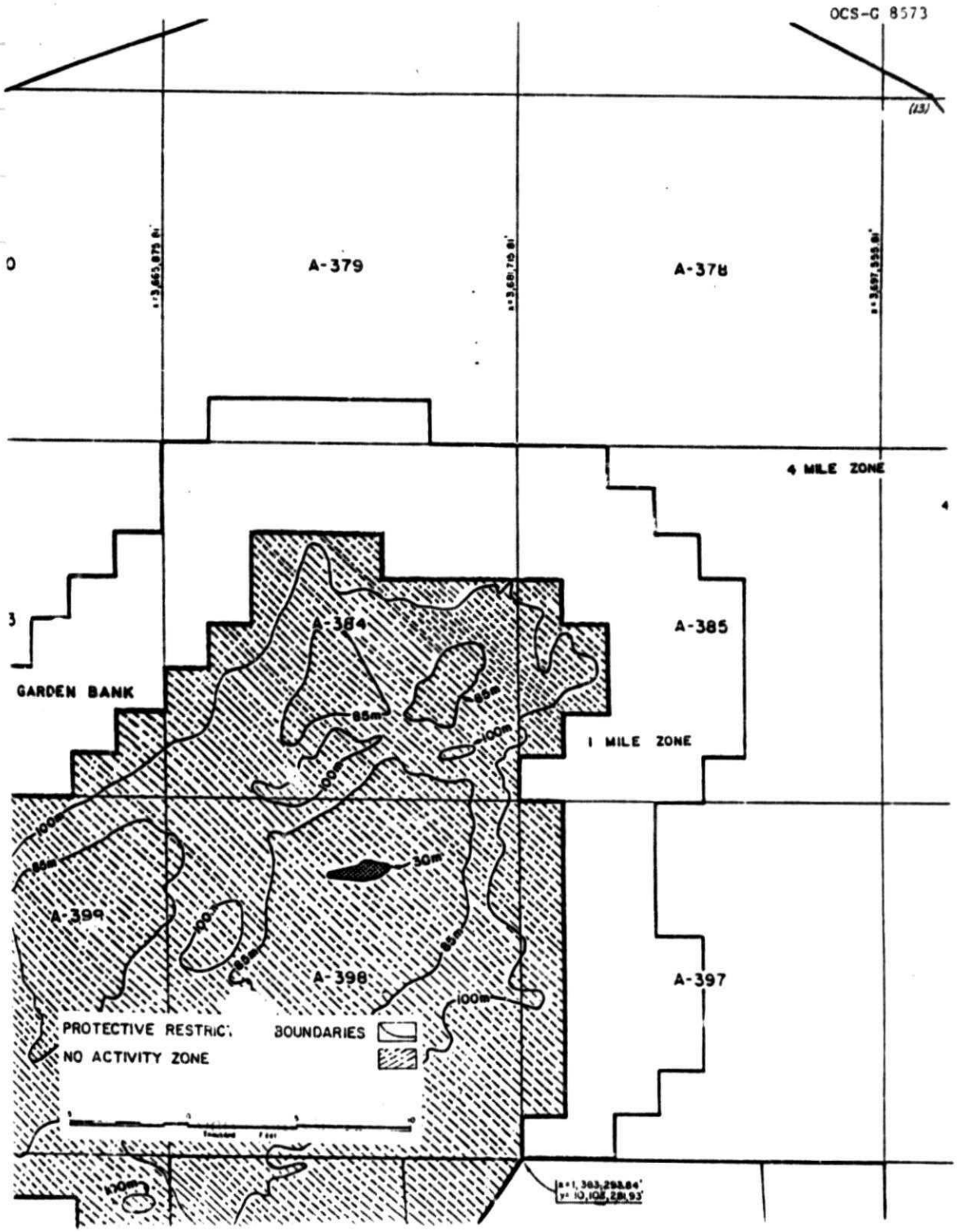
(b) Operations within the area shown as "1 Mile Zone" shall be restricted by shunting all drill cuttings and drilling fluids to the bottom through a downpipe that terminates an appropriate distance, but no more than ten meters, from the bottom.

(c) Operations within the area shown as "3 Mile Zone" shall be restricted as specified in either (1) or (2) below at the option of the lessee.

(1) All drill cuttings and drilling fluids must be disposed of by shunting the material to the bottom through a downpipe that terminates an appropriate distance, but no more than ten meters, from the bottom.

(2) The operator (lessee) shall submit a monitoring plan. The monitoring plan will be designed to assess the effects of oil and gas exploration and development operations on the biotic communities of the nearby banks.

The monitoring program shall indicate that the monitoring investigations will be conducted by qualified, independent scientific personnel and that these personnel and all required equipment will be available at the time of operations. The monitoring team will submit its findings to the Regional Director (RD) on a schedule established by the RD, or immediately in case of imminent danger to the biota of the bank resulting directly from drilling or other operations. If it is decided that surface disposal of drilling fluids or cuttings present no danger to the bank, no further monitoring of that particular well or platform will be required. If, however, the monitoring program indicates that the biota of the bank are being harmed, or if there is a great likelihood that operation of that particular well or platform may cause harm to the biota of the bank, the RD shall require shunting as specified in (1) above or other appropriate operational restrictions.


OCS-G 8573
A-379
A-378
4 MILE ZONE
A-384
A-385
GARDEN BANK
1 MILE ZONE
A-399
A-398
A-397
PROTECTIVE RESTRIC
NO ACTIVITY ZONE
BOUNDARIES

UNITED STATES
DEPARTMENT OF THE INTERIOR
MINERALS MANAGEMENT SERVICE

OCS-G 8574

Outer Continental Shelf, Western Gulf of Mexico
Oil and Gas Lease Sale 105

Stipulation No. 1-- Protection of Archaeological Resources.

(a) "Archaeological resource" means any prehistoric or historic district, site, building, structure, or object (including shipwrecks); such term includes artifacts, records, and remains which are related to such a district, site, building, structure, or object (Section 301(5), National Historic Preservation Act, as amended, 16 U.S.C. 470w(5)). "Operations" means any drilling, mining, or construction or placement of any structure for exploration, development, or production of the lease.

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		West Flower Garden Bank[4]	50
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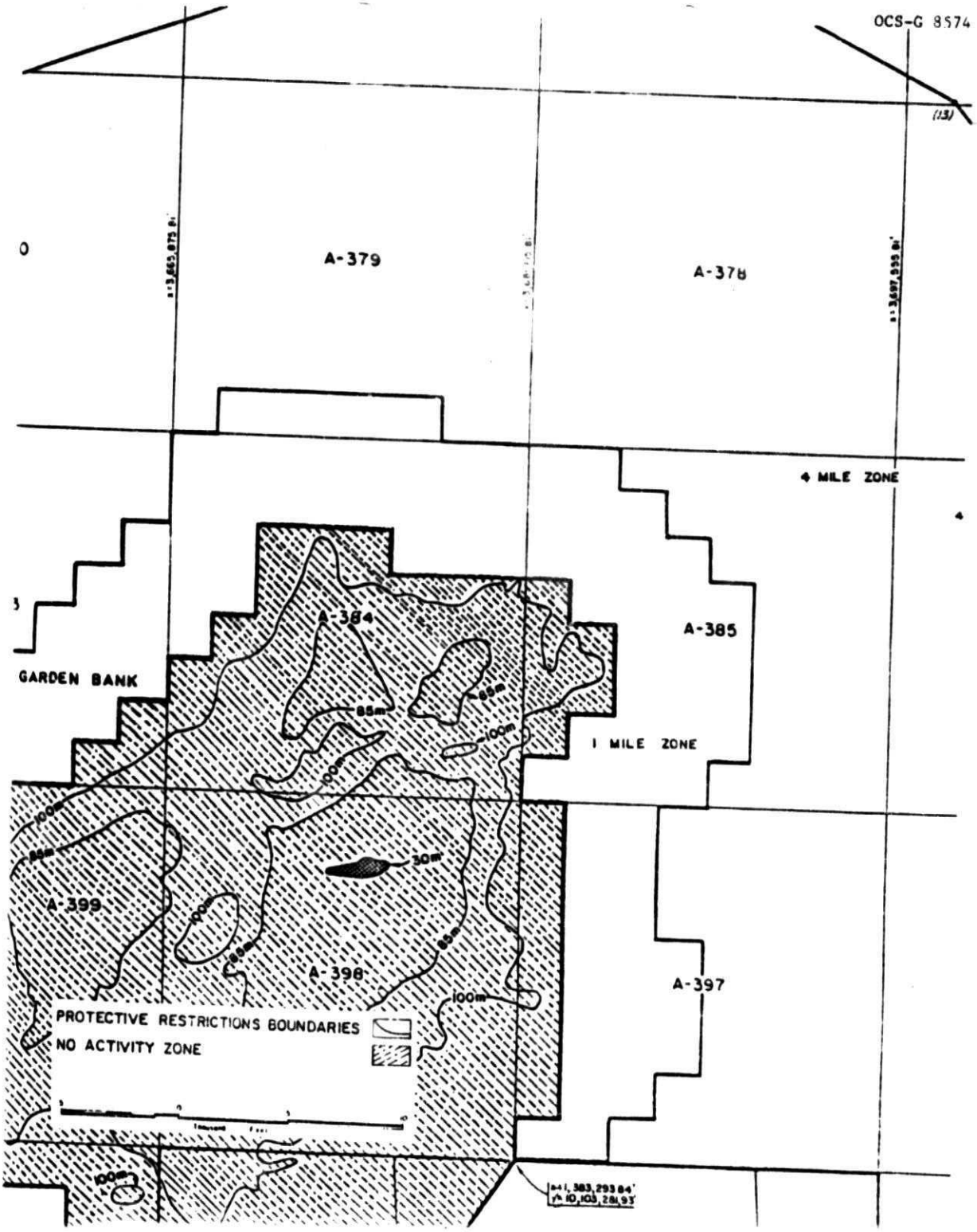
OCS-G 8574
A-379
A-378
4 MILE ZONE
A-384
A-385
GARDEN BANK
1 MILE ZONE
A-399
A-398
A-397
85m
100m
30m
PROTECTIVE RESTRICTIONS BOUNDARIES
NO ACTIVITY ZONE

APPENDIX B

REVIEWS FROM MMS

MEMORANDUM

Date: 4-31-90

To: Unit Supervisor, (MS 5231)

From: Unit Supervisor, (MS 5222)

Subject: Review of Revised POE, Oryx, Control No. R-2600
Leases OCS-G 8573 and 8574, Blocks A-378 and A-379,
respectively, High Island Area

Classification of Area per 250.67(c):

[ ] Zone(s) known to contain H2S

[ ] Zone(s) where the presence of H2S is unknown

[✓] Zone(s) where the absence of H2S has been confirmed

Recommendation/Comments:

[✓] Approval recommended. Normal precautions will be adequate while conducting activities proposed in this POE.

[ ] Approval is recommended with the following conditions: _____

_____

_____

[ ] Modification recommended as follows: _____

_____

_____

[ ] Disapproval recommended for the following reason(s): _____

_____

[ ] Comments: _____

_____ _____

Enclosed are the following reviews as per your request:

[✓] Hazards Review [✓] Geophysical [✓] Geological

Lloyd Dugas
Unit Supervisor

Enclosures

UNITED STATES GOVERNMENT
MEMORANDUM

Aug 28, 1980

To: Supervisor, Exploration/Development Plans Unit, Plans, Platform and Pipeline Section, Field Operations, Gulf of Mexico OCS Region (FO-2-1)

From: Supervisor, Platform/Pipeline Unit, Plans, Platform and Pipeline Section, Field Operations, Gulf of Mexico OCS Region (FO-2-2)

Subject: ~~Development Operations Coordination Document~~ POE for Oryx, H. Island Area, Block A-378 - A-379, Lease OCS-G 8573 + 8574

30 CFR 250.34 Control No. R-2600

Proposed Well/Platform:

	Identification and Location	Existing Pipelines Within 500 Feet
A-378	Well A - 3298' FNL & 2711' FWL	None
A-379	Well B: 3600' FNL & 3990' FWL	None

Remarks:

Frank Torres
for
Unit Supervisor

FTorres:jj:LEXITYPE Disk 7

OIL SPILL REVIEW

Company Name - Oryx

CER/EA No. - R-2600

Lease OCS-G 8573/8574

Area and Block - HI, A-325/ A-329

Primary oil spill equipment base - Galveston, TX

Response time - 19.5 hours

Trajectory analysis submitted: Yes ✓ No ___

The operator's response time/trajectory analysis is adequate
Yes ✓ No ___

Information Sources - Visuals, EIS, Staff, Plan

Comments/Recommendations None

Dennis F. Chew
Reviewer

7/6/90
Date

AIR QUALITY, BIOLOGICAL, AND CULTURAL RESOURCES REVIEW

CER/EA No. N-2968 Due Date 4/29/88 Lease OCS-G 8573 + 8574

Area and Block High Island A378 + A379

AIR QUALITY REVIEW

Onshore Base: Sabine Pass New or Revised: Yes ____ No ✓

Rig Type: SS Distance Offshore 107 mi: Exempt: Yes ✓ No ____

Information Source(s): Plan

Comments/Recommendations: No Sig Effect

E. Hendry 4-4-88

Meteorologist Date

APPENDIX C

REVIEWS FROM OTHER AGENCIES

United States Department of the Interior
Fish and Wildlife Service
DIVISION OF ECOLOGICAL SERVICES
17629 EL CAMINO REAL, SUITE 211
HOUSTON, TEXAS 77058
September 17, 1990

[redacted]

MEMORANDUM

TO: Regional Director, Attn: Field Operations (FO-2-1), Gulf of Mexico OCS Region, New Orleans, Louisiana

FROM: ACTING Field Supervisor, Ecological Services, Houston, Texas

SUBJECT: Revised POE by Oryx for Wells A and B in Blocks A-378 and A-379, High Island Area (Control No. R-2600)

We have reviewed the revised locations for which the lease stipulation for these block will apply.

We have no comments to offer.

cc:
Regional Director (FWE), FWS, Region 2, Albuquerque, NM

Southeast Regional Office
9450 Koger Boulevard
St. Petersburg, FL 33702-2432

September 19, 1990 F/SER112/TW:tw
409/766-3699

Mr. J. Rogers Pearcy, Regional Director
U.S. Department of the Interior
Minerals Management Service, FO-2-1
1201 Elmwood Park Blvd.
New Orleans, LA 70123-2394

Dear Mr. Pearcy:

The National Marine Fisheries Service has reviewed the Revised Plan of Exploration prepared by Oryx Energy Company for Leases OCS-G 8573 and 8574, Blocks A-378 and A-379, High Island Area (Control No.R-2600).

The original Plan of Exploration (POE) for leases OCS-G 8573 and 8574, EHI A-378/379 was submitted by Exxon Company, U.S.A. and approved by Minerals Management Service in 1988. Oryx is now in the process of becoming the operator of these leases, and agrees to abide by the conditions of the approved POE. The revised plans received by our agency state "Lease Stipulations were discussed in the original POE."

Therefore, the NMFS has no changes to recommend on the subject plan of exploration as long as the "3-Mile Zone" stipulation, involving the shunting of all drill solids and liquids to within 10 meters of the bottom, as defined in Sect. C, (1) of the lease stipulations listed in recent Environmental Impact Statements for Western Gulf of Mexico OCS lease sales, will be adhered to.

Thank you for the opportunity to provide these comments.

Sincerely yours,

Russell E. Dennstedt

Andreas Mager, Jr.
Assistant Regional Director
Habitat Conservation Division