OCS-G 3215, 3723

(FO-2-3)

SEP 13 1978

Federal Programs Office
Office of Coastal Zone Management
3000 White Haven Street
Washington, D. C. 20235

Gentlemen:

In accordance with 30 CFR 250.34-1(b)(2), revised January 27, 1978, enclosed is a copy of a proposed Exploration Plan and its accompanying Environmental Report submitted by Atlantic Richfield Company, for leases OCS-G 3215 and OCS-G 3723, Blocks 948 and 956, North Padre Island Area, Control No. G-0091.

Sincerely yours,

(Orig. Sgd.) JACK HENDRICKS

D. W. Solanas
Oil and Gas Supervisor
Field Operations
Gulf of Mexico Area

Enclosure

cc: OCS-G 3215
OCS-G 3723
CM-2-4 w/enclosure

AAlvarado:nhn:9/12/78

ATLANTIC RICHFIELD COMPANY

EXPLORATION PLAN

FOR

NORTH PADRE ISLAND BLOCKS 948, 955, 956, 967 and 968

OCS G-3215, OCS G-3216, OCS G-3723, OCS G-3218, OCS G-3219

August 7, 1978

This Exploration Plan for North Padre Island Blocks 948, 955, 956 967 and 968 was prepared to fulfill the requirements of 30 CFR 250.34-1 published January 27, 1978, OCS Orders 2 and 7, Notice to Lessees 75-3, 75-8 and Secretarial Order No. 2974 revised January 19, 1977.

North Padre Island Block 948 was leased in OCS Lease Sale No. 37, May 28, 1975. Preliminary geophysical activities have been conducted and exploratory drilling of the first well will begin after approval of this Exploratory Plan and required Permit to Drill. Block 948 was one of four OCS tracts leased in 1975 on the geologic prospect. Exploratory drilling has been conducted on two of these blocks. Current seismic data indicates less than favorable structural conditions and the scheduling of a well on Block 948 is contingent upon the results of exploratory drilling on the adjacent Block 955.

A high resolution geophysical survey was conducted in October, 1976. The lease stipulation for a cultural resource was satisfied by an archeological report dated March 9, 1977. There are no magnetic anomalies or any identifiable archeological features seen in the survey data.

The geophysical survey indicates the sea floor to be very smooth with a dip from west-to-east. Water depth varies from 125 feet at the west boundary line to 140 feet at the east boundary line. The sparker data indicates two north-south trending fault systems in the block; one with a down to the west dip and a down to the east relief fault. These faults terminate and are not seen in the upper 80 to 120 ft. of sediments. There are two areas of amplitude anomalies associated with the faults at approximately 1740 and 1800 feet below sea level. These should not present a serious drilling problem as these levels are below the conductor casing setting depth and pore pressure is considered normal.

A Structure Map showing proposed bottom hole locations is submitted. The Geologic Discussion will include all blocks. These should be considered confidential information under the Freedom of Information Act.

Also submitted is a plat showing the proposed surface locations as if all wells were to be drilled as vertical wells. It may be desired to drill a deviated well from a different surface location to some of these bottom hole locations in order to reach targets at different depths. In view of this need for flexibility and the bottom conditions discussed above, it is requested that the entire bottom area of North Padre Island Block 948 be reviewed under the procedures of Secretarial Order No. 2974 for any specific areas which should be avoided in exploratory drilling and the remainder of the block be cleared for drilling operations.

North Padre Island Block 955 was leased in OCS Lease Sale No. 37, May 28, 1975. An Exploratory Drilling Plan was approved December 21, 1976. A Permit to Drill Well No. 1 has been approved and this well is now scheduled for drilling in March, 1979. No revisions are proposed at this time and; therefore a Subsurface Map with well locations is not being submitted.

A geologic survey to fulfill the lease archeological stipulation was conducted in November, 1976. The survey showed the water bottom to be flat and almost featureless with a dip to the east-southeast. The average water depth was 120 feet. A major north-south fault is the only significant feature of the survey. This fault terminates from 150 to 60 feet from the surface of the seafloor. The upper 60 to 75 feet of sediments are well defined with continuous flat bedding planes. There is no near surface gas or "bright spots" associated with the fault from the sparker data. There are several random amplitude anomalies from the sparker data. There are several random amplitude anomalies from the sparker data. From their locations and lack of continuity, they are considered as having a very low probability of being caused by gas. There were no magnetic anomalies noted on this block.

North Padre Island Block 956 was leased in OCS Lease Sale No. 45, April 25, 1978. Preliminary geophysical activities have been conducted and exploratory drilling of the first well will begin after approval of this Exploration Plan and the required Permit to Drill. Drilling of Well No. 1 is now scheduled for drilling about October 1, 1978. The surface and bottom hole location for this well has not

been chosen at this time. The scheduling of a second exploratory well will depend upon the geologic information obtained from this well and rig scheduling for exploratory drilling on other OCS leases. Additional exploratory wells must be predicted upon the need to test additional geologic structures or to define productive reservoir limits. In addition to drilling wells, other exploration activities which may be conducted under this plan would be a velocity survey in a wellbore and a soil boring.

A high resolution geophysical survey was conducted in June, 1978 and the lease stipulation has been fulfilled by Supervisor's letter of July 31, 1978. There were no archeological features seen in the data. Four small magnetic anomalies were noted outside the boundary of this block. Three of these would lie in the northwest corner of Block 968 and one would lie in the west boundary of Block 955. Both of these blocks have been surveyed previously and no anomalies were noted at these locations. Because these anomalies occur at the beginning of a survey line (one 6 gamma) and at the end of a line (10, 12, 12 gammas) it is very probable that these anomalies were caused by the boat slowing down or beginning a maneuver to come about for the next line.

The geophysical survey indicates the sea floor to be very smooth with a dip from west-to-east. Water depth is about 110 feet at the west boundary line to about 120 feet at the eastern margin. The sparker data indicates a northeast-southwest trending fault terminating 160 to 200 feet below the sea floor. There are several amplitude anomalies occurring along this fault from 1000 to 2000 feet below sea level which are considered to be probable gas. The formations are normal pressure and with proper planning should prevent no serious drilling problem There is evidence of an old river channel in the northwest quarter of the block at a depth of 470 to 630 feet below sea level. The seismic data indicates the sediments in the filled channel to be more competent than the surrounding sediments.

A Structure Map showing proposed bottom hole locations is submitted. Also submitted is a plat showing the proposed surface locations as if all wells were to be drilled as vertical wells. Again it may be desirable to drill a deviated well from a different surface location. Again it is requested that the entire bottom area of North Padre Block 956 be reviewed under the procedures of Secretarial Order No. 2974 for any specific areas which should be avoided in exploratory drilling and the remainder of the block be cleared for drilling operations.

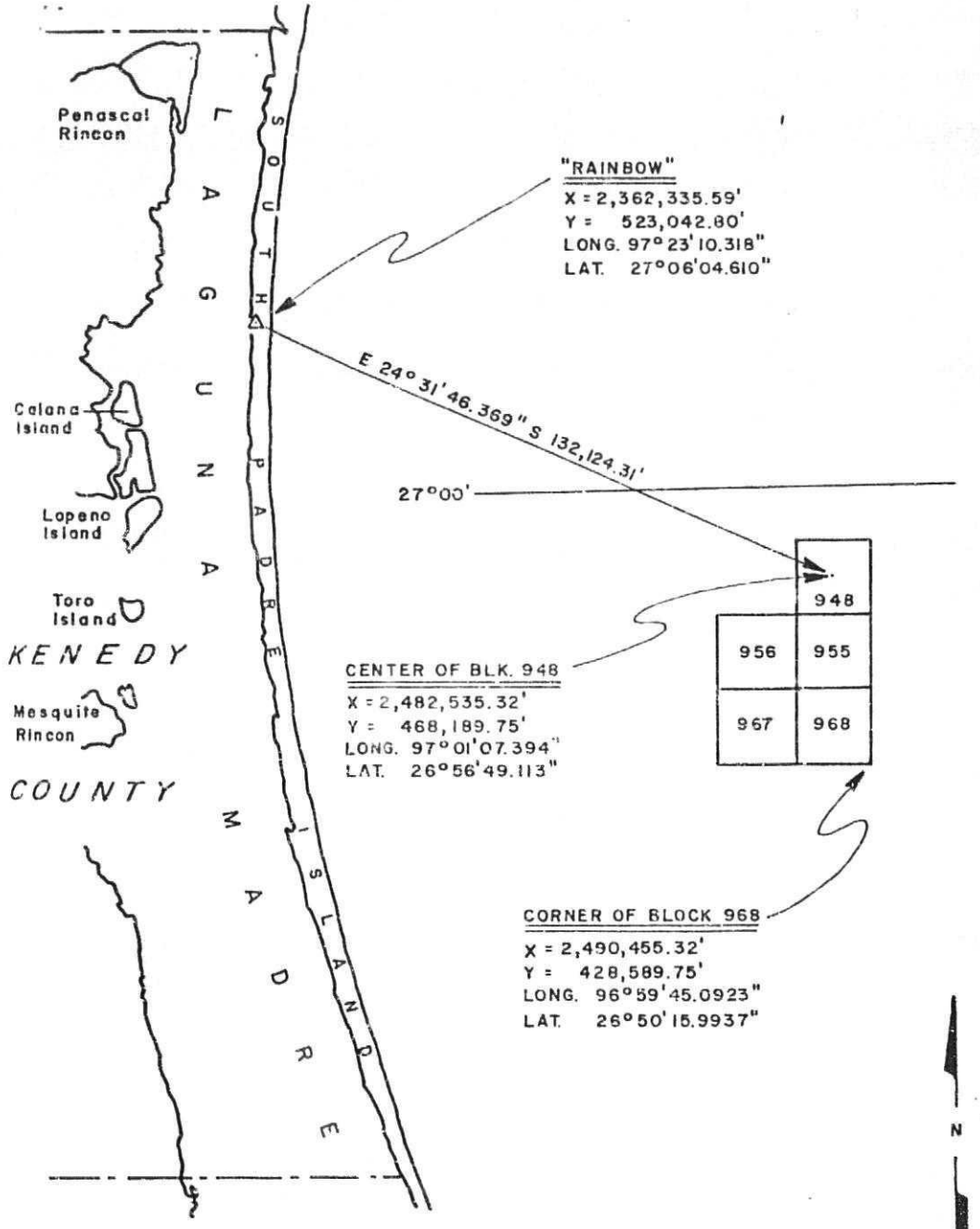
North Padre Island Block 967 was leased in OCS Lease Sale No. 37, May 28, 1975. An Exploratory Drilling Plan was submitted September 30, 1975. Wells No. 1 and No. 2 were drilled and abandoned in May and June, 1976. The geophysical survey conducted in 1975 covered approximately the eastern half of the block. In November, 1976 the remainder of the block was surveyed and the cultural resource stipulation was satisfied. The Exploratory Drilling Plan was supplemented for Well No. 3 and approved January 11, 1978. No additional well locations will be submitted at this time.

The geophysical surveys on Block 967 indicate a very uniform smooth bottom which dips from a depth of about 109 feet at the west boundary to 120 feet at the east boundary. Again the regional fault trend terminates about 150 feet below the sea floor. There is one small area of possible gas associated with the fault at about 775 feet below sea level (655 feet below mudline). This area has and can be avoided in exploratory drilling. The sparker data indicates buried channeling between 250 feet and 600 feet below the sea floor. Two possible magnetic anomalies were noted in the survey and these will be avoided in all planned activities.

North Padre Island Block 968 was leased in OCS Lease Sale No. 37, May 28, 1975. An Exploratory Drilling Plan was submitted September 30, 1975, Well No. 1 was drilled and abandoned in August, 1976. The geophysical survey conducted in 1975 covered approximately the western half of the block. In November, 1976 the remainder of the block was surveyed and the cultural resource stipulation was satisfied. The approved Exploratory Drilling Plan has two additional well locations and additional well locations will not be submitted at this time.

The sea floor for Block 968 is also very smooth and uniform with a dip from west-to-east. Water depth varies from about 120 feet at the west boundary to 136 feet at the east boundary. Here again the upper 105 to 160 feet of upper sediments are not disturbed by the regional faulting. A small area of the shallow gas noted for Block 967 extends onto Block 968. Buried channeling is not significant under this block and there were no magnetic anomalies noted from the surveys.

These five North Padre Island Area blocks are located approximately seventeen miles east of the barrier island Padre Island. A vicinity Plat is attached for reference.



ATLANTIC RICHFIELD COMPANY

VICINITY PLAT

BLOCKS 948, 955, 956, 967 & 968

NORTH PADRE ISLAND AREA

SCALE: 1" = 26,600' AUGUST 1978

EXPLORATION PLAN

NORTH PADRE ISLAND BLOCKS 948, 955, 956, 967 AND 968
OCS G-3215, OCS G-3216, OCS G-3723, OCS G-3218, OCS G-3219

EXPLORATORY DRILLING VESSEL

WITH

SAFETY AND POLLUTION PREVENTION EQUIPMENT

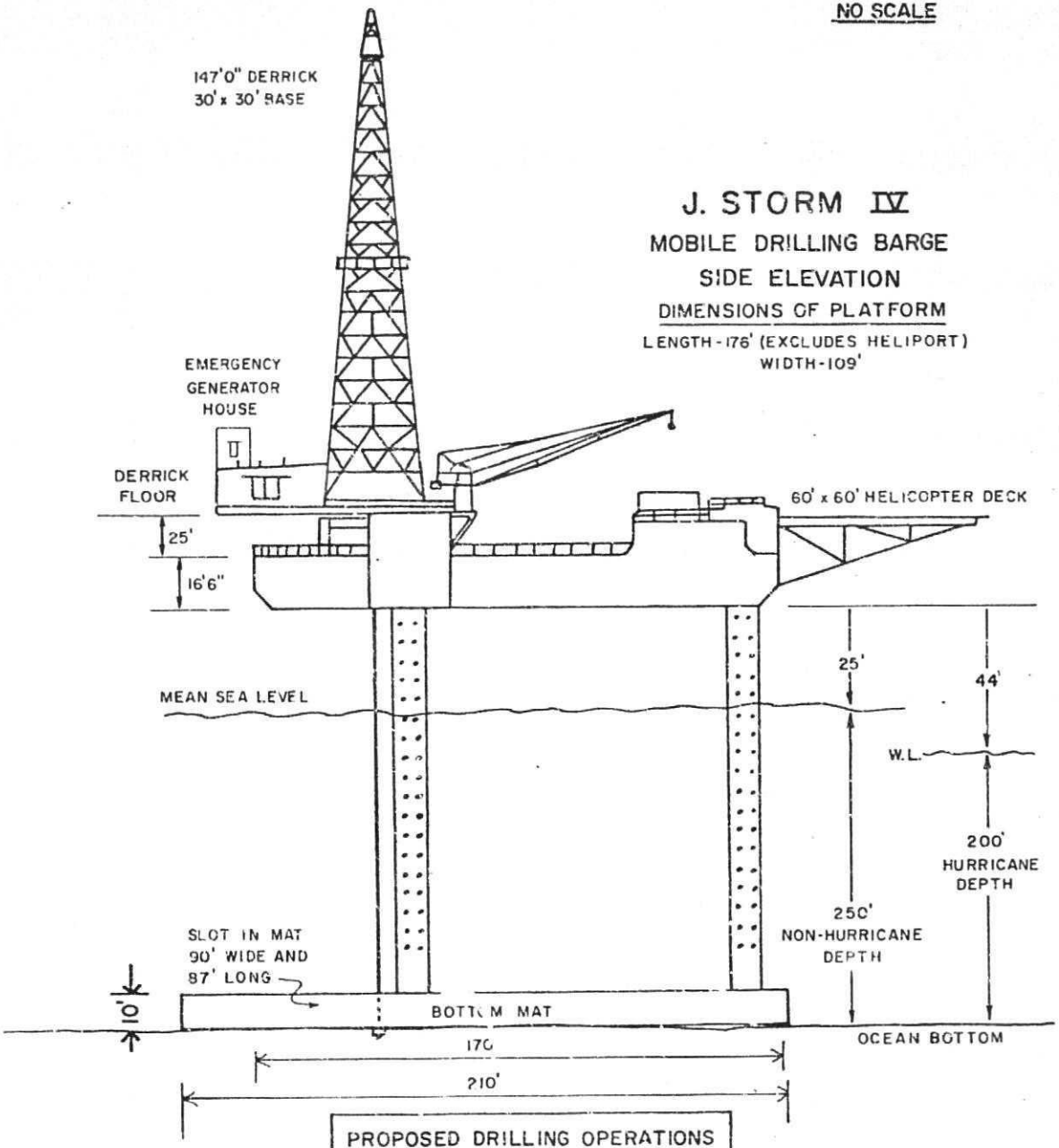
A jackup drilling rig, such as J. STORM IV, will be used to conduct exploratory drilling on our shallow water OCS leases. Attached is a schematic of this rig with a drawing of the surface diverter system for rig safety in accordance with OCS Order No. 2. A list follows of the rig's blowout preventer system for safety and pollution prevention as required by OCS Orders 2 and 7.

1 - 20" Hydril, 2000 psi WP with diverter spool.

1 - 13-5/8" Hydril G. K., 5000 psi WP.

3 - 13-5/8" Cameron Type U Ram Type, 5000 psi WP, 2 pipe rams and 1 blind ram; BOP's actuated with 2-80 gal. 3000 psi accumulators with control console at drillers station and remote located.

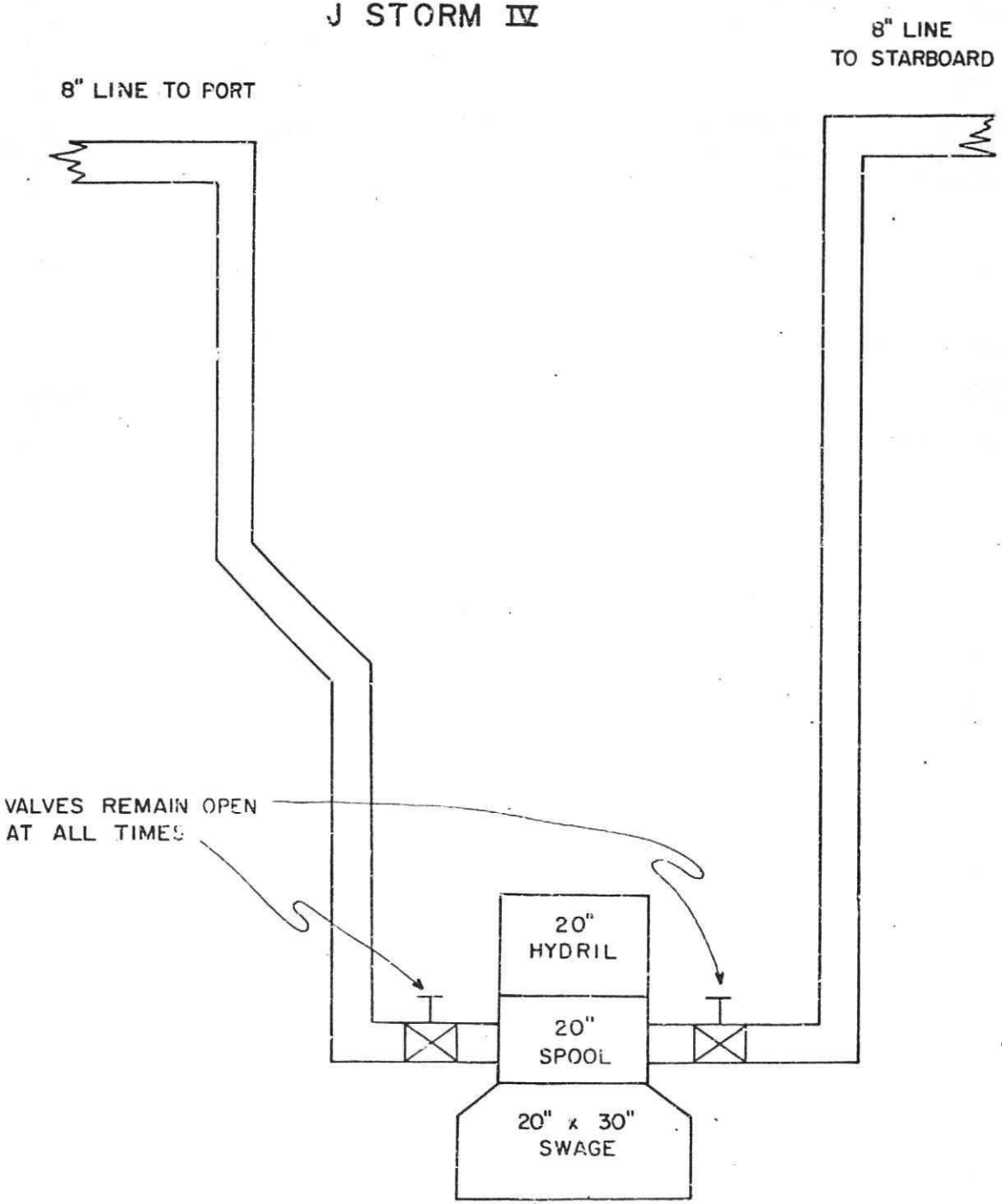
NO SCALE



PROPOSED DRILLING OPERATIONS
for
ATLANTIC RICHFIELD COMPANY
in
GULF OF MEXICO

DIVERTER ARRANGEMENT

J STORM IV



ATLANTIC RICHFIELD COMPANY
ENVIRONMENTAL REPORT FOR EXPLORATION
FOR
NORTH PADRE ISLAND BLOCKS 948, 955, 956, 967 AND 968
OCS G-3215, OCS G-3216, OCS G-3723, OCS G-3218, OCS G-3219

August 7, 1978

This Environmental Report was prepared to fulfill the requirements of 30 CFR 250.34-3 published in the Federal Register January 27, 1978.

A. Description of the Affected Ocean Area

Location - North Padre Island Blocks 948, 955, 956, 967 and 968 are contiguous blocks located approximately 17 miles east of the barrier island Padre Island and approximately 51 miles north-northeast of Port Isabel, Texas. This is in the west central portion of the Gulf of Mexico and the continental shelf is at its minimum width from shoreline to the continental slope. The slope of the shelf is very gentle in this area and water depth over the blocks varies from about 110 feet to 136 feet.

Water Currents and Quality - Currents in the Gulf of Mexico are influenced by the Loop Current in the eastern portion and by density differences and wind patterns in the western portion. The general circulation patterns of the Eastern Gulf is a clockwise Loop Current which flows in through the Yucatan Strait and out through the Florida Strait. During the summer the Loop extends far into the northern Gulf creating an easterly flow past the continental slope off the Mississippi Delta. A portion of the flow through the Yucatan Strait flows counterclockwise westward nearshore along Louisiana and turns southwesterly on the Texas shelf. Currents from the Yucatan Strait also flow west and south along the coast of Mexico and meet the currents from the Texas coast where they turn easterly back into the Gulf. This area of convergence changes from the southern Texas coast in the winter to off the Corpus Christi-Freeport area in the early summer. This shift in the location of the area of convergence is the result of several factors which include the large-scale permanent currents, the tidal currents and the wind drift currents. This latter factor has the greater influence since the shift in the location of the area of convergence northward or southward conforms with wind pattern shift which is predominantly from the southeast in the summer and from the northeast in winter. (Atlas of Pilot Charts, Publication No. 106, United States Naval Oceanographic Office)

In the area of the North Padre Island blocks, the prevailing current direction is from the south at 0.6 knots 47 percent of the time, from the southwest at 0.6 knots 16 percent of the time and from the southeast at 0.6 knots 11 percent of the time. This data is from an annual current rose approximately 39 miles southeast of the five blocks. Another annual current rose approximately 48 miles northeast of the five blocks indicates a current from the east at 0.8 knots 32 percent of the time

A. (Continued)

and from the northeast at 0.7 knots 12 percent of the time. (Graphic No. 6, Final EIS, Sale 37, BLM) This would indicate that the five blocks are in the area of convergence of the currents during much of the year with the predominant current direction near shore from either north or south curving eastward back into the Gulf. Water quality is considered to be excellent in this area. The water quality may be affected by turbidity from wave action during storm periods.

Waves and Tides - The direction of waves nearshore closely correlates with wind direction and speed. This would correspond with the predominant wind direction from the southeast and east. Along the coastline the annual average wave heights are 0.9 meters (2.96 feet) with 75 percent of all waves being smaller in height than 1.5 meters (4.9 feet). Tides in the Gulf of Mexico may be diurnal (daily) and semidiurnal (twice daily). In this area of the coast the tides will be mixed; approximately half of the time there will be one high and one low tide per day and the other half will be two high and two low tides per day. Tides in the Gulf of Mexico are weakly developed and usually do not exceed 0.7 meters (2.3 feet). (Final EIS, Sale 45, BLM)

Weather Patterns - The western extension of the Bermuda high pressure cell dominates circulation over the northern Gulf of Mexico throughout the year, weakening in winter and strengthening in the summer. The direction of the prevailing air currents in this area of the Gulf is from the southeast at 12.7 knots 30.2 percent of the time, from the south at 12.8 knots 17.7 percent of the time, from the east at 11.2 knots 17.2 percent of the time and from the northeast at 12.4 knots 12.1 percent of the time. (Visual No. 6, Final EIS, Sale 45, BLM). Ambient air quality is considered excellent at this distance from the coastline.

During summer months the general weather pattern for this area of the Gulf of Mexico is almost daily showers and thunderstorms nearshore and onshore from the moist southerly winds. During winter months polar continental air masses moving southward will generally pass this area before becoming stationary. These cold fronts are of short duration but act to lower the water temperatures of the coastal marshlands and nearshore sea. These cold water temperatures cause the formation of advective fog in the coastal areas from November to March. Average sea surface temperatures are 85°F in the summer and 64°F in the winter months. Tropical storms which can develop into hurricanes occur from June through November. These storms originate over the warm tropical waters of the central Atlantic Ocean, Caribbean Sea or southeastern Gulf of Mexico. The principal paths of tropical storms into the Gulf are through the Yucatan and Florida Straits. In the area of Corpus Christi, Texas, the average number of years between tropical cyclones is 1.8 and between hurricanes is 2.9. (Final EIS, Sale 45, BLM, II-23)

B. Description of Environmentally Sensitive or Potentially Hazardous Areas

High resolution geophysical surveys, as directed by Notice to Lessees 75-3, were conducted over these five blocks in July 1975, November, 1976 and June, 1978. Archeological Reports prepared by Mr. Jack Hudson have been submitted and there are no identifiable historical or archeological resources in the surveyed areas. No magnetometer anomalies were found in Blocks 948, 955, 956 and 968. In Block 967 one anomaly was found about 400' FWL and 1600' FSL of the block. This anomaly will be avoided in all planned activities.

The geophysical survey indicates the sea floor to be very smooth and probably consisting of clayey silt. The dip of the ocean floor is from west to east and is very gentle with water depths varying from 110 feet to 150 feet over a distance of six miles. The upper 120 to 160 feet of sediments show no disturbance from faulting; therefore, no seismic activity is anticipated. There are amplitude anomalies from sparker data associated with shallow faulting which may be caused by gas. These amplitude anomalies are limited in area and vary in depth from about 750 feet to 2000 feet below sea level. The shallow sediments are considered to be normal pressured and reasonably competent in strength and no unusual drilling problem is anticipated.

There are no holes or banks located on these blocks to attract or hold finfish, however the North Padre Island blocks are located in an important fishing ground for finfish and shellfish. The flow of water from the lakes and streams, which drain the coastal marshland and land areas, provides a source of plant nutrients along the coast of Louisiana and Texas. This source of nutrients is distributed throughout the shallower inshore waters by the nearshore currents. This supply of nutrients is of utmost importance to the production of phytoplankton, the food source of most other aquatic organisms. Other regions which are of great importance to the production of marine organisms are coastal bays, estuaries and streams under tidal influence. These regions serve as nursery grounds for large populations of juvenile fish, crustaceans and other invertebrates.

The life cycle of the shrimp is dependent upon these inshore nursery grounds. Brown, white and pink are the dominant species of shrimp in the Gulf of Mexico. All three species spawn in offshore waters from early spring to late fall at depths ranging from 90 to 240 feet, depending upon species. The larvae and juveniles are carried by currents shoreward into the nursery grounds. Here the juvenile shrimp spend about six months and grow at a rapid rate, at which time they return to the offshore waters. (Shrimp Atlas - Gulf of Mexico, U. S. Department of Interior, Bureau of Commercial Fisheries, Circular 312)

Table II-25 of the Final EIS Sale 45, lists 6.2 million pounds of brown shrimp and 0.08 million pounds of white shrimp caught during 1975 in Grid Zone 21 covering the offshore area from Brownsville, Texas to

B. (Continued)

about 70 miles north. No data is readily available for the percentage of shrimp caught in various water depth ranges.

Menhaden is the most important commercial fish, both by volume and value, caught in the Gulf of Mexico with 1,196.9 million pounds landed in 1974. Most of the commercial fish are landed and processed in plants located in Louisiana. Other commercial fishes in the order of value are red snapper, mullet, croaker, grouper, pompano, spanish mackerel, red drum, flounder, king mackerel, black drum, white seatrout, and sheepshead. Table II-28 lists the commercial fish catch for Texas in 1975 as 88.5 million pounds. Visual No. 5, Final EIS, Sale 45, indicates an average of 250,000 pounds per year of red snapper caught in Grid Zone 21. There is no data immediately available to determine how the area where the North Padre Island blocks are located contributed to the overall commercial fish catch.

Areas of particular concern to the State of Texas which might be impacted by exploration activities on these blocks must be considered as the coastline and estuarine areas which could be affected by a spill of oil. These are the Padre Island National Seashore area and the Laguna Madre estuarine area. Other than shallow cuts in the barrier island, the principal entrances to Laguna Madre are the Port Mansfield and Brownsville ship channels.

C. Description of Oil Spill Cleanup Capability

Atlantic Richfield Company has filed an Oil Spill Contingency Plan, approved December 23, 1977 by the U. S. Geological Survey, in accordance with OCS Order No. 7. This plan contains the names and telephone numbers of company personnel who will form an Emergency Response Team in the event of an oil spill. This plan contains procedures for reporting a spill and for responding to a reported spill.

Atlantic Richfield Company is a member of Clean Gulf Associates. This association provides for the purchase and maintenance of equipment and materials for use by the members in the cleanup of an oil spill. Equipment is presently stored at Venice, Grand Isle, Intercoastal City and Cameron, Louisiana, and Galveston and Freeport, Texas. Equipment available for spill removal consists of a Shallow Water Skimmer System with 40 barrel storage capacity, a Fast Response Open Sea and Bay System with two 180 barrel tanks used in skimming and storage, and a High Volume Open Sea Skimmer with 1000 barrels storage capacity. Equipment response time will vary from 8 hours to 24 hours and is dependent upon the location of Company operated work boats or the availability and location of work boats for immediate charter.

D. Requirements for Onshore Support and Storage Facilities

For exploratory drilling activities in the Western Gulf of Mexico,

D. (Continued)

Atlantic Richfield Company will lease a dock and approximately five acres of land from a commercial dock facility located at Freeport, Texas. There will be no additional land requirements as a result of exploratory drilling on these five North Padre Island Area blocks.

Should reserves of oil or gas be discovered from exploratory drilling, this would be produced and processed offshore and will not require any onshore facilities. Future production, when established, would be contracted to a purchaser who would lay a pipeline or pipelines from an existing system. There are no pipelines in the western Gulf of Mexico. An offshore gathering system in the future will depend upon the quantity of reserves found by all companies in exploratory drilling.

E. Employment Needed for Exploration Plan

Atlantic Richfield Company presently has five exploratory drilling vessels under contract. Company supervisory personnel, usually one or two persons per seven day tour, are already employed. Contract drilling personnel, from 15 to 35 persons per tour depending upon vessel type, are already employed. Company supervisory personnel, from three to five persons depending upon activity level, on the onshore facilities are already employed. They supervise various contract personnel in the trucking, transfer and loading of drilling equipment and material onto work boats for transfer to the drilling vessel. Work boats are under contract to the company, and crewmembers, from three to five persons, are employees of the charter company. Helicopters, Bell 206 and 212, are under a monthly contract and available when needed.

The drilling of exploratory wells in the North Padre Island Area will not result in the need for additional company or contract persons to be employed.

F. Transportation Routes

Support of drilling activities will be from the onshore facility located at Freeport, Texas. Travel routes for boats will be south from the Brazos River channel into the nearshore waters and then south to the North Padre Island blocks.

Helicopter routes will usually follow a straight line from the shorebase to the offshore drilling rig. The pattern and direction of flights can vary with the helicopter going to two or more rigs on a trip.

Frequency of helicopter flights is 10-12 per month. Boat trips are estimated to be eight per month.

G. Assessment of Pollution Products

The solid and liquid wastes likely to be generated by drilling and transport operations are cuttings and drilling fluid. Both of these effluents are a direct result of normal drilling operations. Cuttings are solid particles of rock brought up by the drill bit. Drilling fluids ("mud") are used to control subsurface pore pressures, lubricate the drill bit, and remove cuttings from the well during drilling. After the cuttings are brought to the surface, these particles are disposed of overboard where they settle to the sea floor. In drilling a 10,000' exploratory well, approximately 15,600 cubic feet (578 cubic yards) of cuttings will be deposited on the sea floor.

Drilling mud is attached to the cuttings when they are discharged into the water during normal operations. Mud is disposed of when its composition must be changed and at the end of operations when all the mud remaining in the system is dumped. The estimated losses during drilling operations for this well are 0.2 million pounds (630 barrels) of fresh water gel mud and 1.06 million pounds (1550 barrels) of lignosulfonate mud. Contained in this mud is approximately 0.44 million pounds of barium sulfate ($BA SO_4$), an inert non-toxic weighting material.

Gaseous pollutants are likely to be generated during drilling operations by the following: engines on the drilling vessel, engines on the support vessels, and the engines on the crew boats and helicopters used to transport men and supplies to and from the drill site. In order to estimate the amount of gaseous pollutants, all travel to and from the drilling rig was assumed to originate and terminate in Freeport, Texas. This round trip distance is approximately 150 miles. As service vessels could travel to more than one drilling rig on a round trip, the pollutants contributed to this exploratory well by the above treatment should be a maximum. Based on emission factors taken from the EPA report #AP-42, "Compilation of Air Pollutant Emission Factors", the pollutants generated by drilling and associated operations are estimated at 15.9 tons of carbon monoxides, 102 tons of hydrocarbons and 91.4 tons of nitrogen oxides. The emissions calculations were based on 60 days as the period of time needed to drill and abandon the well. The frequency of boat trips and helicopter flights used were the same as those previously mentioned in this report.

H. Assessment of Material and Energy Requirements

It is estimated that the drilling of a 10,000' exploratory well on North Padre Island Block 956 will require 300' of 36 inch pipe, 800' of 20 inch casing, 3500' of 13 3/8" casing, 9700' of 9 5/8" casing and 6000 sacks of special cement. Food, fresh water and laundry service will be furnished for some 25-30 men for a period of 60 days. Service companies will provide men and equipment for the directional control, logging, running and cementing of casing for the well. An estimated 102,000 gallons of diesel fuel will be required to generate electricity for the drilling activities and support facilities. The furnishing of

H. (Continued)

these major supplies, equipment, goods, service and energy are a well established part of the business economy of Texas and Louisiana. The utilization or non-utilization of these materials should not significantly impact the economy of the States. The utilization of these materials should not significantly impact the supply of materials available in the States.

I. Assessment of Environmental Impact

During the exploration phase, the following potential causes pose the greatest threat to the marine and related coastal environment: drilling and support operations, drilling muds and cuttings and well blowout.

Support operations would include transportation of material and equipment by workboat and personnel by crewboat and helicopter. A potential spill of diesel fuel during loading operations onshore would impact the fresh water quality of the Brazos River of Texas. A spill during transfer at the rig would impact the open water of the Gulf of Mexico. The more volatile and toxic hydrocarbon compounds would dissipate into the atmosphere within the first 24 to 48 hours. The remaining hydrocarbons would either be recovered or dispersed into the water column. The effect on water quality cannot be predicted at this time but the effect is considered to be short term. All boats under contract by Atlantic Richfield purchase diesel fuel from a public fuel transfer facility which is regulated and inspected by the United States Coast Guard. These regulations require that the fuel transfer facility provide a spill control and clean-up capability.

The operation of boats and helicopters burning diesel and jet fuel will contribute to air emissions both onshore and offshore. The estimated quantities of emissions were calculated in Section G. The significant cumulative effect of onshore and nearshore exhaust emissions cannot be predicted. The offshore exhaust emissions would be dispersed by the prevailing winds and rapidly diluted.

An estimate of quantities of drilling fluids and cuttings was calculated in Section G. The disposal of drilling fluids and cuttings will create a turbidity plume and a pile of cuttings on the ocean bottom. The turbidity that results from the discharge of drilling fluids and cuttings is localized and its persistency is short. Thus, there would be no severe water quality degradation problems resulting from turbidity. Chemical compounds and toxic materials contained in the mud are expected to be rapidly dispersed and diluted to innocuous levels.

The blowout of a well during exploratory drilling could result in the flow of oil or gas to the water surface and atmosphere. There is a low probability that oil will be discovered in this geologic area. A gas well blowout will cause little or no environmental damage because the gas will either burn or dissipate into the atmosphere (Section III-7,

I. (Continued)

Final EIS, Sale 45, BLM). In the event of a large spill, the expected path toward land would be north-northwest as a result of the prevailing winds and currents. However, at this distance from the coastline a spill would probably disperse into the water column before reaching the coastline. The probable fate of a spill is that the diluting effects of large volumes of Gulf water and microbial degradation of the hydrocarbons will act to reduce the deleterious effects over time. Judging from past experience in the Gulf of Mexico, oil and gas operations on the OCS do not have a significant long term effect on water quality, although the short term effects in the immediate vicinity of operations may be quite severe (Section III-38, Final EIS, Sale 45, BLM).

North Padre Island Blocks 948, 955 and 968 are located approximately one mile west of the south-north Brownsville-Corpus Christi Shipping Safety Fairway. It is not anticipated that large tankers or cargo vessels will use any route other than the Safety Fairway in this area of the Gulf. There should be no more potential for collision with tugs, work boats, crew boats and shrimp boats from planned exploratory operations than for any of the 2000 plus structures in the Gulf of Mexico. A collision with a ship will require an unusual set of circumstances such as a ship off course, with radar inoperative, a storm or fog and possibly inattention by the helmsman. Atlantic Richfield furnishes the U. S. Coast Guard notice of intended rig moves with beginning and final locations which is then furnished to shipping interests by Notice to Mariners. The drilling vessel design lighting and derrick lighting fulfill all requirements for Aids to Navigation.

The type of drilling vessel which will be used for exploratory drilling will be a bottom mat supported jackup. This vessel will limit trawling only by the physical dimensions of the rig, i.e. no external lines or anchors. A practical limit might be a circle with a diameter of 500 feet. This amounts to 4.5 acres out of the total 5760 acres in each lease.

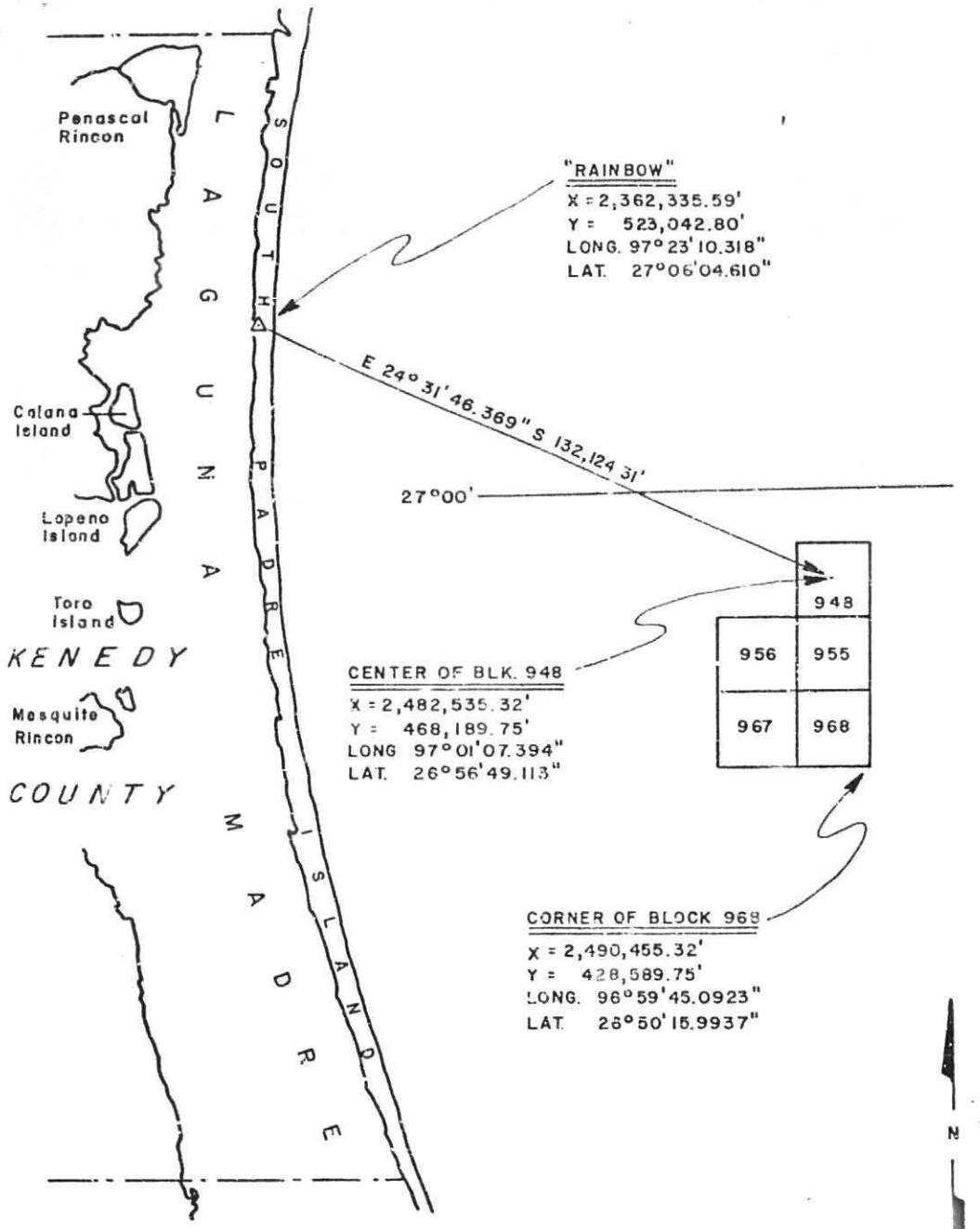
J. Consistency Certification Requirements of CZMA

No certification of consistency has been provided to the affected States as Louisiana and Texas do not have an approved coastal zone management program.

K. The following person may be contacted if there are inquiries concerning this Environmental Report (Exploration):

Telephone:
713/965-6120

James F. Templeton
Atlantic Richfield Company
P. O. Box 1346
Houston, Texas 77001



ATLANTIC RICHFIELD COMPANY

VICINITY PLAT

BLOCKS 948, 955, 956, 967 & 968

NORTH PADRE ISLAND AREA

SCALE: 1" = 26,600' AUGUST 1978

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ENVIRONMENTAL REPORT FOR EXPLORATION
OF
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SUPPLEMENT TO REPORT OF 8-7-78

B. Description of Environmentally Sensitive or Potentially Hazardous Areas

This Environmental Report is being submitted for review of the five contiguous North Padre Island OCS blocks listed above. The companion Exploration Plan notes that Exploratory Drilling Plans have been approved for Blocks 955, 967 and 968 and no additional exploratory well locations were being submitted at this time. Also, two exploratory wells have been drilled on Block 967 and one well has been drilled on Block 968. Therefore the Exploration Plan is concerned primarily with Blocks 948 and 956.

Attached are copies of the Archeological Reports for Blocks 948, 955, 956 and 968. In the survey of Block 956 in June, 1978, four small magnetic anomalies were noted outside the boundary of this block. Three of these anomalies would lie in the northwest corner of Block 968 and one would lie on the west boundary of Block 955. Both of these blocks were surveyed prior to Block 956 and no anomalies were noted at these locations. Because these anomalies occur at the beginning of a survey line (one 6 gamma) and at the end of lines (10, 12, 12 gammas) it is very probable that these anomalies were caused by the boat maneuvering to get on station or to come about for the next line.

I. Assessment of Environmental Impact

Five species of marine turtles occur in the Gulf of Mexico: loggerhead, green, Atlantic Ridley, hawksbill and leatherback. The Atlantic Ridley, hawksbill and leatherback are listed as "endangered" under the Endangered Species Act of 1973. (Final EIS, DOI, OCS Sale No. 51) The Atlantic Ridley and leatherback turtles have been recorded as nesting on Padre Island, Texas (Hildebrand, 1963). The Atlantic Ridley nest in abundance only in Tamaulipas, Mexico, with the number of nesting females declining from over 40,000 in the 1940's to about 400-500 in 1976 (FEIS, Sale No. 51). It is reported that the U. S. Fish and Wildlife Service in cooperation with the Government of Mexico will implement a program to restore nesting of turtles in the Padre Island National Seashore area. Therefore any unnatural mortality of the surviving population should be avoided.

I. Continued

As already noted in the discussion under this section, the probability is very low that oil will be discovered in this geologic area and none has been found by exploratory drilling on the subject blocks to date. Other factors which mitigate the potential for pollution to the seashore should oil be discovered and a spill occur are the distance from the coast (approximately 17 miles) and the generally north-south currents with convergence and return eastward back into the Gulf.

L. Alternative to Exploratory Drilling

The regulations under 30 CFR 250.34-3 do not specifically require this item but the Environmental Analysis Section of the U. S. Geological Survey has requested that a discussion be included in the Environmental Report. The only alternative to exploratory drilling is not to drill. This alternative is without merit and should not have to be discussed. Drilling, logging and testing are the only methods known to quantitatively determine the existence of hydrocarbons in sedimentary rocks. The need for new energy reserves should not have to be justified in this Environmental Report and Exploration Plan.