

OCT 31 1985

In Reply Refer To: RP-2-1

Chevron U.S.A. Inc.
Attention: Mr. M. R. Herrin
Post Office Box 61990
New Orleans, Louisiana 70161

Gentlemen:

Reference is made to your Initial Plan of Exploration and Environmental Report received October 17, 1985, for Lease OCS-G 7750, Block 100, Ship Shoal Area. This plan includes the activities proposed for Wells A through 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 October 31, 1985, and is now being considered for approval.

Your plan control number is N-2322 and should be referenced in your communication and correspondence concerning this plan.

Sincerely yours,

(Orig. Sgd.) A. Donald Giroir

Acting Regional Supervisor
Rules and Production

bcc: Lease OCS-G 7750 (OPS-3-2) (FILE ROOM)
/ OPS-3-4 w/Public Info. Copy of the plan and ER (PUBLIC RECORDS ROOM)
DU-6

MJTolbert:gcw:10/21/85 Disk 3C

Office of
Program Services

NOV 4 1985

Information Services
Section



Chevron U.S.A. Inc.
P. O. Box 61990, New Orleans, LA 70161

October 15, 1985

Proposed Plan of Exploration
Ship Shoal Block 100
OCS-G-7750

U. S. Department of the Interior
Minerals Management Service
P. O. Box 7944
Metairie, LA 70010-7944

MINERALS MANAGEMENT SERVICE

OCT 17 1985

Gentlemen:

RULES AND PRODUCTION

Chevron U.S.A. Inc., operator for the Ship Shoal Block 100 OCS-G-7750 lease, anticipates that as many as five wells may be necessary to delineate the hydrocarbon potential of this tract.

1. The location of the five (5) proposed wells are as follows:

<u>Well</u>	<u>Surface Location</u>
"A"	7000' FSL & 4900' FWL Ship Shoal Block 100
"B"	5600' FSL & 5000' FWL Ship Shoal Block 100
"C"	6400' FSL & ⁷⁶⁵⁰ 6750 ' FWL Ship Shoal Block 100
"D"	6700' FNL & 6800' FWL Ship Shoal Block 100
"E"	4400' FSL & 7500' FWL Ship Shoal Block 100

Noted - Tolbert

Water Depth: $\pm$ 60'

A geophysical check shot velocity survey is planned for the first well either at total depth or some lesser depth utilizing an air gun as an energy source and in-hole geophone as a receiver.

2. An archaeological survey has been field for the OCS-G-7750 lease. It has been determined that there are no magnetic anomalies or cultural resources within 500' of the proposed well locations.

PUBLIC INFORMATION

3. We plan to utilize a jack-up rig similar to the "R. N. Haskin" to drill three wells. (Specification attached)

Safety features will include well control and blowout prevention equipment at least as good as described in OCS Order 2. Appropriate life rafts, life jackets, ring bouys, etc. as prescribed by the U.S. Coast Guard, will be provided. Pollution prevention and control features will include all necessary coaming drains and holding tanks to prevent contamination of the sea, in accordance with OCS Order No. 7 "Pollution and Waste Control".

4. The first well on the OCS-G-7750 lease is currently scheduled for drilling during 1986, but could be drilled in the final quarter of 1985 if all permits are obtained.

5. Onshore Facilities

The service base for this area will be Morgan City, Louisiana. Numerous service facilities, including mud companies, pipe companies, dock space, warehouse, helipads and the like are found here. These existing facilities will be utilized and are considered adequate to handle the various jobs without any expansion or significant changes in activity levels.

6. Oil Spill Contingency Plan

Chevron U.S.A., Inc's Oil Spill Contingency Manual was approved on March 14, 1985. Chevron maintains at its own expense various types of equipment to deal with oil spills. Included are booms, large and small vessels, skimmers and the like. Additionally, Chevron is a member of Clean Gulf Associates. In the unlikely event that a spill occurs, even though it may not be originated with a Chevron operation or facility, an alert procedure is immediately instituted. Immediate notification is made to the Division Manager level and to appropriate Federal and State Agencies. At the same time, efforts are begun to stop and contain the spill and to assess what, if any, equipment will be needed.

If the spill is too large for the on-site personnel to control, Company equipment, facilities and personnel will be immediately marshalled and, if needed, Clean Gulf Associates will be called in. Chevron bases at Leeville, Bayou Boeuf (Morgan City), Cameron and Sabine Pass are on a continual standby basis with appropriate contingency responses assigned to them. Clean Gulf Associates maintains facilities and equipment at Intracoastal City.

PUBLIC INFORMATION

October 15, 1985

It is anticipated that a maximum of six (6) hours would be required to have onshore spill clean-up transported to these areas.

7. Air Emissions/Environmental Reports

The Air Emissions/Environmental reports for the drilling equipment to be used for Ship Shoal 100 are attached.

8. Consistency Statement

A Consistency Certificate pledging our compliance with Louisiana's Coastal Zone Management is attached.

Chevron U.S.A. Inc. believes that the geological structure map and schematic cross-section map submitted are exempt for disclosure under the Freedom of Information Act and should, therefore, not be made available to the public or provided to any affected state or to the executive of any local government.

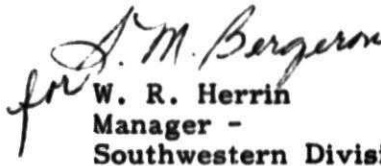
To comply with requirements of 30 CFR 250.34, the following information is attached:

Location Plat
Vicinity Map
Rig Schematic - Specification
Coastal Zone Management - Consistency Certificate
Critical Operations and Curtailment Plan
Mud Additives, Drilling Fluids, etc.
Air Emissions Report
Environmental Report

Time to complete OCS-G-7750 "A", the first well to be drill is $\pm$ 55 days.

If any additional information is required, please contact Ms. Sandy Bergeron at (504) 582-7625.

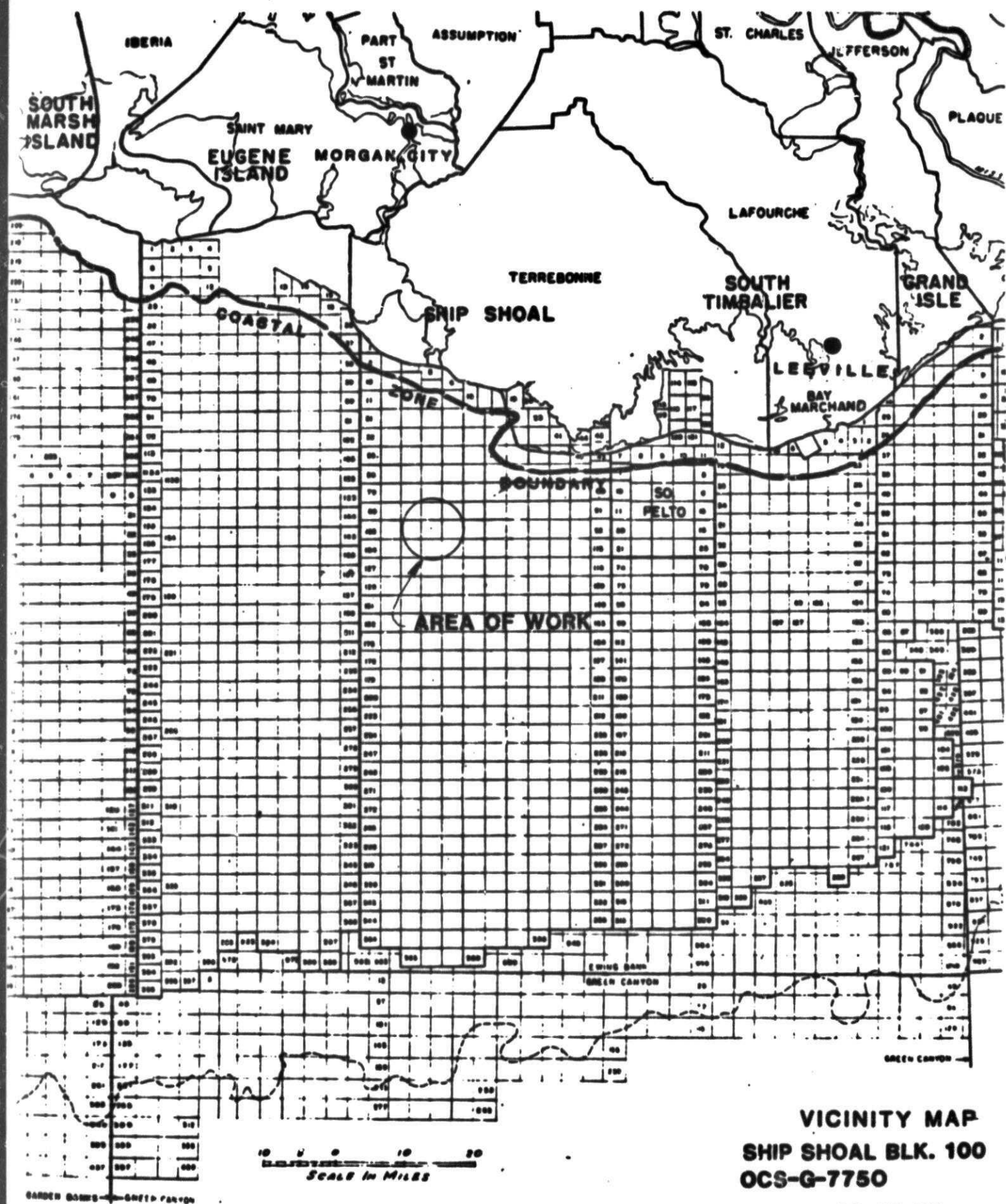
Your very truly,


W. R. Herrin
Manager -
Southwestern Division

Attachments

411/178

PUBLIC INFORMATION

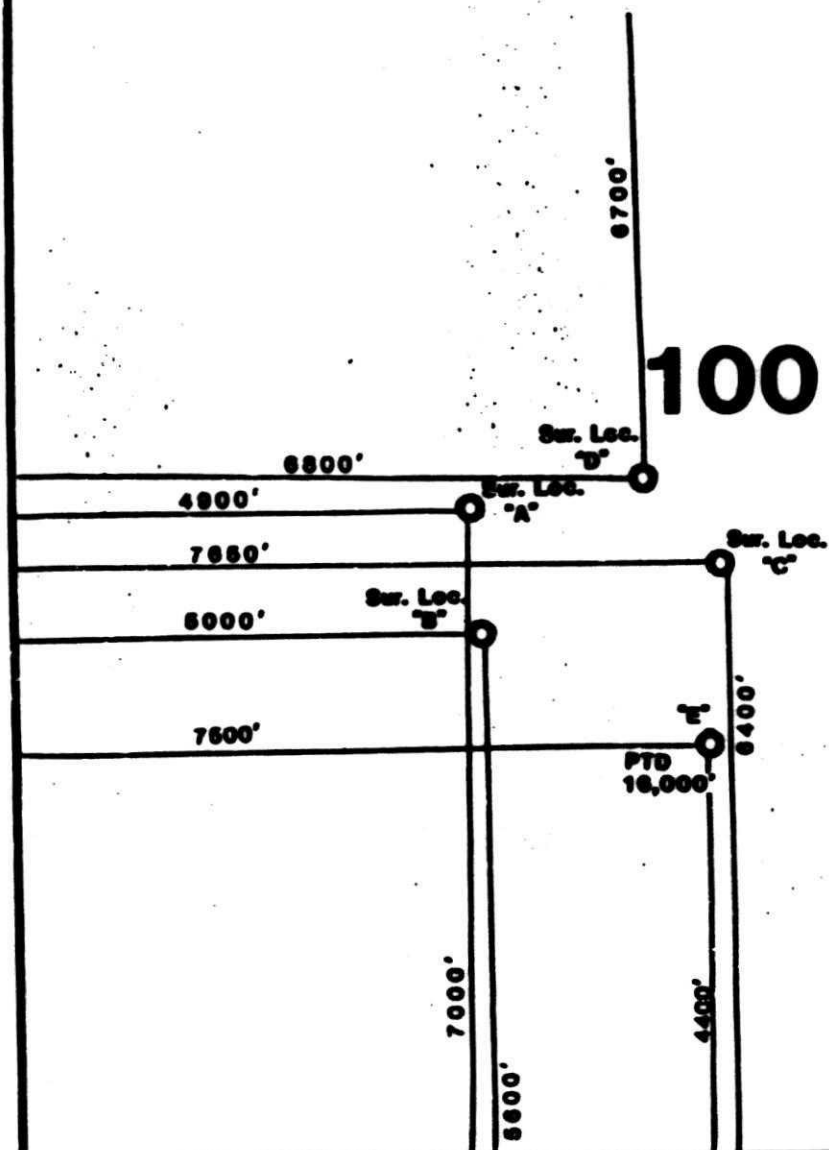


VICINITY MAP
SHIP SHOAL BLK. 100
OCS-G-7750

10-16-85

CHEVRON
OCS-7750

100



SHIP SHOAL
BLOCK 100
SURFACE PLAT

SCALE 1":2000'

DRILLING FLUID COMPOSITION

Gel, Fresh Water - Bentonite
Gel, Salt Water - Attapulgitic Clay
Barites - Barium Sulfate
Fresh Water and/or Sea Water

CHEMICALS & ADDITIVES

Aluminum Sterate
A-Z-32 - Biodegradable surfactant
Barafloc, Flocculant - Polymer
Ben-Ex, Flocculant-Polymer
Caustic Soda - Sodium Hydroxide
Chrome Lignasulfonate
 C.L.S. - Chrome Lignosulfonate
 Q-Broxin - Ferrochrome Lignosulfonate
 Spersene - Chrome Lignosulfonate
 Uni-Cal - Sodium Lignosulfonate
Lignite
 Lenox - Lignite
 Tannathin - Lignite
 Ligco - Lignite
Lime - Calcium Hydroxide
NPL-40 - Biodegradable-Surfactant
Soda Ash - Sodium Carbonate
Sodium Bicarbonate
Sodium Bichromate
Sodium Acid Pyro Phosphate (SAPP)
Carboxyl Methylcellulose (CMC)

LOST CIRCULATION MATERIAL

Mica
Walnut Shells
Cellophane Flakes
Fiber

STUCK PIPE

Diesel Oil
Pipe Lax - Surfactant Aromatic Processed Oil (Organic)
Oil Faze - Fatty Acid - Resins Emulsifiers clays
Black Magic - Air Blown Asphalt
 Chemical "W" - Rosin Acids
 Chemical "V" - Naphtenic Acid
 OB Gel - Organo - Bentonitic Clays

All liquid mud will be disposed of in compliance with EPA requirements.

**CHEVRON U.S.A. INC.
EASTERN REGION
CENTRAL DIVISION**

Critical Operations and Curtailment Plan

Personnel safety and environmental protection have highest priority when conducting any operations. Preplanning and work scheduling are made with these factors in mind.

Chevron recognizes the offshore operating hazards and the possibility of marine environment contamination. Every effort will be made to minimize the pollution possibility and to provide maximum safe working conditions for all personnel.

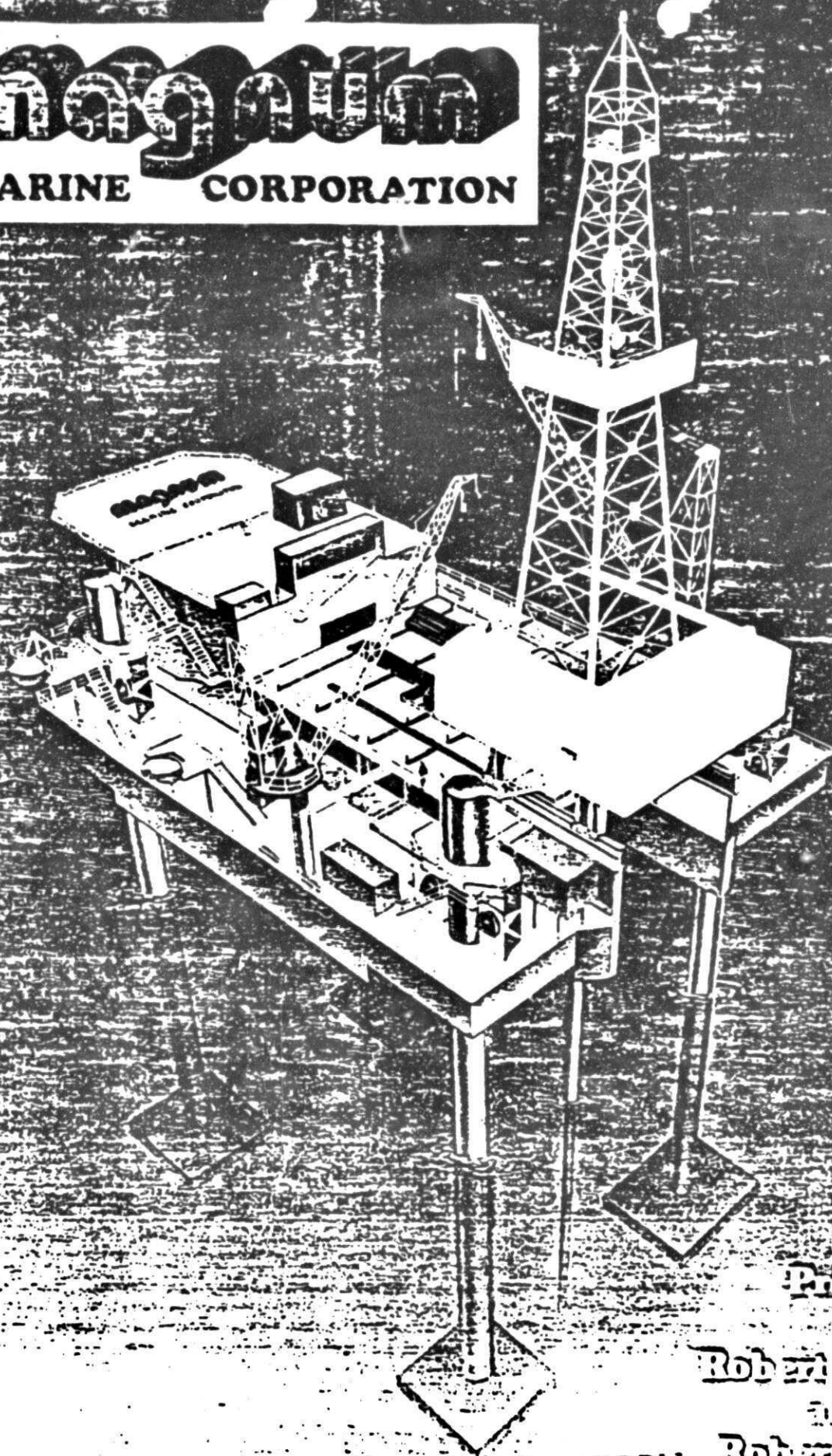
Listed below are operations which are considered to be critical.

1. Shallow Drilling Hazards - A shallow drilling hazards report will be submitted as required in Sec. 2.3 of OCS Order 2. Upon encountering shallow hazards, well will be controlled in accordance with Chevron's USGS approved "Well Control and Blowout Prevention Guide".
2. Drilling in Close Proximity to Producing Wells - Operations will be conducted as outlined in Chevron's Multiple Operations Guidelines.
3. Moving Drilling Rigs On and Off Locations in Emergencies - Floater rigs and bottom setting drilling units will be secured by use of either hurricane plugs, cement, or BOP closure, if possible, when necessary to move rig off in emergency conditions.
4. Testing of Blowout Preventors - Drilling operations will not proceed until such time as the blowout preventor stack has been completely and successfully tested in accordance with Sec. 5.7 of OCS Order #2.
5. Well Kicks - After experiencing a well kick, drilling operations shall not be continued until such time as the wellbore is stable, safely overbalanced, and properly conditioned, in accordance with Chevron's USGS approved "Well Control and Blowout Prevention Guide".
6. Running and Cementing Casing -
 - a) The well is to be carefully monitored during the last trip in the hole with drill pipe prior to running casing.
 - b) The mud weight shall be determined to be adequate to control formation pressures in hole which is to be cased off.
 - c) The well will be checked for normal hole fillup and mud displacement on trip out of hole with conditioning assembly, and while going in hole with casing.
 - d) Flow line returns will be monitored while circulating or cementing.
 - e) If a casing string sticks before reaching the desired depth and cannot be freed, plans are to cement it in place, and notify proper USGS authority.

7. Nippling Up and Nippling Down Blowout Preventors - BOPs will not be nipped down unless well is deemed to be in a safe condition. Safety of personnel is of highest priority during nipple up and nipple down operations, and use of life jackets, safety lines or nets, and adequate pick-up lines by contractor personnel will be strongly encouraged.
8. Minimum Mud Requirements at Well Site - Drilling will not proceed, when minimum amounts of mud materials or barite fall below minimum requirements of OCS Order #2, as specified on drilling program submitted with permit to drill. Greater than minimum amounts will be kept on location in most cases, and as deemed necessary by operator representative.
9. Logging and Wireline Operations - The mud weight shall be adequate to contain any exposed formations. The well will be monitored for flow during logging operations, and kept full at all times.
10. Hurricane Approach - Emergency procedures are provided for securing the well and evacuation of personnel in storm or hurricane situations.
11. Critical Welding and Burning Operations - Critical welding and burning operations will be conducted as outlined in Chevron's "Multiple Operations Guideline".
12. Drill Stem Testing and Production Testing - Drill stem testing and production testing will be performed in accordance with Chevron's "Multiple Operations Guidelines".
13. Plugging and Abandonment - The well will be plugged and abandoned in accordance with OCS Order #3. Plugging will not commence if the well is not under control. Blowout prevention equipment will not be removed prior to placement of surface plug. The OCS orders will be followed during the cutting and removal of casing and clearing the location.
14. Person In Charge - The person in charge at the site of all drilling operations for which Chevron is operator will be the Chevron operator representative. The immediate supervisor of the operator representative will be the Division Drilling Superintendent, Mr. L. C. Richie. The Division Drilling Superintendent, or his designated alternate, will be available to advise on matters concerning critical operations or curtailment of drilling operations.

magnum

MARINE CORPORATION



Presents:
the
Robert M. Womack
and the
Robert M. Womack

CCPY

"BIG FOOT" II MOBILE DRILLIN' NIT GENERAL INFORMATION

Two "Big Foot" II mobile self-elevating offshore drilling platforms designed by Baker Marine Engineers and constructed by Baker Marine Corporation.

CAPACITIES

Drill Water: 6000 bbls
Potable Water: 1140 bbls
Fuel Oil: 1954 bbls
Sack Storage: 10,000 cu. ft.
Bulk Material Storage: 6,600 cu. ft.
Liquid Mud: 1500 bbls
Pipe Rack: 700,000 lbs
Heliport: Designed for Bell 212

JACKING EQUIPMENT

Elevating Units: Baker Marine Corporation rack and pinion

RIG COMPONENTS

DERRICKS: Drecto Size 20 beam leg, galvanized bolt derrick for off-shore service 147' 11" high x 10' 11" base square x 14' 11" top square.

CROWN BLOCK: Drecto 760 ton capacity w/8-60" sheaves grooved for 1 1/2" wireline.

TRAVELING BLOCK: Gardner Denver Model 55T660 550 ton capacity, 60" diameter steel sheave grooved for 1 1/2" wireline.

HOOK: Baash Ross 500 ton return-automatic hydra hook.

SWIVEL: Gardner Denver Model SW-550 550 ton capacity with 3 1/4" fluid passage.

ROTARY TABLE: Gardner Denver Model RT-37 1/2" independently driven by D-79 electric motor.

DRAWWORKS: Drecto 2000 E double drum drawworks driven by two (2) independent electric 1000 HP DC motors.

MAIN PUMPS: Two (2) Gardner Denver PZ-11 triplex mud pumps, single acting 7 1/2" x 11" each rated 1600 input HP and each driven by two (2) independent DC electric motors.

MAIN POWER GENERATION: Three EMD MD 12E9B generator units, each rated at 1790 KW 500 volts 60 Hertz at 900 rpm.

AUXILIARY POWER: One Stewart and Stevenson model 12VGD-400 diesel generator set, rated 400 KW at 60 Hz, 3 phase, 1800 RPM and 480 volts.

AIR COMPRESSORS: Three (3) Ingersoll-Rand for H.P. air, two (2) Ingersoll-Rand for L.P. air, and one (1) Ingersoll-Rand cold start auxiliary compressor.

CRANES: Two (2) BMC 900 diesel/hydraulic with 80' booms.

SAFETY: Two (2) Whittaker 55 person totally enclosed capsules and four 25 person davit launch ladders.

FIRE FIGHTING: Six strategically located fire stations.

BLOWOUT PREVENTORS: One Shaffer 13 1/2" single ram type 10,000 psi WP BOP, one Shaffer 13 1/2" double ram type 10,000 psi WP BOP, and one Shaffer 13 1/2" 5,000 psi AF annular type BOP. Reagan 2,000 psi WP diverter system.

ACCUMULATOR: One Kocmeyer Model T202003S blowout preventor control unit.

DRILLING FLUID TREATMENT PACKAGE: One dual tandem double screen shale shaker, one desander, consisting of twelve (12) 3" cones, one desilter, consisting of ten (10) 4" cones, one jet vacuum degasser, seven (7) 6" x 8" Gardner centrifugal mud pumps to handle all mud treatment equipment plus bulk and sack mud mixing capabilities.

BULK MATERIALS: Unitized bulk system consisting of six (6) 1,100 cu. ft. pneumatic tanks complete with low pressure mixing system and controls.

QUARTERS: Complete international quarters designed to house and feed 46 Expatriots and 52 Nationals with separate galleys, day rooms, etc. Air conditioned and heated in accordance with standards set for the Gulf of Mexico.

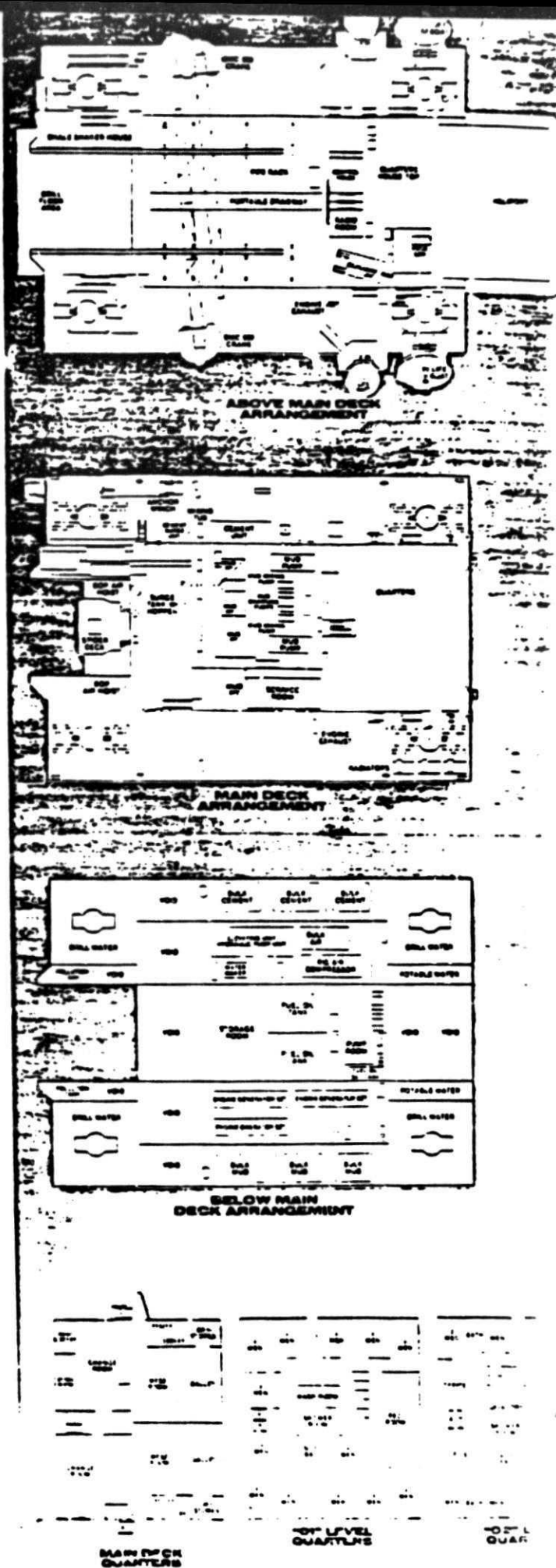
HANDLING TOOLS: Varco iron roughnecks and all appropriate tools.

CHOKE MANIFOLD: Consists of Cameron Iron Works 3 1/4" FCC gate valves with superimposed hydraulic choke.

DRILL STRING: 12,000 5" O.D. 19.50 lb Grade E IEU Range 2 seamless drill pipe with 5" x 6 1/2" O.D. x 3 1/4" I.D. extra hole tool joints and 8,000 5" O.D. 19.50 lb Grade G with 5" extra hole tool joints internally coated with IK-34 plastic coating. Dr. Collars as required. Kelly - 5 1/2" Hexagon by 43' long with 40 foot working space. Hydril - 4 1/2" x 10,000# Upper Kelly Cock. Hydril - 4 1/2" x 10,000# Lower Kelly Cock.

MISCELLANEOUS ITEMS: Single sideband radio, Martin Decker Drilling instrumentation, Grandmark Matheis 15 HP electrohydraulic measuring line unit, Varco series 6500 power sub, Air hoists on drill floor and Texas Deck.

CUSTOMER EQUIPMENT: Space will be provided for installation by the customer of additional modular equipment: Mud Logging Unit, Centrifuge, Cementing Unit, Wireline Logging Unit.

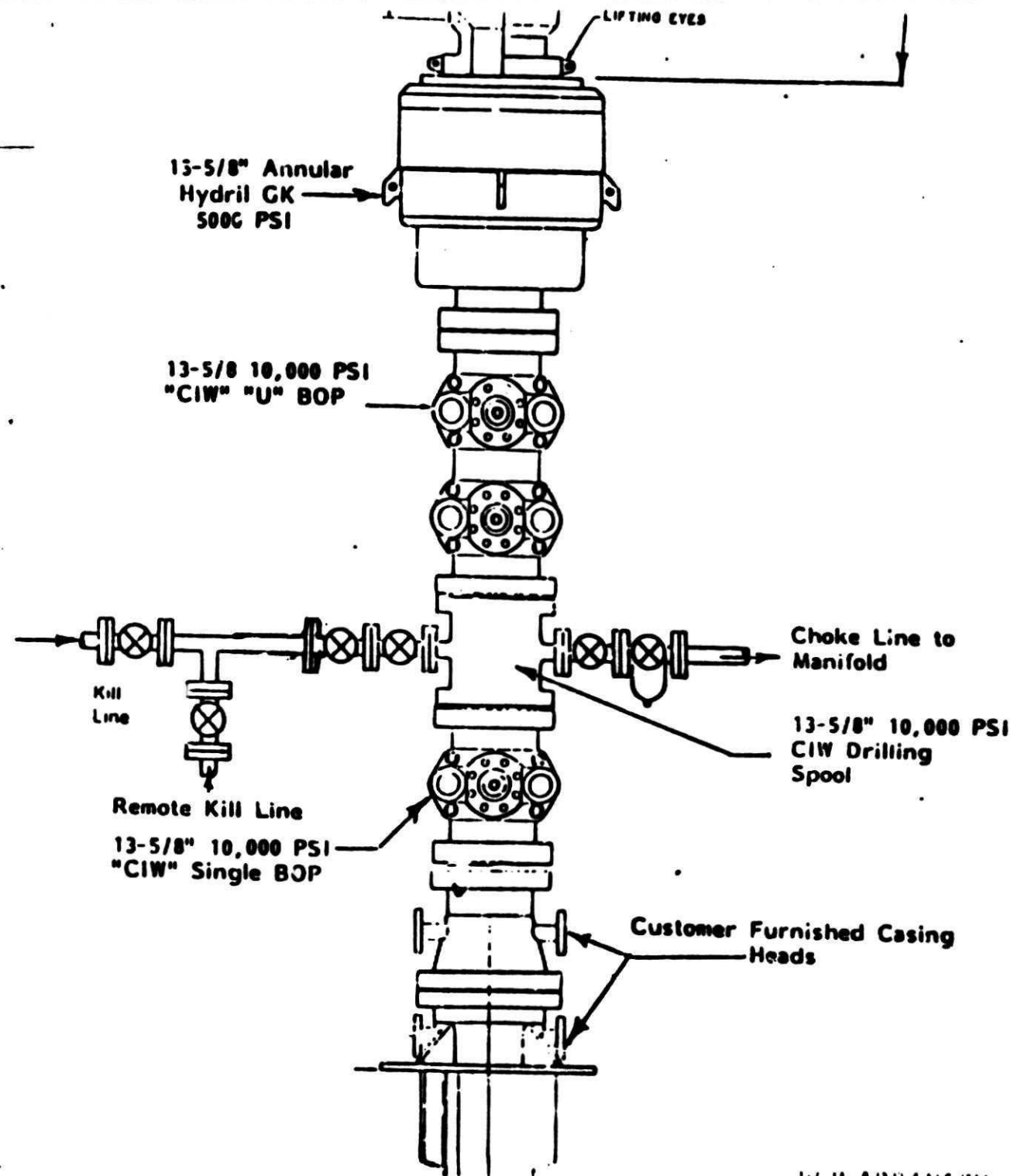


magnum

MARINE CORPORATION

L.P. TOWER SUITE 200 • CONROE, TEXAS 77301
Conroe Telephone 713-539-5000

13 5/8" Preventers



BME "BIG FOOT" III TYPE

MOBILE DRILLING UNIT

GENERAL INFORMATION

Description: Mobile Drilling Unit for 100 ft. water depth

ABS Class: A-1 Self-Elevating Mobile Drilling Unit

Design Operating Temperature: Still air: -20° C to 43° C
Still water: -20° C to 33° C

Designer: Baker Marine Engineers, Inc.

Builder: Baker Marine Corporation

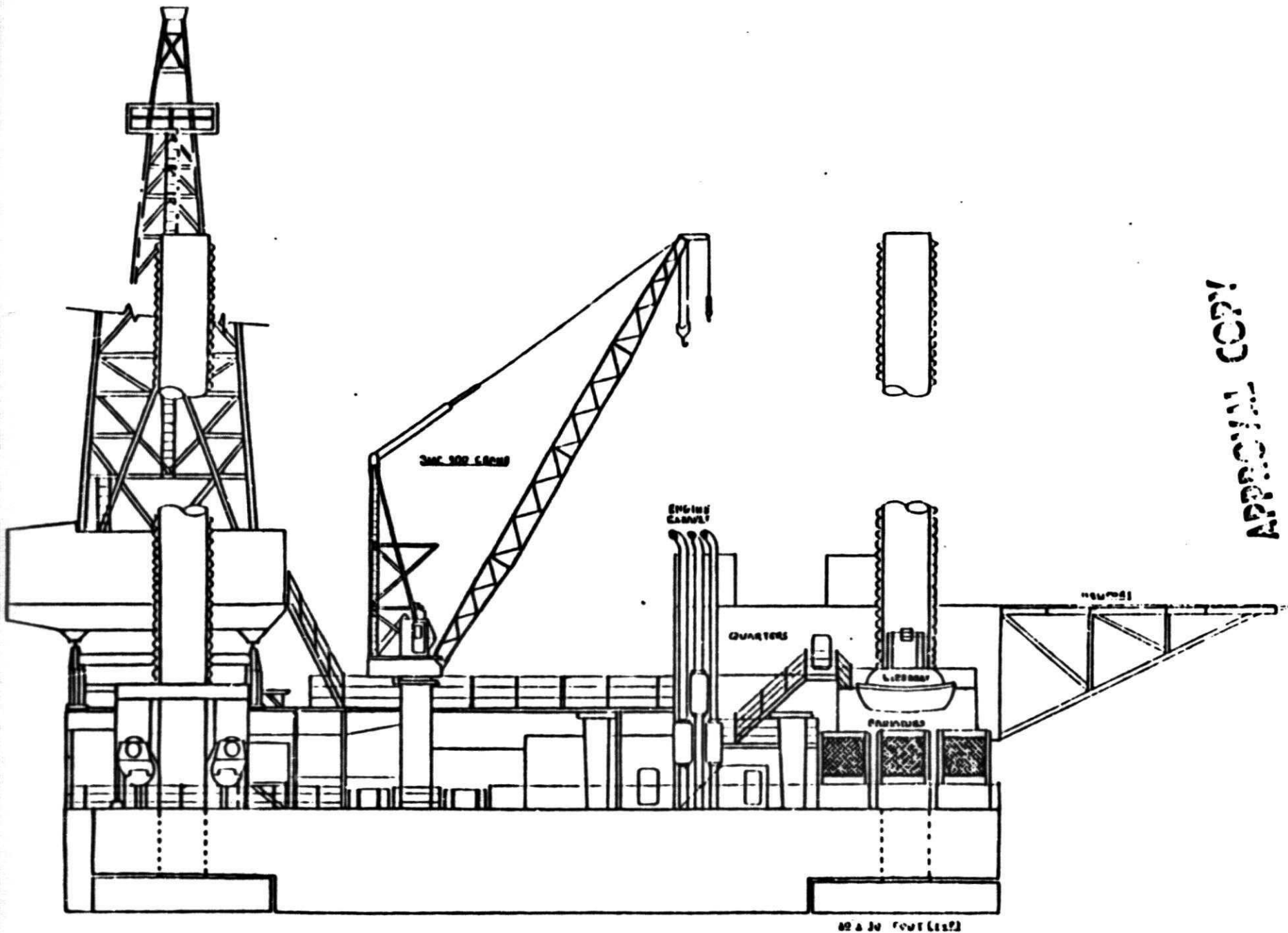
Dimensions:

Platform: 155' - 9" x 110' - 0" x 15' - 0"
Slot in platform: 35' x 3" long x 35' - 0" wide
Footings: 30' x 30' x 5'
Column: 8' - 0" OD x 173' - 0" long,
total of 4 tubular required

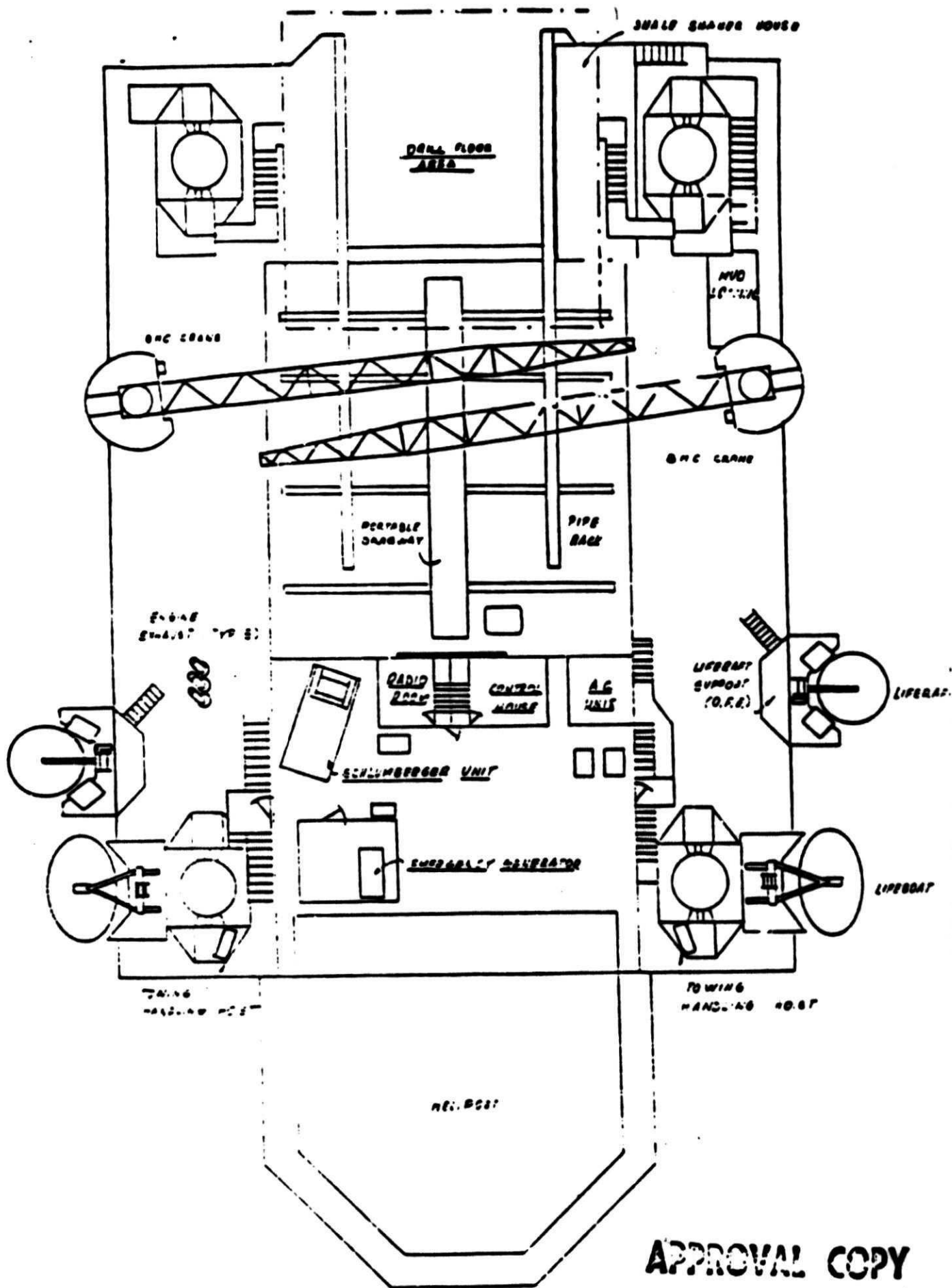
Capabilities:

Drilling water: 6,000 bbls.
Potable water: 1,140 bbls.
Fuel oil: 1,964 bbls.
Sack storage: 10,000 cu. ft.
Pollution tank (2): 280 bbls. ea.
Bulk material storage: 6,600 cu. ft.
Liquid mud: 1,500 bbls. active and reserve
Cranes: BMC 900 (30 ton) with 80 ft. bottom
Rig skidding unit: BMC electric hydraulic
Air conditioned quarters: Custom designed to meet owner's
requirements
Exposed main deck areas: 250 lb./sq. ft.
Pipe rack: 700,000 lb. uniformly loaded
Heliports: Designed for Bell 212 Helicopter

APPROVAL COPY



OUTBOARD PROFILE



ABOVE MAIN DECK ARRANGEMENT



CHEVRON U.S.A. INC.

ENVIRONMENTAL REPORT (EXPLORATION)
SHIP SHOAL BLOCK 100 (OCS-G-7750)
LESSEE/OPERATOR:
CHEVRON U.S.A. INC.

October 11, 1985

ENVIRONMENTAL MANAGEMENT SERVICE

10/11/85

ENVIRONMENTAL PROTECTION

CONTACT PERSON:

Ms. R.H. Dufour
Environment Safety, Fire & Health
Division Coordinator
Chevron U.S.A. Inc.
P.O. Box 61990
New Orleans, Louisiana 70161

Telephone: (504) 582-7605



DESCRIPTION OF THE PROPOSED ACTION

This Environmental Report addresses the proposed drilling activities related to exploration wells in Ship Shoal block 100 by Chevron U.S.A. Inc. lessee and operator. The center of the block is located approximately 56 miles south of Morgan City, Louisiana, at which is located the onshore support base for the activity. The nearest mainland shore is located approximately 24 miles northeast in Terrebonne Parish. The location of Ship Shoal block 100 in relation to the Louisiana Coastal Zone is shown in Exhibit 1. The locations of the proposed exploratory wells within the block are shown in Exhibit 2.

As stated in the exploration plan and geologic program for Ship Shoal block 100, Wells "A", "B", "C" and "D" will be drilled to 14,000' total vertical depth (TVD) and Well "E" will be drilled to 16,000' TVD. The combined vertical depth of the wells is 72,000'. It is projected to take an estimated 385 days of drilling to complete the five wells. No spud date has been set since Chevron U.S.A. will not begin drilling operations until the general National Pollutant Discharge Elimination System (NPDES) permit for the Gulf of Mexico has been issued by the EPA. The wells will be drilled from the jack-up rig "R.N. Haskin".

The onshore support base for the exploration of Ship Shoal block 100 will be Morgan City, Louisiana. No new facilities are envisioned in relation to this activity. Existing facilities are anticipated to be sufficient for all support activities. No new



workers are expected to be employed for this activity as an existing drill rig and crew will be utilized. The first socio-economic data base report will be submitted when the MMS and the states of Alabama, Louisiana, and Mississippi identify the specific parameters to be addressed in these semi-annual reports.

The surface travel route between the proposed well sites and the support base will be by the Atchafalaya River, Atchafalaya Bay navigation channel and into the Gulf of Mexico. The air route will be a straight line to Ship Shoal block 100 from Morgan City. Two surface vessels and two helicopters will normally be employed in support of this activity. One crew boat will make 4 round trips per week to the rig, while one cargo boat is expected to make seven round trips per week. One Bell #206 twin engine helicopter will make one round trip per day and one Bell #212 helicopter will make two round trips per week.

No new or unusual techniques or technology that may affect coastal waters will be used in this exploratory drilling program. Due to the wildcat nature of the drilling program, no development or production plan has been formulated at this time. At the appropriate time (after the exploratory program), a development/production plan giving the proposed means and location of gas and/or oil transportation facilities will be presented.

DESCRIPTION OF THE AFFECTED ENVIRONMENT AND IMPACTS

a. Physical and Environmental

(1) Commercial Fishing

Data presented in the Regional Environmental Impact Statement for the Gulf of Mexico show Ship Shoal block 100 to be located near a productive fishing area. The mean yearly catch returned to the Morgan City area was 374.4 million pounds (combined fin and shellfish) for the years 1977 through 1981. The major fishery in the area is menhaden (*Brevoortia patronus*). The most common sportfish caught in the area would include king mackerel (*Scomberomorus cavalla*), Spanish mackerel (*Scomberomorus maculatus*), crevalle jack (*Caranx hippos*), and wahoo (*Acanthocybium solanderi*).

Commercially important species of shrimp, the most common being brown shrimp (*Penaeus aztecus*) and white shrimp (*P. setiferus*), are taken in the vicinity of Ship Shoal block 100. Nearly 51,000 tons of shrimp were collected by commercial fishermen in 1984 along the coast of the northern Gulf of Mexico, thus providing fishermen with an abundant economic resource.

Major oyster grounds are located northeast of Ship Shoal block 100 in the inshore waters of Terrebonne Parish. The nearest grounds are approximately 24 miles northeast of the block.

Impacts to the offshore fisheries will result from loss of trawling area for fishing vessels due to the physical presence of

the equipment and a decrease in water quality in the immediate area of the rig from the discharge of drilling fluids and cuttings.

The drilling rig will prevent commercial fishermen from using one to two hectares of bottom for the drilling period. Discharge of used drilling fluids and cuttings will decrease water quality causing commercially important species to avoid the immediate area. As the cuttings and mud particles settle, turbidity will drop and this short term impact will be alleviated.

Treated sanitary waste, produced waters, rig wash, runoff, and desalinization waste are to be discharged from the rig. These discharges should not significantly affect commercial fishing as the volume of water is so great relative to the volume of effluent that dispersal will be rapid.

(2) Small Craft Pleasure Boating, Sportfishing and Recreation

Ship Shoal block 100 is located 24 miles from the nearest shore. Exploration in this block will probably not significantly affect recreational boating or sportfishing due to its distance offshore. Temporary loss of one to two hectares for fishing will be incurred during the drilling period. This impact will terminate when the drilling operation is complete.

The drilling rig will present a slight hindrance to navigation for fishing vessels. Its presence in the area also is



a safety factor for vessels needing emergency help and as a reference point.

No major recreational beaches are found along the coast of Terrebonne Parish. The closest sand beach is located approximately 25 miles to the north northwest of Ship Shoal block 100 in St. Mary Parish. An oil spill could possibly reach these shores, though the predominant westwardly current and east to southeast winds would lessen the likelihood that a spill might reach the shoreline.

Disturbance to hunting and fishing in the coastal zone by boats and helicopters servicing the operation should be minimal in an already much traveled area.

(3) Shipping

Ship Shoal block 100 is located approximately 13.5 miles northeast of the nearest safety fairway in the Gulf of Mexico. The rig will be marked with lights to warn commercial traffic of its presence. The wells located in Ship Shoal block 100 are, therefore, expected to have no significant impact on commercial traffic in the Gulf of Mexico.

(4) Cultural Resources

Ship Shoal block 100 lies inside the area designated as likely to yield valuable cultural resources. A shallow hazards review has been completed by Chevron U.S.A Inc. There are no known shipwrecks within Ship Shoal block 100. The closest known shipwreck is located approximately 6 miles south southeast of the

center of the block. The remains of the Ship Shoal lighthouse are located approximately 6 miles to the north northeast of the block. No significant impact is expected on any cultural resources from drilling activity in this block.

Available information shows that this block occurs in an area with a silty clay bottom. There are no known seafloor or subsurface geologic and man-made features or conditions that may adversely affect the proposed operations.

(5) Ecologically Sensitive Features

The marsh-estuarine ecosystem inshore from Ship Shoal block 100 is very productive. The extensive marsh-estuarine systems along coastal Louisiana are utilized in the life cycle of the important commercial fishes and shellfishes of the region. Typical estuarine dependent, commercially important species such as shrimp and menhaden spawn offshore and migrate to the salt-marshes as postlarvae where they spend the juvenile stages of their life history.

Although there are several wildlife refuges and management areas found along the Louisiana coast, none are located in the the immediate area of Ship Shoal block 100. The closest refuge is the Shell Keyes National Wildlife Refuge located approximately 54 miles northwest of Ship Shoal block 100. Its value is mainly to protect nesting seabirds, which in 1976 included 1,000 black skimmers, 90 laughing gulls, 2,320 royal terns, and 2,675 sandwich terns (Portnoy, 1977).



Marsh Island was donated to the state by the Russell Sage Foundation in 1920 with the stipulation that it would remain a wildlife refuge. The southern tip of Marsh Island is located approximately 27 miles northwest of Ship Shoal block 100. There should be no effect from the drilling activities on these wildlife refuges.

Most of the major oyster areas in Louisiana are located in southern Terrebonne Parish and eastward. The closest productive oyster beds are located in Terrebonne Parish approximately 24 miles northeast of the block.

Water quality is affected by spilled oil. If an oil spill occurs, there would be a potential adverse effect on marine mammals or birds. Birds have been seriously affected by oil spills in other parts of the world, but there has been no reported avian mortality from oil spills in the Gulf of Mexico. The same is true of marine mammals, although most species recorded for the Gulf of Mexico are actually very rare. Oil spills in the open Gulf do not visibly affect the marine invertebrate fauna. A small organism such as a copepod, would surely be killed if it encountered spilled oil, but the amount of water involved is so great that no known quantitative sampling program could detect a population change.

If spilled oil were to reach shore, some impact would occur on the shallow water biota. There is a small possibility that any liquid petroleum hydrocarbons would reach shore for two reasons. First, Ship Shoal block 100 is a significant distance

offshore. Secondly, the predominant currents in the area move westwardly and the winds are predominately out of the east to southeast. The impacts of drilling, therefore, on ecologically sensitive areas in the coastal zone are expected to be insignificant.

(6) Existing Pipelines and Submarine Cables

There are no known oil pipelines or submarine cables located in this block.

(7) Other Mineral Uses

Sulphur and salt, two important minerals extracted from coastal Louisiana, are not known to occur in commercially feasible locations and/or amounts within this block.

(8) Ocean Dumping and Related Activities

At the present time a general National Pollutant Discharge Elimination System (NPDES) permit has not been issued for the Gulf of Mexico by the U.S. Environmental Protection Agency. This permit will regulate all discharge of wastewater, drilling fluids, muds and drill cuttings from offshore drilling rigs. Chevron U.S.A. Inc. will not begin their exploratory drilling activities until the general NPDES permit for the Gulf of Mexico comes into effect.

The major anticipated discharge from the proposed five exploratory wells will be used drilling fluids, cuttings, and formation waters. Using the estimates presented in the Draft

The other constituents of the proposed discharge from the five exploratory wells include desalinization plant wastes (sea salts), treated sanitary waste (to secondary treatment standards), runoff (rain water) and rig wash water (oil separated) will be monitored in accordance with the conditions of



the proposed EPA NPDES permit.

(9) Air Quality

Air emissions will result from support vehicles (boats and helicopters) as well as from the drilling rig. Anticipated emissions are all expected to be below MMS guideline limits and are given in the Appendix. Any waste material suitable for consumption by fish or other marine life may be discarded into the water. All other types of waste material are to be collected and transported to shore for proper disposal.

The most serious ambient air quality problems in the region are around urban areas, particularly those which are highly industrialized. Although emissions data are important, particularly when considering control alternatives, it must be remembered that ambient air quality offshore is excellent, and the discharge of gaseous emissions does not have the cumulative impact that a similar volume of emissions would have in an area with poor ambient air quality. These air emissions are expected to have negligible impact on the coastal zone of Louisiana by virtue of their small amount and distance offshore.

(10) Endangered or Threatened Species

All of the sea turtles which occur in the Gulf of Mexico are endangered or threatened. None of them nest in Louisiana west of the Mississippi delta. The rarest of these turtles, the Atlantic Ridley (*Lepidochelys kempi*) apparently uses the northern Gulf as a feeding ground. The key to the survival of this species,

however, is in the protection of its nesting beach in Tamaulipas, Mexico. Other turtles found in the northern Gulf of Mexico are the green turtle (*Chelonia mydas*), loggerhead (*Caretta caretta*), and the leatherback (*Dermochelys coriacea*).

Certain whales and dolphins may also be found in the northern Gulf of Mexico (Lowery, 1974). Endangered species of whales occurring in the Gulf include the giant sperm whale (*Physeter catodon*) and the finbacked whale (*Balaenoptera physalus*). These are rare in the Gulf and it is doubtful that drilling activities in Ship Shoal block 100 will affect these species. Other marine mammals which are not endangered but are more commonly found in the area are the Atlantic bottlenosed dolphin (*Tursiops truncatus*), spotted dolphin (*Stenella plagiodon*), false killer whale (*Pseudorca crassidens*), and the common dolphin (*Delphinus delphis*).

Both the aforementioned turtles and mammals, would suffer temporary loss of a small area for feeding grounds. Collisions with motorized vessels are possible but highly unlikely. More information on threatened or endangered species is presented in the Draft Regional Environmental Impact Statement for the Gulf of Mexico, Appendix B, pp: 625-666.

b. Socio-Economics

The offshore oil exploration industry including oil companies, drilling contractors, oil field suppliers and the rest of the oil industry infrastructure provide a major input to south

central Louisiana's economy. The support base for the proposed exploratory drilling activity, Morgan City, is almost entirely dependent on the oil and commercial fishing industries for direct and indirect employment in support industries (Larson et al., 1980). As stated in the introduction, Chevron U.S.A. Inc. will provide a socio-economic data base report for all OCS operations including data for Ship Shoal block 100. Also as previously stated, no new employees will be required for this project, either as drilling crews or in support functions.

UNAVOIDABLE ADVERSE IMPACTS

Adverse impacts will result from discharge of cuttings and drilling fluids, emissions from boats, helicopters, and engines on the drilling rig, loss of trawling area for fishing vessels, and increase of potential for oil spills. Also, presence of the drilling rig will present a slight navigation hazard to vessels in the area.

Water quality will be affected by the discharge of fluids and cuttings during the drilling period. This will result in the loss of one to two hectares of trawling area for commercial and sportfishermen. There will also be a temporary impact on the benthos in the immediate area of the rig as cuttings settle to the bottom. The heavy metals in the drilling fluids could conceivably have an adverse impact on the biota, but the volume of water is so great relative to the volume of discharged effluent that it would be difficult to measure.

Water quality is affected by spilled oil. If an oil spill occurs, there would be a potential adverse effect on marine mammals or birds. If spilled oil were to reach shore, some impact would occur on the shallow water biota. Chronic oil pollution of the sea is a remote possibility, but the total contribution of the offshore industry is negligible compared with land runoff from rivers and oil transport. The distance from shore (24 miles) and the predominant current and winds in Ship Shoal block 100 make the probability of any spilled petroleum hydrocarbons reaching shore negligible.

The drilling rig may present a slight navigation hazard to fishing and service vessels in the area, but Ship Shoal block 100 is located approximately 13.5 miles from the nearest shipping lane and will be marked with navigation lights.

Air emissions from movable and immovable sources will result from the proposed exploration. However, because of the distance between the drilling rig from shore and the excellent ambient air quality, these emissions cannot be considered significant.

Chevron U.S.A. Inc. will not commence their exploratory drilling operations until the EPA issues the general NPDES permit for the Gulf of Mexico.



REFERENCES

- Behler, J.L. and F.W. King. 1979. The Audubon Society field guide to North American reptiles and amphibians. Alfred A. Knopf Publishing, New York. 719 p.
- Bureau of Land Management, Department of the Interior. 1979. Draft Environmental Impact Statement for the proposed 1980 Outer Continental Shelf Oil and Gas Lease Sales A62 and 62.
- Conant, R. 1958. A field guide to reptiles and amphibians of Eastern and Central North America. Houghton Mifflin Company, Boston. 429 p.
- Larson, D.K., D. Davis, R. Detro, P. Dumond, E. Liebow, R. Motschall, D. Sorensen, and W. Guidroz. 1980. Mississippi Deltaic Plain Region ecological characterization: a socioeconomic study. Vol. 2. Map narratives. U.S. Fish and Wildlife Service, Office of Biological Services. FWS/OBS-79/06.
- Lowery, G.H. 1974. The mammals of Louisiana and its adjacent waters. LSU Press, Baton Rouge, Louisiana. 565 p.
- Minerals Management Service, Department of the Interior. 1982. Draft Regional Environmental Impact Statement: Gulf of Mexico. Minerals Management Service, Gulf of Mexico OCS Region, Metairie, Louisiana. 735 p.
- Portnoy, J.W. 1977. Nesting colonies of seabirds and wading birds - Coastal Louisiana, Mississippi, and Alabama. U.S. Fish and Wildlife Service, Biological Service Program. FWS/OBS-77/07. 126 p.



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 MMS approved oil spill contingency plan.
3. All applicable Federal, State and local requirements regarding air emission, water quality and waste discharge for the proposed activities, as well as any other regulatory conditions, will be complied with.



COASTAL ZONE MANAGEMENT

CONSISTENCY CERTIFICATION

EXPLORATION
Type of Plan

SHIP SHOAL BLOCK 100
Area and Block

OCS-G-7750
Lease Number

The proposed activities described in detail in this Plan comply with Louisiana's approved Coastal Management Program and will be conducted in a manner consistent with such programs. Arrangement have been made with the States-Times in Baton Rouge, Louisiana to publish a notice on the proposed activities no later than 25 October 1985.

Chevron U.S.A. Inc.
Lessee and Operator

R. H. Dufour
R. H. Dufour
Certifying Official

October 15, 1985
Date



STIMULA ASSOCIATES, INC.

APPENDIX



AIR QUALITY STUDY
EMISSIONS DATA AND CALCULATIONS
DISTANCE TO NEAREST SHORE IS 24 MILES

Source Descriptions

- 1 - Crew boat - four round trips per week
- 1 - Cargo boat - seven round trips per week
- 2 - Helicopters, 2 engines each
 - 1 - Bell #206 one round trip per day
 - 1 - Bell #212 two round trips per week

There are five wells to be drilled under this exploration plan requiring a total of 385 days drilling time. Total depth is 72,000 feet.

EMISSIONS FROM VESSELS IDLE AT SHORE BASE
OR ALONGSIDE DRILLING RIG

	CREW BOAT		CARGO BOAT	
	lbs/day	tons/yr.	lbs/day	tons/yr.
CO	17.59	1.83	17.59	3.21
SO ₂	1.62	0.17	1.62	0.30
NO _x	37.39	3.90	37.39	6.82
VOC	23.47	2.45	23.47	4.28
TSP	2.03	0.21	2.03	0.37

Assumptions:

Vessels at each site 50% of the time. Sixty gallons of fuel per vessel per day.

Values for all pollutants except SO₂ and TSP were calculated from tables 3.2.3-3 of Part A of U.S. EPA Publication AP-42, "Compilation of Air Pollutant Emission Factors." Emissions were determined on a worst case basis.

SO₂ values were taken from Table 3.2.3-4 of the same publication. These EPA values were calculated rather than measured and assumed that all sulfur in fuel was converted to SO₂. This assumption was applied to the fuel used in diesel vessel engines due to a lack of other data. TSP values were assumed to be 1.25 of the SO₂ values based on a ratio averaged from several tables for diesel engines in the above mentioned EPA publication, AP-42.



HELICOPTER EMISSIONS FOR TAKE-OFF
AND LANDING CYCLE AT
DRILLING RIG AND SHORE BASE

	<u>lbs/day/helicopter</u>	<u>tons/yr.</u>
CO	5.7	1.34
SO ₂	0.18	0.04
NO _x	0.57	0.13
VOC	0.52	0.13
TSP	0.25	0.05

Calculations made using Table 3.2.1-3 of U.S. EPA Publication AP-42, "Compilation of Air Pollutant Emission Factors."

Assumption - two engine helicopter, one take-off and landing cycle at each location per day.

One helicopter makes one round trip per day
One helicopter makes two round trips per week



DRILLING RIG DIESEL ENGINES EMISSIONS

	<u>tons/year</u>
CO	9.00
SO ₂	4.14
NO _x	61.43
VOC	2.05
TSP	5.18

Calculations were made using emission rates listed in Table 4-4 of U.S. EPA Publication 450/3-77-026, June, 1977, "Atmospheric Emissions from Offshore Oil and Gas Development and Production."

The following modified formula from the above mentioned publication was used to calculate pounds emitted per well from grams per horsepower listed in table.

$$\frac{\text{g/hph}}{453.6 \text{ g/lb}} \times \frac{\text{total depth (ft.)}}{\text{well}} \times \frac{\text{\# of wells}}{\text{year}} \times \frac{60 \text{ hph}}{\text{ft.}}$$
$$\times \frac{1 \text{ ton}}{2,000 \text{ lbs}} = \text{ton/year}$$

TSP values were assumed to be 1.25 of the SO₂ values.



SHORE BASE EMISSIONS (TONS/YEAR)

SOURCE	POLLUTANT				
	CO	SO ₂	NO _x	VOC	TSP
Crew Boat	1.83	0.17	3.90	2.45	0.21
Cargo Boat	3.21	0.30	6.82	4.28	0.37
Helicopter	1.34	0.04	0.13	0.13	0.05
Total Emissions:	6.38	0.51	10.85	6.86	0.63

RIG EMISSIONS (TONS/YEAR)

SOURCE	POLLUTANT				
	CO	SO ₂	NO _x	VOC	TSP
Crew Boat	1.83	0.17	3.90	2.45	0.21
Cargo Boat	3.21	0.30	6.82	4.28	0.37
Helicopter	1.34	0.04	0.13	0.13	0.05
Rig's Diesel Engine	9.00	4.11	61.43	2.05	5.18
Total Emissions:	15.38	4.65	72.28	8.91	5.81
Exemption Levels:	28,289	799.2	799.2	799.2	799.2

Exemption levels for emissions:

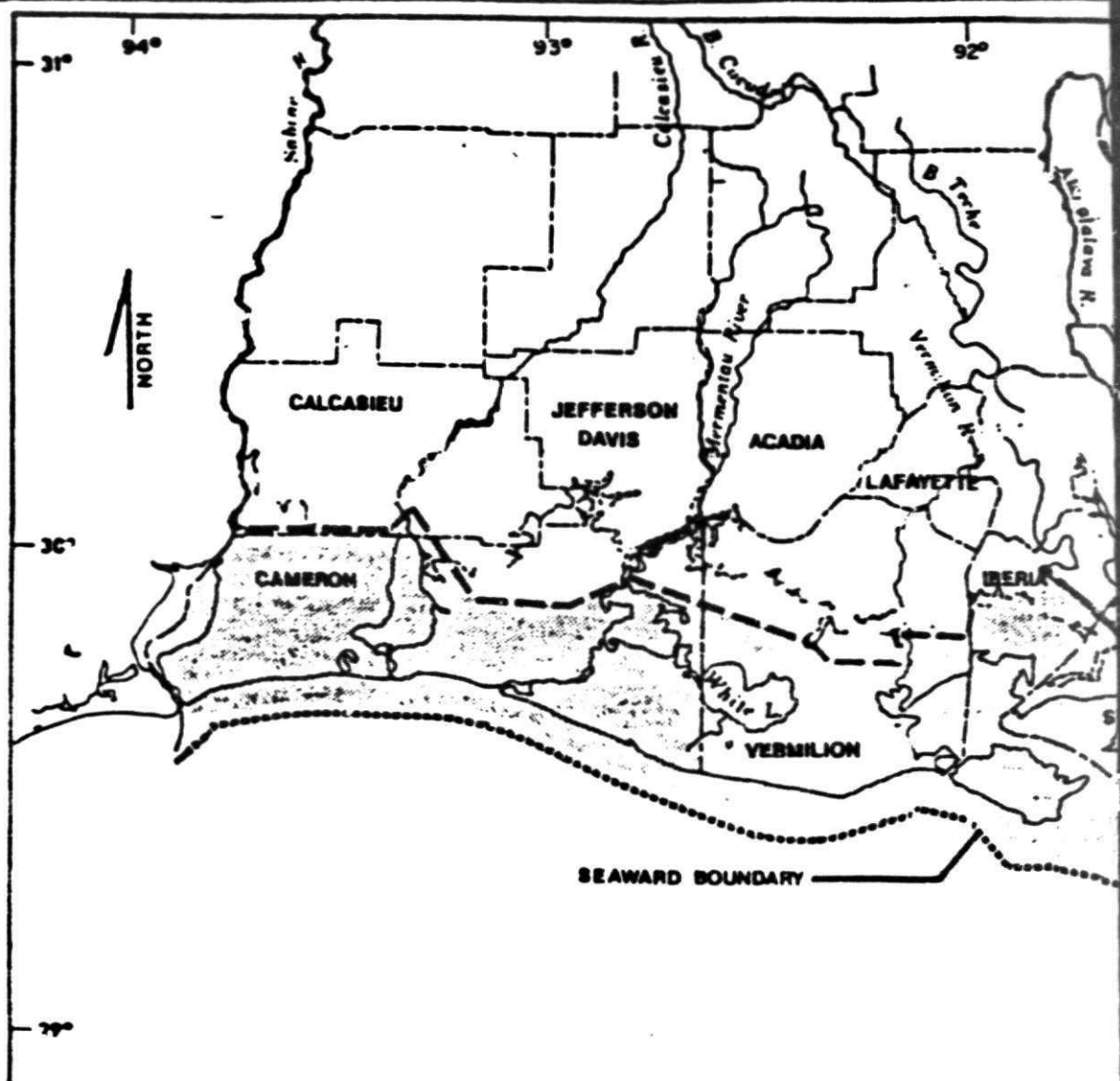
$$\text{CO} \quad E = 3400 D^{2/3}$$

$$E = 3400 (24)^{2/3} = 28,289 \text{ tons/year}$$

$$\text{Others} \quad E = 33.3 D$$

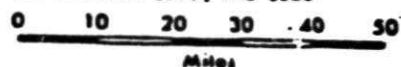
$$E = 33.3 (24) = 799.2 \text{ tons/year}$$

These exemption levels were calculated from formula listed in 30 CFR 250.57-1(d).



SHIP SHOAL BLOCK 10

APPROXIMATE COASTAL ZONE
BOUNDARY AS DEFINED BY ACT 361
AS AMENDED 1979, AND 1980



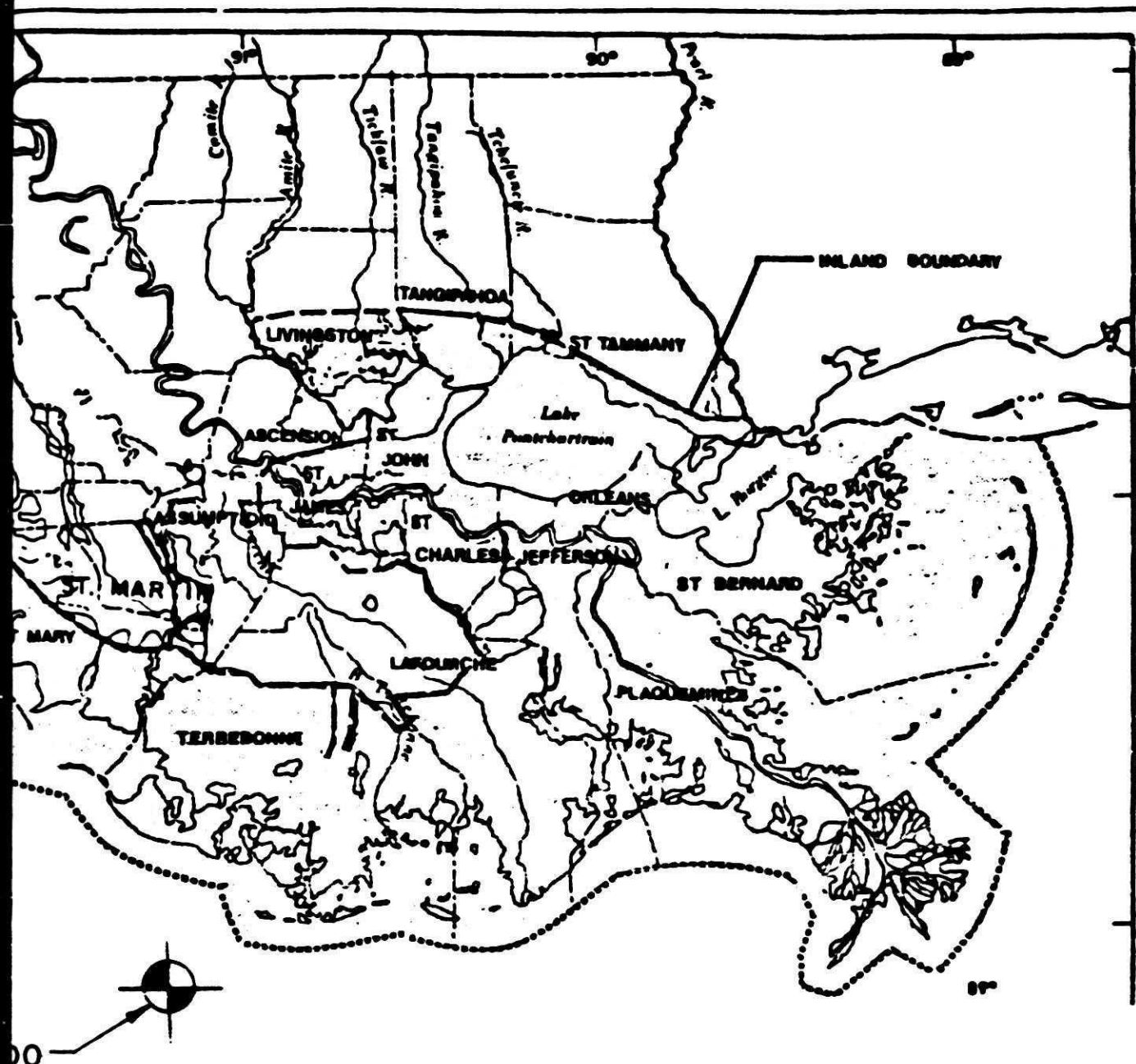


EXHIBIT I

SHIP SHOAL BLOCK 100
IN RELATION TO THE LOUISIANA
COASTAL ZONE

STEIMLE & ASSOC., INC.

ENGINEERS, ECOLOGISTS, PLANNERS

"SPECIALIZING IN THE ENVIRONMENT"

: 3826 AIRLINE HWY.

METairie, LA. 70001

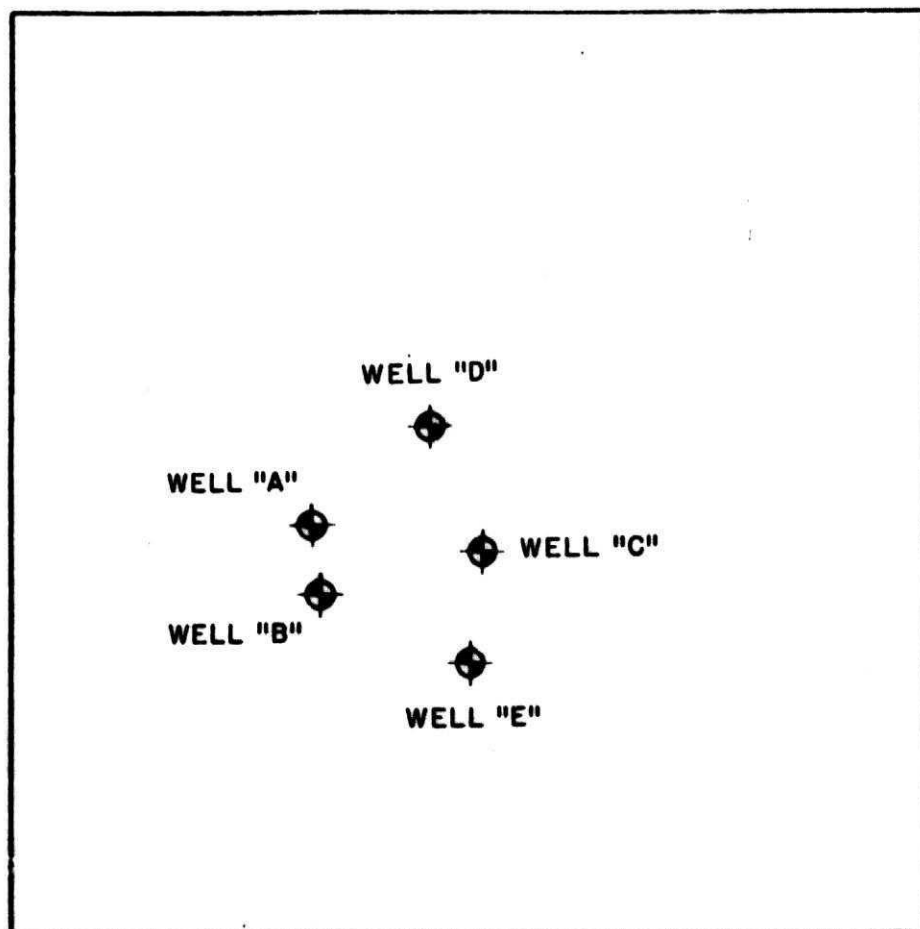
DATE: 10-1-85

DRAWN BY: GAF

JOB NO:

CHK BY:

SHIP SHOAL BLOCK 100



SCALE: 1" = 3000'

EXHIBIT 2

SHIP SHOAL BLOCK 100 PROPOSED WELL LOCATIONS

REFERENCE: CHEVRON USA INC. PLAN AND
GEOLOGIC PROGRAM



STEIMLE & ASSOC., INC.
ENGINEERS, ECOLOGISTS, PLANNERS
"SPECIALIZING IN THE ENVIRONMENT"

3826 ALHAMBRA BL.

METairie LA 70001

DATE 10-1-85

DRAWN BY GAF

CHEK BY