

DATE FEB 11, 1981

TO: OMS-2-2

FROM: OS-7-1

Supplemental Plan of Exploration ^{DER} ~~Production~~, Lease OCS-G 3208

Control No. S- 0590.

VK 862
EXXON CORP.

NOTED - PATZ



COASTAL ZONE MANAGEMENT

CONSISTENCY CERTIFICATION

Supplemental Plan of Exploration
Type of Plan

Viosca Knoll Area, Block 862
Area and Block

OCS-G 3208
Lease Number

The proposed activities described in detail in this Plan comply with Louisiana's approved Coastal Management Program and Mississippi's approved Coastal Program and will be conducted in a manner consistent with such Programs.

EXXON CORPORATION
Lessee or Operator

H.R. Hornach
Certifying Official

February 10, 1981
Date

Additional Statement

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

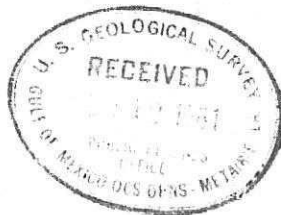
1. The best available and safest technologies, as set forth in the Gulf of Mexico Region OCS Order No. 5, will be utilized throughout the project. This includes meeting all applicable requirements for equipment types, general project layout, safety systems, and equipment and monitoring systems.
2. All operations will be covered by a U.S.G.S. - approved oil spill contingency plan.
3. All applicable Federal, State and local requirements regarding air emission and water quality and discharge for the proposed activities, as well as any other permit conditions, will be complied with.

Due to the nature and location of the proposed drilling operations to be conducted pursuant to the Plan of Exploration, and based on the impact assessments contained in the Environmental Report, Exxon submits that no adverse impacts on coastal resources can reasonably be expected to occur. Likewise, activities conducted pursuant to this Plan of Exploration are not expected to adversely affect or impact land or water uses within the coastal zone. The Federal consistency provisions of the Coastal Zone Management Act only apply to OCS activities which affect land or water uses within the coastal zone. The term "affecting land or water uses" is not defined by statute, regulation, or judicial decree. To the extent that the statutory language is unclear, Exxon reserves its right to seek future clarification as circumstances may require.

EXXON CORPORATION
SUPPLEMENTAL PLAN OF EXPLORATION
GULF OF MEXICO
BLOCK 862, VIOSCA KNOLL AREA
OFFSHORE LOUISIANA



- SECTION 1: PLAN DESCRIPTION
- SECTION 2: DRILLING EQUIPMENT
- SECTION 3: GEOLOGICAL AND GEOPHYSICAL SURVEY RESULTS, AND SHALLOW DRILLING HAZARDS REPORT
- SECTION 4: LOCATION
- SECTION 5: OIL SPILL CONTINGENCY
- SECTION 6: MUD ADDITIVES
- SECTION 7: PERMITS
- SECTION 8: PROPRIETARY DATA



FOR PUBLIC INFORMATION

88771 - 1172

Open

818

Y = 10,581,120.00

Exxon

3900'

6700

7



861

Blk. 862

Ø6



Ø5



Ø 5 Sur.

Open

2700'

8

2500'

O.C.S.-G 3208

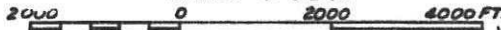
X = 1,122,000.00

Y = 10,563,280.00

Exxon

906

O.C.S.-G 3207



SCALE

863

Open

X = 1,203,840.00

O.C.S.-G 3208
 VIOSCA KNOLL BLK. 862 AREA
 GULF OF MEXICO

Exxon Company, U.S.A.
 (DIVISION OF EXXON CORPORATION)
 PRODUCTION DEPARTMENT
 NEW ORLEANS

DRAWN R.A. Gutierrez

ENGR. SECTION

REVISED 4/7/78

SCALE 1" = 2000'

JOB NO.

FILE NO.

CHECKED S.L.T.

APPROVED

DATE 12/15/75

EA-4240

SUPPLEMENTAL PLAN OF EXPLORATION

BLOCK 862, VIOSCA KNOLL AREA

OFFSHORE LOUISIANA

SECTION 1: PLAN DESCRIPTION

This Supplemental Plan of Exploration for Viosca Knoll, Block 862, OCS-G 3208, consists of from one to two wells as shown below:

<u>Well</u>	<u>Approximate Location on Block</u>
No. 7	3900' FNL, 6700' FWL
No. 8	2500' FSL, 2700' FWL

In the event additional seismic surveys are conducted in the area, a conventional ocean-going seismic survey vessel equipped with an appropriate hydrophone cable and non-dynamite energy source (e.g., air gun) would be used.

Drilling on Well No. 7 is planned for about February 18, 1981 and will require about 65 days to complete. The drilling of Well No. 8 will depend on the results of Well No. 7. The total time required to complete the drilling of the two wells should be about 120 days.

BLOCK 862, VIOSCA KNOLL AREA

OFFSHORE LOUISIANA

SECTION 2: DRILLING EQUIPMENT

A. DESCRIPTION

We intend to utilize the Zapata Yorktown, a 200' X 260' semisubmersible drilling vessel, or similar drilling equipment. The Yorktown is moored on location with an 8-line spread with each line consisting of 2500' of 2-3/4" chain and 4500' of 2-3/4" wire rope. Each line is connected to a 40,000 pound Moorfast anchor. A descriptive rig brochure, a schematic of the diverter system, and a listing of blowout prevention equipment with a configuration schematic are attached.

B. EMERGENCY PLAN

Our plan for abandoning the location, in case of an emergency such as a well kick, will vary in accordance with the severity of the occasion. If the well cannot be controlled by our usual normal methods, and a possible broaching is imminent, then anchor chains on the down wind side of the vessel will be slackened or dropped; and anchors on the up wind side of the vessel will be tightened and the rig moved off the location. Transportation will be available to evacuate personnel from the rig and area as need be. Appropriate U. S. Coast Guard prescribed life rafts, jackets, and ring buoys will be provided.

C. SAFETY FEATURES

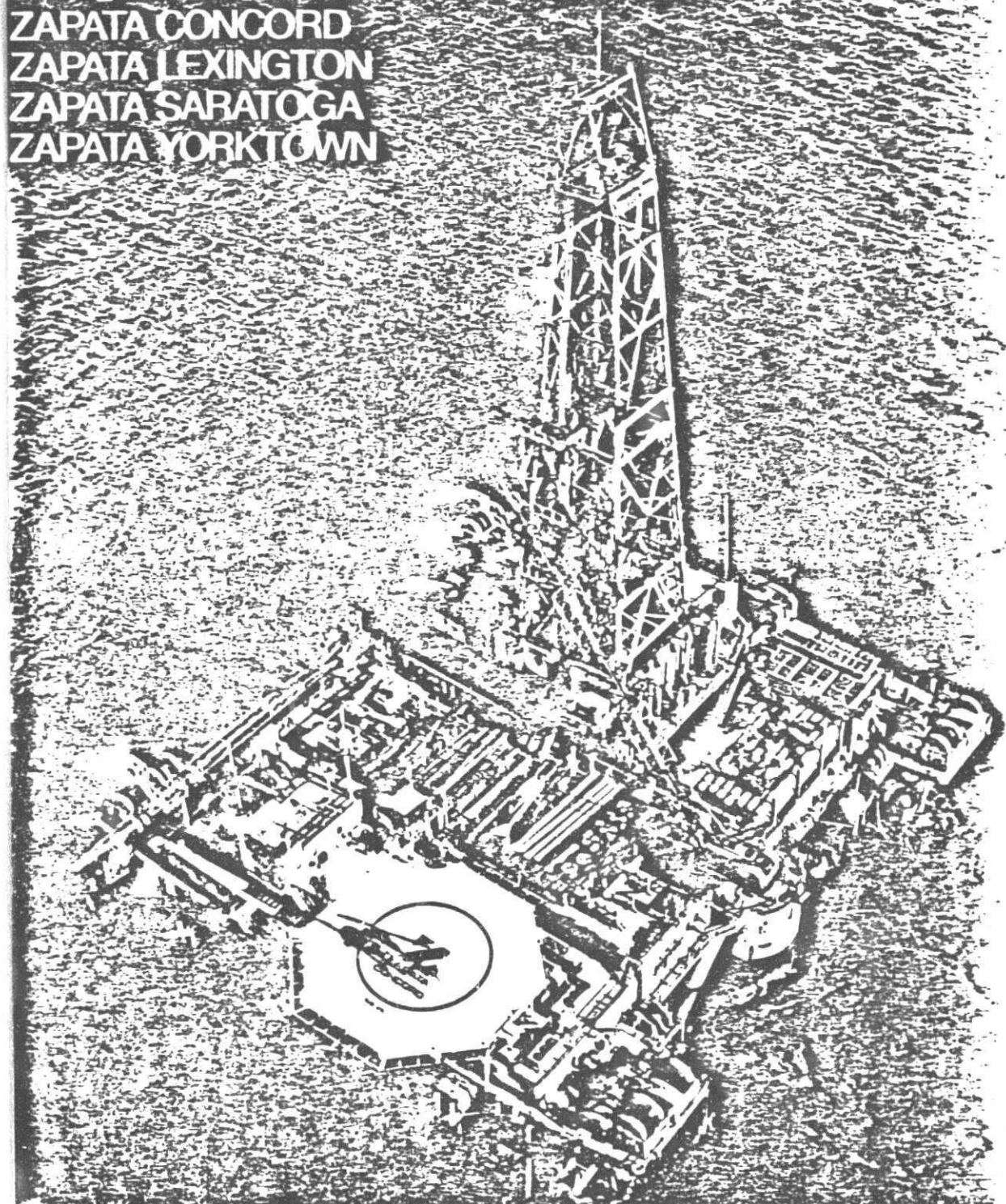
Safety features will include well control and blowout prevention equipment to comply with OCS Order No. 2.

D. POLLUTION PLAN

Washed cuttings and table scraps will be disposed of into the Gulf. Pollution prevention and control features will prevent contamination, in accordance with OCS Order No. 7. The vessel is equipped with drip pans and coaming, and such will be maintained. A USCG approved sewage unit is installed.

Zapata SS-2000 Class

ZAPATA CONCORD
ZAPATA LEXINGTON
ZAPATA SARATOGA
ZAPATA YORKTOWN



Zapata SS-2000 Semisubmersible

The contemporary offshore drilling industry needs rigs with a wide range of capabilities. Zapata's SS-2000 Class has been designed with the ability to operate efficiently year around at deep water, moderate environment locations. At the same time it has excellent mobility characteristics.

The increased emphasis on the ability to drill in deep water has led to the development of a floating unit to drill in depths of 150 feet to 2,000 feet or more.

After initial studies of existing designs were compared with the trend of industry requirements, Zapata developed design parameters for the new unit. These included the following key features:

- Ability to continue operations in seas up to 30 to 40 feet
- Ability to remain moored in seas of 75 feet
- Variable deckload capacity of 2,000 tons
- Load capacity enabling all movements to be made with anchors and anchor chains stowed aboard the vessel
- Target speed of 10 knots under tow
- Mooring system for at least 2,000 feet of water.

These parameters served as a basis for the development of the SS-2000 design by the noted naval architectural consulting firm, Friede and Goldman, Inc., working in conjunction with Zapata's technical services division.

This development program included designing the structure, model tank tests of

the design, and performing strength analyses. These were done concurrently with a program for selection of the optimum drilling and auxiliary equipment.

The resulting design uses catamaran lower hulls with six stability columns. The lower hulls have a configuration with faired bows providing optimum heave dampening action and towing characteristics. The main deck is designed to accommodate the required machinery, storage and quarters spaces.

The Zapata SS-2000 is a drilling rig designed to meet the water depth requirements that will be required in the very near future, using equipment and techniques that have been proven by previous experience.

Key Features

Stability

Seakeeping capability in rough seas for:

Drilling in waves up to 30 to 40 feet

Remaining moored in waves up to 75 feet

Mobility

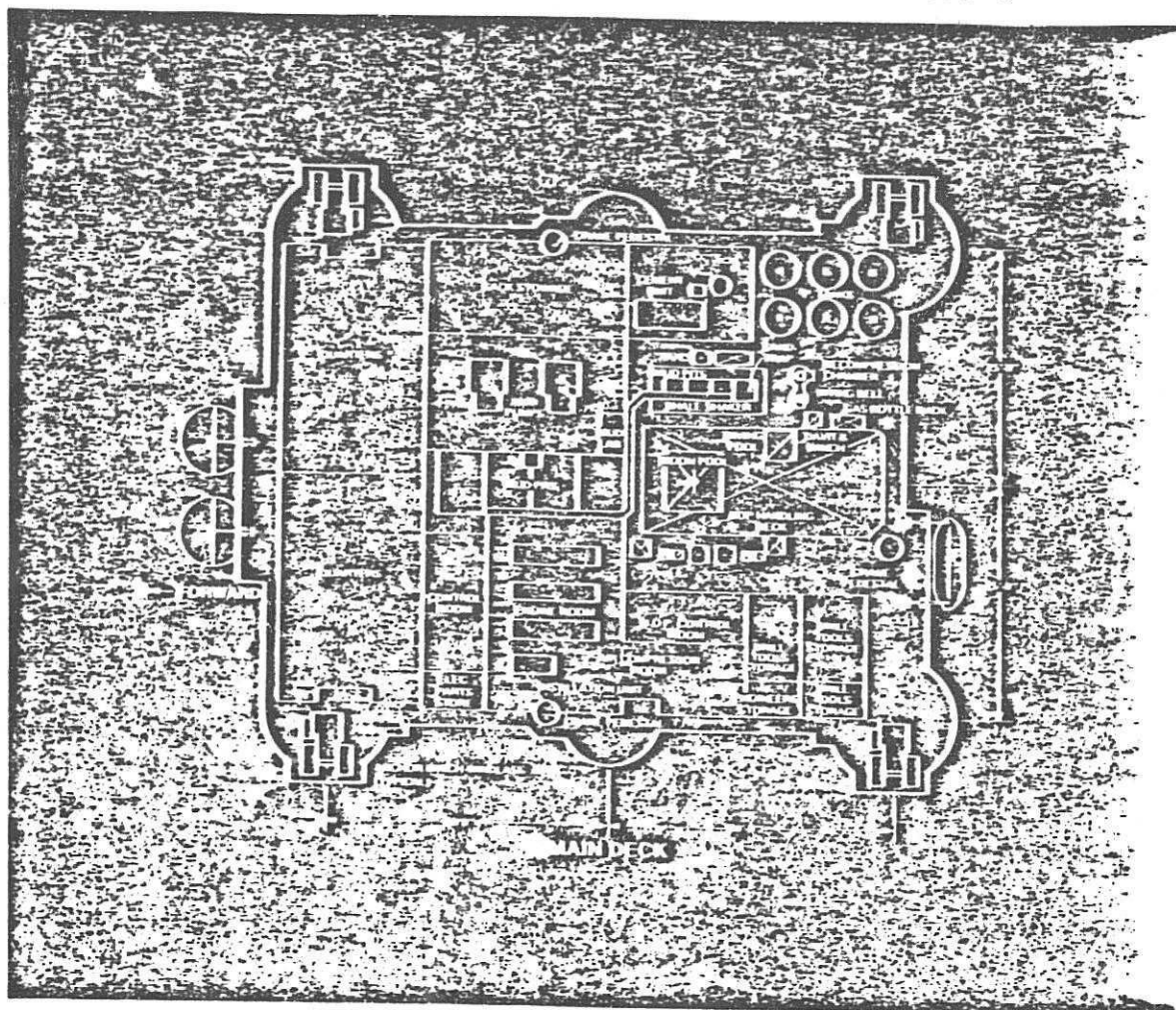
Excellent towing characteristics at speeds of up to 10 knots

Deepwater Capability

Mooring system designed for 2,000-foot water depths.

Large Capacity for Consumables

Deckload capacity of 2,000 tons permits operation for long periods without resupply.



Design Considerations

Design wave: 75 ft. height with 15 second period.

Design wind: 125 knots sustained wind

Design water depth: Range 150 ft. to 2,000 ft.

Design analyses: A computer stress program was used to evaluate wave loading from 75 ft. wave of 15-second period by passing wave through moored platform for approach angles of 0°, 22½°, 45°, 67½° and 90°. Results were input to a stress evaluation program to determine principal truss, beam, strut, diagonal and joint reactions and stresses.

Structural steel: Cold weather steel for 14°F.

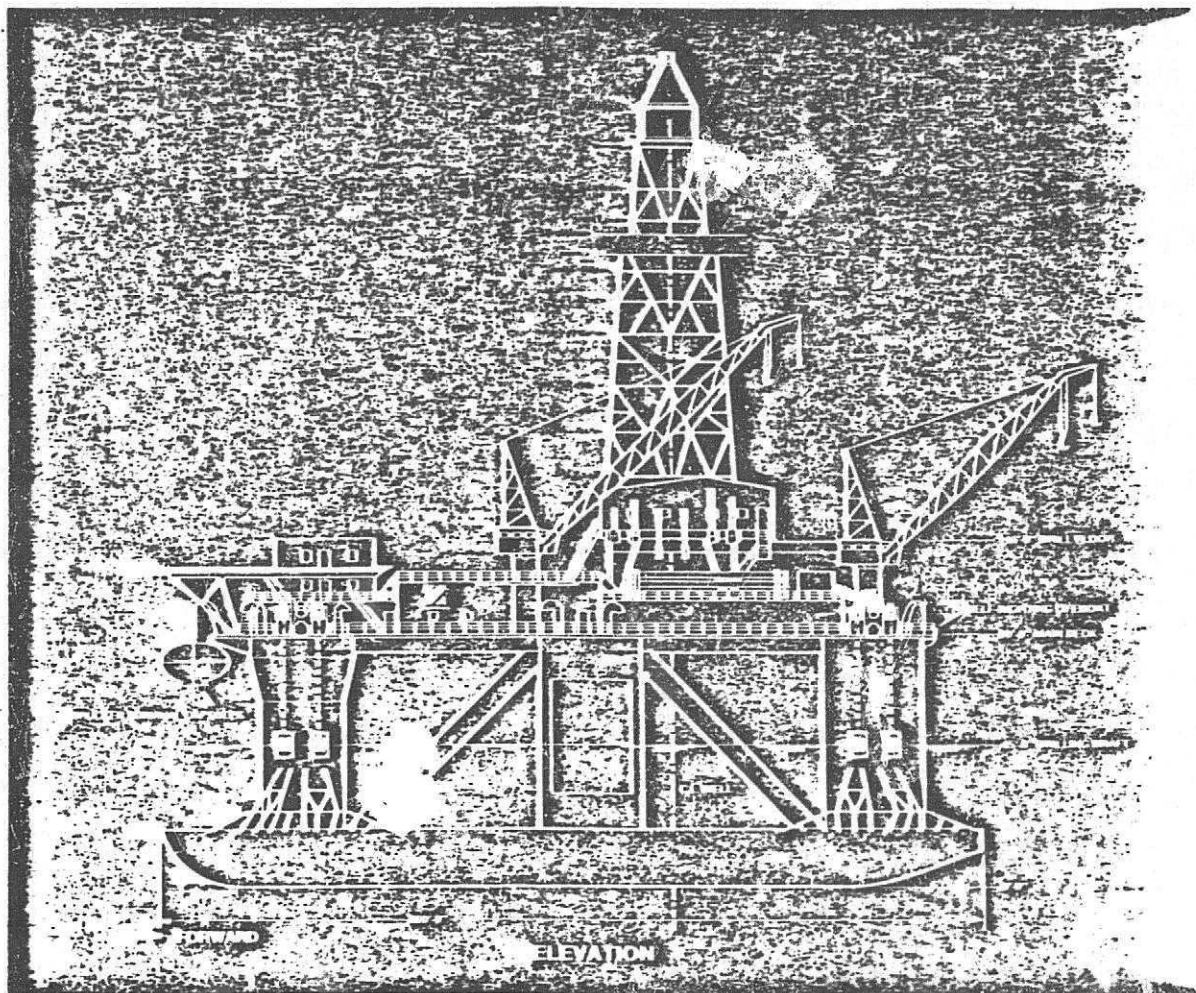
Normalized ABS Grade EH-36 for highly stressed areas and principal members.

Design stresses: Calculated stresses in principal members in accordance with AISC Manual of Steel Construction, ABS Rules for Steel Vessels and ABS Rules for Offshore Mobile Drilling Units.
U. S. registration, ABS classification and USCG certification.

Zapata SS-2000 Natural Periods

Action	Natural Period	Moored
Roll	34.1 seconds	27.0 seconds
Pitch	30.2 seconds	30.0 seconds
Heave	21.6 seconds	19.7 seconds

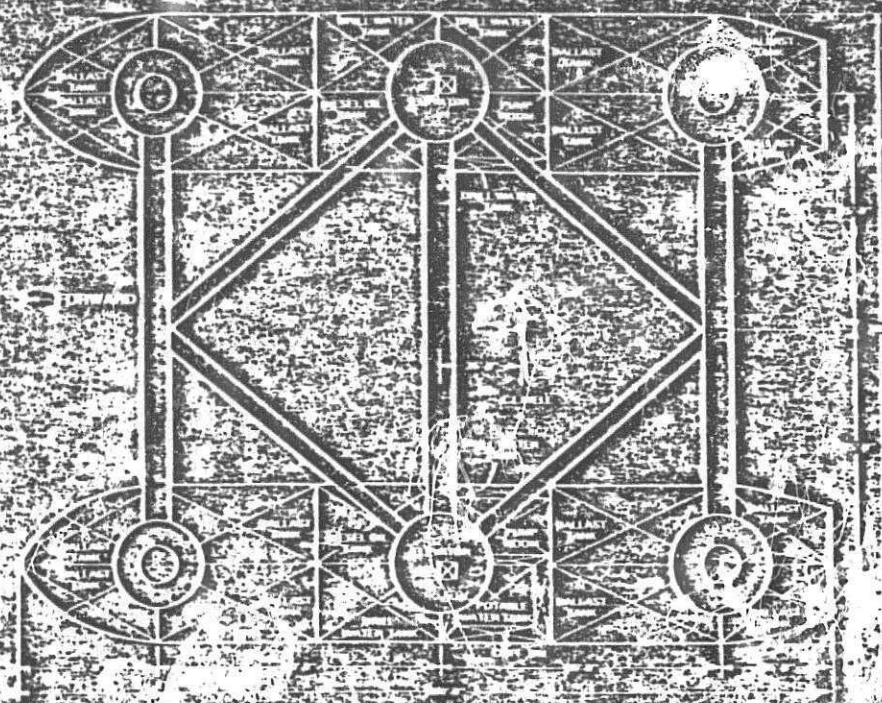
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Principal Dimensions

Length of lower hulls	260 ft.	Diameter of stabilizing columns forward	25 ft.
Overall width of lower hulls	200 ft.	Height to main deck	80 ft.
Width of each lower hull	50 ft.	Overall width of upper deck	214 ft.
Separation between lower hulls	100 ft.	Overall length of upper deck	228 ft.
Depth of lower hulls	20 ft.	Diameter of struts and braces	5 ft. to 9 ft.
Number of stabilizing columns	6	Drilling draft	45 ft.
Length of stabilizing columns	60 ft.	Drilling displacement (short tons)	18,760 s.t.
Diameter of stabilizing columns aft	32 ft.	Severe storm draft	35 ft.
Diameter of stabilizing columns amidships	32 ft.	Severe storm displacement (short tons)	17,300 s.t.

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LOWER HULLS AND BRACES

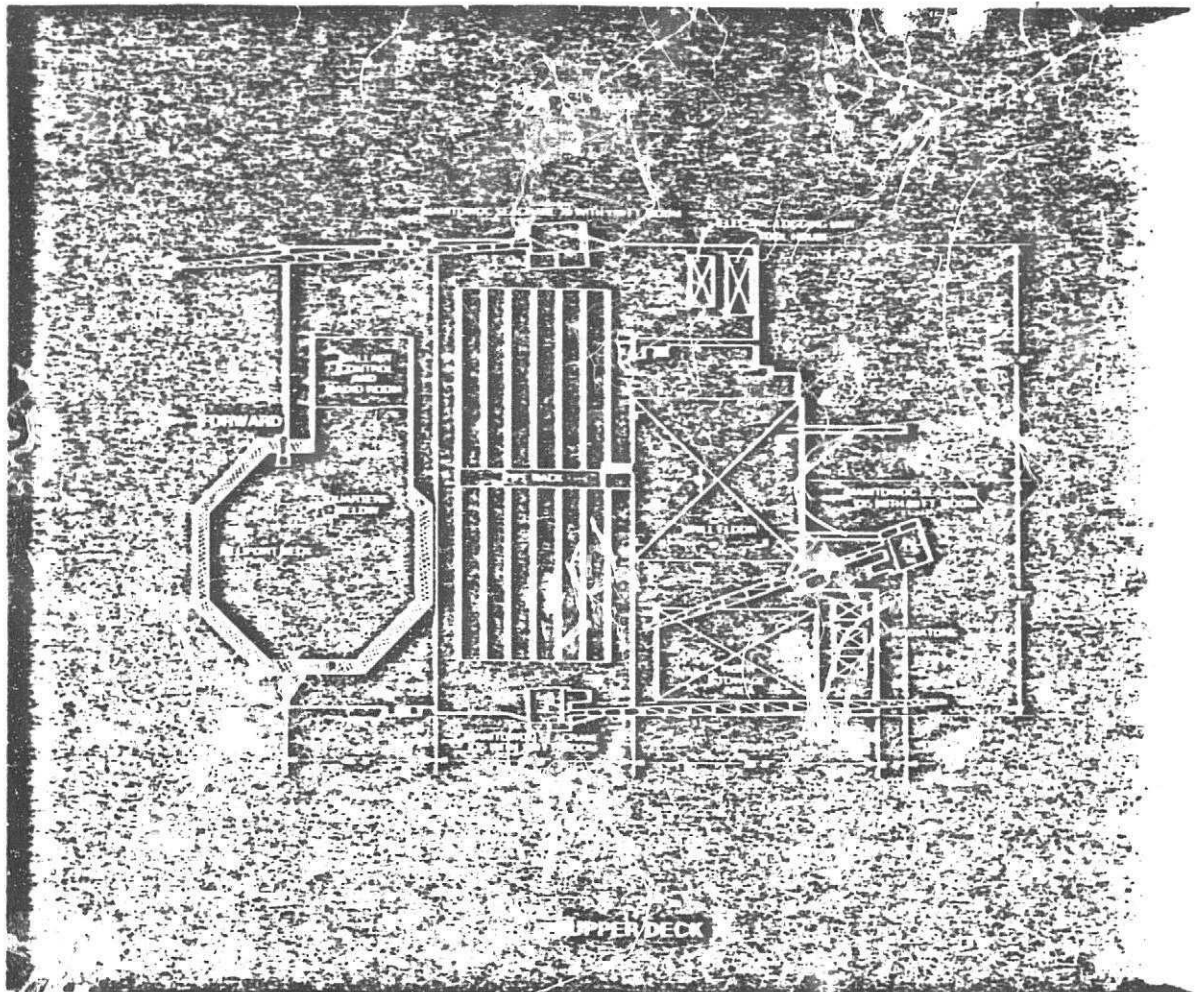
Variable Deckload Capacity

Bulk mud and cement	10,200 cu ft.
Sack materials	6,000 sacks
Liquid mud	1,720 bbls
Pipe rack	6,240 sq ft
Manne riser rack	3,120 sq ft
Potable water	100 bbls

Variable Lower Hull Capacity

Fuel oil	6,900 bbls.
Drill water	3,800 bbls
Ballast water	1,000 bbls
Potable water	1,225 bbls

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Major Drilling and Auxiliary Equipment

Derrick: Derricks, Inc.—40 ft. x 40 ft. base, 160 ft. clear height, 18 ft. x 18 ft. water table, designed to accommodate motion compensator and automated pipe racking. Rated at 1,000,000 lbs. static hook load capacity.

Power package: Three EMD Model 16EB power units, each consisting of Model 645, 16 cylinder engine driving Model A20-b, 600 volt, 3 phase, 60 Hz alternator. E x, h

unit ABS rated at 1,400 KW. DC power provided through SCR rectifier system. Total engine power: 6,000 HP.

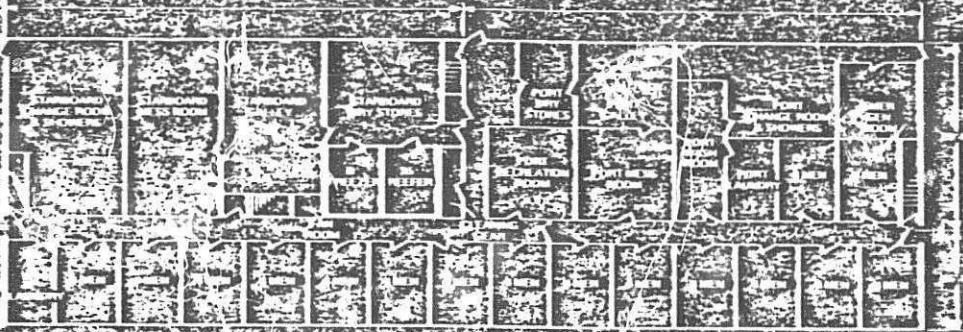
Drawworks: Oilwell E3000 double drum, with Elmagco 7838 auxiliary brake, with 1 1/2 inch drill line. Driven by two EMD 79MD DC electric motors, totaling 2,000 HP intermittent.

Mud pumps: Two Oilwell 1700 PT triplex angle acting piston pumps, each with centrifugal charge pump and Hydril K20-5000

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UPPER DECK QUARTERS
90 FT. LEVEL



MAIN DECK QUARTERS
90 FT. LEVEL

pulsator drive. Each pump is driven by two EMD 79MD DC electric motors totaling 1,600 HP continuous.
Rotary: Oilwell 49½ inch with inertia brake, two speed transmission, emergency drive sprocket and an EMD 79MD DC electric motor rated at 800 HP continuous.
Racking system: BJ three-arm electro-hydraulic vertical pipe racking with BJ block retractor system.

Moisture compensator: Rucker-Schaffer 400,000 lb. with 18 ft. stroke.
Tensioners: Eight 80,000 lb. Rucker XL riser tensioners and 16,000 lb. Rucker guideline tensioners.
Cranes: Two Manitowoc Seacrane 133 with 80 ft. and 120 ft. boom. One Manitowoc Seacrane 70 with 110 ft. boom.

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Zapata "CS" Mooring System

The Zapata SS-2000 is equipped with the innovative Zapata "CS" mooring system, commensurate with its deep water design capabilities for operation on the Continental Slope offshore regions beyond the Continental Shelf limit of 600 ft. The Zapata "CS" system consists of a unique eight-line spread with each line consisting of 2,500 ft. of 2 3/4 in. chain and 4,500 ft. of 2 3/4 in. wire rope.

The Zapata "CS" system has evolved from extensive computer analyses by the Zapata technical services division based on the model test data, theoretical evaluations and mooring system operational data. The design objectives were:

- Ability to remain on location in water depth and sea conditions commensurate with both the platform's capability to conduct drilling operations and the maximum design wave conditions
- Ability to be (1) run out and set and (2) tripped and retrieved in an expedient manner using existing anchor handling workboats, and mooring equipment installed entirely on the drilling platform.

Comparison of the maximum storm wave capabilities of the Zapata "CS" mooring system and conventional systems indicates the clear superiority of the unique combination chain-wire system for operations beyond the 600 ft. water depth. Another advantage of this system is that it can be handled by anchor handling workboats now in existence or under construction. The system consists of:

Anchors: Eight—40,000 lb. Vicinay Offdrill #1 anchors, ABS certified.

Chain: Eight—2,500 ft. of 2 3/4 in. high quality stud link, high strength, ABS certified, welded chain.

Mooring wire: Eight—4,500 ft. of 2 3/4 in. galvanized, 6 x 37 IWRC, ABS certified wire rope

Winch-windlass: Four—Dual Skagit ETW 300/44 mooring units with winch capability for storing 6,000 ft. of 2 3/4 in. wire rope and a windlass wildcat for 2 3/4 in. chain. Nominal maximum rated tension capacity is 500,000 lbs. with brakes rated at 750,000 lbs. Stoppers are rated up to breaking strength of mooring lines.

Controls: Control station at each corner of drilling unit. Tension indicators at each winch-windlass unit and barge control room.

Towing Characteristics

Characteristics

Draft	17 ft.
Lower hull depth	20 ft.
Lower hull freeboard	3 ft.

Predicated speed-power data

Required towing horsepower	8,000 HP
Calm sea with no wind	10 knots
Calm sea with 20-knot headwind	8.5 knots
15 ft. seas with 20-knot headwind	5.5 knots

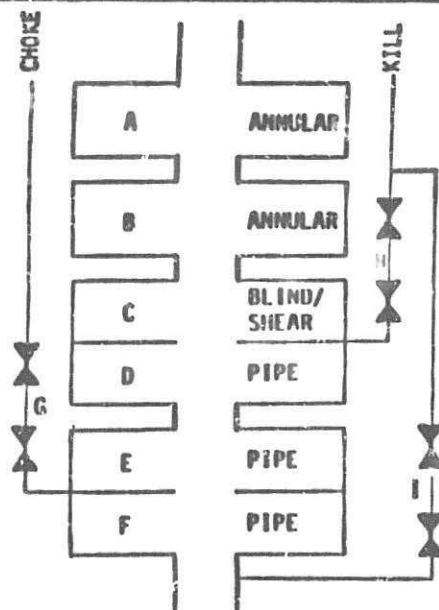
Quarters

Ninety (90) person maximum capacity on two decks with dual galley-mess arrangement. Third deck control center including radio room and barge control room. Helicopter deck above quarters designed according to ABS rules for both Sikorsky S-61 and S-70 units.

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ZAPATA YORKTOWN
BLOWOUT PREVENTION EQUIPMENT

	EQUIPMENT DESCRIPTION
RISER AND DIVERTER	<p>Regan Type KFDS Diverter. Cameron Riser system with two 12" diverter lines, one to starboard, one to port.</p> <p>Riser - A Cameron 21" OD, 1/2" wall with integral 3-1/2" choke and kill lines.</p>
BLOWOUT PREVENTERS	<p>Two - 18-3/4", 10,000 psi WP Cameron type "U" BOP's with wedgelocks. (Four rams - bottom three are pipe rams and top ram is a blind/shear ram.)</p> <p>Two - 21-1/4", 5000 psi WP Shaffer Spherical BOP's.</p>
ROP CONTROL SYSTEM	<p>Cameron Payne 3000 psi hydraulic surface accumulator unit with air and electric pumps. Dual control pods are supplied by two (2) subsea hoses, and a 2-7/8" OD rigid power fluid conduit is attached to the riser.</p>
SURFACE MANIFOLD	<p>10,000 psi system with one (1) positive, two (2) manually adjustable and two (2) remote controlled hydraulically adjustable chokes.</p>



SECTION 2: DRILLING EQUIPMENT

E. PROJECTED GASEOUS EMISSIONS

Projected emissions from the Zapata Yorktown are from four sources: power generation engines, emergency generator, cranes, and storage tank vapors. Equipment in use and the location of the emission discharge are shown in the attached calculations and sketch. The attached Table shows projected emissions for facilities in this Plan. Wells 7 and 8 are 34.7 and 34.1 miles from shore, respectively. It is not anticipated that these wells will be drilled in the same year.

Based on the exemption formulas shown in 30 CFR 250.571(d) and the attached calculations, it is believed the facilities proposed in this Plan of Exploration are exempt from further air quality review. Onshore facilities are described in Section 4; they are not new nor are they to be modified.

ZAPATA YORKTOWN
PROJECTED EMISSIONS
OCS G-320B

SOURCE	ELEVATION FEET	PROJECTED EMISSIONS ⁽¹⁾									
		SO ₂		TSP		NO _x		VOC		CO	
		lb./day	T/Well	lb./day	T/Well	lb./day	T/Well	lb./day	T/Well	lb./day	T/Well
I. Main Power Generation 3074 gpd	50	87.6	2.9 (2) 2.4 (3)	40.0	1.3 (2) 1.1 (3)	1836.7	59.7 (2) 50.5 (3)	59.6	1.9 (2) 1.6 (3)	272.7	8.9 (2) 7.5 (3)
II. Emergency Generator 2 hours per week 27.4 gphr	50	1.6	<0.1 (4) <0.1 (5)	0.1	<0.1 (4) <0.1 (5)	13.2	<0.1 (4) <0.1 (5)	0.4	<0.1 (4) <0.1 (5)	0.9	<0.1 (4) <0.1 (5)
III. Cranes 8 hours per day 219 gpd	60	6.2	0.2 (6) 0.2 (7)	0.5	<0.1 (6) <0.1 (7)	52.8	1.7 (6) 1.5 (7)	1.8	<0.1 (6) <0.1 (7)	3.5	0.1 (6) 0.1 (7)
IV. Vapor Loss 2125 Bbl Storage 3300 gpd use	40	----	----	----	----	-----	----	0.4	<0.1 (2) <0.1 (3)	----	----
TOTAL FACILITY											
Well 7, 65 day well (2)		95.4	3.2	40.6	1.5	1902.7	61.5	62.2	2.2	277.1	9.1
Exemption E with D = 34.7 mi.			1,156		1,156		1,156		1,156		36,171
Well 8, 55 day well (3)		95.4	2.7	40.6	1.3	1902.7	52.1	62.2	1.9	277.1	7.7
Exemption E with D = 34.1 mi.			1,136		1,136		1,136		1,136		35,753

- NOTES: (1) See attached calculations
 (2) Based on continuous emission for a 65 day well.
 (3) Based on continuous emission for a 55 day well.
 (4) Based on operation of emergency generator 2 hours per week or 10 times for 65 day well
 (5) Based on operation of emergency generator 2 hours per week or 8 times for 55 day well
 (6) Based on average operation of one crane 8 hours per day for 65 day well
 (7) Based on average operation of one crane 8 hours per day for 55 day well

CALCULATION OF PROJECTED EMISSIONS
ZAPATA YORKTOWN
OCS-G 3208

- I. Electric Power Generation consisting of three EMD MD16E8 1950 rated horsepower, 2-Cycle, Roots blown diesel engines driving 1400 KW 600 Volt generators.

Average Fuel use is 73.2 barrels (3074 gallons) per day.

Emission factors provided by the Electro-Motive Division of the General Motors Corp. for the MD16E8 engine at full load (1950 HP) are as follows:

	lb./10 ³ gal. of No. 2 diesel
TSP	13.0
NO _x	597.5
CO	88.7
VO ₂ (HC)	19.4
SO ₂ *	28.5

* Based on sulfur content of 0.2 percent (by weight) in No. 2 diesel fuel.

Example Calculations

NO_x for Electric Power Generation (Source - lb./day)

$$597.5 \frac{\text{lb. NO}_x}{10^3 \text{ gal.}} \times 3.074 \frac{10^3 \text{ gal}}{\text{day}} = 1836.7 \frac{\text{lb. NO}_x}{\text{day}}$$

NO_x for Electric Power Generation (Facility - Tons/year)

$$1836.7 \frac{\text{lb. NO}_x}{\text{day}} \times 65 \frac{\text{day}}{\text{well}} \times \frac{1}{2000} \frac{\text{Tons}}{\text{lb.}} = 59.7 \frac{\text{Tons NO}_x}{\text{well}}$$

- II. Emergency Power generator engine is a Caterpillar D-353-JWAC 490 horsepower diesel engine. Unit is operated for two hours once each week.

Estimated fuel use is 27.4 gallons per hour.

Emission factors provided by the Engine Division of the Caterpillar Tractor Co. for the D353-JWAC engine at full load (490 HP) are as follows:

	<u>lb./10³ gal. of No. 2 diesel</u>
TSP	2.19
NO _x	241.23
CO	16.08
VOC (HC)	8.0
SO ₂ *	28.51

* Based on sulfur content of 0.2 percent (by weight) in No. 2 diesel fuel.

Example Calculations

NO_x for Emergency Generator (Source - lb./day) - As above I

NO_x for Emergency Generator (Facility - Tons/year)

$$13.22 \frac{\text{lb. NO}_x}{\text{day}} \times 10 \frac{\text{day}^*}{\text{well}} \times \frac{1}{2000} \frac{\text{Tons}}{\text{lb.}} = 0.07 \frac{\text{Tons NO}_x}{\text{well}}$$

* These are intermittent operations resulting in fluctuating emissions. Emergency generator is operated 2 hours per week or 10 times during a 65 day well.

III. Cranes are equipped with Caterpillar D-353-JWAC diesel engines rated at 490 horsepower. Average use amounts to one crane for eight hours per day.

Fuel consumption is 219 gallons for 8 hours.

Emission factors provided by the Caterpillar Tractor Co. are the same as in II above.

Example Calculations

NO_x for crane engines (Source - lb./day) - As above I

NO_x for crane use (Facility - Tons/year)

$$52.88 \frac{\text{lb. NO}_x}{\text{day}} \times 65 \frac{\text{day}}{\text{well}} \times \frac{1}{2000} = 1.72 \frac{\text{Tons NO}_x}{\text{well}}$$

IV. Tank vapors result from diesel oil storage. Total storage capacity is 2400 bbl. (30-day supply) while daily consumption is 78.6 bbl. Refueling is performed about once per week. Evaporative emission factors for No. 2 diesel fuel are obtained from EPA AP-42 Section 4.3 Storage of Petroleum Liquids, Table 4.3-4.

Breathing Loss	0.0039 lb./10 ³ gal./day
Working Loss	0.023 lb./10 ³ gal./throughout

Example Calculations

Average Stored Volume

$$2400 \text{ bbl} - 3.5 \text{ days} \left(\frac{78.6 \text{ bbl.}}{\text{day}} \right) = 2125 \text{ bbl} = 89.25 \times 10^3 \text{ gal.}$$

Daily consumption

$$78.6 \text{ bbl.} = 3.300 \times 10^3 \text{ gal.}$$

Breathing Loss

$$0.0039 \frac{\text{lb. VOC}}{10^3 \text{ gal./day}} \times 89.25 \times 10^3 \text{ gal.} = 0.35 \frac{\text{lb. VOC}}{\text{day}}$$

Working Loss

$$0.023 \frac{\text{lb. VOC}}{10^3 \text{ gal.thru.}} \times 3.300 \frac{10^3 \text{ gal thru}}{\text{day}} = 0.08 \frac{\text{lb. VOC}}{\text{day}}$$

$$\text{Total vapor loss (source - lb./day)} = 0.43 \frac{\text{lb. VOC}}{\text{day}}$$

$$\text{Total vapor loss (Facility - Tons/year)} = 0.01 \frac{\text{Tons VOC}}{\text{well}}$$

Exemption Calculations

Well 7

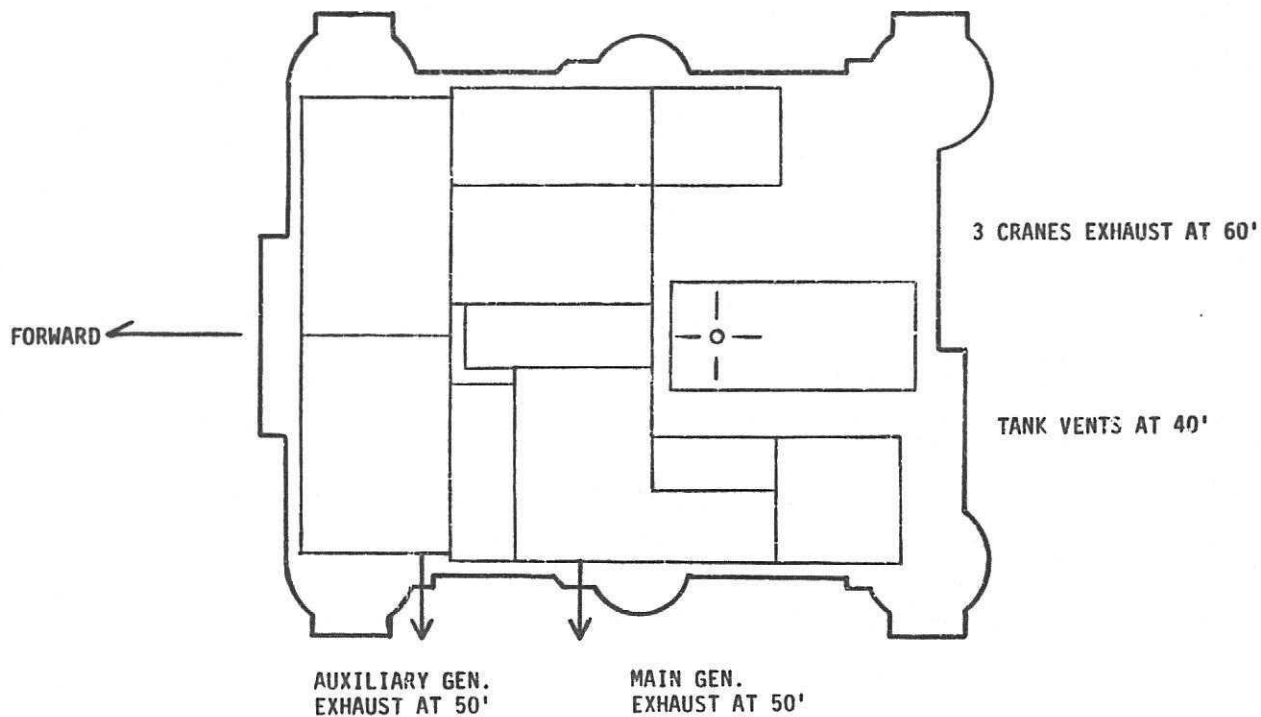
$$E \text{ for NO}_x, \text{ TSP, VOC and SO}_2 = (33.3)(34.7) = 1,156 \text{ T/yr.}$$

$$E \text{ for CO} = (3400)(34.7)^{2/3} = 36,171 \text{ T/yr.}$$

Well 8

$$E \text{ for NO}_x, \text{ TSP, VOC and SO}_2 = (33.3)(34.1) = 1,136 \text{ T/yr.}$$

$$E \text{ for CO} = (3400)(34.1)^{2/3} = 35,753 \text{ T/yr.}$$



MAIN DECK PLAN
ZAPATA
YORKTOWN

Note: Heights above
sea at drlg. draft

BLOCK 862, VIOSCA KNOLL AREA

OFFSHORE LOUISIANA

SECTION 3: GEOLOGICAL AND GEOPHYSICAL SURVEY RESULTS, AND SHALLOW
DRILLING HAZARDS REPORT

All anticipated geophysical work preparatory to initiation of exploratory drilling operations has been completed.

Water depth on Viosca Knoll Block 862, at locations 7 and 8 are approximately 960 and 1125 feet respectively. The "cultural resource" requirement was not invoked for this lease.

Pursuant to Notice to Lessees and Operators No. 75-8, dated June 1, 1975, and to 30 CFR 250.34, we have examined available high resolution geophysical data (sparker), seismic CDP and bright spot information, velocity data, and geologic data and find, to the best of our knowledge, that there are no significant shallow drilling hazards at the proposed drilling locations.

Block 862, VIOSCA KNOLL AREA

OFFSHORE LOUISIANA

SECTION 4: LOCATION

A. LOCATION MAP OF BLOCK AND SHORELINE.

Please see attached.

B. DESCRIPTION OF ONSHORE SUPPORT BASE FACILITIES

The following described commercial facilities for storage, staging, and supply are operated by A-Z Terminal, Inc. on Haliburton Road, Venice, Louisiana:

- Approximately 1200 feet of dock front adjacent to 22 acres of land storage area
- Office spaces, covered storage and warehouse facilities are available as needed
- Approximately 1345 square feet of office space
- 30 parking spaces
- Diesel fuel, gasoline, and helicopter fuel are available from commercial facilities within one mile of the terminal; therefore, no fuel storage is required.
- Potable water is available at dockside
- Exxon operates a surfaced heliport equipped with wind sock direction indicator located approximately 150 yards south of A-Z Terminal.

All facilities are considered adequate and no acquisitions for facility expansions are contemplated.

Other than an Exxon dispatcher, it is not anticipated that additional employees will be required to man this facility. No additional employments are forecast at this time, and impact on housing, services, and public facilities are expected to be minimal. The number of persons on the drilling vessel will generally be between 50 and 80.

At current exploration activity levels, we expect 25 boat trips and 26 helicopter flights per month from these facilities. The docks are approximately two miles from West Bay, via Tiger Pass, and once boats reach open water, they will travel the most practical, direct route to the rig. All helicopter flights follow the most practical and direct route to the rig. The subject well is approximately 63 miles east-southeast of Venice, Louisiana.

C. LOCATION MAP OF BLOCK WITH WELL LOCATIONS

See attached.

ST. BERNARD

PARISH

CHANDELEUR SOUND AREA

CHANDELEUR AREA

VIOSCA KNOLL AREA

CHANDELEUR AREA
(EAST ADDITION)

BRETON SOUND AREA

MAIN PASS AREA

MAIN PASS AREA
(SOUTH AND EAST ADDITIONS)

Venice

MISS R.

TO VENICE, LA. - 60 MI.

VIOSCA KNOLL AREA

WEST DELTA
AREA

SOUTH PASS AREA (EAST ADDITION)

GULF

SOUTH PASS AREA

87

MISSISSIPPI CANYON AREA

OF

MEXICO

12 0 12 24 MILES

SCALE: 1" = 12 MILES (APPROX)

APPLICATION BY

EXXON COMPANY, U.S.A.

(A DIVISION OF EXXON CORPORATION)

VICINITY MAP

VIOSCA KNOLL AREA BLOCK 907

GULF OF MEXICO

DRAWN BY WHT.

CHECKED BY *sh*

DATE 9-26-79

REVISED

SHEET 1 OF

FILE NO: EA-5025-1

FLOCK 862, VIOSCA KNOLL AREA

OFFSHORE LOUISIANA

SECTION 5: OIL SPILL CONTINGENCY

Procedures for preventing, reporting, and cleaning up oil spills or waste materials are included in contingency manuals developed by Exxon's Southeastern Division office and revisions approved October 21, 1980, by the Oil and Gas Supervisor, Gulf of Mexico Area, U.S. Geological Survey. All procedures, personnel training and equipment are designed to be in compliance with OCS Order No. 7.

The possibility of a spill of any nature and magnitude has been contemplated by the Clean Gulf Associates (CGA). This organization has a membership of almost every operator in the Gulf of Mexico, including Exxon. CGA maintains spill and containment equipment at strategic locations along the coast, and as a member of the organization, this equipment is immediately available to Exxon. A list of the principal items of such equipment is included in Section III of the CGA "Oil Spill Contingency Manual."

Response time in the event of an emergency on this specific lease:

1. Approximately 1.0 hour by helicopter
2. Approximately 10 hours by CGA from its base at Grand Isle, Louisiana where fast response systems are located.

BLOCK 862, VIOSCA KNOLL AREA

OFFSHORE LOUISIANA

SECTION 6: MUD ADDITIVES

A. BASIC MUD COMPONENTS

Barite (Barium Sulfate)
Bentonite (Sodium Montmorillonite Clay)
Lignosulfonate (Chrome Lignosulfate)
Lignite (Leonardite-Brown Coal)
Caustic Soda (Sodium Hydroxide)

B. MUD ADDITIVES

Soda Ash (Sodium Carbonate)
SAPP (Sodium Acid Pyrophosphate)
Sodium Bicarbonate
Lime (Calcium Hydroxide)

C. SPECIAL PURPOSE ADDITIVES

Surfactants:

Pipe Lax (Naphtha Base Surfactant)*
Libra-Glide (Copolymer Beads)
Torq-Trim (Vegetable Oil Base Surfactant)
Black Magic (Oil Base Surfactant)*

Lost Circulation Material:

Mica
Nut Hulls

Special Fluid-Loss Control Agent:

CMC (Carboxymethyl Cellulose)

Defoaming Agent:

Aluminum Stearate

*Will not be discharged overboard

BLOCK 862, VIOSCA KNOLL AREA

OFFSHORE LOUISIANA

SECTION 7: PERMITS

- A. Required State Permits: None.
- B. Required Federal Permits; Coastal Zone Management Review:

The activities described in detail in this Plan of Exploration and the activities authorized by related Federal permits and licenses comply with the Louisiana and Mississippi Coastal Management Programs and will be conducted in a manner consistent with that program. The principal Federal Permits are listed below:

USGS Application for Permit to Drill: It is anticipated that USGS Form 9-331C will be filed about February 12, 1981, pursuant to this Plan of Exploration.

Environmental Protection Agency National Pollutant Discharge Elimination System (NPDES) Permit: Application for Permit to Discharge -- Short Form C -- was filed with EPA Region VI on September 10, 1975.

Corps of Engineers, U. S. Army, Blanket Permit Application. Application was filed on EOC Form 4345 with New Orleans District Engineers on June 19, 1975 and approved August 5, 1975.

In addition to activities authorized by the above permits, Exxon will conduct certain supporting functions pursuant to various additional Federal permits, licenses, and approvals, such as those authorized by the Federal Communications Commission and the Federal Aviation Administration. All such activities comply with the Louisiana and Mississippi Coastal Management Programs and will be conducted in a manner consistent with those programs.

BLOCK 862, VIOSCA KNOLL AREA

OFFSHORE LOUISIANA

SECTION 8: PROPRIETARY DATA

A location plat, a structural map, and two schematic cross sections with expected depth marker formations are attached.

Exxon considers the data in this section to be proprietary and exempt from disclosure under the Freedom of Information Act (5 U.S.C. 552) and implementing regulation (43 CFR Part 2).

CSA

1. TITLE PAGE

Continental Shelf Associates, Inc.

P. O. Box 3609

Tequesta, Florida

33458

ENVIRONMENTAL REPORT
(SUPPLEMENTAL PLAN OF EXPLORATION)
GULF OF MEXICO
OFFSHORE LOUISIANA AND MISSISSIPPI
VIOUCA KNOLL AREA
BLOCK 862 (OCS-G 3208)
EXXON CORPORATION

7 February 1981

Mr. W. R. Warnack
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713/999-9390

"Applied Marine Science and Technology"



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Location of Block 862 in Relation to the
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2

2. DESCRIPTION OF THE PROPOSED ACTION

This environmental report has been prepared with consideration for the policy aims and guidelines of the Louisiana Coastal Zone Management Program and Mississippi Coastal Program, and is intended to comply with the regulations in 30 CFR 250, OCS orders, "Notices to Lessees and Operators," and all Federal and State Environmental Documents.

As proposed, the Supplemental Plan of Exploration for Viosca Knoll Block 862 consists of from one to two wells at the following anticipated locations:

<u>Well No.</u>	<u>Anticipated Location</u>
7	3900' SNL; 6700' EWL
8	2500' NSL; 2700' EWL

At this time the planned commencement date for Well No. 7 and all associated activities in Block 862 is on or about February 18, 1981.

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

Crew- and workboats will be operated from one existing facilities of A-Z Terminal Inc., on Haliburton Road, Venice, Louisiana (Figure 1). The docks are approximately two miles from West Bay via Tiger Pass. Helicopters will be operated from a heliport about 150 yards from the A-Z Terminal. At current exploration activity levels, approximately 26 helicopter flights and 25 crew- and workboat trips are

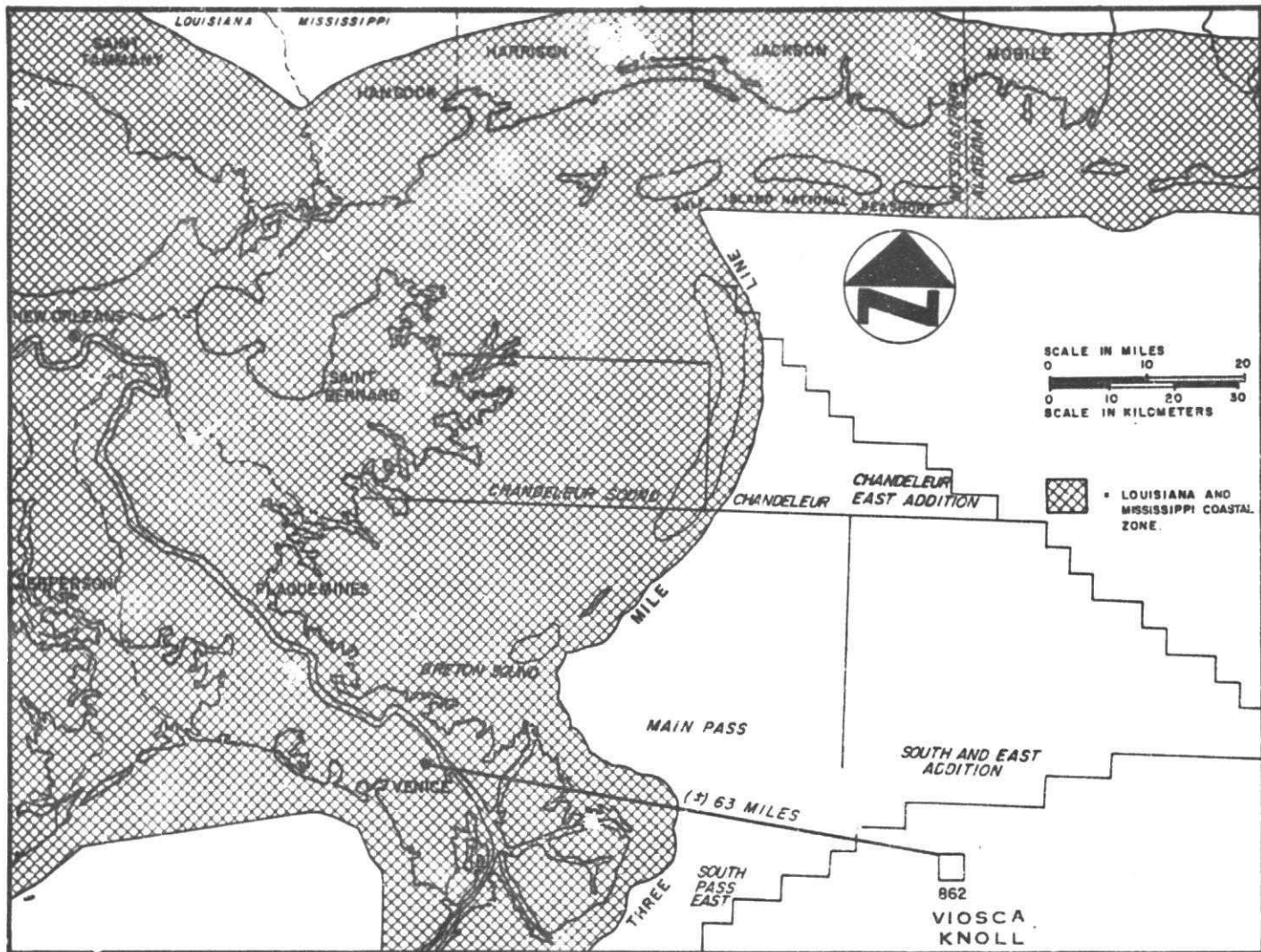


FIGURE 1. LOCATION OF BLOCK 862 IN RELATION TO THE LOUISIANA AND MISSISSIPPI COASTAL ZONES.

expected per month from these facilities. Once the boats or helicopters reach open water, they will travel the most practical, direct route to the rig, which will be located approximately 63 miles east-southeast of Venice, Louisiana (Figure 1).

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

The onshore support base for this exploratory activity will be A-Z Terminal, Inc., as described above. Facilities consist of approximately 1,200 feet of dock frontage for offshore workboats and crewboats, 32 acres of land storage, rental office space, covered storage, and parking areas. A heliport equipped with a wind sock direction indicator is located about 150 yards south of the A-Z Terminal.

Other than an Exxon dispatcher at Venice, if required, it is not anticipated that additional employees will be required to man existing support facilities. Impact on housing, services, and public facilities is expected to be minimal. The number of persons on the drilling vessels at any one time will generally be between 50 and 80.

The initial OCS Socio-Economic Data Base Report is being developed for submittal on or about April 1, 1981. The USGS and the states of Alabama, Louisiana, and Mississippi are presently identifying the specific parameters to be addressed in these semiannual reports (see Section 3.b.).

c. IDENTIFICATION OF THE NUMBER, LOCATION, AND SIZE OF ANY NEW SUPPORT FACILITIES THAT WILL NEED TO BE PROVIDED FOR THE PROPOSED ACTIVITY

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

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

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

e. MAPS SHOWING LOCATION OF THE PROPOSED ACTIVITY IN RELATION TO EACH OF THE AFFECTED STATES' COASTAL ZONES

See Figure 1. Activities will be restricted to OCS waters adjacent to the states of Louisiana and Mississippi.

f. FOR PLANS OF DEVELOPMENT/PRODUCTION, THE MEANS PROPOSED TO TRANSPORT OIL AND GAS TO SHORE FROM THE LEASE SITE, THE ROUTES TO BE FOLLOWED AND THE ESTIMATED QUANTITIES OF OIL AND GAS TO BE MOVED ALONG SUCH ROUTES

The plan is exploratory. No oil or gas will be produced for sale.

3. DESCRIPTION OF THE AFFECTED ENVIRONMENT AND IMPACTS

a. PHYSICAL AND ENVIRONMENTAL

(1) Commercial Fishing

Viosca Knoll Block 862 lies approximately 36 miles to the east of the Mississippi Delta in an area where OSC operations affect both Louisiana and Mississippi. National Marine Fisheries Service grids 11 (containing the lease site) and 12 accounted for almost 5% of the total commercial fisheries harvest from the northwestern Gulf in the period from 1968 to 1974 (USDI, 1980, Visual 5). Gulf waters account for approximately one-third of the total annual U.S. fisheries harvest (USDI, 1979).

The Gulf fishery is dominated by the shellfish fisheries. Shrimp, crabs, and oysters (with smaller amounts of clams and scallops) are the most valuable fisheries and are usually worth three or four times more than the greater volume of finfish catch (USDI, 1979). Table 1 lists the most important shellfish and finfish in Louisiana and Mississippi offshore waters and gives average annual harvest estimates (in pounds) in the coastal parishes and counties onshore from the lease area. Table 2 gives the value per species of that harvest.

The shrimp fishery in the Gulf of Mexico includes the brown (Penaeus aztecus), white (P. setiferus), and pink (P. duorarum) shrimp. These species are taken almost exclusively by trawls in depths ranging from approximately 6

Table 1. Offshore Commercial Fisheries Harvest (In Pounds) Landied in Coastal Louisiana Parishes and Mississippi Counties Onshore From the Lease Site.

Species	<u>St. Tammany</u> ¹	<u>Tangipahoa</u> ¹	<u>Plaquemines</u> ¹	<u>Jefferson</u> ¹	<u>Lafourche</u> ¹	<u>Handcock Harrison Jackson</u> ²
Shrimp	2,394,500	-	12,488,000	16,698,000	15,250,500	3,667,000
Crabs	2,049,500	563,200	569,700	1,841,600	1,446,800	1,710,100
Menhaden	*	*	*	*	*	278,544,000
Mullet	1,512,400	-	437,900	2,000	38,700	1,543,100
Croaker	10,400	900	106,800	53,400	61,300	234,300
Groupers	*	*	*	*	*	35,220
Spanish Mackerel	300	-	6,700	1,800	8,600	65,840
Red Drum	80,600	100	341,600	75,800	260,800	90,680
Flounders	17,500	-	55,900	48,700	94,300	43,680
Black Drum	24,500	100	96,700	33,100	163,600	2,222,500
Sea Trout	20,400	500	246,700	52,200	229,400	49,100
Sheepshead	5,200	100	22,100	14,100	50,700	51,430
Red Snapper	-	-	2,200	1,800	41,400	901,270
Pompano	-	-	3,200	600	4,800	25,300

*catch statistics not available on parish basis
-no catch reported

¹(From National Marine Fisheries Service Statistics for Louisiana Parishes for 1978; personal communication, Orville M. Allen, Area Supervisor, NMFS, New Orleans)

²(From Landings in Mississippi Counties from July 1979 through June 1980; personal communication, Dr. F. Deegan, Chief, Salt Water Fishery Division, Mississippi Department of Wildlife Conservation)

Table 2. Total Commercial Fisheries Harvest Landed in Louisiana Parishes and Mississippi Counties Onshore From The Lease Site and The Per Species Value of That Harvest.

<u>Species</u>	<u>Total Pounds</u>	<u>Total Value in Dollars</u>
Shrimp	50,498,000	48,983,060
Crabs	8,180,900	1,717,989
Menhaden	1,032,916,000	44,161,367
Mullet	3,534,100	247,387
Croaker	467,100	70,065
Groupers	37,514	10,269
Spanish Mackerel	83,240	14,141
Red Drum	849,580	373,815
Flounders	260,080	104,032
Black Drum	2,540,500	508,100
Sea Trout	598,300	317,099
Sheepshead	143,630	20,108
Red Snapper	946,670	785,736
Pompano	33,900	33,561

(From National Marine Fisheries Service Statistics for 1978; personal communication, Orville M. Allen, Area Supervisor, NMFS, New Orleans; Mississippi Landings, personal communication, Dr. F. Deegen, Mississippi Department of Wildlife Conservation).

to 240 feet. These shrimp are estuarine-dependent species which spawn in the open ocean, go through a series of larval phases in the plankton, migrate during post-larval phase to the estuarine nursery areas, then return to the open Gulf as adults. Seasonal variation in the habits of each of these species is indicated in Table 3. Block 862 lies outside the spawning grounds and migration routes for all three commercially valuable shrimp species in the northern Gulf (USDI, 1977, Visual 5; USDI, 1979, Visual 5). Drilling activities should have virtually no effect on the inshore shrimp fishery. Planktonic eggs and larval stages of various shrimp species probably do occur in Block 862 periodically.

Viosca Knoll Block 862 also lies on the outer edge of the royal red shrimp fishing grounds (USDI, 1980, Visual 5). Royal red shrimp show no apparent seasonal variation in average size. No uniform size dominates the catches (Bullis, 1956). Although they are found in some abundance southeast of the mouth of the Mississippi, areas off the coast of Texas show much better catch results (TerEco, 1976). TerEco (1976) lists the royal red shrimp, Hymenopenaeus robustus, as a potential rather than a realized fishery from the upper continental slope of the Gulf of Mexico. Planktonic larva of this species are probably found in Block 862 on occasion.

The blue crab (Callinectes sapidus) makes up 98% of the crab harvest in the Gulf of Mexico (Riley, 1970). Their life cycle is similar to the shrimp in that they have planktonic,

estuarine, and open ocean phases. Adults spend most of their lives in the estuaries. Gravid females migrate to the open Gulf to release their eggs during spring and summer. The blue crab harvest is taken far inshore of Block 862. However, planktonic larvae may appear at some times within this block.

Viosca Knoll Block 862 lies on the outer boundary of the commercially important finfish fishing grounds east of the Mississippi canyon (USDI, 1979, Visual 5). The three species of menhaden known from the Gulf make up the major finfish tonnage taken. These are Brevoortia patronus, B. gunteri, and B. smithi. Brevoortia patronus comprises most of the Gulf catch. Purse seining is the major capture method used in this fishery (Lindall et al., 1972).

Red snapper (Lutjanus campechanus) and various species of grouper (i.e., the red grouper Epinephelus morio and gag Mycteroperca microlepis) compose a large part of the commercial hook and line fishery of Louisiana and Mississippi. These fishes may be taken over irregular bottom areas in depths of 5 to 1,000 feet (TerEco, 1976).

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

The Atlantic croaker (Micropogon undulatus) is an abundant fish in Louisiana and Mississippi estuarine waters. Perret et al. (1971) found croaker to be the most abundant

juvenile commercial fish in the estuaries. Croakers are harvested and marketed both as food fish and industrial bottom fish (Lindall et al., 1972).

The Florida pompano (Trachinotus carolinus) is primarily an inshore fish that is taken mostly in the surf or at passes. They are seasonally abundant (January to April) in shrimping areas.

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

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

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

Some additional fishes of the northern Gulf which are important to commercial and/or sport fishermen are listed in Table 4. Most of the northern Gulf fishes are temperate, with some incursions from the Caribbean fauna. They exhibit seasonal distribution and abundance fluctuations related to oceanographic conditions (USDI, 1979, p. 70). Many of the coastal species (e.g. the croaker, Micropogon undulatus) are estuarine-dependent, because estuaries or coastal marshes are

Table 4. List of the Commercial and Sport Fishes Common to the Northern Gulf and the Predominant Method of Capture (All may occur intermittently in Block 862).

<u>Common Name</u>	<u>Scientific Name</u>	<u>Capture Method</u>
Wenchman Snapper	<u>Pristipomoides</u> <u>aquilonaris</u>	Bottom Trawl
Longspine Scorpionfish	<u>Pontinus longispinis</u>	Bottom Trawl
Spotted Hake	<u>Urophycis regius</u>	Bottom Trawl
Gulf Hake	<u>Urophycis cirratus</u>	Bottom Trawl
Gulf Silver Hake	<u>Merluccius bilinearis</u>	Bottom Trawl
Tilefish	<u>Lopholatilus</u> <u>chamaeleonticeps</u>	Hook & Line
Yellowedge Grouper	<u>Epinephelus</u> <u>flavilinctus</u>	Hook & Line
Warsaw Grouper	<u>Epinephelus</u> <u>nigrifrons</u>	Hook & Line
Red Snapper	<u>Lutjanus campechanus</u>	Hook & Line
Vermilion Snapper	<u>Rhomboplites aurorubens</u>	Hook & Line
Scamp	<u>Mycteroperca phenax</u>	Hook & Line
Red Grouper	<u>Epinephelus morio</u>	Hook & Line
Black Grouper	<u>Mycteroperca bonaci</u>	Hook & Line
Gag	<u>Mycteroperca microlepis</u>	Hook & Line
Brazilian Snapper	<u>Lutjanus aya</u>	Hook & Line
Round Herring	<u>Etrumeus teres</u>	Midwater Trawl
Round Shad	<u>Trachurus lathami</u>	Midwater Trawl
Skipjack Tuna	<u>Euthynnus pelamis</u>	Longline or Purse Seine
Yellowfin Tuna	<u>Thunnus albacares</u>	Longline or Purse Seine

Table 4 (continued)

Blackfin Tuna	<u>Thunnus atlanticus</u>	Longline or Purse Seine
Bluefin Tuna	<u>Thunnus thynnus</u>	Longline or Purse Seine
Rainbow Runner	<u>Elagatis bipinnulata</u>	Hook & Line
Dolphin	<u>Coryphaena hippurus</u>	Hook & Line
Wahoo	<u>Acanthocybium solanderi</u>	Hook & Line
Atlantic Bonito	<u>Sarda sarda</u>	Hook & Line
Swordfish	<u>Xiphias gladius</u>	Hook & Line
Sailfish	<u>Istiophorus platypterus</u>	Hook & Line
Blue Marlin	<u>Makaira nigricans</u>	Hook & Line
White Marlin	<u>Tetrapturus albidus</u>	Hook & Line

a critical habitat during some phase of their life cycle. Rodgers (1977) postulates a net inshore-offshore movement for many demersal shelf fishes. Thus, it is possible that many of these species may occur in Block 862 at some phase of their life cycle.

Eggs and larvae (ichthyoplankton) of various commercially important fish species are probably present in Block 862 on occasion. Sixty-nine fish species have been identified from samples taken to the west of Block 862. Dominant taxa were the families Sparidae, Lutjanidae, Triglidae, Serranidae, and Synodontidae. Stenotomus caprinus, Pristipomoides aquilonaris, Prionotus paralatus, Serranus atrobranchus, and Synodus foetens were the most important species (Chittenden and Moore, 1976). Since the majority of ichthyoplankters are at the mercy of water movements, their distributions vary considerably with space and time. The primary factors influencing ichthyoplankton in the northern Gulf are the Loop Current, the Mississippi River, and local runoff. Due to "patchiness" in distributions, presence and abundance of ichthyoplankton at any given instance can not be predicted.

Drilling at the lease site probably will temporarily degrade the water quality in the immediate vicinity of the drill site due to discharges of drilling fluids and cuttings. This may cause certain fish species to avoid the area. The situation should revert to normal as soon as the exploratory

drilling is completed. Cumulative effects of increasing oil and gas exploration off the Louisiana and Mississippi coast on annual catches are as yet unknown. However, there is no evidence to link oil and gas exploration with declining yield per hectare of sea bottom (USDI, 1979, p. 181).

Any oil spill that would reach the sea floor could conceivably kill benthic organisms such as shrimp or cause a variety of sublethal effects. The potential long-term effects of a spill on the benthos are unclear because it is not known whether petroleum hydrocarbons accumulate in the bottom sediment (USDI, 1979, p. 161). In blocks with water depths greater than 20 meters, the possibility that an oil spill would reach the sea floor is considered remote (USDI, 1979, p. 145). Water depth throughout V. a. ca Knoll Block 862 is far in excess of 20 meters.

An oil spill would degrade water quality and introduce toxins into the water. Ichthyoplankton, if present, may be killed or functionally impaired. However, most adult fish encountering a spill and associated toxic water would probably exhibit avoidance behavior. This effect would be temporary and fish should return to the area after dispersal of the spill. No significant or persistent direct effects from an oil spill on fish populations would be expected. Recruitment from surrounding areas should quickly replenish any affected ichthyoplankton populations once the spill has dispersed.

(2) Shipping

Viosca Knoll Block 862 lies approximately 18.2 nautical miles east of the fairway to South Pass (USDI, 1979, Visual 1). This block is rated as having minimal potential impact on shipping since it is greater than 2.7 nautical miles from a fairway (USDI, 1979, p. 145).

Coastal fogs cause occasionally low visibility in the lease area between November and April. Generally, these coastal fogs last three to four hours. However, particularly dense sea fogs may persist for several days. The number of days per month when visibility can be expected to be equal to or less than one quarter of a nautical mile is as follows (USDC, 1979):

January	7 days	July	0 days
February	4 days	August	0 days
March	4 days	September	0 days
April	2 days	October	2 days
May	1 day	November	4 days
June	0 days	December	6 days

During periods of reduced visibility, operations in Block 862 have the greatest potential for adverse impact on local vessel traffic. However, in view of the total amount of vessel traffic along this coast, the risk specifically assignable to activities in Block 862 is considered negligible. Structures to be positioned at the lease site are temporary and will be removed once the activities are completed.

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

There are several offshore platforms and three reported wrecks inshore of Viosca Knoll Block 862 (USDI, 1980, Visual 4). Although these platforms and reported wreck sites lie only a few miles inshore of the lease site, the shelf slope topography in this area places them in much shallower water than Block 862 (USDI, 1979, Visual 7). It is considered doubtful that a significant amount of sport fishing occurs in Block 862 itself.

Any sports fishing which might occur in the lease area could be temporarily affected by degradation of water quality during drilling. Such a change in water quality could cause some species to avoid the immediate area of the drill site. Migrations of adults of important species should not be affected because the migrators should not find the drilling operation an unavoidable or interfering obstruction. Some larvae and eggs of certain species important to commercial and sport fishermen could also be adversely affected in the immediate area of the drill site because of degradation of water quality. However, any such effects are expected to be temporary and localized and should not affect any fishery potential in the area as a whole. Populations should return to normal once drilling is completed.

Certain pleasure boats (i.e., sail boats, pleasure yachts, and/or open ocean racing power boats) may be slightly inconvenienced by having to avoid the drilling rig and its

support vessels. This inconvenience is considered to be extremely minor. Exploratory drilling rigs are easily avoided and maneuvering room is available.

(4) Cultural Resources

Viosca Knoll Block 862 lies outside the Cultural Resources Demarcation Line (USDI, 1980, Visual 12) in an area where cultural resources are unlikely to be found. An archaeological survey was not required for this block. No features indicating possible cultural resources were detected in the geophysical survey of this area. Mass sediment movement throughout the historic period around the active Mississippi Delta has probably destroyed and scattered any ships which might have gone down in that area (Coleman, 1980).

(5) Ecologically Sensitive Features

Several areas of environmental concern lie onshore of Block 862. Louisiana and Mississippi have developed Federal-approved Coastal Zone Management Programs to regulate the significant land and water activities between the outer limit of each State's coastal waters and land up to the Intracoastal Waterway and/or the 10 foot contour. Land uses which have a direct and significant impact on the coastal area are required by federal law to be consistent with these management programs (USDC and LDNR, 1981; MDWC and USDC, 1980). Both programs provide for the protection of beaches, dunes, wetlands, submerged grassbeds, barrier islands, oyster

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

There are two existing "Special Management Areas" designated by the Louisiana Coastal Management Program (USDI and LDNR, 1980, p. 104-108). These areas are the "Louisiana Offshore Oil Port" (LOOP or Superport) and the "Marsh Island Wildlife Refuge and Game Preserve". Block 862 lies well away from both these areas. None of the proposed activities in this block should have any affect on them.

Mississippi designates three types of areas as current or proposed Special Management Areas: (i) industrial and port areas, (ii) shorefront access areas, and (iii) urban waterfronts. Current Mississippi Special Management Areas are listed below:

<u>Industrial Ports</u>	<u>Shore Access</u>	<u>Urban Waterfronts</u>
Port Bienville Industrial Park	Harrison County Beach	Waveland
Pass Christian Industrial Park	Bay St.Louis-Waveland Beach	Bay St.Louis
Bayou Bernard Industrial Park	Ocean Springs Beach	Pass Christian
Pascagoula River	Pascagoula Beach	Long Beach
Bayou Casotte	Deer Island	Gulfport Harbor
Moss Point Industrial Park (Proposed)		Biloxi
		Pascagoula
		Moss Point

Block 862 is well away from these sites and the proposed activities should have no effects in any of these Special Management Areas.

Conspicuous areas of environmental concern for Louisiana and Mississippi are depicted by the USDI (1979, Visual 1 and 4), the USDC and LDNR (1980, Figure D-1) and MDWC and USDC (1980, Figures VI-1, VI-2, and VI-4). Specific recreational and conservation sites onshore from the lease area in Louisiana and Mississippi include:

<u>Name</u>	<u>Parish or County</u>	<u>Type</u>
<u>Louisiana</u>		
Pass A Loutre	Plaquemines	Wildlife Management Area
Delta National Wildlife Refuge	Plaquemines	National Wildlife Refuge
Bohemia Wildlife Management Area	Plaquemines	Wildlife Management Area

Biloxi Wildlife Management Area	St. Bernard	Wildlife Management Area
Pearl River	St. Tammany	State Wildlife Management Area

Mississippi

Offshore From Bay St. Louis	Hancock	Oyster Grounds
Gulf Port	Harrison	Recreational Beaches
Biloxi	Jackson	Recreational Beaches

Offshore terrestrial areas near the lease site of particular ecological significance to both Louisiana and Mississippi are the barrier islands of Breton National Wildlife Refuge and Gulf Island National Seashore. Submerged areas of critical concern are the extensive oyster grounds off Plaquemines and St. Bernard Parishes, and one submerged area of hard bottom (remanent coastal bank) which is located much farther away (40 miles) to the north-northeast, off Mobile, Alabama (USDI, 1979, Visual 1, and 4).

While oil spills during drilling operations are rare (Danenberger, 1976), the possibility of a spill resulting from a blowout does exist. Oil fouling in any coastal area could directly or indirectly affect a variety of species, including threatened or endangered species or species important to commercial and sport fisheries. Direct effects on biota would include fouling (particularly birds), suffocation (particularly fishes and turtles), and toxicity from contact or from the ingestion of oil or contaminated food. Any of these effects could kill directly or cause weakening or a greater susceptibility to predation or other

adverse conditions. Indirect effects would include the destruction of habitat, especially breeding and nursery areas. Any effects on endangered or threatened species could be significant.

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

There are numerous factors unique to each lease block which would either intensify or reduce the effects of a major oil spill. The USDI (1979, p. 143) developed a sensitivity rating system which can be applied to any lease block. This system assigns a sensitivity rating for each block to each environmental resource which might be affected by an oil spill. These ratings are assigned based upon the site's distance from a particular resource and vary depending upon the type of resource being rated. Ratings are: 1-minimum; 2-moderate; and 3-maximum. Sensitivity ratings which may be assigned to Viosca Knoll Block 862 are as follows:

<u>Resource</u>	<u>Rating</u>	<u>Distance From Resource</u>
Littoral Systems	1	>17 nmi
Reefal Systems	1	>17 nmi
Other Benthic Systems	1	>20 m deep

Commercial Fishing	1	>200 m deep
Endangered Species	1	>17 nmi
Shipping	1	>2.7 nmi
Aesthetics	1	>17 nmi
Cumulative Impact	7/21	
Impact Index	.33	

Evaluation of the Impact Index rating is as follows:

Impact Index

0.33 - 0.55 minimum

0.56 - 0.77 moderate

0.78 - 1.00 maximum

Viosca Knoll Block 862 is rated as an area of minimum potential impact from a possible oil spill using this system (USDI, 1975, p. 797). A spill would be subjected to containment and clean-up efforts, according to a USGS-approved oil spill contingency plan. Thus, it seems unlikely that a spill will occur during operations and affect any nearshore or onshore areas or resources.

(6) Existing Pipelines and Cables

There are no existing pipelines or cables in Block 862 (USDI, 1979, Visual 7).

(7) Other Mineral Uses

There are no known other mineral resources in Block 862.

(8) Ocean Dumping Activities

Viosca Knoll Block 862 does not lie in an area designated for any ocean dumping activity.

(9) Endangered or Threatened Species.

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

marine mammals would include contamination or other alterations of food supplies. However, such effects would be temporary, with a return to normal conditions after dispersal of a spill.

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

The USDI (1980) considers possible impacts of lease activities on endangered species in this area of the Gulf to be temporary, localized, and chance occurrences. They have judged the potential impacts on endangered species to be remote possibilities without major potential for direct effects on any single species. In addition, it has been determined that lease activities will not result in destruction or modification of designated critical habitats

or potential critical habitats. Onshore facilities are located in a previously developed area and pose no new or additional threats to endangered or threatened species.

b. SOCIO-ECONOMIC

The initial OCS Socio-Economic Data Base Report is being developed for submittal on or about April 1, 1981. Other than a possible Exxon dispatcher at Venice, if required, it is not anticipated that additional employees will be required to man current support facilities. No additional employments are forecast at this time. Impact on housing, services, and public facilities is expected to be negligible (see Section 2.b.).

4. UNAVOIDABLE ADVERSE IMPACTS

a. SUMMARY OF THE UNAVOIDABLE ADVERSE IMPACTS

Discharge of drilling muds and cuttings and the presence of the drilling vessel on the surface will adversely affect marine organisms, water and air quality, ship navigation, and commercial fishing as described by USDI (1979, p. 229-231). These impacts are temporary, however, and will be limited to an extremely small area in a remote location. They are justified by the national interest in discovering and developing badly needed reserves of oil and gas. The activities covered by this Supplemental Plan of Exploration should not result in unavoidable impacts on wetlands, cultural resources, recreational activities, shoreline aesthetics, or other land uses.

b. STATEMENT CONCERNING THE UNAVOIDABLE ADVERSE IMPACTS

None of the environmental consequences expected during normal operations should produce significant or cumulative adverse environmental effects. While oil spills during drilling operations are rare (Danenberger, 1976), the possibility of a spill does exist. However, Viosca Knoll Block 862 is apparently an area of minimum potential impact from a possible oil spill. The effects of a possible oil spill should have no overall cumulative or long term effect on the environment, except in the case of possible contamination of endangered marine species, i.e. turtles and/or whales. A spill would be subjected to containment and

clean-up efforts, according to a USGS-approved oil spill contingency plan. Thus, it seems unlikely that a spill will occur during operations and affect any nearshore or onshore areas or resources. Geological and environmental surveys indicate no clear or present reason not to proceed with this Supplemental Plan of Exploration for Block 862. No significant geological hazards are present and no cumulative environmental degradation should occur if the proposed Plan is implemented. Withdrawal of the Plan would result in the loss of potential hydrocarbon production from Block 862.

5. REFERENCES

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6. FINDINGS

1. Exxon's Supplemental Exploration Plan (Section-7) for OCS-G 3208 addresses all of the permits, licenses, and clearances needed to conduct the activities described in the Plan.
2. To the best of our knowledge, all of the data requested for Coastal Zone Management Review are contained in this Environmental Report and the accompanying Plan.
3. The proposed drilling activity is located outside of the Louisiana Coastal Zone and far removed from the "Marsh Island Wildlife Refuge and Game Preserve" and the "Louisiana Offshore Oil Port" and is not expected to affect these Special Management Areas (see Section 3.a.5.).
4. The proposed drilling activity is located outside of the Mississippi Coastal Zone and far removed from designated port and industrial, shorefront access, and urban waterfront Special Management Areas and is not expected to affect these areas (see Section 3.a.5.).
5. No significant detrimental impact is likely to occur to water or land uses in the Louisiana or Mississippi coastal zones as a result of activities proposed in the Supplemental Exploration Plan.
6. Each of the proposed activities, their associated facilities, and their effects are consistent with the provisions of the Louisiana Coastal Management Program and the Mississippi Coastal Program.