UNITED STATES GOVERNMENT
MEMORANDUM

October 29, 2002

To: Public Information (MS 5034)

From: Plan Coordinator, FO, Plans Section (MS 5231)

Subject: Public Information copy of plan

Control #	-	N-07608
Type	-	Initial Exploration Plan
Lease(s)	-	OCS-G22164 Block - 815 Mustang Island Area
Operator	-	Union Oil Company of California
Description	-	Wells 1, 2, and 3
Rig Type	-	JACKUP

Attached is a copy of the subject plan.

It has been deemed submitted as of this date and is under review for approval.

Elmo Cooper
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
WELL/1	G22164/MU/815	4525 FSL, 4400 FWL	G22164/MU/815
WELL/2	G22164/MU/815	4525 FSL, 4400 FWL	G22164/MU/815
WELL/3	G22164/MU/815	4525 FSL, 4400 FWL	G22164/MU/815

NOTED - SCHEXNAILDRE

Unocal Gulf Region USA
14141 Southwest Freeway
Sugar Land, Texas 77478
P.O. Box 4551
Houston, Texas 77210-4551
Telephone (281) 491-7600

CONTROL No. N-7608
REVIEWER: Elmo Cooper
PHONE: (504) 731-3083

UNOCAL

October 23, 2002

U. S. Department of the Interior
Minerals Management Service
Gulf of Mexico OCS Region
1201 Elmwood Park Boulevard
New Orleans, Louisiana 70123

Attn: Plans Section, Office of Field Operations

Re: Exploration Plan, Block 815, OCS-G-22164, Mustang Island Area

Dear Sir or Madam,

Attached are five proprietary and four public information copies of an Initial Exploration Plan addressing our proposed activity in Mustang Island Area Block 815. Unocal would like to utilize Transocean's RBF 202 jackup rig to drill the proposed wells. That rig is currently drilling a well in Mustang Island Area Block 746 and will become available in early December. Therefore, Unocal is respectively requesting expedited approval of the attached Exploration Plan.

Thank you for your consideration of this matter. Should additional information be required, please contact Joe Morton, Tim Morton & Associates, Inc. at 337/234-5124 or by e-mail at jmorton@mortoninc.com.

Sincerely,

UNION OIL COMPANY OF CALIFORNIA

For Terry Cook
Attachment

INITIAL

EXPLORATION PLAN

UNION OIL COMPANY OF CALIFORNIA

MUSTANG ISLAND AREA BLOCK 815

OCS-G-22164

OFFSHORE TEXAS

October 23, 2002

LIST OF ATTACHMENTS

A. Vicinity Plat, Location Plat

B. Rig Specifications

C. Shallow Hazard Report, Geologic Structure Map, Cross-Section Map, Stratigraphic Column and Bathymetry Map

D. Drilling Fluids List

E. Consistency Certification, Environmental Report and Air Quality Report

INITIAL

EXPLORATION PLAN

MUSTANG ISLAND AREA BLOCK 815

OCS-G-22164

OFFSHORE TEXAS

Pursuant to the requirements of 30 CFR 250 Subpart B, Union Oil Company of California (Unocal) submits the following Initial Exploration Plan for activities proposed in Mustang Island Area Block 815.

I. DESCRIPTION OF ACTIVITIES

Unocal proposes to use a jackup rig to drill three wells in Mustang Island Area Block 815. Information regarding the wells is as follows:

Well Name	Surface Location	Bottomhole Location	TVD/ MD	Lambert Coordinates	Water Depth
No. 1	4400' FWL 4525' FSL	PROP. INFO.	PROP. INFO.	X = 2,479,015' Y = 670,715'	76'
No. 2	4400' FWL 4525' FSL	PROP. INFO.	PROP. INFO.	X = 2,479,015' Y = 670,715'	76'
No. 3	4400' FWL 4525' FSL	PROP. INFO.	PROP. INFO.	X = 2,479,015' Y = 670,715'	76'

Attachment A contains a vicinity map that depicts the location of Mustang Island Area Block 815 in relation to the Texas coast and a location plat that depicts the well locations in relation to the lease lines. The wells will be drilled sequentially, and the anticipated spud date for Well No. 1 is December 1, 2002. Unocal anticipates that it will take approximately 60 days to drill and 30 days to complete each well. If commercial quantities of hydrocarbons are discovered, a Development Operations Coordination Document will be submitted for approval.

II. DRILLING RIG, SAFETY, AND POLLUTION PREVENTION INFORMATION

Unocal proposes to utilize Transocean's RBF 202 jackup rig to drill the proposed wells. Rig specifications are included in Attachment B.

Safety and pollution prevention will be accomplished during drilling operations through the use of adequately designed casing programs; blowout preventers, diverters, and other associated well equipment of adequate pressure rating to control anticipated pressures; mud monitoring equipment and sufficient mud volumes to insure well control; and properly trained supervisory personnel. Pursuant to

Coast Guard regulations, fire drills and abandon ship drills will be conducted, and navigational aids, lifesaving equipment, and all other shipboard safety equipment will be installed and maintained.

III. GEOPHYSICAL AND GEOLOGIC INFORMATION

A Shallow Hazard Report is included in Attachment C of this document. As stated in that report, no shallow drilling hazards are anticipated during the drilling of the proposed wells. A geologic structure map, cross-section map, stratigraphic column and bathymetry map are also included in Attachment C. Water depths at the proposed surface location is 76 feet.

IV. OIL SPILL INFORMATION

Unocal is a member of Clean Gulf Associates (CGA), and would utilize CGA equipment in the event of an oil spill at Mustang Island Area Block 815. CGA is an oil spill cooperative which owns a large inventory of oil spill clean-up equipment which is supported by Marine Spill Response Corporation (MSRC). MSRC is responsible for storing, inspecting, maintaining and dispatching CGA's equipment. An inventory of spill response equipment suitable for spills in the Gulf of Mexico is identified in Unocal's Oil Spill Response Plan (OSRP) which was approved on July 12, 2001. Union Oil Company of California and Unocal Pipeline Company are the two entities covered under the OSRP. Unocal requests that the activities proposed in this Exploration Plan be covered by the OSRP.

In the event of a spill, the primary location for the procurement of clean-up equipment would be the CGA stockpile at Ingleside, Texas. Additional cleanup equipment could be mobilized from Galveston, Texas and the Lake Charles, Houma and Fort Jackson, Louisiana CGA stockpile areas. The Ingleside, Texas stockpile area is located approximately 23 miles from the block.

In accordance with 30 CFR 254.47, the worst case discharge is calculated as follows:
Worst Case Discharge = Daily volume from uncontrolled blowout = 1,000 Barrels

Following is a comparison of the worst case scenario from Unocal's approved regional Oil Spill Response Plan to the worst case scenario from the proposed activities in this Exploration Plan.

Category	**Regional OSRP**	**EP**
Type of Activity	Pipeline	Well No. 1
Spill Location (area/block)	Ship Shoal Area 208	Mustang Island Block 815
Facility Designation	SS 208 to SS 28, Segment 1196	NA
Distance to Nearest Shoreline (miles)	20 miles	12 miles
Volume	24,200 barrels	1,000 barrels
Type of Oil(s) (crude oil, condensate, diesel)	Crude Oil	Condensate
API° Gravity(s)	Pipeline	

Since Union Oil Company of California has the capability to respond to the worst-case spill scenario included in its regional Oil Spill Response Plan approved on July 12, 2001, and since the worst-case scenario determined for their Exploration Plan does not replace the worst-case scenario in their regional OSRP, Union Oil Company of California hereby certifies that they have the capability to respond, to the maximum extent practicable, to a worst-case discharge, or a substantial threat of such a discharge, resulting from the activities proposed in their Exploration Plan.

V. LEASE STIPULATIONS

There are no operational lease stipulations.

VI. SOLID AND LIQUID WASTES AND POLLUTANTS

The discharges generated at this proposed well locations by the drilling activities associated with this EP will be discharged as per NPDES discharge guidelines. Bioassay tests will be performed on the discharge effluents. Discharge rates will not exceed permit specifications.

All drill cuttings will be brought to the surface by the mud system and will be separated from the drilling fluid by shaker screens and centrifugal separators prior to discharging overboard. This discharge is composed of the cuttings, shaker washwater, and adhered drilling fluids. The projected amounts of this discharge are based on the size of the hole at each drilling interval, and are computed at 25 percent over the gauge hole at that interval. Drill cuttings are assumed to comprise 50 percent of the discharge, washwater is assumed to comprise 42.5 percent, and adhered drilling fluids are assumed to comprise 7.5 percent. A list of drilling fluids to be utilized during the drilling operation is included as Attachment D.

Drilled solids and liquids discharge volumes for a typical well are listed below:

Volumes/Well

Drilling Interval	Hole Size	Drilled Solids	Shaker Washwater	Adhered Drilling Fluids
0 - 400'	30.00"	360 bbls	297 bbls	NA
400 - 1000'	28.00"	571 bbls	485 bbls	86 bbls
1000 - 4500'	20.00"	1700 bbls	1445 bbls	255 bbls
4500 - 8000'	17.50"	1301 bbls	1106 bbls	195 bbls
8000 - 12000'	14.75"	1057 bbls	898 bbls	159 bbls
12000 - 15000'	12.25"	547 bbls	465 bbls	82 bbls
15000 - 20000'	8.50"	439 bbls	373 bbls	66 bbls

Batch discharges of drilling fluids will be limited to 1000 barrels per hour. This limitation should only need to be imposed upon the completion of drilling operations.

Solids wastes; typically paper, plastic, cloth, and metal, will be collected and transported to shore for disposal at an approved disposal facility. Solid wastes generated from the transportation vessels, normally just garbage, will be collected and returned to shore for disposal with the drilling rig refuse. Scrap metal and other metal wastes will be recycled or sold as scrap and will not be shipped to a disposal facility with the other refuse.

Sanitary wastes will be treated in approved marine sanitation devices as required by the Clean Water Act. All biodegradable wastes, such as kitchen food scraps, will be comminuted or ground and discharged in accordance with Annex V of MARPOL 73/78.

Hazardous wastes from the drilling rig, such as paint, or paint thinner, will be collected in sealed metal containers and transported to an approved disposal site in accordance with RCRA guidelines.

VII. H_2S AREA CLASSIFICATION

This area is not known to contain any H_2S. Unocal, therefore, requests that Mustang Island Area Block 815 be classified as a "Zone where the absence of H_2S has been confirmed".

VIII. NEW OR UNUSUAL TECHNOLOGY

Exploration and production activities in Mustang Island Area Block 815 will not warrant utilizing any new or unusual technology that may affect coastal waters.

IX. BIOLOGICAL INFORMATION

Activities proposed in this Exploration Plan will not impact any deepwater chemosynthetic communities as the water depth at the proposed surface location is 76 feet. All proposed bottom-disturbing activities are outside the 3-mile zone of any identified topographic feature, and are not within 100 feet of any pinnacle trend feature; therefore, no impacts to these features are anticipated.

X. CERTIFICATE OF COASTAL ZONE CONSISTENCY

A Certificate of Coastal Zone Consistency is included in Attachment E.

XI. ENVIRONMENTAL REPORT

An Environmental Report has been prepared for the proposed activity and is included as Attachment E.

XII. CALCULATION OF AIR EMISSIONS

An air quality report is included as Attachment E.

XIII. SUPPORT BASE

Mustang Island Area Block 815 is located approximately 12 miles from the coast of Kleberg County, Texas. An existing facility in Aransas Pass, Texas will serve as the operations base for the Mustang Island Area Block 815 exploration activities. This shore base is located approximately 26 miles from Mustang Island Area Block 815. Unocal proposes to utilize one helicopter, one supply boat, and one crew boat to support the activities in this block. The helicopter will travel to the location as needed. The supply boat and crew boat will travel to the location a total of three and five times per week, respectively. The shore base will serve the following functions: loading point for tools, equipment and machinery to be delivered to the drilling rig, transportation base, and temporary storage area for materials and equipment. The base is equipped with cranes and loading docks necessary for safe operations. Twenty-four hour a day contact with offshore personnel is maintained by full time dispatchers at the shore base. The existing onshore facilities and support personnel are sufficient to support the proposed operations without modification or expansion.

XIV. SURETY BOND REQUIREMENTS

In accordance with the amendment of 30 CFR Part 256 surety bond requirements applicable to OCS lessees and operators, Unocal submitted an area-wide bond in the amount of $3,000,000.00 to the Minerals Management Service, New Orleans, Louisiana.

XV. COMPANY CONTACT

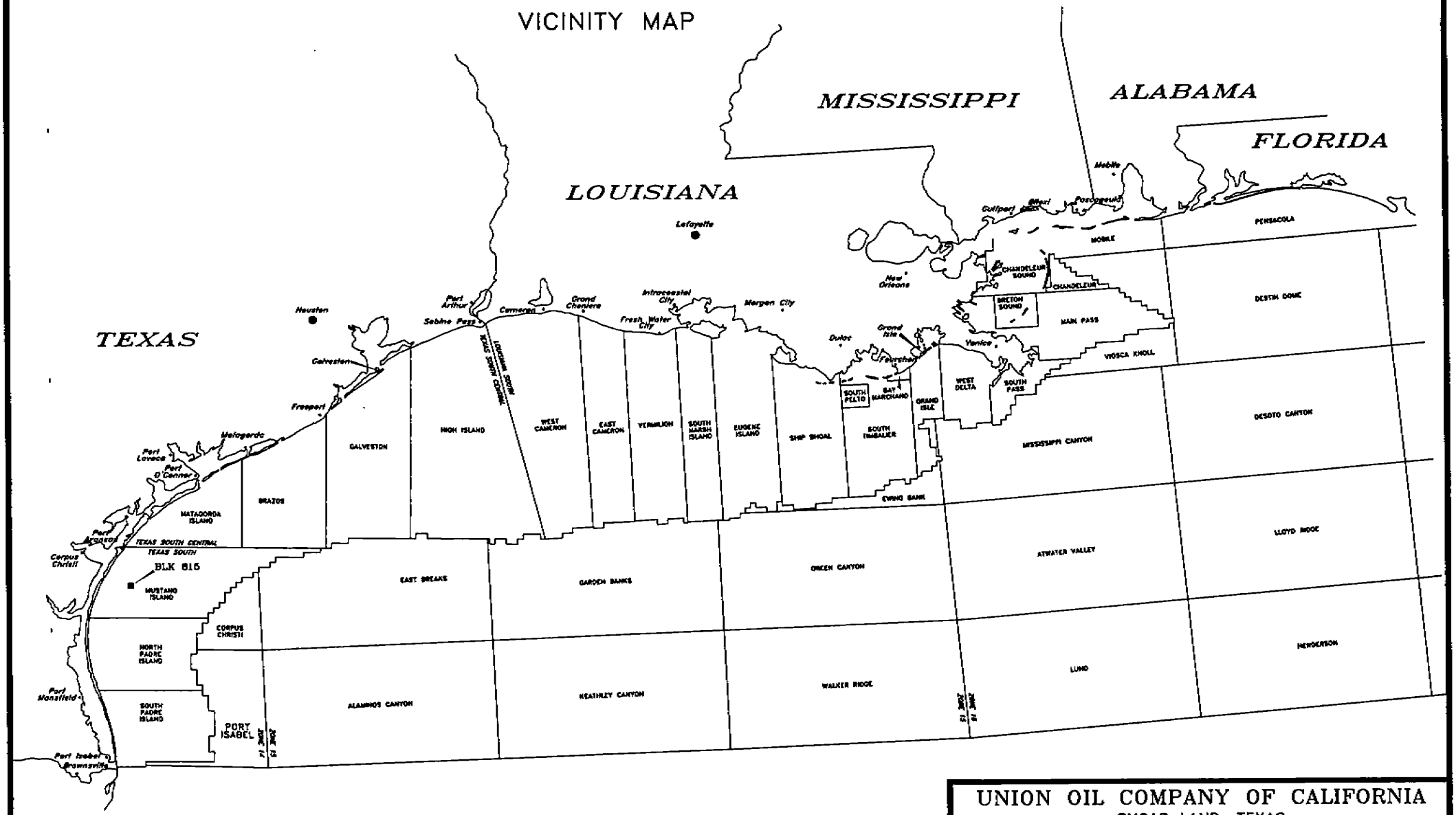
Any inquiries regarding this plan may be addressed to Mr. Terry Cook, Union Oil Company of California, 14141 Southwest Freeway, Sugar Land, Texas 77478, telephone number 281/287-5538.

ATTACHMENT A

VICINITY PLAT

LOCATION PLAT

VICINITY MAP



UNION OIL COMPANY OF CALIFORNIA
SUGAR LAND, TEXAS

VICINITY MAP
BLOCK 815
MUSTANG ISLAND AREA

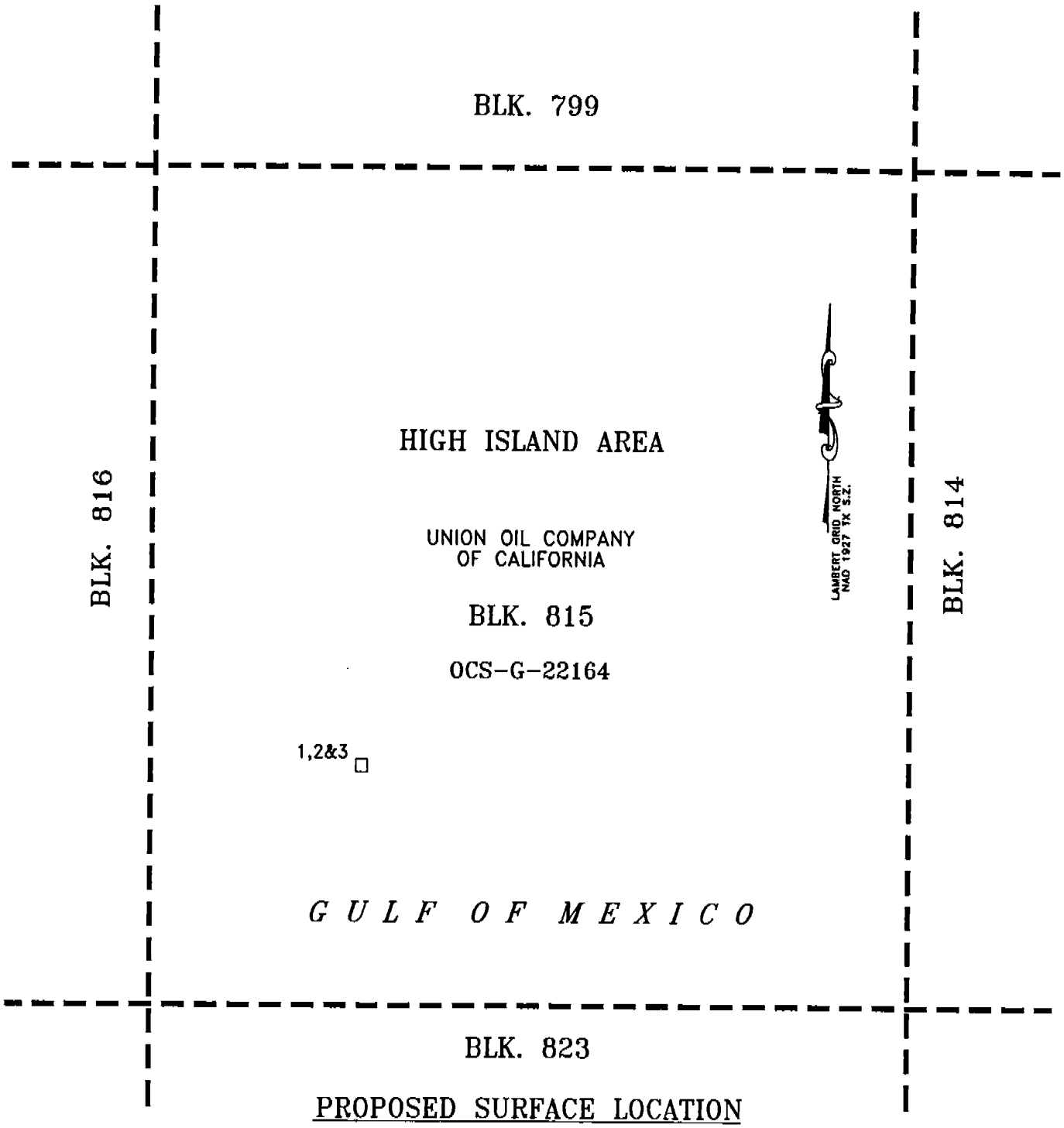
75 0 75 150

SCALE : 1" = 75 MILES

TIM MORTON & ASSOCIATES, INC.
REGULATORY & ENVIRONMENTAL CONSULTANTS
LAFAYETTE, LOUISIANA

JOB NO. 02-200 | DATE: 10/23/02

MAP NO. UOCTC



PROPOSED SURFACE LOCATION

BLK.	WELL NO.	CALLS		X	Y	LATITUDE	LONGITUDE
815	1,2&3	4400' FWL	4525' FSL	2,479,015'	670,715'	27°30'15.2"	97°1'20.1"

UNION OIL COMPANY OF CALIFORNIA
14141 SOUTHWEST FREEWAY
SUGAR LAND, TEXAS 77478

INITIAL EXPLORATION PLAN
MUSTANG ISLAND AREA – BLOCK 815

3000' 0' 3000' 6000'
SCALE IN FEET

TIM MORTON & ASSOCIATES, INC.
Regulatory & Environmental Consultants
337 / 234-5124

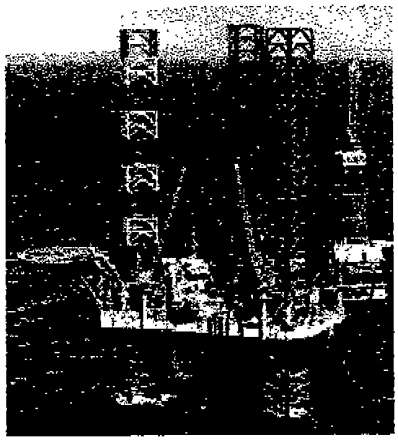
JOB # 02-200
MAP NO. MI815
REVISED
DATE 10/23/02

ATTACHMENT B

RIG SPECIFICATIONS

Fleet Specifications

Report Updated

RBF 202		
Rig Type	Other Jackups	
Design	Beth JU-200 MC	
Builder	Bethlehem Steel Corporation	
Year Built	1981	
Classification	Water Depth - 200' non-hurricane, 175' hurricane	
Flag		
Accommodation	48 persons	
Helideck	60' x 70' designed for Sikorsky S-61	
Max Drill Depth	25,000 ft / 7,620 m	
Max Water Depth	200 ft / 61 m	
Operating Conditions		
Storm Conditions		

Technical Dimensions

Length	157 ft	48 m
Breadth	132 ft	40 m
Depth	18 ft	5 m
Ocean Transit Draft	0 ft	0 m
VDL - Operating	0 st	0 mt

Capacities

Liquid Mud	1,500 bbls	8,422 cu ft	238 cu m
Drill Water	4,200 bbls	23,581 cu ft	667 cu m
Potable Water	1,000 bbls	5,615 cu ft	159 cu m
Fuel Oil	2,000 bbls	11,229 cu ft	318 cu m
Bulk Mud		7,280 cu ft	206 cu m

Bulk Cement		7,280 cu ft	206 cu m
Sack Material	0 sacks		

Drilling Equipment

Derrick	Continental Emsco 20-R 160' high x 30' base rated at 1,000,000 pounds with 12 lines strung
Drawworks	Continental Emsco Model C-2 rated at 2,000 hp driven by two EMD DC motors each rated at 1000 hp
Top Drive	Continental Emsco Model T-4950
Rotary	Continental Emsco Model T-4950
Pipe Handling	
Mud Pumps	
Shale Shakers	
Desander	
Desilter	
Mud Cleaner	
BOP	13 ¯ ÿin., 10,000 psi
Diverter	
Control System	
Choke & Kill	
Cementing	

Machinery

Main Power	Two EMD SR16-645-E1 DC generating sets
Emergency Power	
Power Distribution	
Deck Cranes	Two Link Belt 218A with 90' boom, rated at 71,900# at 20' or 52,900# at 40'

Jackup Specifications

Legs	
Leg Spacing	
Spud Cans	
Jacking System	
Cantilever/Slot	

Mooring Equipment

Winches	
Wire/Chain	
Anchors	

Home | Company Overview | Investor Relations | News and Highlights
Fleet Information | Career Opportunities | Contact Us

Transocean • PO Box 2765 • Houston, TX 77252-2765
Phone 713.232.7500

ATTACHMENT C

SHALLOW HAZARD REPORT

GEOLOGIC STRUCTURES MAP

CROSS-SECTION MAP

STRATIGRAPHIC COLUMN

BATHYMETRY MAP

UNION OIL COMPANY OF CALIFORNIA
OCS-G-22164
MUSTANG ISLAND BLOCK 815
OFFSHORE TEXAS

SHALLOW HAZARD REPORT

Mustang Island Block 815 Prospect

This memo was written in conclusion to my evaluation of Mustang Island Block 815 For archaeological artifacts and subsurface geologic hazards at or near the proposed well locations.

Mustang Island 4,525' FSL and 4,400' FWL

John E. Chance and UNOCAL Corporation conducted a high resolution survey during September 3, 2002 and September 19-20, 2002 using the following equipment.

1. CHANCE STARFIX Differential GPS navigation system.
2. SeaSpy GSM-19 MD Proton magnetometer.
3. Edgetech SMS-260-TH 100 kHz side scan sonar.
4. ORE Model 140 Pinger 3.5 kHZ subbottom profiler
5. Simrad EA 500 Echo Sounder
6. SonarWiz subbottom profiler recording system
7. SeaCat SBE 19-01 sound velocity profiler
8. Seismic Systems, Inc. GI Gun
9. Western Atlas/Litton 48 channel streamer cable
10. OYO GEOSPACE DAS-1 seismic data acquisition system
11. SVP-16 velocimeter.

The survey grid was 37 lines in the north-south direction spaced at an interval of 50 meters. The east-west grid was 3 tie lines spaced 80 meters apart.

GEOPHYSICAL DISCUSSION

The seafloor of Block 815 is smooth, featureless and sloping to the southwest. The seafloor is reported to be silty clays. Water depths in the discussed location, range between 73-78 feet. No prominent amplitude anomalies were noticeable at or near the location, indicating no presence of high-pressure gas pockets. Gas saturation in the sediments observed from the pinger and airgun data, appear to be low pressure gas in equilibrium. This is a normal attribute in the Gulf of Mexico and presents no drilling hazard. There are no magnetic anomalies within 1750 feet of the proposed location. No near surface faulting is evident at the proposed location.

CONCLUSION

In view of the above observations, we believe the proposed location can be drilled safely with minimum risk of disturbing any potential archaeological artifacts.

BY: Tom Catlett

Tom Catlett
Sr. Advising Geophysicist
October 22, 2002

GEOLOGIC STRUCTURES MAP

PROPRIETARY INFORMATION

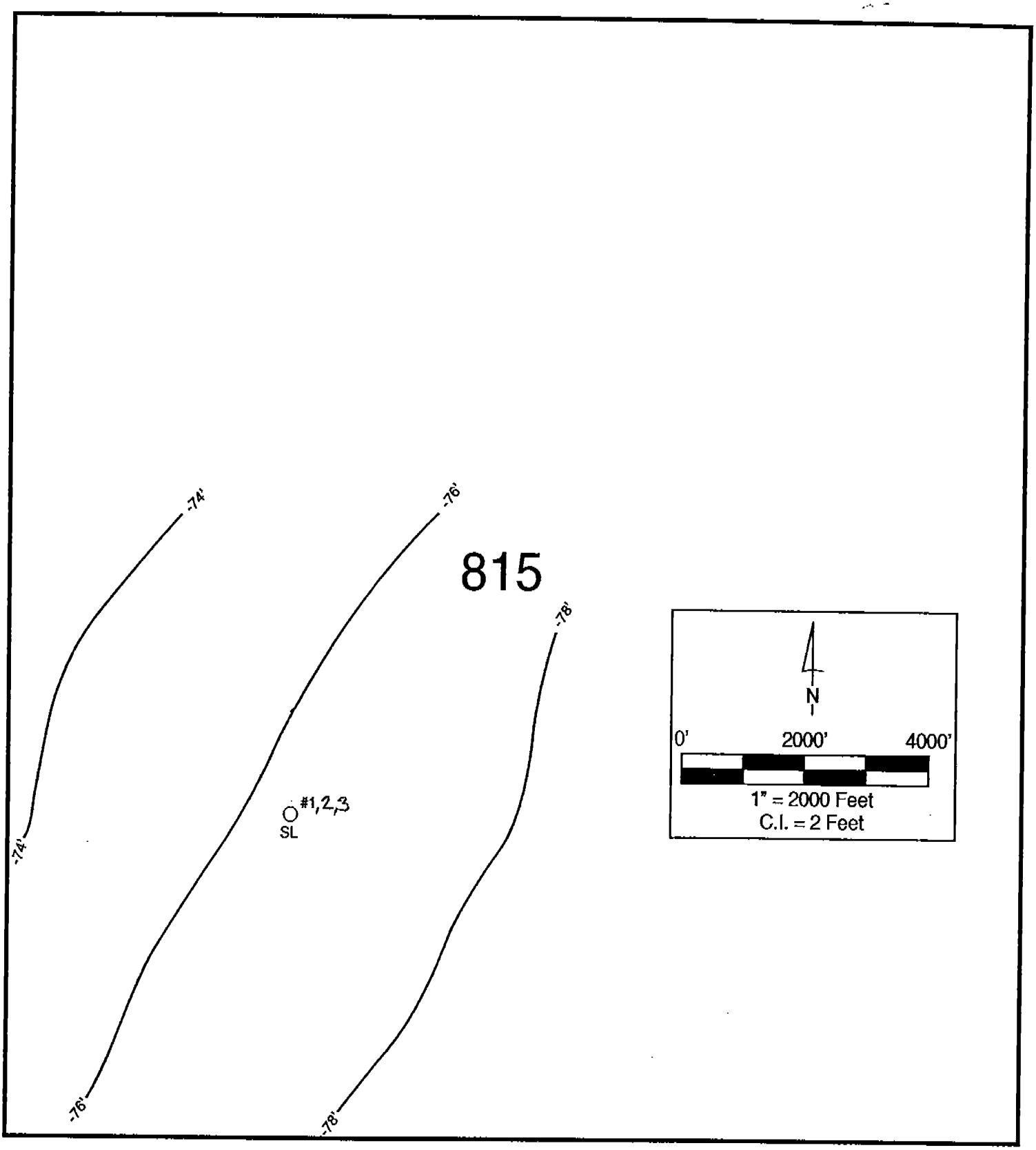
CROSS-SECTION MAP

PROPRIETARY INFORMATION

STRATIGRAPHIC COLUMN

PROPRIETARY INFORMATION

OCS-G 22164



Union Oil Company of California
Bathymetry Map
Mustang Island
Block 815

Cook11.002 MK

ATTACHMENT D

DRILLING FLUIDS LIST

MUD SYSTEM COMPONENT LISTING

PRODUCT NAME	APPLICATION	DESCRIPTION
Aluminum Stearate	Defoamer	Aluminum Stearate $Al(C_{18}H_{35}O_2)_3$
Bac Ban	Preservative	Isothiazolin mixture
Barabuf	PH control	Magnesium oxide
Calcium Chloride	Weighting Agent	Calcium Chloride $CaCl_2$
Cane Fiber	Loss Circulation	Sugar cane fiber (bagasse)
Caustic Potash	PH control	Potassium hydroxide (KOH)
Caustic Soda	PH control	Sodium hydroxide (NaOH)
Caustilig	Thinner	Causticized lignite
Cedar Fiber	Loss Circulation	Shredded cedar, cellulose
Congor 101	Corrosion Inhibitor	Blend of tall oil and alcohol
Congor 202	Corrosion Inhibitor	Blend of amines and alcohol
Congor 303	Corrosion Inhibitor	Blend of alkyl diamines
Congor 404	Corrosion Inhibitor	Salt of phosphate ester
Cottonseed Hulls	Loss Circulation	Cotton seed hulls
Defoam X	Defoamer	Blend of glycols and stearate
Desco	Thinner	Sulfomethylated tannin/dichromate
Diaseal M	Loss Circulation	Diatomaceous earth
Drillaid Selec Floc	Flocculant	Anionic polymer
Drispac	Fluid Loss Control	Cellulose Gum
Durogel	Viscosifier	Sepiolite clay
Fer-Ox	Weighting Agent	Iron oxide; hematite ($Fe_2 O_3$)
Flakes	Loss Circulation	Cellophane $(C_6 H_{10} O_5)_n$
Floxit	Flocculant	Polyacrylamide $(C_3 H_5 NO)_x$
Gelex	Viscosifier	Sodium polyacrylate
Gelite	Viscosifier	Saponite ($Al_2 MgO_8Si_2$)

Gypsum	Shale Control	Calcium sulfate ($CaSO_4.2H_2O$)
Ironite Sponge	Corrosion Inhibitor	Iron oxide ($Fe_2 O_4$)
K-17	Thinner	Metal salt of lignite with potassium hydroxide
Kleen Up	Surfactant	Blend of surfactants
Kwik Seal	Loss Circulation	Blend of nut shells, cellophane and wood fibers
Kwik-Thik	Viscosifier	Bentonite, polyacryl-amide blend
Lime	PH Control	Calcium hydroxide [$Ca(OH)_2$]
Liquid $CaCl_2$	Weighting Agent	Calcium chloride, liquid ($CaCl_2$)
Lo-Wato	Weighting Agent	Calcium carbonate ($CaCO_3$)
Lube-106	Lubricant	Blend of alcohol and esters
Lube-153	Lubricant	
M-I Bar	Weighting Agent	Barium sulfate ($BaSO_4$)
M-I CMC	Fluid Loss Control	Sodium carboxymethy-cellulose
M-I Cal	Viscosifier	Sodiummontmorillonite (bentonite)
M-I Mica	Loss Circulation	Mica
Melanex-T	Thinner	Melanin polymer derivative
My-Lo-Jel	Fluid Loss Control	Pregelatinized starch
N-DRL HT	Viscosifier and Fluid Loss Control	Biopolymer
N-VIS P	Fluid Loss Control	Hyperproperlated starch
Nut Plug - All Grades	Loss Circulation	Ground nut shells
Oxygen Scavenger	Corrosion Inhibitor	Ammonium bisulfite solution
Pheno-seal	Loss Circulation	Chipped formica
Phos	Thinner	Sodium tetraphosphate
Pipelax	Spotting Fluid	Blend of surfactants dispersed in an aromatic process oil
Pipelax SF	Spotting Fluid	Blend of surfactants and low toxicity hydrocarbons
Polypac	Fluid Loss Control	A high grade carboxy-methyl cellulose

Poly-Plus (liquid)	Polymer	A liquid anionic polyelectrolyte with mineral oil
Polysal	Fluid Loss Control	A modified potato starch
Polyseal	Loss Circulation	A blend of mixed fibers and cellophane
Quebracho 60/40	Thinner	Tannin
Resinex	Fluid Loss Control	Copolymer of a lignite and a sulfonated phenol, formaldehyde urea resin
Safe Link	Viscosifier	A blend of salt, polymer and lignosulfonate
Salt	Weighting Agent	Sodium chloride (NaCl)
Salt Gel	Viscosifier	Attapulgite clay
SAPP	Thinner	Sodium acid pyrophosphate ($Na_2 H_2 P_2 O_7$)
Shale Chek	Shale Control	A blend of amines and glycol
Soda Ash	PH Control	Sodium carbonate ($Na_2 CO_3$)
Sodium Bicarbonate	PH Control	Sodium bicarbonate ($NaHCO_3$)
Soltex	Lubricant	Sodium asphalt sulfonate
SP-101	Fluid Loss Control	Sodium polyacrylate
Spersene	Thinner	Chrome lignosulfonate
Spersene CF	Thinner	Chrome free lignosulfonate
Sulf-X Plus	Corrosion Inhibitor	Zinc oxide blend
Tackle	Thinner	A polyacrylamide blend
Tannathin	Thinner	Oxidized lignite (naturally occurring)
Thermpac UL	Fluid Loss Control	Sodium carboxymethyl starch
XP-20	Thinner	Oxidized chrome lignite

NOTE:

The product names are from M-I Drilling Fluids. These product names may differ depending on the actual company selected to provide drilling fluid products.

ATTACHMENT E

CONSISTENCY CERTIFICATION

ENVIRONMENTAL REPORT

AIR QUALITY REPORT

COASTAL ZONE MANAGEMENT CONSISTENCY CERTIFICATE

PLAN OF EXPLORATION

GULF OF MEXICO

FOR

MUSTANG ISLAND AREA BLOCK 815

SUBMITTED TO:

MR. TERRY COOK

UNION OIL COMPANY OF CALIFORNIA

14141 SOUTHWEST FREEWAY

SUGAR LAND, TEXAS 77478

(281/287-5538)

OCTOBER 23, 2002

PREPARED BY:

TIM MORTON & ASSOCIATES, INC.

REGULATORY & ENVIRONMENTAL CONSULTANTS

PROJECT NO. 02-200

COASTAL ZONE MANAGEMENT

CONSISTENCY CERTIFICATION

EXPLORATION

.....

Type of Plan

MUSTANG ISLAND AREA BLOCK 815

.....

Area and Block

The proposed activities described in detail in the attached Exploration Plan comply with Texas' approved Coastal Management program and will be conducted in a manner consistent with such Program.

UNION OIL COMPANY OF CALIFORNIA

.....

Lessee or Operator

.....

Certifying Official

OCTOBER 23, 2002

Date

ENVIRONMENTAL REPORT

FOR COASTAL MANAGEMENT CONSISTENCY DETERMINATION

PLAN OF EXPLORATION

GULF OF MEXICO

FOR

MUSTANG ISLAND AREA BLOCK 815 (OCS-G-22164)

SUBMITTED TO:

MR. TERRY COOK

UNION OIL COMPANY OF CALIFORNIA

14141 SOUTHWEST FREEWAY

SUGAR LAND, TEXAS 77478

(281/287-5538)

OCTOBER 23, 2002

PREPARED BY:

TIM MORTON & ASSOCIATES, INC.

REGULATORY & ENVIRONMENTAL CONSULTANTS

PROJECT NO. 02-200

TABLE OF CONTENTS

LIST OF FIGURES

FIGURE

II. DESCRIPTION OF THE PROPOSED ACTION

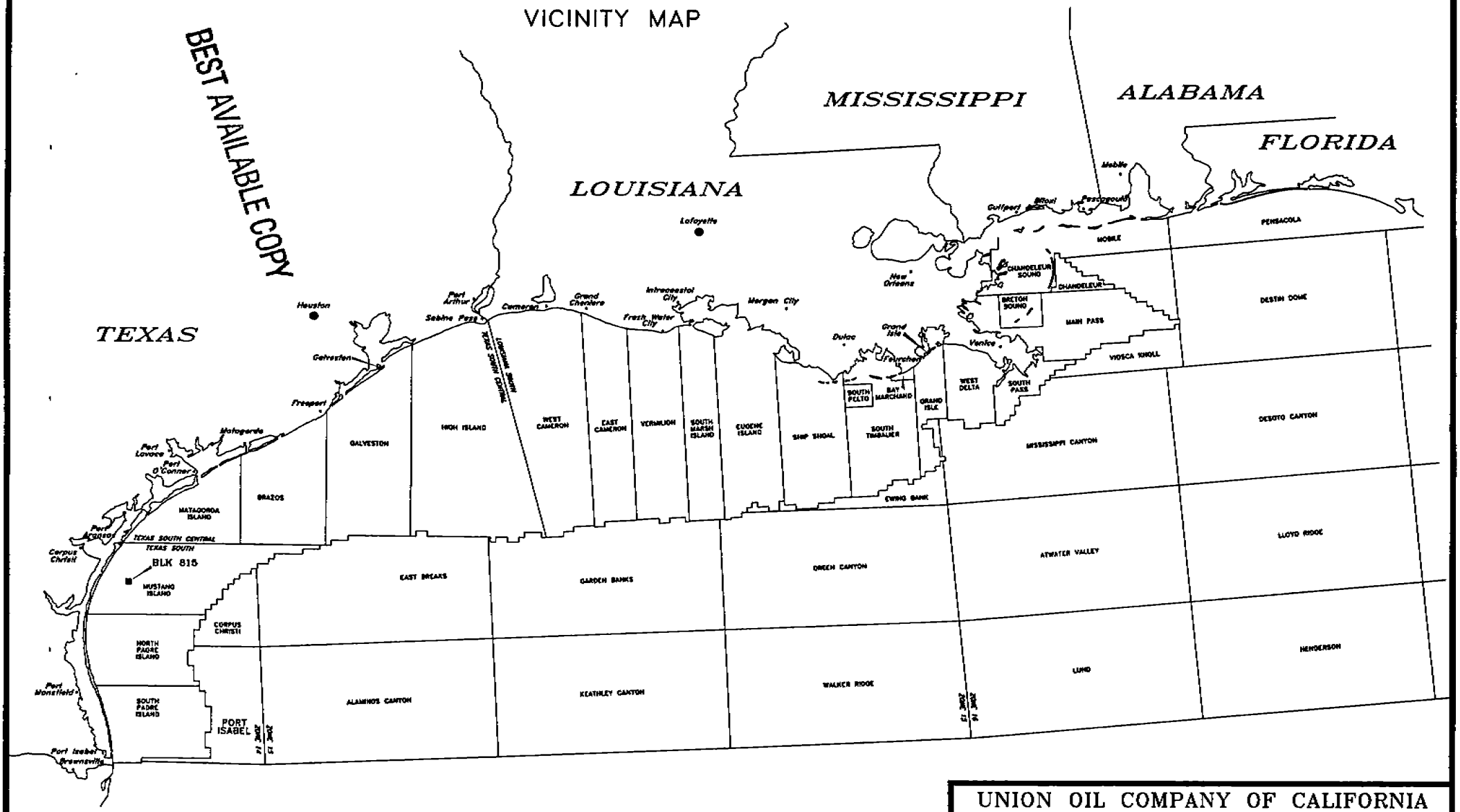
This environmental report addresses the activity proposed by Union Oil Company of California for Mustang Island Area Block 815 (OCS-G-22164). The approximate location of the activity is presented on a general vicinity map of the Outer Continental Shelf (OCS) lease areas off the coast of Texas (Figure 1).

A jackup rig will be utilized to drill three wells. The activities proposed by Union Oil Company of California for this block are addressed in the attached Plan of Exploration.

The proposed activities will be carried out by Union Oil Company of California with a guarantee of the following:

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, equipment and monitoring systems.
2. All operations will be covered by a M.M.S. approved Oil Spill Response Plan.
3. All applicable Federal, State, and local requirements regarding air emissions, water quality, and discharge for the proposed activities, as well as any other permit conditions, will be complied with.

VICINITY MAP



UNION OIL COMPANY OF CALIFORNIA
SUGAR LAND, TEXAS

VICINITY MAP
BLOCK 815
MUSTANG ISLAND AREA

75 0 75 150

SCALE : 1" = 75 MILES

TIM MORTON & ASSOCIATES, INC.
REGULATORY & ENVIRONMENTAL CONSULTANTS
LAFAYETTE, LOUISIANA

JOB NO. 02-200 | DATE: 10/23/02

MAP NO. UOCTC

A. Travel Modes, Routes, and Frequencies

Union Oil Company of California will operate out of service base facilities established in Aransas Pass, Texas. Union Oil Company of California proposes to utilize one helicopter, one supply boat, and one crew boat to support the Mustang Island Area Block 815 activities.

The helicopter will travel to the location on an as needed basis. The crew boat will travel to the location a total of five times per week, and the supply boat will travel to the location a total of three times per week.

Transportation vessels will utilize the most direct route from the Aransas Pass, Texas service base. However, because a vessel supporting the Mustang Island Area Block 815 exploration activities, as outlined in the Plan of Exploration, may be scheduled for other stops in the area, the exact route for each vessel on each particular trip cannot be predetermined.

B. Support Base and New Personnel

Union Oil Company of California will utilize support base facilities established in Aransas Pass, Texas. The Aransas Pass, Texas support base is located approximately twenty-six miles from the block.

Helicopter and marine facilities are currently available at the service base and are presently and continuously manned, therefore, no additional onshore employment is expected to be generated as a result of these activities. The initial OCS Socio-Economic Data Base Report for the service base

facilities utilized by Union Oil Company of California will be prepared for submission upon issuance of the specific parameters to be established by the DOI/MMS.

C. New Support Facilities

Exploration activities in Mustang Island Area Block 815 will not require the development of any new support facilities.

D. New or Unusual Technology

Exploration activities in Mustang Island Area Block 815 will not warrant utilizing any new or unusual technology that may affect coastal waters.

E. Location of the Proposed Activities

Mustang Island Area Block 815 is located approximately twenty-six miles from Aransas Pass, Texas and approximately twelve miles from the shore of Kleberg County, Texas. Figure 1 presents the location of the block in relation to the Texas coast, as well as the geographic relationship between other OCS lease areas and Mustang Island Area Block 815.

III. DESCRIPTION OF THE AFFECTED ENVIRONMENT AND IMPACTS

A. Physical and Environmental

1. Commercial Fishing

The Gulf of Mexico provides nearly 20 percent of the commercial fish landings in the continental United States (USDOI, MMS 1995). In 1995, commercial landings in Texas amounted to 139,776,085 pounds worth $199,733,037 (USDC, NMFS 1997). Seven families of shellfish and finfish represented 98 percent of the dockside value (dollars) of Texas' marine and estuarine commercial fishery landings.

The most valuable commercial species in Texas are the brown shrimp (Penaeus aztecus) and white shrimp (P. setiferus). Texas fishermen harvested 121,074,708 pounds of shrimp worth $175,683,516 in 1995 (USDC, NMFS 1997). Both species of shrimp are estuarine dependent and have similar life histories, with the major differences being the time and location that the various life stages begin and reach their maximum levels. Generally, spawning occurs offshore with the resulting larvae migrating inshore to develop in estuaries. Brown shrimp spawn from November to April in water depths of 30 to 120 meters and white shrimp spawn from March to October in water depths of 8 to 34 meters (Benson 1982). Juvenile and adult brown shrimp migrate offshore from May to July and white shrimp migrate between June and November (Benson 1982).

The Mustang Island Area under consideration falls within the high to moderate white and brown shrimp productivity areas (USDOI, MMS 1986, Visual No. 2) wherein the possibility of shrimp fishing activity exists. Some documented impacts of petroleum exploration and production on the shrimp

fishery include the removal of trawling space during the drilling and exploration phases and the possibility of fishing gear conflicts with existing well heads. These conflicts could result in loss of catch, loss of or damage to nets, vessel damage, and/or fishing downtime losses. Additional discussion of the impacts on the commercial fishing industry is contained in the Final Environmental Impact Statement, Gulf of Mexico, Central and Western Planning Areas, Volume II, pages 381 to 388 (USDOI, MMS 1994).

The Eastern oyster (Crassostrea virginica) is most abundant in the Gulf of Mexico from Aransas Bay, Texas to Apalachicola Bay, Florida (Beccasio et al. 1982). Texas oystermen landed 5,496,188 pounds of oysters worth $10,012,658 in 1995, making this fishery the second most valuable in Texas (USDC, NMFS 1997). Optimum conditions for oysters are found at salinities between 5 and 15 parts per thousand and water depths of 2.5 to 8 meters (Beccasio et al. 1982). Oysters spawn during the summer, and the free-swimming larvae attach and develop in the same estuarine habitat. The activities proposed in Mustang Island Area Block 815 are not expected to have any impact on the oyster fishery in Texas.

Blue crabs (Callinectes sapidus) range from Nova Scotia to Uruguay and support the largest crab fishery in the United States (Marine Experiment Station 1973). In 1995, 5,560,688 pounds of crabs worth $3,940,044 were landed in Texas (USDC, NMFS 1997). Blue crabs inhabit shallow water and can be found in high salinity sounds, bays, and channels where they spawn from March through November, with a peak from May to September (Benson 1982). The resulting planktonic larvae pass through several molts and stages before the juveniles drop to the bottom of the estuarine nurseries, where they remain throughout the year (Benson 1982). The blue crab fishery will not be significantly affected by production activities in this block because these activities will be conducted offshore of the coastal and estuarine waters in which this fishery occurs.

The drums (Sciaenidae) are one of the three most abundant families of fishes in the Gulf of Mexico in terms of biomass, and they outnumber all other families in the number of species (Hoese and Moore 1977). The species of drum which is commercially important to Texas is the black drum (Pogonias cromis). In 1995, Texas landed a total of 2,904,209 pounds of black drum worth $2,495,071 (USDC, NMFS 1997).

Typically, sciaenids are euryhaline species that spawn in shallow nearshore Gulf waters, producing larvae that enter coastal estuaries for development (Benson 1982; Johnson 1978; Hoese and Moore 1977). Black drum spawn from February to April in or near tidal passes and in open bays and estuaries (Benson 1982). The larvae are transported to shallow estuarine marshes, but may move to deeper estuarine waters or shallow waters off sandy beaches as large juveniles (Johnson 1978). Adult migration is largely restricted to spring and fall movement through the passes between estuaries and nearshore environments (Beccasio et al. 1982). The activities proposed are not expected to have any impact on black drums.

Red snapper (Lutjanus campechanus) and Vermilion snapper (Rhomboplites aurorubens) accounted for the majority of the snapper landings in Texas which amounted to 1,227,665 pounds worth $2,391,220 in 1995 (USDC, NMFS 1997). Snappers are common over or near banks, coral reefs and outcrops, submarine ridges, rocks, and man-made structures such as shipwrecks and offshore drilling platforms (Benson 1982; Hardy 1978). Red snapper spawn in the Gulf of Mexico from June to Mid-September, in water depths of 16-37 meters, over bottoms of hard sand and shell with rocky reef areas; spawning may actually take place at the surface (Hardy 1978). Little or no information is available about larval red snapper, but juveniles are typically found inshore in high salinity (24 to 40 ppt) water 9-91 meters in

depth (Benson 1982). The vermilion snapper has a life history and habits similar to the red snapper. The proposed activities should create a suitable habitat for snapper.

In 1995, Texas landed a total of 550,711 pounds of mackerel (Scombridae) valued at $992,935 (USDC, NMFS 1997). Three species of mackerel are commercially important to Texas. These include king mackerel (Scomberomorus cavalla), cero (S. regalis), and yellowfin tuna (Thunnus albacares).

The mackerels are typified as fast-swimming, oceanic fish. Most species travel in schools and feed on smaller fish and squid. Most are highly regarded as both game fish and as food fish, with some species supporting extensive commercial fisheries (Hoese and Moore 1977).

Tunas are mass spawners, so that the details of spawning behavior are difficult to observe. These fishes do not protect their eggs and young after spawning, but leave them scattered over the bottom, on aquatic plants, or drifting in the water (Moyle 1993).

Scombroids range around the world in tropical, temperate, and even cold seas (Herald 1972). Tuna are sometimes found in shallow water, especially in places where deep water is immediately adjacent. The presence of tuna at the surface or at greater depths is determined by the water temperature as well as by the composition of the pelagic community (Herald 1972). The activities as proposed are not expected to have any impact on scombroids.

Two species of flounder, the southern flounder (Paralichthys lethostigma) and the gulf flounder (P. albigutta) are sought commercially, but the two are combined for the purpose of commercial fishery statistics (Ernest Snell, NMFS, personal communication 1985). A total of 270,817 pounds of flounder

worth $478,731 were landed in the coastal counties of Texas in 1995 (USDC, NMFS 1997). The southern flounder is much more abundant in the area than the gulf flounder and probably comprises the majority of the catch (Beccasio et al. 1982).

The spawning habits of southern flounder are poorly known. Spawning apparently takes place in the nearshore Gulf of Mexico from late autumn through early spring, but mostly in November through February. Larvae, in turn, migrate from the shallow Gulf to marsh nurseries in estuaries (Gosselink et al. 1979).

In general, adults and large juveniles occur from freshwater to maximum Gulf salinities, and in inland areas, appear to be rather ubiquitous with respect to salinity. Spawning, however, is apparently restricted to the colder months and high-salinity waters of the nearshore Gulf (Gosselink et al. 1979). No impacts to flounders should result from the proposed activities.

2. Shipping

A designated shipping fairway is located approximately one mile east of Mustang Island Area Block 815. It is likely that marine vessels supporting this block will utilize the shipping fairway to gain access to the support base. The drilling rig and each of the marine vessels will be equipped with all U. S. Coast Guard required navigational safety aids.

3. Recreation

The major recreational activity occurring on the OCS is recreational fishing and diving. Studies, reports, and conference proceedings published by the Minerals Management Service and others have documented a substantial recreational fishery, including scuba diving, directly associated with oil and gas production platforms. Marine recreational fishing in the Gulf Region from Texas to Alabama is a major industry important to the economies of these States (USDOI, MMS 1995).

Petroleum platforms act as artificial reefs attracting and establishing aquatic communities including highly sought after food and sport fishes. The reef effect created by petroleum platforms is well known and is evidenced by the numerous private boat owners who regularly fish at offshore facilities.

Offshore rigs and platforms serve as navigation points for small commercial and recreational marine craft. Manned drilling rigs and platforms can also provide a haven for small craft operators forced to abandon their vessels during storms. The installation and use of navigational aids, lifesaving equipment, and other safety requirements pursuant to Coast Guard regulations are standard procedure for production platforms and marine vessels utilized by Union Oil Company of California.

4. Cultural Resources

Visual No. 4 from the Final Environmental Impact Statement (USDOI, MMS 1986) indicates that Mustang Island Area Block 815 falls within the zone designated as an area with a high probability of historic shipwrecks and prehistoric cultural resources. An Archeological and Hazard Survey was

performed in Mustang Island Area Block 815 by Fugro Geoservices, Inc. A report of that survey was prepared in October 2002, and the following was extracted from that report.

There were no sonar contacts or unidentified magnetic anomalies indicative of shipwreck remains identified within the survey area. However, it is possible that historic shipwreck materials may not be detected by the geophysical instruments or may be obscured by modern debris. If wooden planking or other cultural materials that could represent shipwreck remains are encountered, the USDI MMS archaeologists should be contacted to provide an assessment of these artifacts. Pleistocene coastal plain surface would have represented the area of highest probability for prehistoric occupation. However, the coastal plain would have been significantly eroded during the ensuing marine transgression, and in situ archaeological deposits are unlikely to be present. There were no other landforms identified within the survey area that could be considered as high probability areas for prehistoric occupations.

5. Ecologically Sensitive Features

Mustang Island Area Block 815 is located approximately twelve miles east-southeast of Mustang Island State Park (USDOI, MMS 1986, Visual No. 4). There are no other known ecologically sensitive areas near Mustang Island Area Block 815.

The Aransas Pass, Texas support base which will be utilized as the operations base for the Mustang Island Area Block 815 exploration activities is located approximately twenty-one miles southwest of Aransas National Wildlife Refuge and approximately six miles northeast of Mustang Island State Park (USDOI, MMS 1986, Visual No. 3). In general, if all activities are executed as planned, the environmentally sensitive areas will not be affected.

The following discussion of wetlands is summarized from the Final Environmental Impact Statement for Proposed Gulf of Mexico OCS Lease Sales 157 and 161 (USDOI, MMS 1995). Wetland habitat types occurring along the Gulf coast include fresh, brackish, and saline marshes; forested wetlands; and small areas of mangroves. Wetland habitats may occur along narrow bands or across broad expanses. They can support sharply delineated zones of different species, monotonous stands of a single species, or mixed communities of plant species.

Coastal wetlands are characterized by high organic productivity, high detritus production, and efficient nutrient recycling. Wetlands provide habitat for a great number and wide diversity of invertebrates, fish, reptiles, birds, and mammals. Wetlands are particularly important as nursery grounds for juvenile forms of many important fish species.

In Texas, coastal marshes occur along bays, along rivers, and along the inshore side of barrier islands. Salt marshes consisting primarily of smooth cordgrass (Spartina alterniflora) occur at lower elevations and at higher salinities. Brackish marshes occur in less saline areas inland of salt marshes. Freshwater marshes of Texas occur primarily along the major rivers and tributaries. Sparse bands of black mangroves are also found in the wetlands of Texas.

Wetland changes observed in Texas during the past several decades appear to be driven by subsidence and sea-level rise. Open-water areas are appearing in wetlands along their seaward margins, while new wetlands are encroaching onto previously non-wetland habitat along the landward margin of wetland areas on the mainland, on the back side of barrier islands, and onto spoil banks. In addition, wetlands are being affected by human activities including canal dredging, impoundments, and

accelerated subsidence caused by fluid withdrawals. The magnitude of these wetland acreage changes in most of Texas have not been determined at the present time.

Wetlands and estuaries could be affected by OCS-related activities. These activities include construction of new onshore facilities in wetland areas; pipeline placement in wetland areas; vessel usage of navigation channels and access canals; maintenance of navigation channels; onshore disposal of OCS-generated oil-field wastes; and oil and chemical spills from both onshore and offshore OCS support activities. No direct wetland losses are anticipated as a result of the proposed activities.

6. Existing Pipelines and Cables

Union Oil Company of California is aware of the pipelines located in Mustang Island Area Block 815.

7. Other Mineral Uses

There are no other known mineral resources located in or near Mustang Island Area Block 815.

8. Ocean Dumping

The major sources of ocean dumping related to OCS petroleum exploration activity are drilling fluids, or "muds", and drill cuttings. After the exploratory drilling in Mustang Island Area Block 815 is completed, Union Oil Company of California does anticipate dumping their excess water-based drilling

fluids. If any oil-based mud is used in the drilling operations, it will be transported to shore for proper disposal.

Drill cuttings are brought up by the drilling mud and range in size from grains of sand to pebbles. These cuttings are separated and sifted and then disposed overboard. Treated domestic wastes and drill waters will also be disposed at the proposed drilling site. There will be no intentional discharge of any oily or hazardous materials in violation of DOI or EPA regulations.

9. Endangered or Threatened Species

Endangered or threatened species which might occur in Mustang Island Area Block 815 are finback whale (Balaenoptera physalus), humpback whale (Megaptera novaeangliae), right whale (Eubalaena glacialis), sei whale (B. borealis), sperm whale (Physeter macrocephalus), green sea turtle (Chelonia mydas), hawksbill sea turtle (Eretmochelys imbricata), Kemp's ridley sea turtle (Lepidochelys kempii), leatherback sea turtle (Dermochelys coriacea), and loggerhead sea turtle (Caretta caretta) (USDC, NMFS 1996).

Endangered or threatened species expected to occur in the vicinity of the Port Aransas, Texas service base are Attwater's prairie chicken (Tympanuchus cupido attwateri), brown pelican (Pelecanus occidentalis), jaguarundi (Felis yagouaroundi), ocelot (Felis pardalis), whooping crane (Grus americana), Arctic peregrine falcon (Falco peregrinus tundrius), bald eagle (Haliaeetus leucocephalus), and piping plover (Charadrius melodus) (USDOI, FWS 1996). The presence of marine mammals in coastal Texas is considered sporadic and probably no resident populations exist. Onshore or exploration activities related to Mustang Island Area Block 815 will have no likely impact on the previously named species.

B. Socio-Economic Impacts

In accordance with DOI/MMS guidelines (OS-7-01), dated November 20, 1980, the initial OCS Data Base Report will be developed for submission on or before the prescribed due date. Subsequent Environmental Reports provided by Union Oil Company of California will address this data and related activity impacts as required.

IV. UNAVOIDABLE ADVERSE IMPACTS

The greatest threat to the natural environment is caused by inadequate operational safeguards that may cause or contribute to an oil spill or well blowout. These accidents can be greatly reduced in number by utilizing trained operational personnel and employing all available safety and pollution control systems. These measures are standard operating procedure for Union Oil Company of California. Union Oil Company of California has an approved Oil Spill Response Plan.

It should be noted that most large crude oil and refined products spills have occurred during transportation and not during drilling or production operations. Furthermore, the probability of an oil spill occurring during exploratory drilling operations is low (Danenberger 1976). Transportation and river runoff contribute an estimated 34.9 percent and 26.2 percent, respectively, to the hydrocarbon contamination of the world's oceans while offshore production activities account for only 1.3 percent (National Academy of Sciences 1975). Natural seeps of petroleum and natural gas, which occur throughout the northern Gulf of Mexico (Zo Bell 1954; Geyer 1979), contribute an estimated 9.8 percent to the contamination of the world's oceans (National Academy of Sciences 1975). Additionally, it was noted in the executive summary of a study of petroleum production platforms in the central Gulf of Mexico (Bedinger 1981), that natural disturbances (i.e. river flooding and storms) can more greatly affect normal biological communities than the current industrial development of the OCS. The preceding discussion is not intended to minimize the significance of major oil spills resulting from petroleum exploration and production activities but is provided to establish a perspective relative to their probable occurrence.

Thirteen of the forty-six blow-outs on the OCS between 1971 and 1978 were associated with exploratory drilling activities, none of which released any oil to the marine environment (Danenberger 1980). The IXTOC I spill of 1979, however, demonstrates that advanced drilling technology and available safety and pollution control systems are not infallible. Most spills are subjected to immediate containment and clean-up efforts. The ultimate fate of oil spilled in the marine environment is generally considered to be one or a combination of the following: evaporation and decomposition in the atmosphere, dispersal in the water column, incorporation into sediments, and oxidation by chemical or biological means (National Academy of Sciences 1975).

The unavoidable adverse impacts that will occur as a result of the exploratory drilling and discharging of drilling fluids, domestic wastes, and treated sewage will be few in number and temporary in nature. The primary adverse impacts include a localized degradation of water and air quality in the vicinity of the drilling site, the potential obstruction to commercial and recreational fishing vessels, and the disruption and/or killing of benthic and/or pelagic organisms during location of the drilling rig and during disposal of muds, cuttings, and domestic wastes and sewage.

Discharging from the drill site is inevitable during OCS operations, particularly during exploration. Any materials that may contain oil or other hazardous materials, and therefore would have a much greater adverse impact on the environment, will not be discharged intentionally. Any discharging will be done pursuant to all DOI and EPA regulations. The discharges to be disposed overboard as a result of the exploration activity will include domestic waste and sewage that is treated on the rig before discharging, drill cuttings, and excess water-based mud.

The environmental fate and effects of drilling muds and cuttings has been extensively addressed in a symposium (See Ayers et al. 1980 for detailed discussions). The discharging of drill cuttings and water-based mud will result in an increase in water turbidity, burial of benthic organisms, and possible toxic effects on marine organisms in the immediate vicinity of the drilling rig. A reduction in photosynthetic activity and plankton populations can also be expected as a result of discharging. It is expected, however, that pelagic and benthic organisms will repopulate the area rapidly after discharging if the effects are minimal and intermittent as expected.

Offshore activities generate a small but significant amount of air pollutants due to the emissions of diesel engines; therefore, the deterioration of air quality is unavoidable in an OCS operation area. In most instances, these emissions affect only the immediate exploration activity site and are rapidly dissipated by the atmosphere depending upon climatic conditions. An Air Quality Review Report has been prepared for Mustang Island Area Block 815 and is included as an attachment to the Plan of Exploration.

Commercial and recreational fishing would be affected by OCS development, but primarily in terms of inconvenience and interference. Although the unavoidable adverse impacts could include some smothering of shellfish, snagging of trawl nets, reduction of area presently used for unrestricted fishing, and minimal finfish killing, commercial fishing activities would not be significantly affected, except in the unlikely event of an oil spill. An oil spill would result in serious economic losses due to the contamination of commercial fish species over a large area.

There is a remote possibility that offshore areas of historical, cultural, or biological significance could be damaged or destroyed by OCS exploration operations. Visual No. 3 from the Final

Environmental Impact Statement (USDOI, MMS 1986) indicates that no archeological, cultural, or historic areas are in the vicinity of Mustang Island Area Block 815. Union Oil Company of California will make every effort to avoid disturbing any historically, culturally, or biologically significant feature.

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GULF OF MEXICO AIR EMISSION CALCULATIONS

INSTRUCTIONS

General

This document (EP_AQ.XLS) was prepared through the cooperative efforts of those professionals in the oil industry including the API/OOC Gulf of Mexico Air Quality Task Force, and the Minerals Management Service (MMS), who deal with air emission issues. This document is intended to standardize the way we estimate our potential air emissions for Exploration Plans (EP) approved by the MMS. It is intended to be thorough but flexible to meet the needs of different operators. This first file gives the basis for the emission factors used in the emission spreadsheet as well as some general instructions. The following files, Title Sheet, Factors Sheet, Emissions Spreadsheet, and Summary Sheet will describe and calculate emissions from an activity.

Title Sheet

1. The Title Sheet requires input of the company's name, area, block, OCS-G number, platform well(s) in the necessary lines. This data will automatically be transferred to the spreadsheet and/or and summary sheet.
2. Answer the screening questions by indicating yes or no in the correct column. If all of the questions are answered no, just submit the title sheet with your EP, you do not need to complete the rest of the spreadsheets. If you answer yes to any of the screening questions, you need to prepare and submit a full set of spreadsheets. In either case you do not need to print and submit these instructions.

Factor Sheet

The emission factors were compiled from the latest AP-42 references or from industry studies if no AP-42 reference was available. Factors can be revised as more data becomes available. A change to this Factor Sheet will be automatically changed in Emission Spreadsheet. A sulfur content table was added in 1996. A change in this table will automatically revise the SOx factor which will revise emissions.

The basis for the factors is as follows:

1. NG Turbines — Fuel usage scf/hr = HP X 9.524 (10,000 btu/HP-hr / 1050 btu/scf)
2. NG Engines — Fuel usage scf/hr = HP X 7.143 (7,500 btu/HP-hr / 1050 btu/scf)
3. Diesel — Fuel usage gals/hr = HP X 0.0483 (7,000 btu/HP-hr / 145,000 btu/gal)

Emission Factors

Natural Gas Prime Movers

1. TNMOC refers to total non-methane organic carbon emissions and these can be assumed equivalent to VOC emissions.

3. The sulfur content assumed is 2000 grains /mmscf (3.33 ppm). If your concentration is different then revise the ppm in the sulfur table immediately below the factors table.

Diesel-Fired Prime Movers

1. Diesel sulfur level 0.4% by wt. If your sulfur content is different change % wt. in the sulfur table.

2. For boats use > 600 HP factors based on AP-42 Vol. II, Table II-3-3.
Include the emissions from all vessels associated with your activities for their time of operation within a 25 mile radius of your facility.

3. For diesel engines <600 HP VOC emissions equal total HC emissions; for diesel engines>600 HP VOC emissions equal non-methane HC emissions.

Gas Flares

1. It is assumed that the flare is non-smoking.

2. A heating value of 1050 btu/cu. ft. for NG is assumed.

3. The sulfur content assumed is 2000 grains /mmscf (3.33 ppm). If your concentration is different then revise the ppm in the sulfur table or you may use the following formula:

H2S flared (lbs/hr) = Gas flared (cu ft/hr) X ppm H2S X 34/(379X1000000)

SOx emis (lbs/hr) = H2S flared (lbs/hr) X 64/34

Liquid Flares

1. Assumes 1% by wt Sulfur maximum in the crude oil.Revise the percent sulfurin the sulfur table if your value is different.

2. VOC equals non-methane HCs

3. Particulate emissions assumes Grade 5 oil.

Tanks

1. Tank emissions assumes uncontrolled fixed roof tank.

2. The EPA TANKS model is an acceptable alternate. If you choose to use TANKS, you must provide MMS with sufficent information to verify your results.

Emissions Spreadsheets (EMISSIONS1 through EMISSIONS5)

The emissions from an operation should be presented for a calendar year (1999, 2000, etc.). The operation may include drilling only or drilling in conjunction with other activities such as well testing or caisson installation. For additional years the Emissions1is renamed Emissions 2, 3, etc. The different operating parameters for each year should entered to calculate revised emissions for that year. The spreadsheet will calculate maximum fuel usage (UNIT/HR) using the known horsepower. It will assume maximum fuel usage is equal to actual fuel (UNIT/DAY) usage unless the actual fuel usage is known. If so, insert actual fuel usage in appropriate column. The emissions will be calculated as follows:

Emission rate (lb/hr) = (HP or fuel rate) X Emission Factor (Potential to emit)

Emissions (tpy)=Emission rate (lb/hr) X load factor(Act Fuel/Max Fuel) X hrsX daysX ton/2000 lbs (Actual emissions)

To customize the spreadsheet for your application it is possible to delete lines for non-applicable equipment/activities or copy/insert an entire line if more than one similiar type of equipment is present.

Summary Sheet

The Summary Sheet is designed to show a proposed estimate of emissions from an activity over a future period of time. In this example ten years was chosen. The first line (Row 7) of the summary sheet is linked to the yearly totals in the Emissions Spreadsheet. The second line (Row 8) is referenced to Emissions2 Spreadsheet. The third line (Row 9) is referenced to Emissions3, Row 10 to Emissions 4, Row 11 to Emissions 5. If more years of calculations are necessary to reach a constant then a spreadsheet can be copied and linked to the summary sheet for future years. Once emissions are constant the values are carried to the end of the ten year period.

EXPLORATION PLAN (EP)
AIR QUALITY SCREENING CHECKLIST

OMB Control No. XXX-XXX
Expiration Date: Pending

COMPANY	Union Oil Company of California
AREA	Mustang Island
BLOCK	815
LEASE	OCS-G-22164
PLATFORM	
WELL	1, 2 & 3
COMPANY CONTACT	Terry Cook
TELEPHONE NO.	281/287-5538
REMARKS	

"Yes"	"No"	Air Quality Screening Questions
	No	1. Are the proposed activities east of 87.5° W longitude?
	No	2. Are H_2S concentrations greater than 20 ppm expected?
	No	3. Is gas flaring proposed for greater than 48 continuous hours per well?
	No	4. Is produced liquid burning proposed?
Yes		5. Is the exploratory activity within 25 miles of shore?
	No	6. Are semi-submersible activities involved and is the facility within 50 miles of shore?
	No	7. Are drillship operations involved and is the facility within 120 miles of shore?
	No	8. Will the exploratory activity be collocated (same surface location) on a production facility?

If ALL questions are answered "No":
Submit only this coversheet with your plan; a full set of spreadsheets is not needed.

If ANY of questions 1 through 7 is answered "Yes":
Prepare and submit a full set of **EP** spreadsheets with your plan.

If question number 8 is answered "Yes":
Prepare and submit a full set of **DOCD** spreadsheets showing the cumulative emissions from both the proposed activities and the existing production platform.

Fuel Usage Conversion Factors	Natural Gas Turbines		Natural Gas Engines		Diesel Recip. Engine		REF.	DATE
	SCF/hp-hr	9.524	SCF/hp-hr	7.143	GAL/hp-hr	0.0483	AP42 3.2-1	4/76 & 8/84

Equipment/Emission Factors	units	PM	SOx	NOx	VOC	CO	REF.	DATE
NG Turbines	gms/hp-hr		0.00247	1.3	0.01	0.83	AP42 3.2-1& 3.1-1	10/96
NG 2-cycle lean	gms/hp-hr		0.00185	10.9	0.43	1.5	AP42 3.2-1	10/96
NG 4-cycle lean	gms/hp-hr		0.00185	11.8	0.72	1.6	AP42 3.2-1	10/96
NG 4-cycle rich	gms/hp-hr		0.00185	10	0.14	8.6	AP42 3.2-1	10/96
Diesel Recip. < 600 hp.	gms/hp-hr	1	1.468	14	1.12	3.03	AP42 3.3-1	10/96
Diesel Recip. > 600 hp.	gms/hp-hr	0.32	1.468	11	0.33	2.4	AP42 3.4-1	10/96
Diesel Boiler	lbs/bbl	0.084	2.42	0.84	0.008	0.21	AP42 1.3-12,14	9/98
NG Heaters/Boilers/Burners	lbs/mmscf	7.6	0.593	100	5.5	84	AP42 1.4-1, 14-2, & 14-	7/98
NG Flares	lbs/mmscf		0.593	71.4	60.3	388.5	AP42 11.5-1	9/91
Liquid Flaring	lbs/bbl	0.42	6.83	2	0.01	0.21	AP42 1.3-1 & 1.3-3	9/98
Tank Vapors	lbs/bbl				0.03		E&P Forum	1/93
Fugitives	lbs/hr/comp.				0.0005		API Study	12/93
Glycol Dehydrator Vent	lbs/mmscf				6.6		La. DEQ	1991
Gas Venting	lbs/scf				0.0034			

Sulfur Content Source	Value	Units
Fuel Gas	3.33	ppm
Diesel Fuel	0.4	% weight
Produced Gas(Flares)	3.33	ppm
Produced Oil (Liquid Flaring)	1	% weight

EMISSIONS CALCULATIONS 1ST YEAR

OMB Control No. xxxx-xxxx
Expiration Date: Pending

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
Union Oil Company of California	Mustang Island	815	OCS-G-22164		1, 2 & 3		Terry Cook	281/287-5538	

OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS				
	Diesel Engines	HP	GAL/HR	GAL/D												
	Nat. Gas Engines	HP	SCF/HR	SCF/D												
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	DAYS	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	Transocean RBF 202															
	TOTAL RIG>600hp diesel	4600	222.18	5332.32	24	31	3.24	14.87	111.45	3.34	24.32	1.21	5.53	41.46	1.24	9.05
	VESSELS>600hp diesel(crew)	2000	96.6	2318.40	6	22	1.41	6.47	48.46	1.45	10.57	0.09	0.43	3.20	0.10	0.70
	VESSELS>600hp diesel(supply)	2500	120.75	2898.00	8	13	1.76	8.08	60.57	1.82	13.22	0.09	0.42	3.15	0.09	0.69
	VESSELS>600hp diesel(tugs)	10800	521.64	12519.36	24	3	7.61	34.92	261.67	7.85	57.09	0.27	1.26	9.42	0.28	2.06
FACILITY	DERRICK BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
INSTALLATION	MATERIAL TUG diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(supply)	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0.00					0.00	
DRILLING	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
WELL TEST	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
2002 YEAR TOTAL							14.03	64.35	482.16	14.46	105.20	1.66	7.64	57.23	1.72	12.49
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											392.94	392.94	392.94	392.94	17622.48
	11.8															

EMISSIONS CALCULATIONS 2ND YEAR

OMB Control No. xxxx-xxxx
Expiration Date: Pending

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL		CONTACT	PHONE	REMARKS
Union Oil Company of Californi	Mustang Island	815	OCS-G-22164		1, 2 & 3		Terry Cook	281/287-5538	

OPERATIONS	EQUIPMENT	RATING	MAX. FUEL	ACT. FUEL	RUN TIME		MAXIMUM POUNDS PER HOUR					ESTIMATED TONS				
	Diesel Engines	HP	GAL/HR	GAL/D												
	Nat. Gas Engines	HP	SCF/HR	SCF/D												
	Burners	MMBTU/HR	SCF/HR	SCF/D	HR/D	DAYS	PM	SOx	NOx	VOC	CO	PM	SOx	NOx	VOC	CO
DRILLING	Transocean RBF 202															
	TOTAL RIG>600hp diesel	4600	222.18	5332.32	24	239	3.24	14.87	111.45	3.34	24.32	9.30	42.66	319.65	9.59	69.74
	VESSELS>600hp diesel(crew)	2000	96.6	2318.40	8	171	1.41	6.47	48.46	1.45	10.57	0.96	4.42	33.15	0.99	7.23
	VESSELS>600hp diesel(supply)	2500	120.75	2898.00	6	102	1.76	8.08	60.57	1.82	13.22	0.54	2.47	18.54	0.56	4.04
	VESSELS>600hp diesel(tugs)	10800	521.64	12519.36	24	3	7.61	34.92	261.67	7.85	57.09	0.27	1.26	9.42	0.28	2.06
FACILITY INSTALLATION	DERRICK BARGE diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MATERIAL TUG diesel	0	0	0.00	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(crew)	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	VESSELS>600hp diesel(supply)	0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	MISC.	BPD	SCF/HR	COUNT												
	TANK-	0			0	0				0.00					0.00	
DRILLING WELL TEST	OIL BURN	0			0	0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	GAS FLARE		0		0	0		0.00	0.00	0.00	0.00		0.00	0.00	0.00	0.00
2003	YEAR TOTAL						14.03	64.35	482.16	14.46	105.20	11.08	50.81	380.75	11.42	83.07
EXEMPTION CALCULATION	DISTANCE FROM LAND IN MILES											392.94	392.94	392.94	392.94	17622.48
	11.8															

SUMMARY

OMB Control No. xxxx-xxxx
Expiration Date: Pending

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
Union Oil Company of California	Mustang Island	815	OCS-G-22164		1, 2 & 3

Year	Emitted Substance				
	PM	SOx	NOx	VOC	CO
2002	1.66	7.64	57.23	1.72	12.49
2003	11.08	50.81	380.75	11.42	83.07
Allowable	392.94	392.94	392.94	392.94	17622.48