UNITED STATES GOVERNMENT
MEMORANDUM

March 24, 2003

To: Public Information (MS 5034)

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

Subject: Public Information copy of plan

Control #	-	S-06145
Type	-	Supplemental Exploration Plan
Lease(s)	-	OCS-G21323 Block - 237 Galveston Area
Operator	-	Challenger Minerals Inc.
Description	-	Well C
Rig Type	-	JACKUP

Attached is a copy of the subject plan.

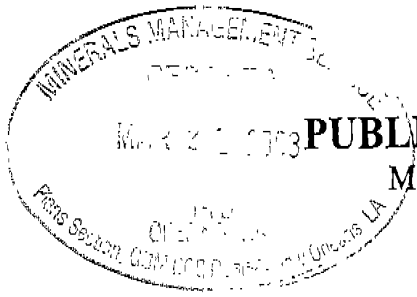
It has been deemed submitted as of this date and is under review for approval.

Robert Stringfellow
Plan Coordinator

Site Type/Name	Botm Lse/Area/Blk	Surface Location	Surf Lse/Area/Blk
WELL/C	G21323/GA/237	600 FNL, 3625 FEL	G21323/GA/237

NOTED - SCHEXNAILDRE

ISS MAR25'03PM 2:12



PUBLIC COPY
March 20, 2003

SUPPLEMENTAL EXPLORATION PLAN

Lease Number (s):	OCS-G 21323
Area/Block:	Galveston Block 237
Prospect Name:	N/A
Offshore:	Texas

Submitted by:

Challenger Minerals Inc.
15375 Memorial Drive
Suite G200
Houston, Texas 77079

T. J. Morrow
(281) 925-7200

Estimated start up date: June 15, 2003

Authorized Representative:
Valerie Land
J. Connor Consulting, Inc.
16225 Park Ten Place, Suite 700
Houston, Texas 77084
(281) 578-3388
valerie.land@jccteam.com

No. Copies Being Submitted:
Proprietary: 5
Public Info: 3

For MMS:
Plan No. _____
Assigned to: _____

CHALLENGER MINERALS INC.

SUPPLEMENTAL EXPLORATION PLAN

LEASE OCS-G 21323

GALVESTON BLOCK 237

APPENDIX A
CONTENTS OF PLAN

Challenger Minerals Inc. (Challenger) is the designated operator of the subject oil and gas lease.

(A) DESCRIPTION, OBJECTIVES AND SCHEDULE

On March 9, 2001, Minerals Management Service approved a Joint Initial Exploration Plan for Leases 21323 and 17122, Galveston Blocks 237 and 238, respectively (Control No. N-6987). The plan provided for the drilling, completion and testing of Well Locations A and B from a common surface location in Galveston Block 237.

Under this Supplemental Exploration Plan, Challenger proposes to drill, complete and potentially test satellite Well Location C in Galveston Block 237.

Appendix C includes the Geologic Objectives proposed in this plan.

Appendix J contains a Plan Information Form, which provides a description of proposed activities, objectives and a tentative schedule.

(B) LOCATION

Included as ***Attachments A-1 and A-2*** are the proposed well location plat showing the surface location of the proposed well and the bathymetry map showing the surveyed water depths in this area. Additional well information is included in Appendix J, on the Well Information Form.

(C) DRILLING UNIT

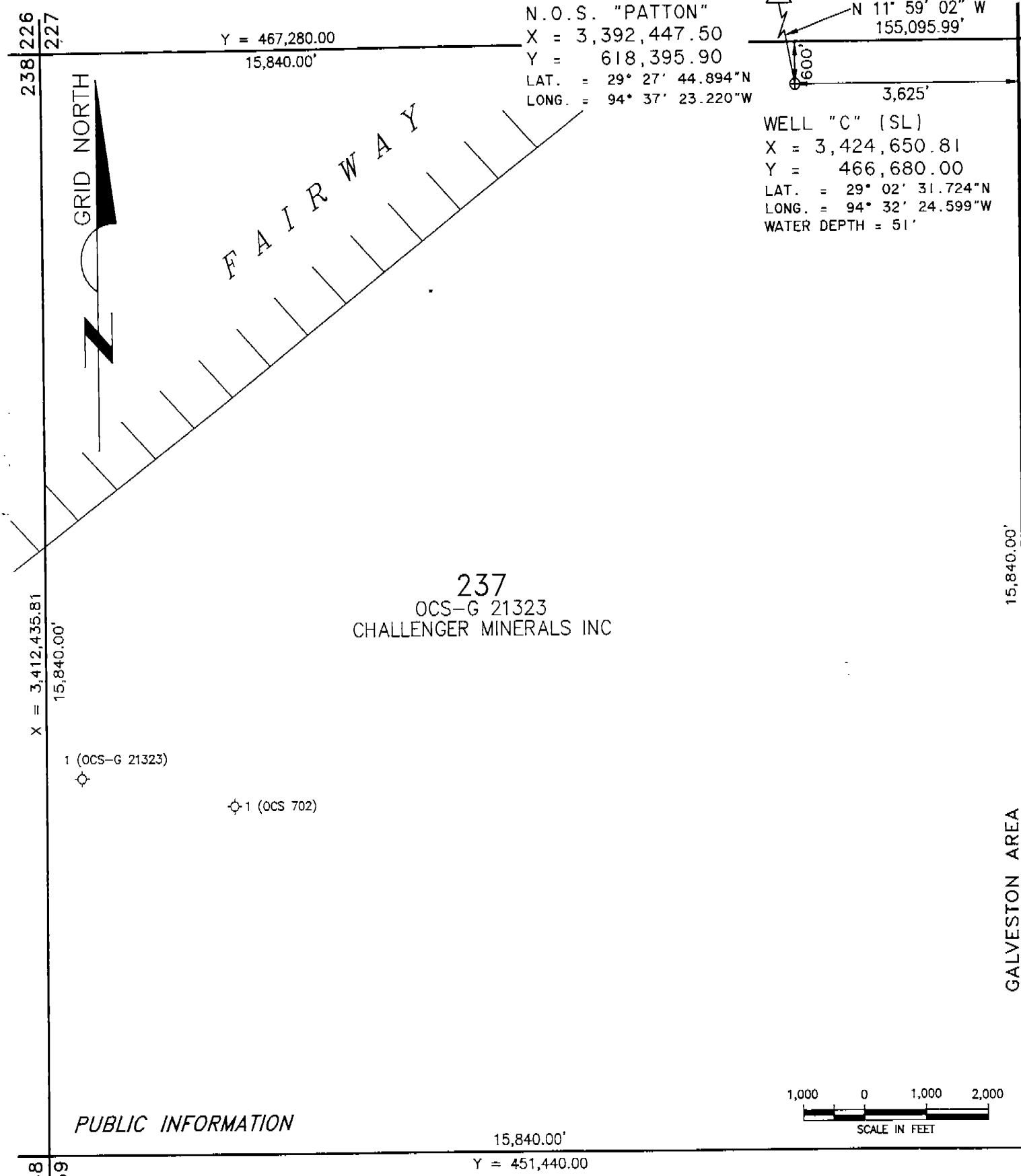
A description of the drilling unit is included in Appendix J, on the Plan Information Form. Rig specifications will be made a part of the Application for Permit to Drill.

Safety features on the drilling unit will include well control, pollution prevention, and blowout prevention equipment as described in Title 30 CFR Part 250, Subparts C, D, E, and G; and as further clarified by MMS Notices to Lessees, and current policy making invoked by the MMS, Environmental Protection Agency and the U.S. Coast Guard. Appropriate life rafts, life jackets, ring buoys, etc., will be maintained on the facility at all times.

Well Control Training is provided for personnel engaged in oil and gas operations in accordance with Title 30 CFR Part 250, Subpart O.

Pollution prevention measures include installation of curbs, gutters, drip pans, and drains on drilling deck areas to collect all contaminants and debris.

Challenger does not propose additional safety, pollution prevention, or early spill detection measures beyond those required by 30 CFR 250.



ATTACHMENT A-1

I HEREBY CERTIFY THE ABOVE PROPOSED WELL LOCATION IS CORRECT

Keith A. Codd

Keith A. Codd Tx. Reg. No. 4669

2/11/03

Date

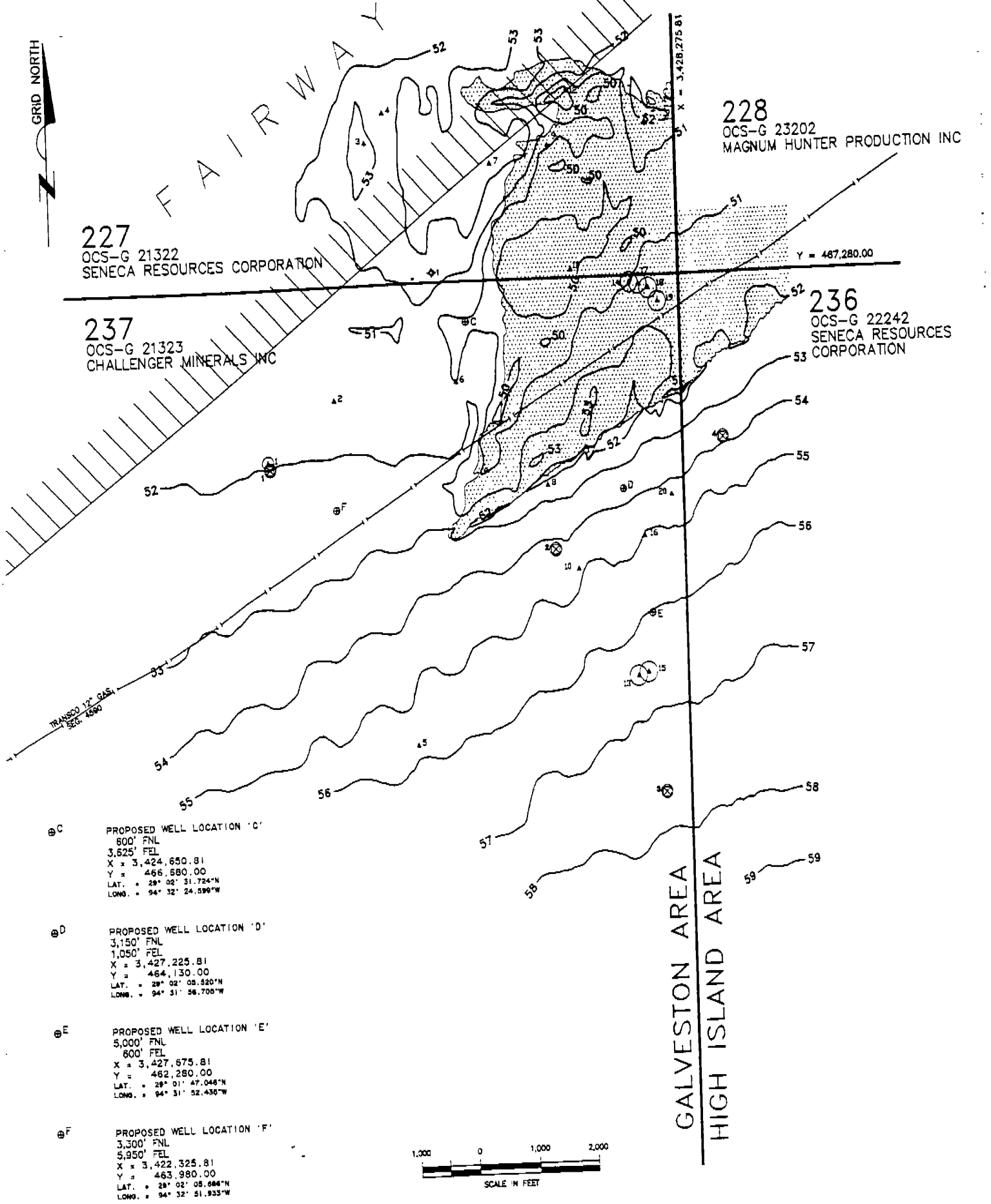
DATUM:	NAD 27
SPHEROID:	CLARKE 1866
PROJECTION:	LAMBERT
ZONE:	TEXAS SOUTH CENTRAL

Thales GeoSolutions, Inc.
3624 Westchase Drive
Houston, Texas 77042
Tel: 713-784-4482 Fax 713-784-8162
THALES

CHALLENGER MINERALS, INC.

PROPOSED WELL LOCATION
WELL C
BLOCK 237
GALVESTON AREA

DATE	DRAWN BY:	CHECKED BY:	DRAWING No.
1-8-2003	DLA	KAC	02-1446PERA_REV
REV. DATE 2-11-2003	REV. No.: 1	SCALE: AS SHOWN	JOB No. 02-1446 D.P. No. 4969



⊕C PROPOSED WELL LOCATION 'C'
600' FNL
3,625' FEL
X = 3,424,650.81
Y = 466,680.00
LAT. = 29° 02' 31.724"N
LONG. = 94° 32' 24.599"W

⊕D PROPOSED WELL LOCATION 'D'
3,150' FNL
1,050' FEL
X = 3,427,225.81
Y = 464,130.00
LAT. = 29° 02' 05.520"N
LONG. = 94° 31' 56.709"W

⊕E PROPOSED WELL LOCATION 'E'
5,000' FNL
600' FEL
X = 3,427,675.81
Y = 462,280.00
LAT. = 29° 01' 47.046"N
LONG. = 94° 31' 52.436"W

⊕F PROPOSED WELL LOCATION 'F'
3,300' FNL
5,950' FEL
X = 3,422,325.81
Y = 463,980.00
LAT. = 29° 02' 05.686"N
LONG. = 94° 32' 51.933"W

LEGEND:

PIPELINE (EXISTING)

WELL (PLUGGED AND ABANDONED)

50 BATHYMETRIC CONTOUR, INTERVAL = 1 FOOT. VERTICAL DATUM FOR BATHYMETRY IS MEAN LOWER LOW WATER (MLLW).

HIGHLY REFLECTIVE SEAFLOOR SEDIMENTS WITH PROMINENT RIPPLE MARKS.

15 UNIDENTIFIED MAGNETIC ANOMALY - NUMBER REFERS TO ANOMALY ID NUMBER. CIRCLE IS RECOMMENDED AVOIDANCE.

SIDE SCAN SONAR TARGET - NUMBER REFERS TO SONAR TARGET ID NUMBER. RECOMMENDED AVOIDANCE IS 100' FOR ALL TARGETS.

GRID - TEXAS (LAMBERT), SOUTH CENTRAL ZONE (NAD 27) CLARKE 1866

SITE SPECIFIC SURVEYS BATHYMETRY AND SURFICIAL FEATURES MAP PORTION OF BLOCK 237 GALVESTON AREA WITH EXTENSIONS INTO ADJACENT BLOCKS OFFSHORE TEXAS	CHALLENGER MINERALS, INC.

Thales GeoSolutions, Inc.
3624 Westchase Drive
Houston, Texas 77042
Tel: 713-784-4482 Fax: 713-784-8182
THALES

DRN.	RJ	PREP.	JLR	CAL.	TAO	APP	KAC	FILE NO.	02-2550-1446
CHK.	KAC	CHK.	KAC	CHK.	KAC	REV	2/11/03	D.P.	4968

APPENDIX B
GENERAL INFORMATION

(A) CONTACT

Inquiries may be made to the following authorized representative:

Valerie Land
J. Connor Consulting, Inc.
16225 Park Ten Place, Suite 700
Houston, Texas 77084
(281) 578-3388
E-mail address: valerie.land@jccteam.com

(B) NEW OR UNUSUAL TECHNOLOGY

Challenger does not propose to use any new or unusual technology to carry out the proposed exploration activities. New or unusual technology is defined as equipment and/or procedures that:

1. Function in a manner that potentially causes different impacts to the environment than the equipment or procedures did in the past;
2. Have not been used previously or extensively in an MMS OCS Region;
3. Have not been used previously under the anticipated operating conditions; or
4. Have operating characteristics that are outside the performance parameters established by 30 CFR 250.

(C) BONDING INFORMATION

The bond requirements for the activities and facilities proposed in this Supplemental Exploration Plan are satisfied by a $3,000,000 area wide bond, furnished and maintained according to 30 CFR 256, subpart I; NTL No. N2000-G16, "Guidelines for General Lease Surety Bonds", dated September 7, 2000.

(D) ONSHORE BASE AND SUPPORT VESSELS

A Vicinity Map is included as ***Attachment B-1***, showing Galveston 237 located approximately 23 miles from the nearest Texas shoreline and approximately 24 miles from the onshore support base located in Galveston, Texas.

The existing onshore base provides 24-hour service, a radio tower with a phone patch, dock space, equipment, and supply storage area, drinking and drill water, etc. The base serves as a loading point for tools, equipment, and machinery, and temporary storage for materials and equipment. The base also supports crew change activities. The proposed operations do not require expansion or major modifications to the base.

During the proposed activities, support vessels/helicopters and travel frequency are as follows:

Type	Weekly Estimate (No.) of Roundtrips
Crew Boat	7
Supply Boat	4
Helicopter	As needed

The most practical, direct route from the shorebase as permitted by weather and traffic conditions will be utilized.

(E) LEASE STIPULATION

The MMS did not invoke lease stipulations for Lease OCS-G 21323, Galveston Block 237.

SPECIAL CONDITIONS

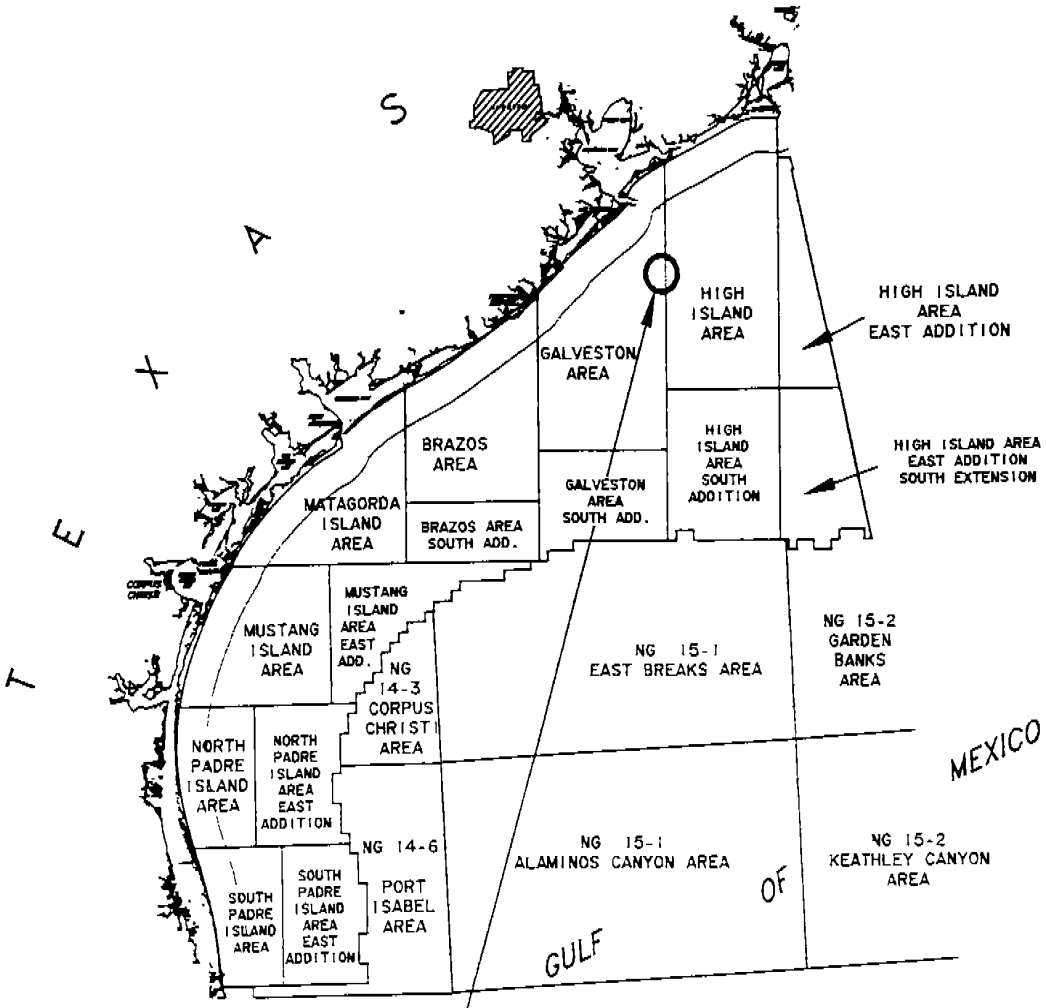
Galveston Block 237 is located outside the boundary of a **designated shipping fairway** as detailed on the location plat included in Appendix A as ***Attachment A-1.***

Challenger will comply with the U.S. Coast Guard and U.S. Army Corps of Engineers regulations regarding the placement of drilling units and associated anchors and chains.

ARCHAEOLOGY SURVEY BLOCKS

Under NTL 98-06 MMS has determined that Galveston 237 is located within the historical and prehistorical cultural resources area. Therefore, an Archaeological Survey Report has been prepared in accordance with NTL 2002-G01, and is being submitted under separate cover.

TEXAS GULF COAST INDEX
MMS OCS LEASING AREAS



VICINITY MAP

AREA OF INTEREST

BEST AVAILABLE COPY

DATUM: NAD 27	CHALLENGER MINERALS, INC.
SPHEROID: CLARKE 1866	PROPOSED WELL LOCATION WELL C BLOCK 237 GALVESTON AREA
PROJECTION: LAMBERT	
ZONE: TEXAS SOUTH CENTRAL	

Thales GeoSolutions, Inc.
3624 Westchase Drive
Houston, Texas 77042
Tel: 713-784-4482 Fax: 713-784-8162
THALES

DATE	DRAWN BY:	CHECKED BY:	DRAWING No.
1-8-2003	DLA	KAC	02-1446PERA_REV
REV. DATE	REV. No.:	SCALE:	JOB No. 02-1446
2-11-2003	1	NOT TO SCALE	D.P. No. 4969

ATTACHMENT B-1

APPENDIX C
GEOLOGICAL, GEOPHYSICAL, AND H_2S INFORMATION

(A) STRUCTURE CONTOUR MAP(S)

Current structure contour maps drawn on the top of each prospective hydrocarbon sand, showing the entire lease block, the location of the proposed well, and the locations of geological cross-section are included as ***Attachments C-1 and C-2.***

(B) INTERPRETED SEISMIC LINE

Attachment C-3 is the interpreted 3-D seismic line. This line is migrated, annotated with depth scale, and is within 500' of the surface location of the proposed well and is attached to one Proprietary Information copy of this plan.

(C) GEOLOGICAL STRUCTURE CROSS-SECTIONS

An interpreted geological structure cross-section showing the location and depth of the proposed well and at least one key horizon or objective sand is included as ***Attachment C-4.***

(D) SHALLOW HAZARDS REPORT

A shallow hazards survey was conducted over Galveston 237 by Thales GeoSolutions, Inc. in November, 2002.

Three copies of the survey report are being submitted to the Minerals Management Service under separate cover.

(E) SHALLOW HAZARDS ASSESSMENT

A shallow hazards assessment has been prepared for the proposed surface location, evaluating seafloor and subsurface geological and manmade features and conditions that may adversely affect drilling operations, and is included as ***Attachment C-5.***

(F) HIGH-RESOLUTION SEISMIC LINES

Attached to one Proprietary Copy of this Plan, ***Attachments C-6 through C-15*** are annotated high-resolution seismic lines. These lines are the closest high-resolution seismic lines to the proposed surface location.

(I) STRATIGRAPHIC COLUMN

A generalized biostratigraphic/lithostratigraphic column depicting each well from the seafloor to total depth, with each horizon labeled, is included as ***Attachment C-16.***

(J) TIME VS DEPTH TABLES

Appropriate tables providing seismic time versus depth for the proposed well location in areas where there is no well control is included as ***Attachment C-17.***

(K) HYDROGEN SULFIDE INFORMATION

In accordance with Title 30 CFR 250.417(c), Challenger requests that Galveston 237 be classified by the MMS as H_2S absent.

CHALLENGER MINERALS INC.
A GlobalSantaFe Company
15375 Memorial Drive, Suite G200
Houston, Texas 77079
281-925-7200 Fax 281-925-7280

March 12, 2003

Re: Galveston 237 Northeast prospect
Location "C"
OCS-G-21323
Hazard Survey Report and Geologic Discussion

Attention: Mr. Roger Corbielle,

Hazard Report:

In November, 2003 Thales GeoSolutions, Inc. acquired a site specific high resolution geophysical survey report covering the proposed location in Galveston 237 northeast. Based on these geophysical data acquired by Thales, there are no faults, acoustic amplitude anomalies or magnetic anomalies in close proximity to the proposed surface location that would interfere with the drilling of this well. In addition, two 3D surveys were acquired over the subject prospect allowing for a detailed evaluation of the well trajectory and neither revealed any unusual drilling circumstances.

Geologic Discussion:

The proposed well will be drilled as a directional well from a surface location 600' FNL and 3,625' FEL of Galveston Block 237. The bottom hole location is approximately 2,884' FNL and 5,349' FEL of Galveston Block 237. The anticipated TVD is 7,800' (8,982' MD) and will be a normal pressured well. Geopressure is anticipated at approximately 9,000' TVD. Numerous wells have been drilled in reasonably proximity to the prospect affording excellent geologic correlations to the objective section and supporting the anticipated pressure regime.

The well is scheduled to be drilled to test Middle Miocene, Bigenerina Humblei objectives trapped by an up-thrown 3-way fault closure. A King Ranch 237 #1 ST well was drilled down-dip in the same fault segment establishing the objective interval and the pressure conditions.

No record of H2S has been documented in offset wells.

Sincerely,
Challenger Minerals Inc.

Ronald W. Ramsey

area	block	well	api	date	one way time (ms)	depth (ft)
GA	237	001	427060001400	11-Mar-1961	10	52
GA	237	001	427060001400	11-Mar-1961	469	2939
GA	237	001	427060001400	11-Mar-1961	494	3103
GA	237	001	427060001400	11-Mar-1961	507	3193
GA	237	001	427060001400	11-Mar-1961	530	3343
GA	237	001	427060001400	11-Mar-1961	560	3553
GA	237	001	427060001400	11-Mar-1961	585	3723
GA	237	001	427060001400	11-Mar-1961	595	3796
GA	237	001	427060001400	11-Mar-1961	612	3913
GA	237	001	427060001400	11-Mar-1961	636	4083
GA	237	001	427060001400	11-Mar-1961	674	4373
GA	237	001	427060001400	11-Mar-1961	683	4445
GA	237	001	427060001400	11-Mar-1961	698	4573
GA	237	001	427060001400	11-Mar-1961	727	4823
GA	237	001	427060001400	11-Mar-1961	732	4873
GA	237	001	427060001400	11-Mar-1961	751	5038
GA	237	001	427060001400	11-Mar-1961	765	5163
GA	237	001	427060001400	11-Mar-1961	793	5398
GA	237	001	427060001400	11-Mar-1961	816	5603
GA	237	001	427060001400	11-Mar-1961	841	5832
GA	237	001	427060001400	11-Mar-1961	855	5958
GA	237	001	427060001400	11-Mar-1961	865	6053
GA	237	001	427060001400	11-Mar-1961	907	6443
GA	237	001	427060001400	11-Mar-1961	932	6683
GA	237	001	427060001400	11-Mar-1961	957	6943
GA	237	001	427060001400	11-Mar-1961	978	7153
GA	237	001	427060001400	11-Mar-1961	984	7213
GA	237	001	427060001400	11-Mar-1961	1005	7433
GA	237	001	427060001400	11-Mar-1961	1021	7603
GA	237	001	427060001400	11-Mar-1961	1033	7723
GA	237	001	427060001400	11-Mar-1961	1124	8659

APPENDIX D
BIOLOGICAL INFORMATION

TOPOGRAPHIC FEATURES INFORMATION

The activities proposed in this plan will not take place within 500 feet of any identified topographic feature; therefore topographic features information is not required.

LIVE BOTTOM (PINNACLE TREND) INFORMATION

Galveston 237 is not located within 100 feet of any pinnacle trend feature with vertical relief equal to or greater than 8 feet; therefore, live bottom information is not required.

APPENDIX E
WASTES AND DISCHARGES INFORMATION

DISCHARGES

All discharges associated with operations proposed in this Exploration Plan will be in accordance with regulations implemented by Minerals Management Service (MMS), U. S. Coast Guard (USCG) and the U.S. Environmental Protection Agency (EPA).

For disposed wastes, the type and general characteristics of the wastes, the amount to be disposed of (volume, rate, or weight), the daily rate, the name and location of the disposal facility, a description of any treatment or storage, and the methods for transporting and final disposal are provided in tabular format in ***Attachment E-1.*** For purposes of this Appendix, disposed wastes describes those wastes generated by the proposed activities that are disposed of by means other than by releasing them in to the waters of the Gulf of Mexico at the site where they are generated. These wastes can be disposed of by offsite release, injection, encapsulation, or placement at either onshore or offshore permitted locations for the purpose of returning them back to the environment.

Disposal Table (Wastes to be disposed of, not discharged)

Type of Waste Approximate Composition	Amount*	Rate per Day	Name/Location of Disposal Facility	Treatment and/or Storage, Transport and Disposal Method
Spent oil-based drilling fluids and cuttings	N/A	N/A	N/A	N/A
Spent synthetic-based drilling fluids and cuttings	N/A	N/A	N/A	N/A
Oil-contaminated produced sand	N/A	N/A	N/A	N/A
Waste Oil	N/A	N/A	N/A	N/A
Produced water	NA	NA	NA	NA
Produced water	NA	NA	NA	NA
Norm-contaminated wastes	N/A	Not applicable	N/A	N/A
Trash and debris	288 ft^3	18 ft^3 /day	Waste Management; Galveston,Tx,: BFI, Galveston, Tx.	Transport in storage bins on crew boat to a landfill
Chemical product wastes	N/A	N/A	N/A	N/A
Chemical product wastes	N/A	N/A	N/A	N/A
Workover fluids	NA	NA	NA	NA

*can be expressed as a volume, weight, or rate

APPENDIX F
OIL SPILL INFORMATION

1. Site-Specific OSRP N/A

2. Regional OSRP Information

Challenger Minerals Inc. is the only entity covered in their Regional Oil Spill Response Plan (OSRP) approved on November 14, 2002 through August 31, 2003. Activities proposed in this EP will be covered by the Regional OSRP.

3. OSRO Information

Challenger's primary equipment provider is Clean Gulf Associates (CGA). The Marine Spill Response Corporation's (MSRC) STARS network will provide closest available personnel, as well as an MSRC supervisor to operate the equipment.

4. Worst-Case Scenario Comparison

Category	Regional OSRP WCD	EP WCD
Type of Activity	Exploratory Drilling	Drilling/Completion
Facility Location (Area/Block)	ST 311	GA 237
Facility Designation		Jack Up
Distance to Nearest Shoreline (miles)	60	23
Volume (bbls) Storage tanks (total) Uncontrolled blowout Total Volume	1,000	1,000
Type of Oil(s) (crude, condensate, diesel)	Condensate	Condensate
API Gravity	40°	42°

Challenger has determined that the worst-case scenario from the activities proposed in this Supplemental Exploration Plan do not supercede the worst-case scenario from our approved regional OSRP for exploratory drilling activities.

Since Challenger Minerals Inc. has the capability to respond to the worst-case spill scenario included in our regional OSRP approved on November 14, 2002 through August 31, 2003, and since the worst-case scenario determined for our Supplemental Exploration Plan does not replace the worst-case scenario in our regional OSRP, I hereby certify that Challenger has 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 our Supplemental Exploration Plan.

APPENDIX G
AIR EMISSIONS INFORMATION

Screen Procedures for EP's	Yes	No
Is any calculated Complex Total (CT) Emission amount (tons) associated with your proposed exploration activities more than 90% of the amounts calculated using the following formulas: $CT = 3400D^{2/3}$ for CO, and $CT = 33.3D$ for the other air pollutants (where D = distance to shore in miles)?		X
Do your emission calculations include any emission reduction measures or modified emission factors?		X
Are your proposed exploration activities located east of 87.5° W longitude?		X
Do you expect to encounter H_2S at concentrations greater than 20 parts per million (ppm)?		X
Do you propose to flare or vent natural gas for more than 48 continuous hours from any proposed well?		X
Do you propose to burn produced hydrocarbon liquids?		X

Summary Information

There are no existing facilities or activities co-located with the currently proposed activities, therefore the Complex Total Emissions are the same as the Plan Emissions and are provided in the table below.

Air Pollutant	Plan Emission Amounts[1] (tons)	Calculated Exemption Amounts[2] (tons)	Calculated Complex Total Emission Amounts[3] (tons)
Particular matter (PM)	5.47	755.91	5.47
Sulphur dioxide (SO_2)	25.08	755.91	25.08
Nitrogen oxides (NO_x)	187.94	755.91	187.94
Volatile organic compounds (VOC)	5.64	755.91	5.64
Carbon Monoxide (CO)	41.01	27,258.14	41.01

[1]For activities proposed in your EP, list the projected emissions calculated from the worksheets.
[2]List the exemption amounts for your proposed activities calculated by using the formulas in 30 CFR 250.303(d).
[3]List the complex total emissions associated with your proposed activities calculated from the worksheets.

This information was calculated by: Brenda Montalvo
(281) 578-3388
brenda.montalvo@jccteam.com

Based on this data, emissions from the proposed activities will not cause any significant effect on onshore air quality.

APPENDIX H
ENVIRONMENTAL IMPACT ANALYSIS (EIA)

Challenger Minerals Inc. (CMI)

Supplemental Exploration Plan
Galveston Area Block 237
OCS-G 21323

(B) Analysis

Site-Specific at Galveston Block 237

1. Designated topographic features

Potential IPFs on topographic features are physical disturbances to the seafloor, effluents, and accidents.

Physical disturbances to the seafloor and effluents: Galveston Block 237 is approximately 50 miles from the closest designated topographic feature (Claypile Bank), and therefore no adverse impacts are expected.

Accidents: It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities (refer to statistics in paragraph 5, Water quality). Oil spills cause damage to benthic organisms only if the oil contacts the organisms. Oil from a surface spill can be driven into the water column; measurable amounts have been documented down to a 10 m depth. At this depth, the oil is found only at concentrations several orders of magnitude lower than the amount shown to have an effect on corals. Because the crests of topographic features in the Northern Gulf of Mexico are found below 10 m, no oil from a surface spill could reach their sessile biota. Oil from a subsurface spill is not applicable due to the distance of these blocks from a topographic area. The activities proposed in this plan will be covered by CMI's Regional OSRP (refer to information submitted in Appendix F).

There are no other IPF's (including emissions and wastes sent to shore for disposal) from the proposed activities that could cause impacts to topographic features.

2.Pinnacle trend area live bottoms.

Potential IPFs on pinnacle trend area live bottoms are physical disturbances to the seafloor, effluents, and accidents.

Physical disturbances to the seafloor, effluents and accidents: Galveston Block 237 is more than 100 miles from the closest live bottom (pinnacle trend) area, and therefore no adverse impacts are expected. There are no other IPF's (including emissions and wastes sent to shore for disposal) from the proposed activities that could cause impacts to a live bottom (pinnacle trend) area.

3. Eastern Gulf live bottoms
Potential IPFs on Eastern Gulf live bottoms are physical disturbances to the seafloor, effluents, and accidents.

Physical disturbances to the seafloor, effluents and accidents: Galveston Block 237 is more than 100 miles from the closest Eastern Gulf live bottom stipulated block, and therefore no adverse impacts are expected.

There are no other IPF's (including emissions and wastes sent to shore for disposal) from the proposed activities that could cause impacts to an Eastern Gulf live bottom area.

4. Chemosynthetic communities
There are no IPF's (including emissions, physical disturbances to the seafloor, wastes sent to shore for disposal, or accidents) from the proposed activities that could cause impacts to chemosynthetic communities.

High-density chemosynthetic communities are found only in water depths greater than 400 m, therefore CMI's proposed operations in Galveston Block 237 would not cause impacts.

5. Water quality
IPFs that could result in water quality degradation from the proposed operations in Galveston Block 237 include effluents and accidents.

Effluents – Routine effluent activities related to drilling operations that could result in marine quality degradation include the emplacement and removal of rigs, and the discharge of operational wastes. Bottom area disturbance from rig emplacement and removal would be limited and the disturbance would produce only a localized, temporary resuspension of bottom sediments.

During drilling operations, water-based drilling muds and cuttings, treated sanitary and domestic wastewaters, deck drainage, and miscellaneous wastes such as ballast waters, may be discharged at some point in the operation. All discharges are covered under an EPA NPDES permit, and must meet limitations and requirements set by the EPA. The rate that discharges occur is controlled and restricted. Operational discharges are not expected to cause significant adverse impacts to water quality.

Accidents - Oil spills also have the potential to alter offshore water quality. It is unlikely that an accidental surface or subsurface spill would occur from the proposed activities. During the twenty years from 1980 to 2000, OCS operations produced 4.7 billion barrels of oil and spilled only 0.001 percent of this oil, or 1 bbl for every 81,000 bbl produced. The spill risk related to a diesel spill from drilling operations is even less. During the 10 year period from 1976 – 1985, in which data were collected, there were 80 reported diesel spills greater than one barrel associated with drilling activities, compared with 11,944 wells drilled, or a 0.7 percent probability of an occurrence. If a spill were to occur, the water quality of marine waters would be temporarily affected by the dissolved components and small oil droplets. Dispersion by currents and

microbial degradation would remove the oil from the water column or dilute the constituents to background levels. Historically, changes in offshore water quality from oil spills have only been detected during the life of the spill and up to several months afterwards. Most of the components of oil are insoluble in water and therefore float. The activities proposed in this plan will be covered by CMI's Regional Oil Spill Response Plan (refer to information submitted in Appendix F).

There are no other IPF's (including emissions, physical disturbances to the seafloor, and wastes sent to shore for disposal) from the proposed activities that could cause impacts to water quality.

6. Fisheries

IPFs that could cause impacts to essential fish habitat as a result of the proposed operations in Galveston Block 237 include effluents, physical disturbances to the seafloor, and accidents. Essential fish habitat includes all estuarine and marine waters and substrates in the Gulf of Mexico.

Effluents - The Live Bottom Low Relief Stipulation, the Live Bottom (Pinnacle Trend) Stipulation, and the Eastern Gulf Pinnacle Trend Stipulation would prevent most of the potential impacts on live-bottom communities and EFH from operational waste discharges (drilling muds and cuttings and produced waters). Levels of contaminants in drilling muds and cuttings and produced-water discharges, discharge-rate restrictions, and monitoring and toxicity testing are regulated by the EPA NPDES permit, thereby eliminating many significant biological or ecological effects. Operational discharges are not expected to cause significant adverse impacts to EFH.

Physical disturbances to the seafloor –The Live Bottom Low Relief Stipulation, the Live Bottom (Pinnacle Trend) Stipulation, and the Eastern Gulf Pinnacle Trend Stipulation would prevent most of the potential impacts on live-bottom communities and EFH from bottom disturbing activities (drilling rig, well protector structure).

An accidental oil spill has the potential to cause some detrimental effects to fisheries. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to Paragraph 5, Water Quality). The effects of oil on mobile adult finfish or shellfish would likely be sub lethal and the extent of damage would be reduced to the capacity of adult fish and shell fish to avoid the spill, to metabolize hydrocarbons, and to excrete both metabolites and parent compounds. The activities proposed in this plan will be covered by CMI's Regional OSRP (refer to information submitted in Appendix F).

There are no IPF's from emissions or wastes sent to shore for disposal from the proposed activities that could cause impacts to fisheries.

7. Marine mammals

IPFs that could cause impacts to marine mammals as a result of the proposed operations in Galveston Block 237 include emissions, effluents, discarded trash and debris, and accidents. GulfCet II studies revealed that cetaceans of the continental shelf and shelf-edge were almost exclusively bottlenose dolphin and Atlantic spotted dolphin. Squid eaters, including dwarf and

pygmy killer whale, Risso's dolphin, rough-toothed dolphin, and Cuvier's beaked whale occurred most frequently along the upper slope in areas outside of anticyclones.

Emissions (Noise) – Noises from drilling activities, support vessels and helicopters may elicit a startle reaction from marine mammals. This reaction may lead to disruption of marine mammals' normal activities. Stress may make them more vulnerable to parasites, disease, environmental contaminants, and/or predation (e.g., Majors and Myrick, 1990). There is little conclusive evidence for long-term displacements and population trends for marine mammals relative to noise.

Effluents – Drilling fluids and cuttings discharges contain components that may be detrimental to marine mammals. Most operational discharges are diluted and dispersed when released. Any potential impact from drilling fluids would be indirect, either as a result of impacts on prey items or possibly through ingestion in the food chain (API, 1989).

Discarded trash and debris - Both entanglement in, and ingestion of, debris have caused the death or serious injury of marine mammals (Laist, 1997; MMC, 1999). The limited amount of marine debris, if any, resulting from the proposed activities is not expected to substantially harm marine mammals. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA).

CMI will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on vessels and every facility that has sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video, "All Washed Up: The Beach Litter Problem". Thereafter, all personnel will view the marine trash and debris training video annually.

Accidents – Collisions between support vessels and cetaceans would be unusual events, however should one occur, death or injury to marine mammals is possible. Contract vessel operators can avoid marine mammals and reduce potential deaths. Vessel crews are required to report sightings of any injured or dead protected species immediately to the MMS Protected Species Biologist by telephone. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

Oil spills have the potential to cause sub-lethal oil-related injuries and spill-related deaths to marine mammals. However, it is unlikely that an accidental oil spill would occur from the

proposed activities (refer to Paragraph 5, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could add to changes in cetacean behavior and/or distribution, thereby causing additional stress to the animals. The effect of oil dispersants on cetaceans is not known. The acute toxicity of oil dispersant chemicals included in our OSRP is considered to be low when compared with the constituents and fractions of crude oils and diesel products. The activities proposed in this plan will be covered by CMI's Regional Oil Spill Response Plan (refer to information submitted in accordance with Appendix F).

There are no other IPF's (including physical disturbances to the seafloor) from the proposed activities that could cause impacts to marine mammals.

8. Sea turtles

IPFs that could cause impacts to sea turtles as a result of the proposed operations in Galveston Block 237 include emissions, effluents, discarded trash and debris, and accidents. GulfCet II studies sighted most loggerhead, Kemp's ridley, and leatherback sea turtles over shelf waters. Historically these species have been sighted up to the shelf's edge. They appear to be more abundant east of the Mississippi River than they are west of the river (Fritts et al., 1983b; Lohoefener et al., 1990). Activities are proposed approximately 32 miles from Matagorda Peninsula, where the Kemp's Ridley are known to nest.

Emissions – Noise from drilling activities, support vessels, and helicopters may elicit a startle reaction from sea turtles, but this is a temporary disturbance. **Effluents** – Drilling fluids and cuttings discharges are not known to be lethal to sea turtles. Most operational discharges are diluted and dispersed when released. Any potential impact from drilling fluids would be indirect, either as a result of impacts on prey items or possibly through ingestion in the food chain (API, 1989).

Discarded trash and debris - Both entanglement in, and ingestion of, debris have caused the death or serious injury of sea turtles (Balazs, 1985). The limited amount of marine debris, if any, resulting from the proposed activities is not expected to substantially harm sea turtles. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). CMI will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on vessels and every facility that has sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video, "All Washed Up: The Beach Litter Problem". Thereafter, all personnel will view the marine trash and debris training video annually.

Accidents – Collisions between support vessels and sea turtles are expected to be unusual events, however such collision could result in death or injury. Contract vessel operators can avoid marine turtles and reduce potential deaths. Vessel crews are required to report sightings of any injured or dead protected species immediately to the MMS Protected Species Biologist by telephone. If the vessel is the responsible party, it is required to remain available to assist the respective salvage and stranding network as needed.

All sea turtle species and life stages are vulnerable to the harmful effects of oil through direct contact or by fouling of their food. Exposure to oil can be fatal, particularly to juvenile and hatchlings. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer to Paragraph 5, Water Quality). Oil spill response activities may increase vessel traffic in the area, which could add to the possibility of collisions with sea turtles. The activities proposed in this plan will be covered by CMI's Regional Oil Spill Response Plan (refer to information submitted in accordance with Appendix F). There are no other IPF's (including physical disturbances to the seafloor) from the proposed activities that could cause impacts to sea turtles.

9. Air Quality

There would be a limited degree of air quality degradation in the immediate vicinity of the proposed activities. Plan Emissions (Complex Total Emissions are the same as Plan Emissions) for the proposed activities do not exceed the exemption amounts. There are no other IPF's (including effluents, physical disturbances to the seafloor, wastes sent to shore for treatment or disposal, or accidents) from the proposed activities that could cause impacts to air quality.

10. Shipwreck sites (known or potential)

IPFs that could cause impacts to known or unknown shipwreck sites as a result of the proposed operations in Galveston Block 237 are disturbances to the seafloor (drilling rig emplacement). Galveston Block 237 is located in an OCS Block designated by MMS as high-probability for occurrence of shipwrecks, and therefore an Archaeological Survey was conducted. Review of the survey data indicates there are no known or potential shipwreck sites located within the block. However, CMI will report to MMS the discovery of any evidence of a shipwreck and make every reasonable effort to preserve and protect that cultural resource. There are no other IPF's (including emissions, effluents, wastes sent to shore for treatment or disposal, or accidents) from the proposed activities that could cause impacts to shipwreck sites.

11. Prehistoric archaeological sites

IPF's that could cause impacts to prehistoric archaeological sites as a result of the proposed operations in Galveston Block 237 are disturbances to the seafloor (drilling rig emplacement) and accidents (oil spill). Galveston Block 237 is located within a block of Archaeological Prehistoric high probability; therefore an Archaeological Survey was required. Review of the survey data indicates there are no archaeological resources located within the survey area. CMI will report to MMS the discovery of any object of prehistoric archaeological significance and make every reasonable effort to preserve and protect that cultural resource. An accidental oil spill has the potential to cause some detrimental effects to prehistoric archaeological sites. However, it is unlikely that an accidental oil spill would occur from the proposed activities (refer

to Paragraph 5, Water Quality). The activities proposed in this plan will be covered by CMI's Regional Oil Spill Response Plan (refer to information submitted in accordance with Appendix F).

There are no other IPF's (including emissions, effluents, wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to prehistoric archaeological sites.

Vicinity of Offshore Location

1. Essential fish habitat IPFs that could cause impacts to essential fish habitat as a result of the proposed operations in Galveston Block 237 include effluents and accidents. Essential fish habitat includes all estuarine and marine waters and substrates in the Gulf of Mexico.

Effluents - The Live Bottom Low Relief Stipulation, the Live Bottom (Pinnacle Trend) Stipulation, and the Eastern Gulf Pinnacle Trend Stipulation would prevent most of the potential impacts on live-bottom communities and EFH from operational waste discharges (drilling muds and cuttings). Levels of contaminants in drilling muds and cuttings discharges, discharge-rate restrictions, and monitoring and toxicity testing are regulated by the EPA NPDES permit, thereby eliminating many significant biological or ecological effects. Operational discharges are not expected to cause significant adverse impacts to EFH.

Accident - An accidental oil spill has the potential to cause some detrimental effects on EFH. Oil spills that contact coastal bays and estuaries, as well as OCS waters when pelagic eggs and larvae are present have the greatest potential to affect fisheries. However, it is unlikely that an oil spill would occur from the proposed activities (refer to Paragraph 5, Water quality). The activities proposed in this plan will be covered by CMI's Regional OSRP (refer to information submitted in Appendix F).

There are no other IPF's (including emissions, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to essential fish habitat.

2. Marine and pelagic birds
IPF's that could impact marine birds as a result of the proposed activities include air emissions, accidental oil spills, and discarded trash and debris from vessels and the drilling rig.

Emissions - Emissions of pollutants into the atmosphere from these activities are far below concentrations that could harm coastal and marine birds.

Accidents – An oil spill would cause localized, low-level petroleum hydrocarbon contamination. However, it is unlikely that an oil spill would occur from the proposed activities (refer to Paragraph 5, Water quality). Marine and pelagic birds feeding at the spill location may experience chronic, nonfatal, physiological stress. It is expected that few, if any, coastal and marine birds would actually be affected to that extent. The activities proposed in this plan will be covered by CMI's Regional OSRP (refer to information submitted in Appendix F).

Discarded trash and debris - Marine and pelagic birds could become entangled and snared in discarded trash and debris, or ingest small plastic debris, which can cause permanent injuries and death. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). CMI will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass. Informational placards will be posted on vessels and every facility that has sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video, "All Washed Up: The Beach Litter Problem". Thereafter, all personnel will view the marine trash and debris training video annually. Debris, if any, from these proposed activities will seldom interact with marine and pelagic birds, and therefore, the effects will be negligible.

There are no other IPF's (including effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to marine and pelagic birds.

3. Public health and safety due to accidents.
There are no IPF's (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal, or accidents, including an accidental H_2S releases) from the proposed activities that could cause impacts to public health and safety. In accordance with 30 CFR 250.417(c) and 2002-G08, sufficient information is included in Appendix C to justify our request that our proposed activities be classified by MMS as H_2S absent.

Coastal and Onshore

1. Beaches
IPF's from the proposed activities that could cause impacts to beaches are accidents (oil spills) and discarded trash and debris.

Accidents – If a large volume of spilled oil contacts a beach, the cleanup operations can affect barrier beach stability. If large quantities of sand were removed during spill cleanup operations, shoreline erosion would be accelerated. The Gulf State governments have established policies to limit sand removal by cleanup operations; therefore impacts are projected as minimal. Due to the distance from shore (23 miles) and the response capabilities that would be implemented, significant adverse impacts are not expected. The activities proposed in this plan will be covered by CMI's Regional OSRP (refer to information submitted in Appendix F). **Discarded trash and debris** - Trash on the beach is recognized as a major threat to the enjoyment and use of beaches. There should only be a limited amount of marine debris, if any, resulting from the proposed activities. Operators are prohibited from deliberately discharging debris as mandated

by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). CMI will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on vessels and every facility that has sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video, "All Washed Up: The Beach Litter Problem". Thereafter, all personnel will view the marine trash and debris training video annually.

There are no other IPF's (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to beaches.

2. Wetlands

IPF's that could affect wetlands and seagrass beds associated with the proposed operations are accidents (oil spills).

Accidents – Oil slicks that contact land are expected to come ashore on barrier islands, and are unlikely to contact coastal wetlands or seagrasses, which are located inland. Should a contact occur, oiling will be very light with short-term impacts to vegetation. However, it is unlikely that an oil spill would occur from the proposed activities (refer to Paragraph 5, Water quality). If a spill were to occur, response capabilities as outlined in CMI's Regional OSRP (refer to information submitted in Appendix F) would be implemented.

There are no other IPF's (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to wetlands.

3. Shore birds and coastal nesting birds

IPF's from the proposed activities that could cause impacts to shore birds and coastal nesting birds are accidents (oil spills) and discarded trash and debris. Galveston 237 is approximately 25 miles from West Bay Bird Island (Galveston Island). A number of colonial water birds and shore birds - including endangered and threatened species such as the brown pelican, piping plover and reddish egret use the island for breeding, nesting, and roosting.

Accidents - Oil spills could cause impacts to shore birds and coastal nesting birds. The birds most vulnerable to direct effects of oiling include those species that spend most of their time swimming on and under the sea surface, and often aggregate in dense flocks (Piatt et al., 1990; Vauk et al., 1989). Coastal birds, including shorebirds, waders, marsh birds, and certain water

fowl, may be the hardest hit indirectly through destruction of their feeding habitat and/or food source (Hansen, 1981; Vermeer and Vermeer, 1975). Direct oiling of coastal birds and certain seabirds is usually minor; many of these birds are merely stained as a result of their foraging behaviors. Birds can ingest oil when feeding on contaminated food items or drinking contaminated water.

Oil-spill cleanup operations will result in additional disturbance of coastal birds after a spill. However, it is unlikely that an oil spill would occur from the proposed activities (refer to Paragraph 5, Water quality). Due to the distance from shore being 23 miles, CMI would immediately implement the response capabilities outlined in their Regional OSRP (refer to information submitted in Appendix F).

Discarded trash and debris – Coastal and marine birds are highly susceptible to entanglement in floating, submerged, and beached marine debris: specifically plastics. Operators are prohibited from deliberately discharging debris as mandated by MARPOL-Annex V and the Marine Plastic Pollution Research and Control Act, and regulations imposed by various agencies including the United States Coast Guard (USCG) and the Environmental Protection Agency (EPA). CMI will operate in accordance with the regulations and also avoid accidental loss of solid waste items by maintaining waste management plans, manifesting trash sent to shore, and using special precautions such as covering outside trash bins to prevent accidental loss of solid waste. Special caution will be exercised when handling and disposing of small items and packaging materials, particularly those made of non-biodegradable, environmentally persistent materials such as plastic or glass.

Informational placards will be posted on vessels and every facility that has sleeping or food preparation capabilities. All offshore personnel, including contractors and other support services-related personnel (e.g. helicopter pilots, vessel captains and boat crews) will be indoctrinated on waste procedures, and will view the video, "All Washed Up: The Beach Litter Problem". Thereafter, all personnel will view the marine trash and debris training video annually.

There are no other IPF's (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to shore birds and coastal nesting birds.

4. Coastal wildlife refuges

IPF's from the proposed activities that could cause impacts to coastal wildlife refuges are accidents (oil spills) and discarded trash and debris. Due to the distance from the San Bernard National Wildlife Refuge (approximately 55 miles), an accidental oil spill from the proposed activities could cause impacts to coastal wildlife refuges. San Bernard National Wildlife Refuge provides essential winter habitat for birds on the Central Flyway. During the winter months, duck and geese populations reach peaks as high as 35,000 and 90,000, respectively. Numerous species of marine life, most notably several living reefs of colonial oysters, also inhabit the refuge's marshes and waters. Marshes within San Bernard National Wildlife Refuge (25 miles from Galveston Block 237) provide valuable feeding and nursery areas for a variety of marine life. Fish caught in refuge waters include spotted sea trout, redfish, black drum, sheephead, and

flounder. Blue crabs and several shrimp species use these waters during their life cycles and reefs of colonial oysters are found in the shallow Cedar Lake and Cow Trap Lake. The Cow Trap Lake system is recognized as one of the most pristine marsh systems of the Texas coast.

Potential impacts to shore birds and coastal nesting birds were covered in previous sections. However, it is unlikely that an oil spill would occur from the proposed activities (refer to Paragraph 5, Water quality). Response capabilities would be implemented, no impacts are expected. The activities proposed in this plan will be covered by CMI's Regional OSRP (refer to information submitted in Appendix F).

There are no other IPF's (emissions, effluents, physical disturbances to the seafloor, or wastes sent to shore for treatment or disposal) from the proposed activities that could cause impacts to coastal wildlife refuges.

5. Wilderness areas
There are no lands in coastal Texas managed as designated wilderness areas. Therefore, no IPFs apply.
Other Environmental Resources Identified.
None

(C) Impacts on your proposed activities.
The site–specific environmental conditions have been taken into account for the proposed activities. No impacts are expected on the proposed activities from site-specific environmental conditions.

A Shallow Hazards Report is being submitted in accordance with NTL 2002-G08, Appendix C, and NTL 98-20. A Shallow Hazards Assessment of any seafloor and subsurface geological and man-made features and conditions that may adversely affect operations is being submitted in accordance with NTL 2002-G08 and NTL 98-20.

(D) Alternatives
No alternatives to the proposed activities were considered to reduce environmental impacts.

(E) Mitigation measures
No mitigation measures other than those required by regulation will be employed to avoid, diminish, or eliminate potential impacts on environmental resources.

F) Consultation
No agencies or persons were consulted regarding potential impacts associated with the proposed activities. Therefore, a list of such entities has not been provided.

(G) References
Authors:

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Although not cited, the following were utilized in preparing the EIA:

- Hazard Surveys
- MMS EIS's:
    - GOM Deepwater Operations and Activities. Environmental Assessment. MMS 2000-001
    - GOM Central and Western Planning Areas Sales 166 and 168 Final Environmental Impact Statement. MMS 96-0058

Challenger Minerals Inc. (CMI)
Supplemental Exploration Plan
Galveston Area Block 237
OCS-G 21323

ENVIRONMENTAL IMPACT ANALYSIS WORKSHEET

Environment Resources	Impact Producing Factors (IPFs) Categories and Examples Refer to recent GOM OCS Lease Sale EIS for a more complete list of IPFs					
	Emissions (air, noise, light, etc.)	Effluents (muds, cutting, other discharges to the water column or seafloor)	Physical disturbances to the seafloor (rig or anchor emplacements, etc.)	Wastes sent to shore for treatment or disposal	Accidents (e.g., oil spills, chemical spills, H_2S releases)	Discarded Trash & Debris
Site-specific at Offshore Location						
Designated topographic features		(1)	(1)		(1)	
Pinnacle Trend area live bottoms		(2)	(2)		(2)	
Eastern Gulf live bottoms		(3)	(3)		(3)	
Chemosynthetic communities			(4)			
Water quality		X			X	
Fisheries		X			X	
Marine Mammals	X(8)	X			X(8)	X
Sea Turtles	X(8)	X			X(8)	X
Air quality	X(9)					
Shipwreck sites (known or potential)			X(7)			
Prehistoric archaeological sites			X(7)			
Vicinity of Offshore Location						
Essential fish habitat		X	X		X(6)	
Marine and pelagic birds					X	X
Public health and safety					(5)	
Coastal and Onshore						
Beaches					X(6)	X
Wetlands					X(6)	
Shore birds and coastal nesting birds					X(6)	X

Coastal wildlife refuges					X	X
Wilderness areas						
Other Resources You Identify						

Footnotes for Environmental Impact Analysis Matrix

1. Activities that may affect a marine sanctuary or topographic feature. Specifically, if the well or platform site or any anchors will be on the seafloor within the:
   a. 4-mile zone of the Flower Garden Banks, or the 3-mile zone of Stetson Bank;
   b. 1000-m, 1-mile or 3-mile zone of any topographic feature (submarine bank) protected by the Topographic Features Stipulation attached to an OCS lease;
   c. Essential Fish Habitat (EFH) criteria of 500 ft. from any no-activity zone: or
   d. Proximity of any submarine bank (500 ft. buffer zone) with relief greater than 2 meters that is not protected by the Topographic Features Stipulation attached to an OCS lease.
2. Activities with any bottom disturbance within an OCS lease block protected through the Live Bottom (Pinnacle Trend) Stipulation attached to an OCS lease.
3. Activities within any Eastern Gulf OCS block where seafloor habitats are protected by the Live Bottom (Low-Relief) Stipulation attached to an OCS lease.
4. Activities on blocks designated by the MMS as being in water depths 400 meters or greater.
5. Exploration or production activities where H_2S concentrations greater than 500 ppm might be encountered.
6. All activities that could result in an accidental spill of produced liquid hydrocarbons or diesel fuel that you determine would impact these environmental resources. If the proposed action is located a sufficient distance from a resource that no impact would occur, the EIA can note that in a sentence or two.
7. All activities that involve seafloor disturbances, including anchor emplacements, in any OCS block designated by the MMS as having high-probability for the occurrence of shipwrecks or prehistoric sites, including such blocks that will be affected that are adjacent to the lease block in which your planned activity will occur. If the proposed activities are located a sufficient distance from a shipwreck or a prehistoric site that no impact would occur, the EIA can note that in a sentence or two.
8. All activities that you determine might have an adverse effect on endangered or threatened marine mammals or sea turtles or their critical habitats.
9. Production activities that involve transportation of produced fluids to shore using shuttle tankers or barges.

APPENDIX I

COASTAL ZONE MANAGEMENT CONSISTENCY INFORMATION

A certificate of Coastal Zone Management Consistency for the State of Louisiana is not required for a Supplemental Exploration Plan; therefore this section does not apply.

PLAN INFORMATION FORM

GENERAL INFORMATION

Type of OCS Plan:	X	Supplemental Exploration Plan (SEP)		Development Operations Coordination Document (DOCD)
Company Name:	Challenger Minerals Inc.			MMS Operator Number: 00403
Address:	15375 Memorial Drive Suite G200 Houston, Texas 77079		Contact Person:	Valerie D. Land
			Phone Number:	(281) 578-3388
			Email Address:	valerie.land@jccteam.com

Lease: G21323	Area: Galveston	Block: 237	Project Name (If Applicable): N/A
Objective(s): ☐ Oil	☒ Gas ☐ Sulphur ☐ Salt	Onshore Base: Galveston, Texas	Distance to Closest Land (Miles): 23

Description of Proposed Activities (Mark all that apply)

☒ Exploration drilling	☐ Development drilling
☒ Well completion	☐ Installation of production platform
☒ Well test flaring	☐ Installation of production facilities
☒ Installation of well protection structure	☐ Installation of satellite structure
☐ Installation of subsea wellheads and/or manifolds	☐ Installation of lease term pipelines
☐ Temporary well abandonment	☐ Commence production
☐ Other (specify and describe)	

Do you propose to use new or unusual technology to conduct your activities?		Yes	X	No
Do you propose any facility that will serve as a host facility for deepwater subsea development?		Yes	X	No
Do you propose any activities that may disturb an MMS-designated high-probability archaeological area?	X	Yes		No

Tentative Schedule of Proposed Activities

Proposed Activity	Start Date	End Date	No. of Days
Drill Well Location C	06/15/03	07/06/03	22
Complete Well Location C	07/07/03	07/16/03	10
Installation of well protection structure	07/17/03	07/19/03	3

Description of Drilling Rig		Description of Production Platform	
☒ Jackup	☐ Drillship	☐ Caisson	☐ Tension leg platform
☐ Gorilla Jackup	☐ Platform rig	☒ Well protector	☐ Compliant tower
☐ Semisubmersible	☐ Submersible	☐ Fixed platform	☐ Guyed tower
☐ DP Semisubmersible	☐ Other (Attach Description)	☐ Subsea manifold	☐ Floating production system
☐ Drilling Rig Name (If Known): Unknown		☐ Spar	☐ Other (Attach description)

Description of Lease Term Pipelines

From (Facility/Area/Block)	TO (Facility/Area/Block)	Diameter (inches)	Length (Feet)	Product
N/A				

WELL INFORMATION FORM
(USE SEPARATE FORM FOR EACH LEASE)

PROPOSED WELL/STRUCTURE LOCATIONS

WELL / STRUCTURE NAME	SURFACE LOCATION			BOTTOM-HOLE LOCATION (FOR WELLS)	
Platform _ or Well X Name: "C"	CALLS: 600′ F N L and 3625′ F E L OF LEASE OCS G21323 , GALVESTON AREA, BLOCK 237			CALLS: F L and F L OF LEASE OCS , AREA, BLOCK	
	X: 3,424,650.81 Y: 466,680.00			X: Y:	
	LAT: 29° 02′ 31.724″ LONG: 94° 32′ 24.599″			LAT: LONG:	
	TVD (IN FEET):	MD (IN FEET):			WATER DEPTH (IN FEET): 51′
Platform _ or Well _ Name:	CALLS: F L and F L OF LEASE OCS , AREA, BLOCK			CALLS: F L and F L OF LEASE OCS , AREA, BLOCK	
	X: Y:			X: Y:	
	LAT: LONG:			LAT: LONG:	
	TVD (IN FEET):	MD (IN FEET):			WATER DEPTH (IN FEET):
Platform _ or Well _ Name:	CALLS: F L and F L OF LEASE OCS , AREA, BLOCK			CALLS: F L and F L OF LEASE OCS , AREA, BLOCK	
	X: Y:			X: Y:	
	LAT: LONG:			LAT: LONG:	
	TVD (IN FEET):	MD (IN FEET):			WATER DEPTH (IN FEET):
Platform _ or Well _ Name:	CALLS: F L and F L OF LEASE OCS , AREA, BLOCK			CALLS: F L and F L OF LEASE OCS , AREA, BLOCK	
	X: Y:			X: Y:	
	LAT: LONG:			LAT: LONG:	
	TVD (IN FEET):	MD (IN FEET):			WATER DEPTH (IN FEET):