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MARCH 29 1995
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CON/OCS REGION

In Reply Refer To: MS 5231

March 29, 1995

Seagull Energy E&P Inc.
Attention: Ms. Rita Heintz
1001 Fannin, Suite 1700
Houston, Texas 77002-6794

Gentlemen:

Reference is made to the following plan received March 15, 1995:

Type Plan - Supplemental Development Operations Coordination Document
Lease - OCS-G 7251
Block - 349
Area - Galveston
Activities Proposed - Wells Nos. AA through DD

In accordance with 30 CFR 250.34, this plan is hereby deemed submitted and is now being considered for approval.

Your control number is S-3607 and should be referenced in your communication and correspondence concerning this plan.

Sincerely,

(Orig. Sgd.) J. R. Hennessey

Donald C. Howard
Regional Supervisor
Field Operations

bcc: Lease OCS-G 7251 POD File (MS 5032)
MS 5034 w/public info. copy of the plan
and accomp. info.

DTrocquet:cic:03/23/95:DOCDOM

SEAGULL ENERGY E&P INC.

A Subsidiary of Seagull Energy Corporation
1001 Fannin, Suite 1700 • Houston, Texas 77002-6794 • (713) 951-4700



March 9, 1995

Mr. Donald C. Howard
Regional Supervisor
Office of Field Operations
Minerals Management Service
1201 Elmwood Park Boulevard
New Orleans, Louisiana 70123-2394

Reference: Supplemental Development Operations Coordination Document
OCS-G 7251, Galveston Block 349
Offshore Texas

Gentlemen:

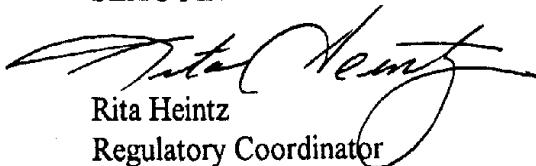
Seagull Energy E&P Inc. herewith submits for your approval a Supplemental Development Operations Coordination Document (DOCD) for Lease OCS-G 7251, Galveston Block 349, Offshore, Texas.

Seagull anticipates commencing activities under this Supplemental DOCD on or about May 15, 1995.

Should you require additional information, please advise.

Very truly yours,

SEAGULL ENERGY E&P INC.


Rita Heintz
Regulatory Coordinator

Attachments: 5 Proprietary Copies
4 Public Information Copies

**PUBLIC
INFORMATION**

**SEAGULL ENERGY E&P INC.
 SUPPLEMENTAL DEVELOPMENT OPERATIONS COORDINATION DOCUMENT
 GALVESTON BLOCK 349
 OCS-G 7251**

Seagull Energy E&P Inc. is the designated operator of Galveston Block 349 and is submitting this Supplemental Development Operations Coordination Document (DOCD) in accordance with 30 CFR 250.34 and subsequent guidelines. Excluded from the "Public Information" copies of this plan are certain geologic discussions, well depths, and structure map.

DESCRIPTION OF DEVELOPMENT ACTIVITIES

Seagull Energy E&P Inc. proposes to drill, complete and produce four (4) additional wells, Locations AA through DD under this supplemental DOCD. A location plat is enclosed as Attachment B. A table showing the location coordinates for the wells is enclosed as Attachment B(1). Activities proposed under this supplemental DOCD will commence on or about May 15, 1995. The proposed wells should take approximately 40 days to drill and complete.

Well	Location	PTD	Status
AA	SL: 5864' FSL & 6087' FEL of GA 349 BHL:		To Be Drld
BB	SL: 5864' FSL & 6087' FEL of GA 349 BHL:		To Be Drld
CC	SL: 5509' FNL & 0545' FEL of GA 349 BHL:		To Be Drld
DD	SL: 7617' FSL & 5469' FWL of GA 349 BHL:		To Be Drld

The estimated life of reserves for Galveston Block 349 Wells AA through DD is
 Expected production from the wells is

DRILLING EQUIPMENT DESCRIPTION

The proposed wells will be drilled with a typical jackup drilling rig. Drilling and other operations will be conducted under the applicable provisions of OCS orders, notices and regulations and in the interest of safety and pollution control. A schematic of a typical diverter system and blowout preventer is enclosed as Attachment A.

DESCRIPTION OF PLATFORM

Development and production activities for these wells will occur from Seagull's existing Production Platform "No. 1" in Galveston Block 349.

Wells "AA" and "BB" will be drilled, completed and produced at Seagull's existing No. 1 Production Platform.

Well "CC" will be drilled and completed at Seagull's existing Caisson No. 6. Production will be transported through existing flowlines to Seagull's Production Platform No. 1.

Well "DD" will be drilled and completed at Seagull's existing Caisson No. 2. Production will be transported through existing flowlines to Seagull's Production Platform No. 1.

STRUCTURE MAP

A structure map of the expected productive formations showing the surface and bottomhole locations of the proposed wells is enclosed as Attachment C.

BATHYMETRY MAP

A bathymetry map showing the surface locations of the wells is enclosed as Attachment D.

SHALLOW HAZARDS

An analysis of any seafloor and subsurface geologic and manmade features and conditions which may have an adverse effect on the proposed operations was discussed in the Initial Plan of Exploration for Galveston Block 349.

OIL SPILL CONTINGENCY PLAN

Seagull is a member of the Clean Gulf Associates with an approved Oil Spill Contingency Plan on file with the MMS. Seagull intends to exercise due diligence towards protection of the environment during construction and production operations. An oil spill trajectory and response analysis is included as Attachment E.

NEW OR UNUSUAL TECHNOLOGY

No new or unusual technology will be required for this operation.

LEASE STIPULATIONS

An archaeological survey report for Lease OCS-G 7251, Galveston Block 349, was submitted with the initial Plan of Exploration.

DISCHARGES

Discharge Rates

All discharges associated with the drilling of the proposed wells will be in accordance with the EPA NPDES General Permit for the Gulf of Mexico. A table of the approximate anticipated discharge rates for these wells is enclosed as Attachment F.

Circulating Media

Seagull does not plan to utilize oil based muds during the drilling of these wells. Monthly and end of well LC50 toxicity tests will be performed in accordance with the EPA regulations. Any drilling fluid contaminated with oil will be transported to shore for proper disposal at an authorized disposal site. A list of mud additives is enclosed as Attachment G.

Domestic Waste

Sewage will be treated on location. Solid domestic wastes will be transported to shore for proper disposal.

Deck Drainage

Deck drainage will be estimated by amount of rainfall and wash water used. All discharges will be free of oil.

HYDROGEN SULFIDE

A geological review of Galveston Block 349 indicates no evidence of hydrogen sulfide. Data reviewed included all information from Seagull's wells 1 through 7 in Galveston Block 349 which penetrated a depth of 8700 feet. Based on this data, Seagull requests that in accordance with 30 CFR 260.67(c), a determination be made that Galveston Block 349 is in an area where the absence of hydrogen sulfide has been confirmed.

PROJECTED EMISSIONS

Projected emissions are included on the enclosed Air Quality Review as Attachment H. The wells will be produced by the use of existing facilities and support vessels.

LOCATION OF LEASE BLOCK AND ONSHORE FACILITIES

Galveston Block 349 is located approximately 24.8 miles from the nearest shore off the Texas coast. The water depth is approximately 82 feet. A map showing the location of Galveston Block 349 relative to the shoreline is enclosed as Attachment I.

Seagull will utilize existing onshore facilities located in Freeport, Texas. This will serve as port of debarkation for supplies and crews. No onshore expansion or construction is anticipated with respect to this activity. This base is capable of providing the services necessary for the proposed activities. It has 24 hour service, a radio tower with a phone patch, dock space, equipment and supply storage base, drinking and drill water, etc. During drilling operations, boats will make one trip every day and helicopters will be make two flights a week.

The onshore activities associated with Galveston 349 should not result in any increase in the size and number of onshore support and storage facilities or land and personnel requirements.

OCS MINERAL LESSEE'S AND OPERATOR'S BOND

By letter dated November 23, 1993 Seagull Energy E&P Inc. submitted to the Minerals Management Service a rider to OCS Mineral Lessee's and Operator's Bond Number U1606516 to

increase the amount of coverage from \$300,000 to \$3,000,000, covering all of the Gulf of Mexico. The effective date of the rider and additional coverage was November 18, 1993.

AUTHORIZED REPRESENTATIVE

Inquiries regarding this plan should be addressed to the following authorized representative of Seagull Energy E&P Inc.

Rita Heintz
Seagull Energy E&P Inc.
1001 Fannin, Suite 1700
Houston, Texas 77002
713/951-1368

LIST OF ATTACHMENTS

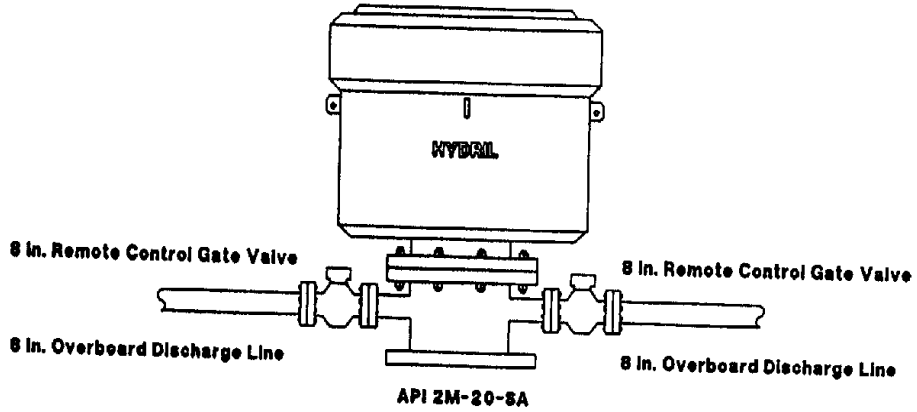
- A. BOP Schematic
- B. Location Plat
- C. Structure Map
- D. Bathymetry Map
- E. Oil Spill Trajectory Analysis
- F. Discharge Rate Table
- G. Mud Components
- H. Projected Emissions
- I. Vicinity Map

Attachment A

DIVERTER AND BOP SCHEMATIC

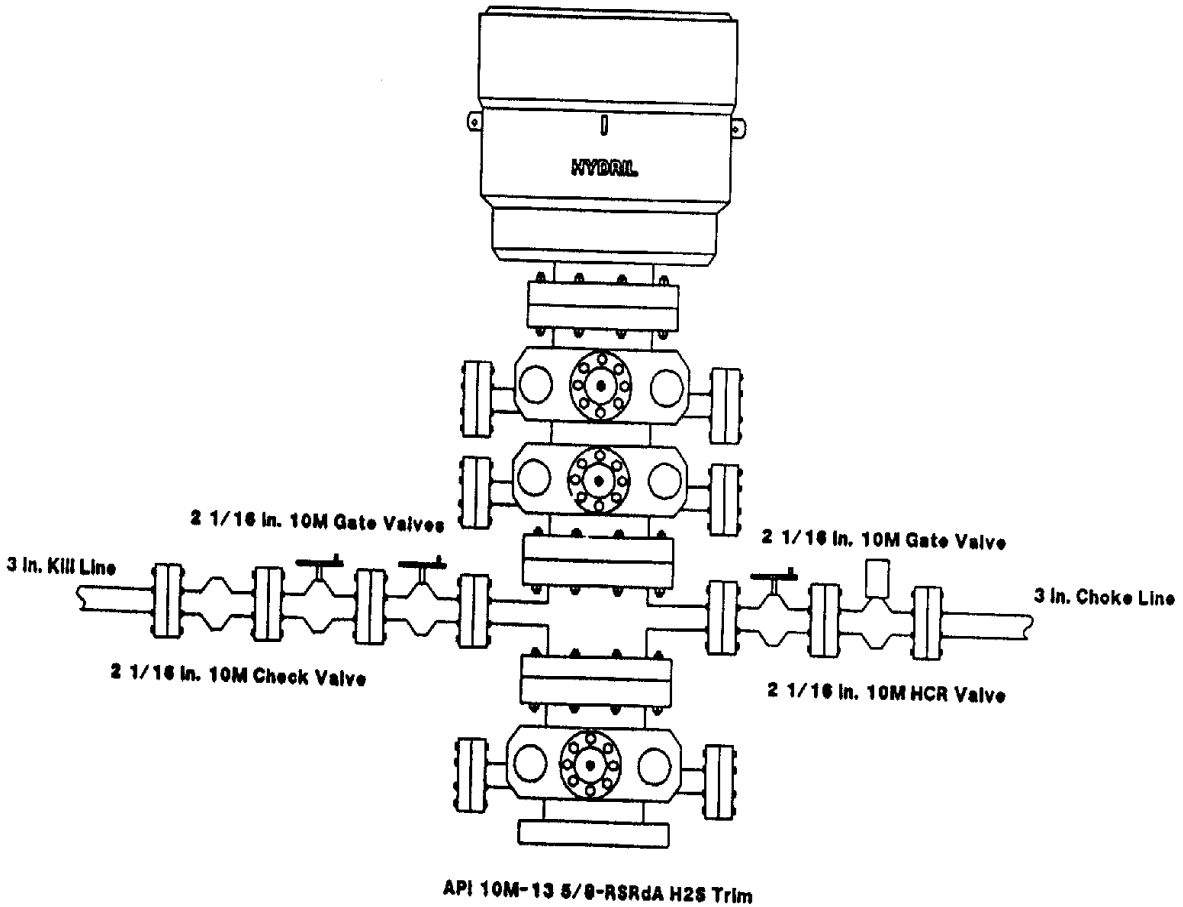
DIVERTER ASSEMBLY

20 in. 2M PSI Annular BOP



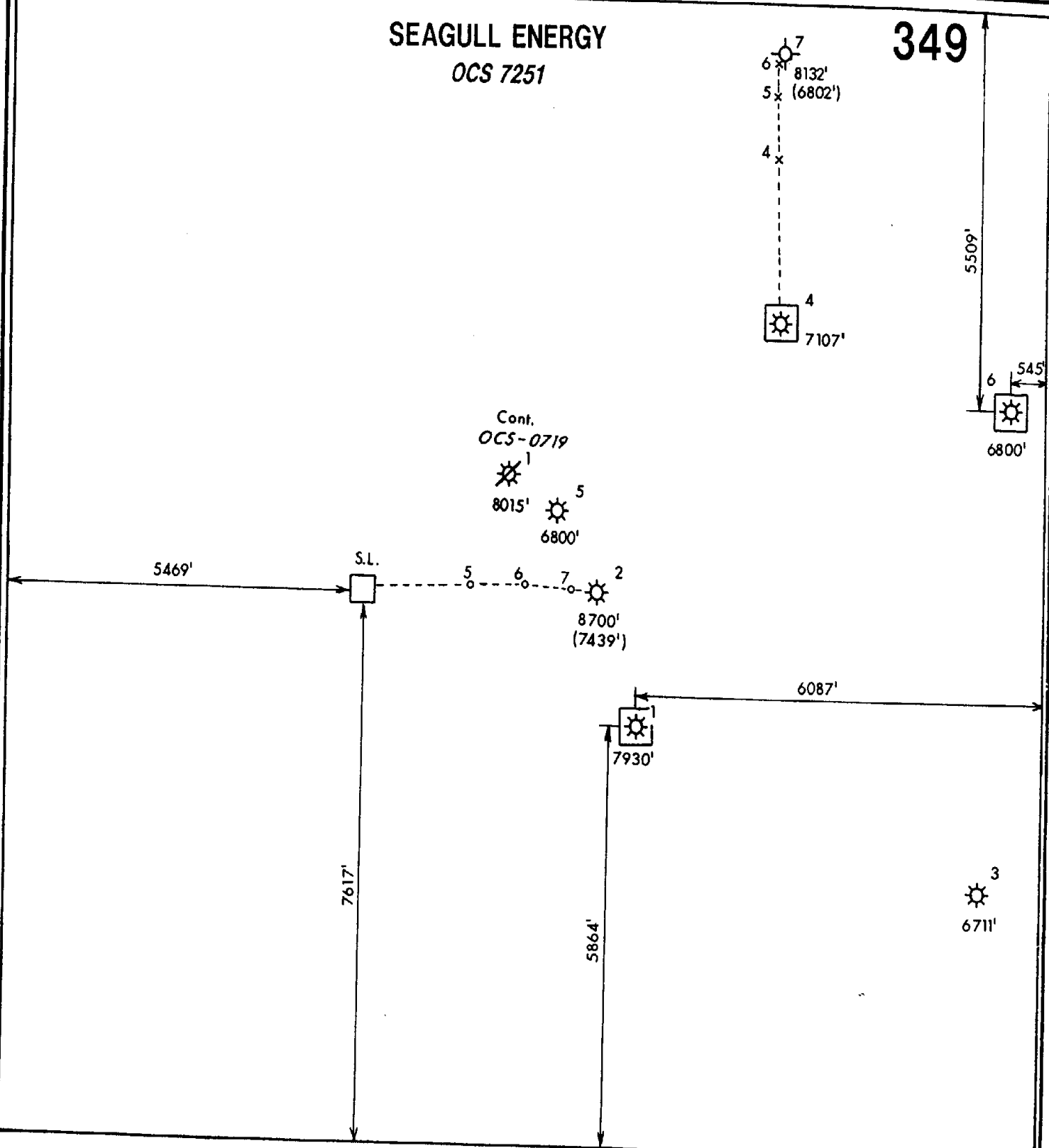
BOP ASSEMBLY

13 5/8 in. 5M PSI Annular BOP




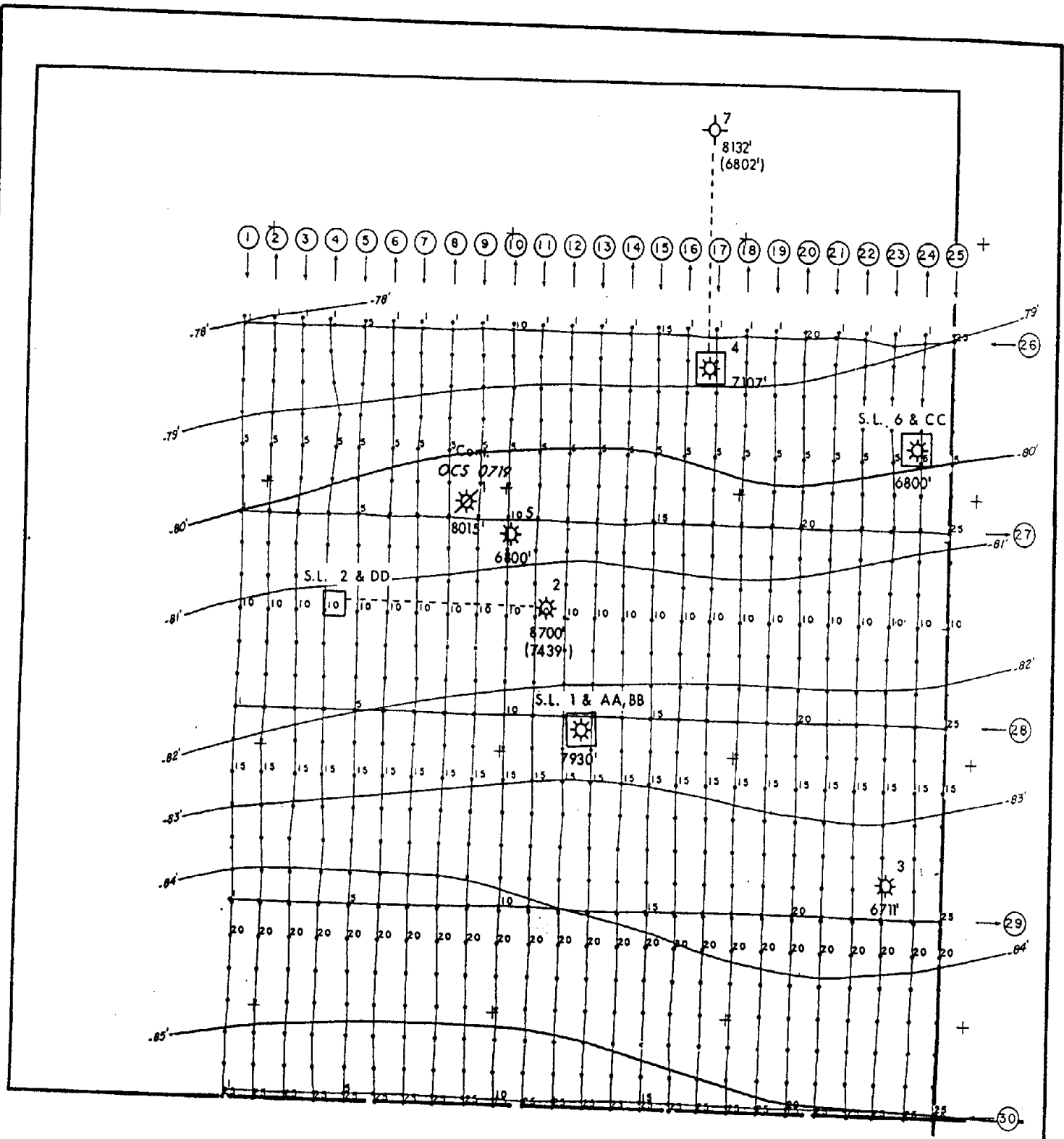
SEAGULL ENERGY
OCS 7251

349



ATTACHMENT B

 SEAGULL ENERGY E&P INC.
GALVESTON BLOCK 349
OFFSHORE TEXAS
SCALE: 1"=2,000'
DATE:

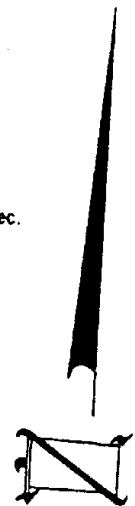


— 5 — SHOT POINT & SHOT POINT No.
 — (5) — LINE No. & LINE DIRECTION
 CONTOUR INTERVAL = 1 FOOT
 ZERO DATUM = SEA LEVEL
 APPLIED ACOUSTIC VELOCITY = 5000'/sec.

ATTACHMENT D



N. G. Truelove
 REGISTERED PROFESSIONAL ENGINEER No. 26984
 STATE OF TEXAS
 JOHN E. CHANCE & ASSOC., INC.



SEAGULL ENERGY E&P INC.						
BATHYMETRY MAP						
OCS-G-7251						
BLOCK 349						
GALVESTON AREA						
JOHN E. CHANCE & ASSOCIATES, INC. GEOPHYSICAL DIVISION LAFAYETTE, LOUISIANA	<table border="1"> <tr> <td>0' 1000' 2000'</td> </tr> <tr> <td>SCALE</td> </tr> <tr> <td>DATE: MARCH 1988</td> </tr> <tr> <td>JOB No. 88-0103</td> </tr> <tr> <td>MAP No. 1 OF 3</td> </tr> </table>	0' 1000' 2000'	SCALE	DATE: MARCH 1988	JOB No. 88-0103	MAP No. 1 OF 3
0' 1000' 2000'						
SCALE						
DATE: MARCH 1988						
JOB No. 88-0103						
MAP No. 1 OF 3						

Attachment E

OIL SPILL TRAJECTORY ANALYSIS

Seagull is a member of Clean Gulf Associates (CGA). The CGA has two permanent equipment bases in Texas, at Port Aransas and Galveston, and five bases in Louisiana, at Venice, Grand Isle, Houma, Intracoastal City and Cameron. Each base is equipped with fast response skimmers and there is a barge mounted high volume open sea skimmer based at Grand Isle, Louisiana. In addition to providing equipment, the CGA also supplies advisors for clean-up operations. Equipment available from CGA and the base it is located is listed in the CGA Manual, Volume I, Section III. Equipment located in Galveston, Texas would be utilized first with additional equipment transported from the nearest equipment base on-site as required.

Estimated response time for a spill in Galveston Block 349 during normal weather conditions could vary from 10 to 12 hours based on the following:

PROCEDURE	HOURS
1. Procurement of equipment and transportation vessel	4.0
2. Load out of Fast Response Unit	2.0
3. Travel to deployment site from CGA base (40 miles @ 10 mph)	4.0
4. Deployment of containment and clean up equipment on site	<u>1.0</u>
TOTAL ESTIMATED TIME	11.0

Should a spill occur during operations on Galveston Block 349, Seagull has projected trajectory of a spill utilizing information in the Environmental Impact Statement (EIS) for OCS Lease Sales 142 and 143.

We have calculated the probable projected land fall of an oil spill from our area of operations by referring to the summary of the trajectory analysis. The following calculations outline the probability of a spill making landfall within 10 days. Also listed is the CGA Map Number corresponding to the land segment which will be utilized to determine environmentally sensitive areas that may be affected by a spill.

AREA	LAND SGMNT	COUNTY	PCNT PROB	CGA MAP #
W-13	8	Matagorda	1%	TX Map 2&3
W-13	9	Brazoria	12%	TX Map 3
W-13	10	Galveston	26%	TX Map 3&4

The tables provided with the maps listed above also identify the protection response modes required to protect the biologically sensitive areas. Referring to Section VI in the CGA Manual, each of the appropriate pieces of equipment to be deployed would be identified in this site specific instance to protect the biologically sensitive areas.

Attachment G

DRILLING MUD COMPONENTS FOR POE

COMMON NAME	DESCRIPTION OF MATERIAL
Weighting Agents	
Barite	Barium Sulfate (BaSO_4)
Calcium Carbonate	Aragonite (CaCO_3)
Heavywate	Iron Oxide (Fe_2O_3)
Viscosifiers	
Gel	Bentonite, Montmorillonite
Benex	Polymer, Clay Extender
Salt Water Gel	Attapulgitte Clay
Asbestos Fibers	Chrysotile Asbestos
Polymer	Synthetic Polymer
Dispersants	
Phos	Sodium Tetrphosphate
SAPP	Sodium Acid Pyrophosphate
Lignosulfonate	Sodium Lignosulfonate
Lignite	NaCH Treated Lignite
Tannin	Sulso Methylated Tannin + Sodium Dichromate
Filtration Control Additives	
Starch	Corn Starch
CMC	Sodium Carboxymethyl Cellulose
Drispac	Polyanionic Cellulose
Cypan, WL-100	Sodium Polyacrylate
Chemicals	
Lime	Calcium Hydroxide
Bicarb	Sodium Bicarbonate (NaHCO_3)
Soda Ash	Sodium Carbonate (Na_2CO_3)
Caustic	Sodium Hydroxide (NaOH)
Sodium Chromate	Sodium Chromate ($\text{NaCrO}_4 \cdot 10\text{H}_2\text{O}$)
Gypsum	Calcium Sulfate ($\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$)
Salt	Salt (NaCl)
Chrome Alum	Chromic Chloride
Defoamers, Flocculants	
Aluminum Stearate	Aluminum Stearate
Defoam	Sodium Alkyl Aryl Sulfonate
Foamban	Surfactant

DRILLING MUD COMPONENTS
PAGE 2

COMMON NAME

DESCRIPTION OF MATERIAL

Detergents, Bacteriocides, Lubricants

Preservative

DME

Soap

Soltex^R

Holecoat^R

Lubrisal

Shaletrol

Noxygen

Freepipe^R

Spotting Fluids

Black Magic SFT^R

Lost Circulation Materials

Nut Plug

Mica

Celloflake

Kwik-Seal^R

Diaseal-M^R

Paraformaldehyde

Non-ionic Emulsifier

Drilling Fluid Detergent

Processed Hydrocarbons

Water Dispersable Asphalts

Biodegradable Vegetable Oil

Aluminum Organic Acid Complex

Catalyzed, Sodium Sulfite

Oil Soluble Surfactant

Fatty Acids, Sulfonates and

Asphaltic Materials

Sacked Concentrated Asphaltines

Ground Nut Shells

Ground Mica

Plastic, Shredded Cellophane

Combination of Granules,

Flakes and Fibers of Various Sizes

High Water Loss Diatomite Blend

AIR EMISSION CALCULATIONS

COMPANY	SEAGULL ENERGY E & P INC
AREA	GALVESTON
BLOCK	349
LEASE	OCS - G 7251
PLATFORM	1,6,2
WELL	AA,BB,CC,DD
LATITUDE	
LONGITUDE	
COMPANY CONTACT	RITA HEINTZ
TELEPHONE NO.	713-951-1368
REMARKS	WELLS WILL BE PRODUCED FROM EXISTING FACILITIES

AIR EMISSION CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	LATITUDE	LONGITUDE	CONTACT	PHONE	REMARKS	TONS PER YEAR													
											TSP	SOX	NOX	VOC	CO	TSP	SOX	NOX	VOC	CO				
SEAGULL ENERGY OPERATIONS	GALVESTON	349	OCS - G 7251	1,6,2	AA,BB			0 RITA HEINTZ	713-951-1368	WELLS WILL BE PRODUCED FROM EXISTING FACILITIES	POUNDS PER HOUR													
OPERATIONS	EQUIPMENT	HP	MAX. FUEL	ACT. FUEL	RUN TIME						TSP	SOX	NOX	VOC	CO	TSP	SOX	NOX	VOC	CO				
	Diesel Engines	HP	GAL/HR	SCF/HR	SCF/D	HR/D	DAYS																	
	Nat. Gas Engines	MMBTU/HR	SCF/HR	SCF/D																				
DRILLING	PRIME MOVER->600hp diesel	1620	78.25	1877.90		24	80	0.86	5.32	39.25	1.18	8.56	0.82	5.10	37.68	1.13	8.22	0.82	5.10	37.68	1.13	8.22		
	PRIME MOVER->600hp diesel	1620	78.25	1877.90		24	80	0.86	5.32	39.25	1.18	8.56	0.82	5.10	37.68	1.13	8.22	0.82	5.10	37.68	1.13	8.22		
	PRIME MOVER->600hp diesel	1620	78.25	1877.90		24	80	0.86	5.32	39.25	1.18	8.56	0.82	5.10	37.68	1.13	8.22	0.82	5.10	37.68	1.13	8.22		
	AUXILIARY EQUIP->600hp diesel	0	0.00	0.00		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	0.00	0.00		
	VESSELS->600hp diesel	5000	241.50	5796.00		18	85	2.84	16.41	121.15	3.63	26.43	2.02	12.55	92.68	2.78	20.22	2.02	12.55	92.68	2.78	20.22		
PIPELINE INSTALLATION	PIPELINE LAY BARGE diesel	0	0.00	0.00		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	0.00	0.00		
	SUPPORT VESSEL diesel	0	0.00	0.00		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	0.00	0.00		
	PIPELINE BURY BARGE diesel	0	0.00	0.00		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	0.00	0.00		
	SUPPORT VESSEL diesel	0	0.00	0.00		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	0.00	0.00		
FACILITY INSTALLATION	DERRICK BARGE diesel	0	0.00	0.00		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	0.00	0.00		
	MATERIAL TUG diesel	0	0.00	0.00		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	0.00	0.00		
PRODUCTION	RECIP. <600hp diesel	0	0.00	0.00		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	0.00	0.00		
	RECIP. >600hp diesel	0	0.00	0.00		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	0.00	0.00		
	SUPPORT VESSEL diesel	0	0.00	0.00		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	0.00	0.00		
	TURBINE nat.gas	0	0.00	0.00		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	0.00	0.00		
	RECIP. 2 cycle lean nat.gas	0	0.00	0.00		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	0.00	0.00		
	RECIP. 4 cycle lean nat.gas	0	0.00	0.00		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	0.00	0.00		
	RECIP. 4 cycle rich nat.gas	0	0.00	0.00		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	0.00	0.00		
	BURNER nat.gas	0	0.00	0.00		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	0.00	0.00		
	MISC.	BPD	SCF/HR	COUNT																				
	TANK.	0																						
	FLARE.	0	0																					
	PROCESS VENT.	0	0																					
	FUGITIVES.	0	0	5.0																				
	GLYCOL STILL VENT.	0	0																					
DRILLING	OIL BURN	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	0.00	0.00		
WELL TEST	GAS FLARE	0	420000			24	4	0.24	0.24	29.99	25.33	163.17	0.01	0.01	1.44	1.22	7.83	0.01	0.01	1.44	1.22	7.83		
1995 YEAR TOTAL											5.21	32.60	268.89	32.49	215.29	4.49	27.88	207.16	7.39	52.72	825.84	825.84	825.84	29225.47
EXEMPTION CALCULATION	DISTANCE FROM LAND MILES										24.8													

AIR EMISSION CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL	LATITUDE	LONGITUDE	CONTACT		PHONE	REMARKS	TONS PER YEAR									
								CC,DD	RUN TIME			ORITA HEINTZ	WELLS WILL BE PRODUCED FROM EXISTING FACILITIES	POUNDS PER HOUR							
SEAGULL ENERGY OPERATIONS	GALVESTON	349	DGS-G 7251	1,6,2			0			713-951-1398		TSP	SOX	NOX	CO	VOC	SOX	NOX	CO	VOC	
	Diesel Engines	HP	GAL/HR	GAL/D																	
	Nat. Gas Engines	HP	SCF/HR	SCFD																	
	Burners	MMBTU/HR	SCF/HR	SCFD																	
DRILLING	PRIME MOVER->600hp diesel	1620	78.25	1877.90	24	80	0.86	5.32	39.25	1.18	8.56	0.82	5.10	37.68	1.13	8.22	0.82	5.10	37.68	1.13	8.22
	PRIME MOVER->600hp diesel	1620	78.25	1877.90	24	80	0.86	5.32	39.25	1.18	8.56	0.82	5.10	37.68	1.13	8.22	0.82	5.10	37.68	1.13	8.22
	PRIME MOVER->600hp diesel	1620	78.25	1877.90	24	80	0.86	5.32	39.25	1.18	8.56	0.82	5.10	37.68	1.13	8.22	0.82	5.10	37.68	1.13	8.22
	AUXILIARY EQUIP->600hp diesel	0	0.00	0.00	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	0.00	0.00
	VESSELS->600hp diesel	5000	241.50	5796.00	18	85	2.84	16.41	121.15	3.63	26.43	2.02	12.55	92.68	2.78	20.22	2.02	12.55	92.68	2.78	20.22
PIPELINE	PIPELINE LAY BARGE diesel	0	0.00	0.00	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	0.00	0.00
INSTALLATION	SUPPORT VESSEL diesel	0	0.00	0.00	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	0.00	0.00
	PIPELINE BURY BARGE diesel	0	0.00	0.00	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	0.00	0.00
	SUPPORT VESSEL diesel	0	0.00	0.00	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	0.00	0.00
FACILITY	DERRICK BARGE diesel	0	0.00	0.00	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	0.00	0.00
INSTALLATION	MATERIAL TUG diesel	0	0.00	0.00	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	0.00	0.00
PRODUCTION	RECIP-<600hp diesel	0	0.00	0.00	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	0.00	0.00
	RECIP->600hp diesel	0	0.00	0.00	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	0.00	0.00
	SUPPORT VESSEL diesel	0	0.00	0.00	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	0.00	0.00
	TURBINE nat.gas	0	0.00	0.00	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	0.00	0.00
	RECIP 2 cycle lean nat.gas	0	0.00	0.00	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	0.00	0.00
	RECIP 4 cycle lean nat.gas	0	0.00	0.00	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	0.00	0.00
	RECIP 4 cycle rich nat.gas	0	0.00	0.00	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	0.00	0.00
	RECIP nat.gas	0	0.00	0.00	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	0.00	0.00
MISC.	BPD	0	SCF/HR	COUNT																	
TANK-		0																			
FLARE-		0																			
PROCESS VENT-		0																			
FUGITIVES-		5.0																			
GLYCOL STILL VENT-		0																			
OIL BURN		0																			
GAS FLARE		420000			24	4	0.00	0.24	29.99	25.33	163.17	0.00	0.01	1.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00
1996 YEAR TOTAL							5.21	32.60	268.89	32.49	215.29	4.49	27.88	207.16	7.39	52.72	4.49	27.88	207.16	7.39	52.72
EXEMPTION CALCULATION	DISTANCE FROM LAND MILES	24.8										825.84	825.84	825.84	825.84	825.84	825.84	825.84	825.84	825.84	29225.47

AIR EMISSION CALCULATIONS

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	TSP	SOx	NOx	VOC	CO	REF.	DATE
NG Turbines		gms/hp-hr		0.00247	1.3	0.01	0.83	AP42 3.2-2	4/93
NG 2-cycle lean		gms/hp-hr		0.00185	11	0.43	1.5	AP42 3.2-2	4/93
NG 4-cycle lean		gms/hp-hr		0.00185	12	0.72	1.6	AP42 3.2-2	4/93
NG 4-cycle rich		gms/hp-hr		0.00185	10	0.14	8.6	AP42 3.2-2	4/93
Diesel Recip. < 600 hp.		gms/hp-hr	1	0.931	14	1.12	3.03	AP42 3.3-1	4/93
Diesel Recip. > 600 hp.		gms/hp-hr	0.24	1.49	11	0.33	2.4	AP42 3.4-1	4/93
NG Heaters/Boilers/Burners		lbs/mmscf	5	0.6	140	2.8	35	AP42 1.4-1	4/93
NG Flares		lbs/mmscf		0.57	71.4	60.3	388.5	AP42 11.5-1	9/91
Liquid Flaring		lbs/bbls	0.42	6.6	2.3	0.01	0.21	AP421.3-1	4/93
Tank Vapors		lbs/bbl				0.03		E&P Forum	1/93
Fugitives		lbs/hr/comp.				0.000025		API Study	12/93
Glycol Dehydrator Vent		lbs/mmscf				6.6		La. DEQ	1991
Gas Venting		lbs/scf				0.0034			

AIR EMISSION CALCULATIONS

COMPANY	AREA	BLOCK	LEASE	PLATFORM	WELL
SEAGULL ENER	GALVESTON	349	OCS - G 7251	1,6,2	AA,BB,CC,DD
Year	Emitted Substance				
	TSP	SOx	NOx	HC	CO
1995	4.49	27.88	207.16	7.39	52.72
1996	4.49	27.88	207.16	7.39	52.72
1997	0.00	0.00	0.00	0.00	0.00
1998	0.00	0.00	0.00	0.00	0.00
1999	0.00	0.00	0.00	0.00	0.00
2000	0.00	0.00	0.00	0.00	0.00
2001	0.00	0.00	0.00	0.00	0.00
2002	0.00	0.00	0.00	0.00	0.00
2003	0.00	0.00	0.00	0.00	0.00
2004	0.00	0.00	0.00	0.00	0.00
Allowable	825.84	825.84	825.84	825.84	29225.47

GULF OF MEXICO AIR EMISSION CALCULATIONS

General

This document (MMS.WK3) was prepared through the cooperative efforts of those professionals in the oil industry including the API/OOC Gulf of Mexico Air Quality Task Force, who deal with air emission issues. This document is intended to standardize the way we estimate an air emission inventory for Plans of Exploration (POE) and Development, Operations, Coordination Documents (DOCD) approved by the Minerals Management Service (MMS). It is intended to be thorough but flexible to meet the needs of different operators. This first sheet gives the basis for the emission factors used in the emission spreadsheet as well as some general instructions. This file contains 8 sheets: A,B,C,D,E,F,G,& H. A is the Instruction Sheet, B is the Title Sheet, C is the Factors Sheet, D,E,F, & G are the Emission Spreadsheets and H is the Summary Sheet. These sheets will describe and calculate emissions from an activity.

Title Sheet

The Title Sheet requires input of the company's name, area, block, OCS-G number, platform and/or well(s) in the necessary lines. This data will automatically be transferred to the spreadsheet and summary sheet.

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.

The basis for the factors is as follows:

1. NG Turbines Fuel usage scf/hr = $HP \times 9.524$ (10,000 btu/HP-hr / 1050 btu/scf)
2. NG Engines Fuel usage scf/hr = $HP \times 7.143$ (7,500 btu/HP-hr / 1050 btu/scf)
3. Diesel Fuel usage gals/hr = $HP \times 0.0483$ (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.
2. The sulfur content assumed is 2000 grains/mmscf (3.33 ppm). If your concentration is different then ratio your emission factor up or down.

Diesel-Fired Prime Movers

1. Diesel sulfur level 0.4% by wt
2. For boats use > 600 HP factors based on AP-42 Vol. II, Table II-3-3. Those figures closely match the above values. Include only the emissions from the boats within 25 mile radius of the well/platform.
3. For diesel engines <600 HP VOC emissions equal total HC emissions; for diesel engines >600 HP VOC emissions equal non-methane HC emissions.

Heaters/Bollers/Firetubes/NG-Fired

1. NG Sulfur content is 2000 grains per million cu ft
2. VOCs emissions based on total non-methane HCs

Gas Flares

1. Flare is non-smoking
2. 1050 btu/cu. ft. for NG heating value
3. The sulfur content assumed is 2000 grains/mmscf (3.33 ppm). If your concentration is different then ratio your emission factor up or down or you may use the following formula

$$\text{H2S flared (lbs/hr)} = \text{Gas flared (cu ft/hr)} \times \text{ppm H2S} \times 10\text{E-}06 \times 34/379$$

$$\text{SOx emis (lbs/hr)} = \text{H2S flared (lbs/hr)} \times 64/34$$

Liquid Flares

1. Assume 1% by wt Sulfur maximum in the crude oil.
2. VOC equals non-methane HCs
3. Particulate emissions assumes Grade 5 oil.

Tanks

1. Tank emissions assumes uncontrolled fixed roof tank.

Fugitives

1. Fugitives are based on the 1993 Star Environmental Report. It requires that you count or estimate your components.

Glycol Dehydrator Vent

1. The dehydrated gas rate in SCF/HR must be entered in the spreadsheet. The emission factor is from the compilation of the Louisiana Survey and an average emissions per gas rate.

Gas Venting

1. The emission factor is based on venting unburned natural gas of average weight.

Emissions Spreadsheet

The emissions from an operation should be presented for a calendar year (1994, 1995, etc.). The operation may include drilling only or drilling in conjunction with other activities such as pipeline installation or production operations. For the first year use sheet D, for the second year use sheet E, third use F, fourth use G and if you need more you will have to insert a sheet and copy the spreadsheet to the new sheet. The year (CELL D:A38) should be changed and the different operating parameters entered to calculate revised emissions for that subsequent 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 usage (UNIT/DAY) 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 hrs X days X ton/2000 lbs
(Actual emissions)

To customize the spreadsheet for your application you may want to delete lines for non-applicable equipment/activities or you can input "0" for the HP of equipment that does not apply. You may also need to copy/insert an entire line if more than one similar type of equipment is present.

Also, the production equipment can be customized further by adding the use of the equipment behind each type of engine, i.e.,

Turbine
Turbine - Gas Compressor

Burner
Burner - Line Heater

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. Each row links to the corresponding emission calculation spreadsheet for that year. For example, Row 7 of the summary corresponds to the annual totals from Sheet D. Row 8 links to the second emission calculation spreadsheet, Row 9 to the third and Row 10 to the fourth. Row 11 - 16 will carry down the emissions from the last spreadsheet with an emission rate greater than zero. The Summary Sheet will always carry down the last non-zero emission total. For example, if emission calculations are done for the years 1994 and 1995, then the 1995 total will be carried down through the year 2003. Row 17 of the summary sheet reflects the allowable for the air quality review exemption determination. If more or less years are needed you will have to modify the spreadsheet.

Print Instructions

The table below lists macros that were written to print sheets A, C, D, E, F, G, & H.

- \A - This macro prints 3 pages of instructions (sheet A).
- \C - This macro prints the emissions factors sheet (sheet C).
- \D - This macro prints the emissions calculations sheet (sheet D).
- \E - This macro prints the emissions calculations sheet (sheet E).
- \F - This macro prints the emissions calculations sheet (sheet F).
- \G - This macro prints the emissions calculations sheet (sheet G).
- \H - This macro prints the emissions calculations sheet (sheet H).
- \X - This macro prints all sheets - A, C, D, E, F, G, & H.

To run one of these macros, hold down ALT and press the letter in the macro range name. For example, to run the macro \A, press ALT-a.

TEXAS

▲ HOUSTON

□ 349

▲ CORPUS CHRISTI

MATAGORDA

BRAZOS

GALVESTON

HIGH ISLAND

MUSTANG

GULF OF MEXICO

NORTH PADRE

SOUTH PADRE

STATE
FEDERAL



SEAGULL ENERGY E&P INC.

OFFSHORE TEXAS
VICINITY MAP

ATTACHMENT I