

**N.M. Oil Cons. Div. Dist. 2**  
**1301 W. G Avenue**  
**Artesia, NM 88210**  
**APPLICATION FOR PERMIT TO DRILL OR REENTER**

FORM APPROVED  
OMB No. 1004-0136  
Expires January 31, 2004


5. Lease Serial No. **113927 NM 8247 (EH)**  
6. If Indian, Allottee or Tribe Name

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		7. If Unit or CA Agreement, Name and No. <b>35056</b>	
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		8. Lease Name and Well No. <b>Hang 'Em High Federal #1</b>	
2. Name of Operator <b>Marbob Energy Corporation</b>		9. API Well No. <b>30-015-34294</b>	
3a. Address <b>PO Box 227, Artesia, NM 88210</b>		10. Field and Pool, or Exploratory <b>Cemetery Morrow (Gas)</b>	
3b. Phone No. (include area code) <b>505-748-3303</b>		11. Sec., T., R., M., or Blk. and Survey or Area <b>Sec. 35, T-19S, R-25E</b>	
4. Location of Well (Report location clearly and in accordance with any State requirements.) <b>At surface 660FNL 1980FEL</b> <b>At proposed prod. zone</b>		12. County or Parish <b>Eddy</b>	
14. Distance in miles and direction from nearest town or post office*		13. State <b>NM</b>	
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of Acres in lease	17. Spacing Unit dedicated to this well <b>320</b>	
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	19. Proposed Depth <b>10000</b>	20. BLM/BIA Bond No. on file <b>585716</b>	
21. Elevations (Show whether DF, KDB, RT, GL, etc.) <b>3472' GL</b>	22. Approximate date work will start* <b>July 21, 2005</b>	23. Estimated duration <b>21 days</b>	

**24. Attachments Roswell Controlled Water Basin**

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form:

- |   |  |
|---|--|
| 1. Well plat certified by a registered surveyor.  | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).    |
| 2. A Drilling Plan.   | 5. Operator certification.   |
| 3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature 	Name (Printed/Typed) <b>Amy Reid</b>	Date <b>6/21/05</b>
Title _____		
Land Department _____		
Approved by (Signature) <b>/s/ Joe G. Lara</b>	Name (Printed/Typed) <b>/s/ Joe G. Lara</b>	Date <b>AUG 16 2005</b>
Title <b>ACTING FIELD MANAGER</b>	Office <b>CARLSBAD FIELD OFFICE</b>	

Application approval does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Conditions of approval, if any, are attached.

**APPROVAL FOR 1 YEAR**

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

\*(Instructions on reverse)

**APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS AND  
SPECIAL STIPULATIONS  
ATTACHED**

## State of New Mexico

## DISTRICT I

1825 N. FRENCH DR., HOBBS, NM 88240

Energy, Minerals and Natural Resources Department

Form C-102

Revised JUNE 10, 2003

## DISTRICT II

1301 W. GRAND AVENUE, ARTESIA, NM 88210

## OIL CONSERVATION DIVISION

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

1220 SOUTH ST. FRANCIS DR.

Santa Fe, New Mexico 87505

## DISTRICT III

1000 Rio Brazos Rd., Aztec, NM 87410

## DISTRICT IV

1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number	Pool Code 74640	Pool Name CEMETARY MORROW (GAS)
Property Code	Property Name HANG'EM HIGH FEDERAL	Well Number 1
OGRID No. 14049	Operator Name MARBOB ENERGY CORPORATION	Elevation 3472'

## Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	35	19-S	25-E		660	NORTH	1980	EAST	EDDY

## Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 320	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>GEODETIC COORDINATES NAD 27 NME</p> <p>Y=590160.3 N X=463243.4 E</p> <p>LAT.=32°37'20.63" N LONG.=104°27'09.79" W</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify the the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>[Signature]</i> Signature</p> <p>AMY REID Printed Name</p> <p>LAND DEPARTMENT Title</p> <p>JUNE 21, 2005 Date</p>
	<p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>APRIL 22, 2005</p> <p>Date Surveyed</p> <p><i>[Signature]</i> Signature &amp; Seal of Professional Surveyor</p> <p>05.11.0646</p> <p>Certificate No. GARY EDSON 12641</p>

**MARBOB ENERGY CORPORATION**  
**DRILLING AND OPERATIONS PROGRAM**

N LEP  
**Hang 'Em High Federal #1**  
**660' FSL & 1980' FEL, Unit B**  
**Section 35, T19S, R25E**  
**Eddy County, New Mexico**

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Marbob Energy Corporation submits the following ten items of pertinent information in accordance with BLM requirements.

1. The geological surface formation is Permian.
2. The estimated tops of geologic markers are as follows:

San Andres	750'	Cisco-Canyon	8250'
Glorieta	2400'	Atoka	9000'
Bone Spring	3950'	Morrow	9400'
Wolfcamp	6650'	TD	10000

3. The estimated depths at which anticipated water, oil or gas formations are expected to be encountered:

San Andres	750'	Oil
Wolfcamp	6650'	Oil
Cisco Canyon	8250'	Oil
Atoka	9000'	Gas
Morrow	9400'	Gas

No other formations are expected to give up oil, gas, or fresh water in measurable quantities. The surface fresh water sands will be protected by setting 13 3/8" casing at 300' and circulating cement back to surface. Any shallower zones above TD which contain commercial quantities of oil and/or gas will have cement circulated across them by inserting a float shoe joint into the 5 1/2" production casing which will be run at TD to sufficiently cover all known oil and gas horizons above 200'.

4. Proposed Casing Program:

Hole Size	Interval	OD Casing	Wt	Grade
17 1/2 "	0 - 325'	13 3/8"	48#	H-40
12 1/4"	0 - 1000'	9 5/8"	36#	J-55
8 3/4"	0 - 10000'	5 1/2"	17#	S-95/P110

5. Proposed Cement Program:

13 3/8" Surface Casing: Cement w/ 300 sx Premium Plus. Circulate to surface.

9 5/8" Intermediate Casing: Cement w/ 300 sx cmt. Circulate to surface.

5 1/2" Production Casing: Cement w/ 700 sx cmt. TOC 200' above all oil/gas bearing zones. *[Glorietta at 2400 Ft See Slips]*

6. Pressure Control Equipment: See Exhibit 1.

7. Mud Program: The applicable depths and properties of this system are as follows:

Depth	Type	Weight (ppg)	Viscosity (sec)	Waterloss (cc)
0 – 320'	Fresh Wtr	8.4 – 9.2	32 – 36	N.C.
300 – 1000'	Fresh Wtr	10	28	N.C.
1000 – 10000'	Cut Brine	8.7 – 9.5	28 – 32	N.C.

8. Auxiliary Equipment: Kelly Cock; Sub with full opening valve on floor; and drill pipe connections.

9. Testing, Logging and Coring Program:

No drillstem tests are anticipated.

The electric logging program will consist of Dual Laterolog Micro SFL, Spectral Density Dual Spaced Neutron Casing Log, and Depth Control Log.

No conventional coring is anticipated.

10. No abnormal pressures or temperatures are anticipated.

11. Anticipated starting date: As soon as possible after approval.

**MARBOB ENERGY CORPORATION**  
**MULTI-POINT SURFACE USE AND OPERATIONS PLAN**

N  
LH  
**Hang 'Em High Federal #1**  
**660' FSL & 1980' FEL, Unit B**  
**Section 35, T19S, R25E**  
**Eddy County, New Mexico**

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

**1. EXISTING ROADS:**

Exhibit 2 is a portion of a topo map showing the well and roads in the vicinity of the proposed location. The proposed wellsite and the access route to the location are indicated in red on Exhibit 2.

**DIRECTIONS:**

From the intersection of US Hwy 285 and County Road 23 (Rock Daisy Road) go west on Rock Daisy Road approximately 2.4 miles. This location is approx. 600' south of the road.

**2. PLANNED ACCESS ROAD:**

342' of road is proposed.

- A. The maximum width of the running surface will be 10'. The road will be crowned and ditched and constructed of 6" of rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns. BLM may specify any additions or changes during the onsite inspection.
- B. The average grade will be less than 1%.
- C. No turnouts are planned.
- D. No culverts, cattleguard, gates, low-water crossings, or fence cuts are necessary.
- E. Surfacing material will consist of native caliche. Caliche will be obtained from the nearest BLM-approved caliche pit. Any additional materials that are required will be purchased from the dirt contractor.
- F. The proposed access road as shown in Exhibit 2 has been centerline flagged by John West Engineering.

**8. OTHER INFORMATION:**

- A. Topography: Refer to the existing archaeological report for a description of the topography, flora, fauna, soil characteristics, dwellings, historical and cultural sites.

**9. OPERATOR'S REPRESENTATIVE:**

A. Through A.P.D. Approval:

Dean Chumbley, Landman  
Marbob Energy Corporation  
P. O. Box 227  
Artesia, NM 88211-0227  
Phone (505)748-3303  
Cell (505)748-5988

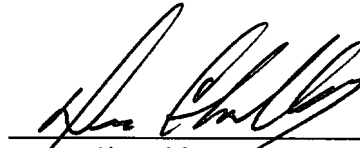
B. Through Drilling Operations

Sheryl Baker, Drilling Supervisor  
Marbob Energy Corporation  
P. O. Box 227  
Artesia, NM 88211-0227  
Phone (505)748-3303  
Cell (505)748-5489

**10. CERTIFICATION:**

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route, that I am familiar with the conditions which presently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Marbob Energy Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

6/21/05  
Date

  
\_\_\_\_\_  
Dean Chumbley  
Land Department

## **MARBOB ENERGY CORPORATION**

### **HYDROGEN SULFIDE DRILLING OPERATIONS PLAN**

#### **I. HYDROGEN SULFIDE TRAINING**

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

- A. The hazards and characteristics of hydrogen sulfide (H<sub>2</sub>S).
- B. The proper use and maintenance of personal protective equipment and life support systems.
- C. The proper use of H<sub>2</sub>S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
- D. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

- A. The effects of H<sub>2</sub>S on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
- B. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
- C. The contents and requirements of the H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H<sub>2</sub>S zone (within 3 days or 500 feet) and weekly H<sub>2</sub>S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H<sub>2</sub>S Drilling Operations Plan and the Public Protection Plan. This plan shall be available at the well site. All personnel will be required to carry documentation that they have received the proper training.

## **II. H<sub>2</sub>S SAFETY EQUIPMENT AND SYSTEMS**

Note: All H<sub>2</sub>S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonably expected to contain H<sub>2</sub>S.

### **A. Well Control Equipment:**

Flare line.

Choke manifold.

Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.

### **B. Protective equipment for essential personnel:**

Mark II Surviveair 30-minute units located in the dog house and at briefing areas.

### **C. H<sub>2</sub>S detection and monitoring equipment:**

2 - portable H<sub>2</sub>S monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when H<sub>2</sub>S levels of 20 ppm are reached.

### **D. Visual warning systems:**

Caution/Danger signs shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.



E. Mud Program:

The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to the surface.

A mud-gas separator will be utilized.

F. Metallurgy:

All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H<sub>2</sub>S service.

G. Communication:

Company vehicles equipped with cellular telephone and 2-way radio.

# **W A R N I N G**

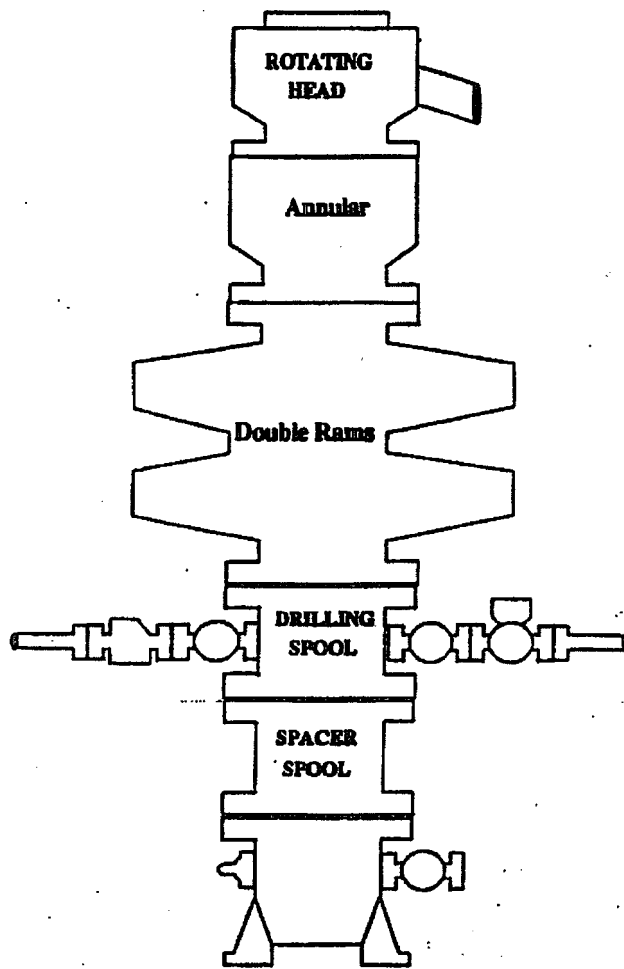
**YOU ARE ENTERING AN H<sub>2</sub>S AREA  
AUTHORIZED PERSONNEL ONLY**

- 1. BEARDS OR CONTACT LENSES NOT ALLOWED**
- 2. HARD HATS REQUIRED**
- 3. SMOKING IN DESIGNATED AREAS ONLY**
- 4. BE WIND CONSCIOUS AT ALL TIMES**
- 5. CK WITH MARBOB FOREMAN AT MAIN OFFICE**

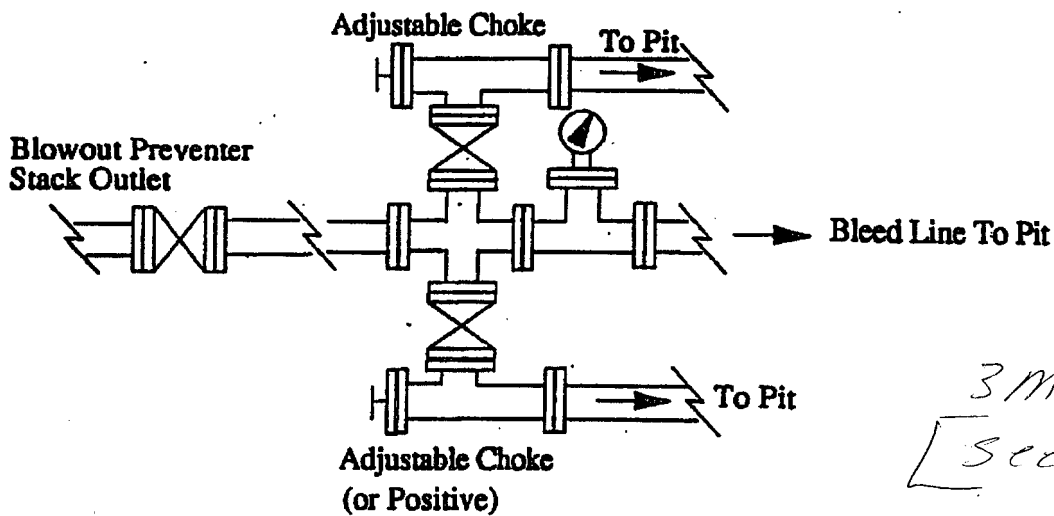
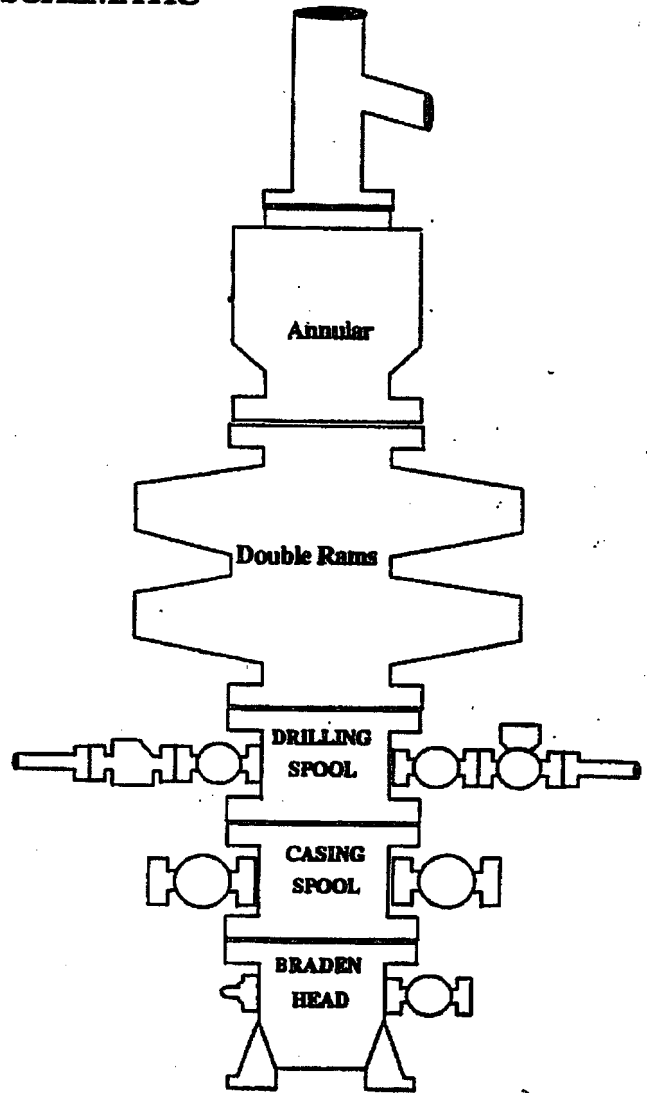
**MARBOB ENERGY CORPORATION**

**1-505-748-3303**

# BOPE SCHEMATIC



**Choke Manifold**



*3M Reg'd  
[See Steps]*

## CONDITIONS OF APPROVAL - DRILLING

Operator's Name: Marbob Energy Corporation  
Well Name & No: Hang 'Em High Federal No. 01  
Location: Surface 660' FNL & 1980' FEL, Sec. 35, T. 19 S. R. 25 E.  
Lease: NMNM 113927  
Eddy County, New Mexico

.....

### I. DRILLING OPERATIONS REQUIREMENTS:

1. The Bureau of Land Management (BLM) is to be notified at the Roswell Field Office, 2909 West Second St., Roswell, NM 88201, (505) 627-0272 for wells in Chaves and Roosevelt Counties; the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 for wells in Eddy County; and the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (505) 393-3612 for wells in Lea County, in sufficient time for a representative to witness:
- A. Spudding  $9\frac{5}{8}$  (JL)
- B. Cementing casing: 13  $\frac{3}{8}$  inch; ~~8  $\frac{1}{8}$  inch~~; 5  $\frac{1}{2}$  inch.
- C. BOP Tests
2. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan shall be in operations 500 Ft or three days prior to drilling into the Top of the ~~San Andres~~ formation sighted at 750 in area wells. *first zone expected to contain H<sub>2</sub>S. (JL)*
3. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
4. Submit a Sundry Notice (Form 3160-5, one original and five copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing (size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.
5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.
6. A Communitization Agreement shall be approved in this office prior to any sales from this well.

### II. CASING:

1. The 13  $\frac{3}{8}$  inch shall be set at 325 Feet with cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.
2. The minimum required fill of cement behind the 9  $\frac{5}{8}$  inch Intermediate casing is to circulate to surface.
3. The minimum required fill of cement behind the 5  $\frac{1}{2}$  inch Production casing is to place TOC at least to 1700 ft to cover the top of the Glorietta at 2200 feet or Tie Back to 13  $\frac{3}{8}$  inch casing shoe by at least 200 Ft.

### III. PRESSURE CONTROL:

1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the 9  $\frac{5}{8}$  inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.
2. Minimum working pressure of the blowout preventer and related equipment (BOPE) shall be 3 M psi.

### **III. Pressure Control (continued):**

3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the test.

- The test shall be done by an independent service company
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures.
- Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in safe workman-like manner. Hard line connections shall be required.
- Both low pressure and high pressure testing of BOPE is required.

**MARBOB ENERGY CORPORATION**  
**HYDROGEN SULFIDE (H<sub>2</sub>S) CONTINGENCY PLAN**  
**FOR DRILLING/COMPLETING/WORKOVER/FACILITY**  
**WITH THE EXPECTATION OF H<sub>2</sub>S IN EXCESS OF 100 PPM**

**HANG 'EM HIGH FEDERAL**  
**NEW WELL DRILL**  
**660' FNL & 1980' FEL**  
**SECTION 35-T19S-R25E**  
**EDDY COUNTY, NEW MEXICO**

**This well/facility is not expected to have H<sub>2</sub>S, but  
due to the sensitive location, the following is  
submitted as requested.**

## **TABLE OF CONTENTS**

<b>General Emergency Plan</b>	<b>Page 1</b>
<b>Emergency Procedure for Uncontrolled Release of H<sub>2</sub>S</b>	<b>Page 1</b>
<b>Emergency Numbers for Notification</b>	<b>Page 2</b>
<b>Location Map</b>	<b>Page 3</b>
<b>Protection of the General (ROE) Radius of Exposure</b>	<b>Page 4</b>
<b>Public Evacuation Plan</b>	<b>Page 4</b>
<b>Procedure for Igniting an Uncontrollable Condition</b>	<b>Page 5</b>
<b>Required Emergency Equipment</b>	<b>Page 5 &amp; 6</b>
<b>Using Self-Contained Breathing Air Equipment (SCBA)</b>	<b>Page 6</b>
<b>Rescue &amp; First Aid for Victims of H<sub>2</sub>S Poisoning</b>	<b>Page 7</b>
<b>H<sub>2</sub>S Toxic Effects</b>	<b>Page 8</b>
<b>H<sub>2</sub>S Physical Effects</b>	<b>Page 8</b>

**GENERAL H<sub>2</sub>S EMERGENCY ACTIONS**

In the event of an H<sub>2</sub>S emergency, the following plan will be initiated:

- 1) All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".
- 2) If for any reason a person must enter the hazardous area, they must wear a SCBA (self contained breathing apparatus).
- 3) Always use the "buddy system".
- 4) Isolate the well/problem if possible.
- 5) Account for all personnel.
- 6) Display the proper colors warning all unsuspecting personnel of the danger at hand.
- 7) Contact the company representative as soon as possible if not at the location (use the enclosed call list as instructed).

At this point the company representative will evaluate the situation and coordinate the necessary duties to bring the situation under control, and if necessary, the notification of emergency response agencies and residents.

**EMERGENCY PROCEDURES FOR  
AN UNCONTROLLABLE RELEASE OF H<sub>2</sub>S**

- 1) All personnel will don the self contained breathing apparatus.
- 2) Remove all personnel to the "safe area" (always use the "buddy system").
- 3) Contact company representative if not on location.
- 4) Set in motion the steps to protect and/or remove the general public to any upwind "safe area". Maintain strict security and safety procedures while dealing with the source.
- 5) No entry to any unauthorized personnel.
- 6) Notify the appropriate agencies:  
City Police – City streets  
State Police – State Roads  
County Sheriff – County Roads
- 7) Call the NMOCD.

If at this time the supervising person determines the release of H<sub>2</sub>S cannot be contained to the site location and the general public is in harms way, he will immediately notify public safety personnel.

**EMERGENCY CALL LIST**

	<u>Office</u>	<u>Mobile</u>	<u>Home</u>
Marbob Energy Corp.	505-748-3303		
Sheryl Baker	505-748-3303	505-748-5489	505-748-2396
Johnny C. Gray	505-748-3303	505-748-5983	
Raye Miller	505-748-3303	505-513-0176	505-746-9577
Dean Chumbley	505-748-3303	505-748-5988	505-748-2426

**EMERGENCY RESPONSE NUMBERS**  
**Eddy County, New Mexico**

Artesia Police Department	505-746-5000
Artesia Fire Department	505-746-5051
State Police	505-748-9718
Eddy County Sheriff	505-746-2701
Emergency Medical Services (Ambulance)	911 or 505-746-2701
Eddy County Emergency Management (Harry Burgess)	505-887-9511
State Emergency Response Center (SERC)	505-476-9620
Carlsbad Police Department	505-885-2111
Carlsbad Fire Department	505-885-3125
New Mexico Oil Conservation Division	505-748-1283
Indian Fire & Safety	800-530-8693
Halliburton Services	800-844-8451



### PROTECTION OF THE GENERAL PUBLIC/ROE

In the event greater than 100 ppg H<sub>2</sub>S is present, the ROE (Radius of Exposure) calculations will be done to determine if the following is warranted:

- 100 ppm at any public area (any place not associated with this site)
- 500 ppm at any public road (any road which the general public may travel)
- 100 ppm radius of 3000' will be assumed if there is insufficient data to do the calculations, and there is a reasonable expectation that H<sub>2</sub>S could be present in concentrations greater than 100 ppm in the gas mixture.

#### **Calculation for the 100 ppm ROE:**

$$X = [(1.589)(\text{concentration})(Q)] (0.6258)$$

(H<sub>2</sub>S concentrations in decimal form)

$$10,000 \text{ ppm} = .01$$

$$1,000 \text{ ppm} = .001$$

#### **Calculation for the 500 ppm ROE:**

$$100 \text{ ppm} = .0001$$

$$10 \text{ ppm} = .00001$$

$$X = [(0.4546)(\text{concentration})(Q)] (.06258)$$

**EXAMPLE:** If a well/facility has been determined to have 150 ppm H<sub>2</sub>S in the gas mixture and the well/facility is producing at a gas rate of 200 MCFD then:

$$\text{ROE for 100 ppm} \quad X = [(1.589)(.00010)(200,000)] (0.6258)$$

$$X = 8.8'$$

$$\text{ROE for 500 ppm} \quad X = [(0.4546)(.00050)(200,000)] (0.6258)$$

$$X = 10.9'$$

These calculations will be forwarded to the appropriate NMOCD district office when applicable.

### PUBLIC EVACUATION PLAN

When the supervisor has determined that the general public will be involved, the following plan will be implemented.

- 1) Notification of the emergency response agencies of the hazardous condition and implement evacuation procedures.
- 2) A trained person in H<sub>2</sub>S safety shall monitor with detection equipment the H<sub>2</sub>S concentration, wind and area of exposure. This person will determine the outer perimeter of the hazardous area. The extent of the evacuation area will be determined from the data being collected. Monitoring shall continue until the situation has been resolved. All monitoring equipment shall be UL approved for use in Class I Groups A, B, C & D, Division I hazardous locations. All monitors will have a minimum capability of measuring H<sub>2</sub>S, oxygen, and flammable values.
- 3) Law enforcement shall be notified to set up necessary barriers and maintain such for the duration of the situation as well as aid in the evacuation procedure.
- 4) The company representative shall stay in communication with all agencies throughout the duration of the situation and inform such agencies when the situation has been contained and the effected area is safe to enter.

### **PROCEDURE FOR IGNITING AN UNCONTROLLABLE CONDITION**

The decision to ignite a well should be a last resort and one, if not both, of the following pertain:

- 1) Human life and/or property are in danger.
- 2) There is no hope of bringing the situation under control with the prevailing conditions at the site.

### **INSTRUCTIONS FOR IGNITION**

- 1) Two people are required. They must be equipped with positive pressure, self contained breathing apparatus and a "D"-ring style, full body, OSHA approved safety harness. Non-flammable rope will be attached.
- 2) One of the people will be a qualified safety person who will test the atmosphere for H<sub>2</sub>S, oxygen and LFL. The other person will be the company representative.
- 3) Ignite up-wind from a distance no closer than necessary. Make sure that where you ignite from has the maximum escape avenue available. A 25 mm flare gun shall be used, with a +/-500' range to ignite the gas.
- 4) Prior to ignition, make a final check for combustible gases.
- 5) Following ignition, continue with the emergency actions and procedures as before.

### **REQUIRED EMERGENCY EQUIPMENT**

- 1) Breathing Apparatus
  - Rescue Packs (SCBA) – 1 unit shall be placed at each breathing area, 2 shall be stored in the safety trailer.
  - Work/Escapes Packs – 4 packs shall be stored on the rig floor with sufficient air hose not to restrict work activity.
  - Emergency Escape Packs – 4 packs shall be stored in the doghouse for emergency evacuation.
- 2) Signage and Flagging
  - One Color Code Condition Sign will be placed at the entrance to the site reflecting the possible conditions at the site.
  - A Colored Condition flag will be on display reflecting the condition at the site at that time.
- 3) Briefing Area
  - Two perpendicular areas will be designated by signs and readily accessible.

- 4) Wind Socks
  - Two windsocks will be placed in strategic locations, visible from all angles.
- 5) H<sub>2</sub>S Detectors and Alarm
  - The stationary detector with three (3) sensors will be placed in the upper dog house if equipped, set to visually alarm @ 10 ppm and audible alarm @ 15 ppm. Calibrate a minimum of every 30 days or as needed. The three sensors will be placed in the following places: (Gas sample tubes will be stored in the safety trailer)
    - Rig floor
    - Bell nipple
    - End of flow line or where well bore fluid is being discharged
- 6) Auxiliary Rescue Equipment
  - Stretcher
  - Two OSHA full body harnesses
  - 100' of 5/8" OSHA approved rope
  - One 20 lb. Class ABC fire extinguisher
  - Communication via cell phones on location and vehicles on location

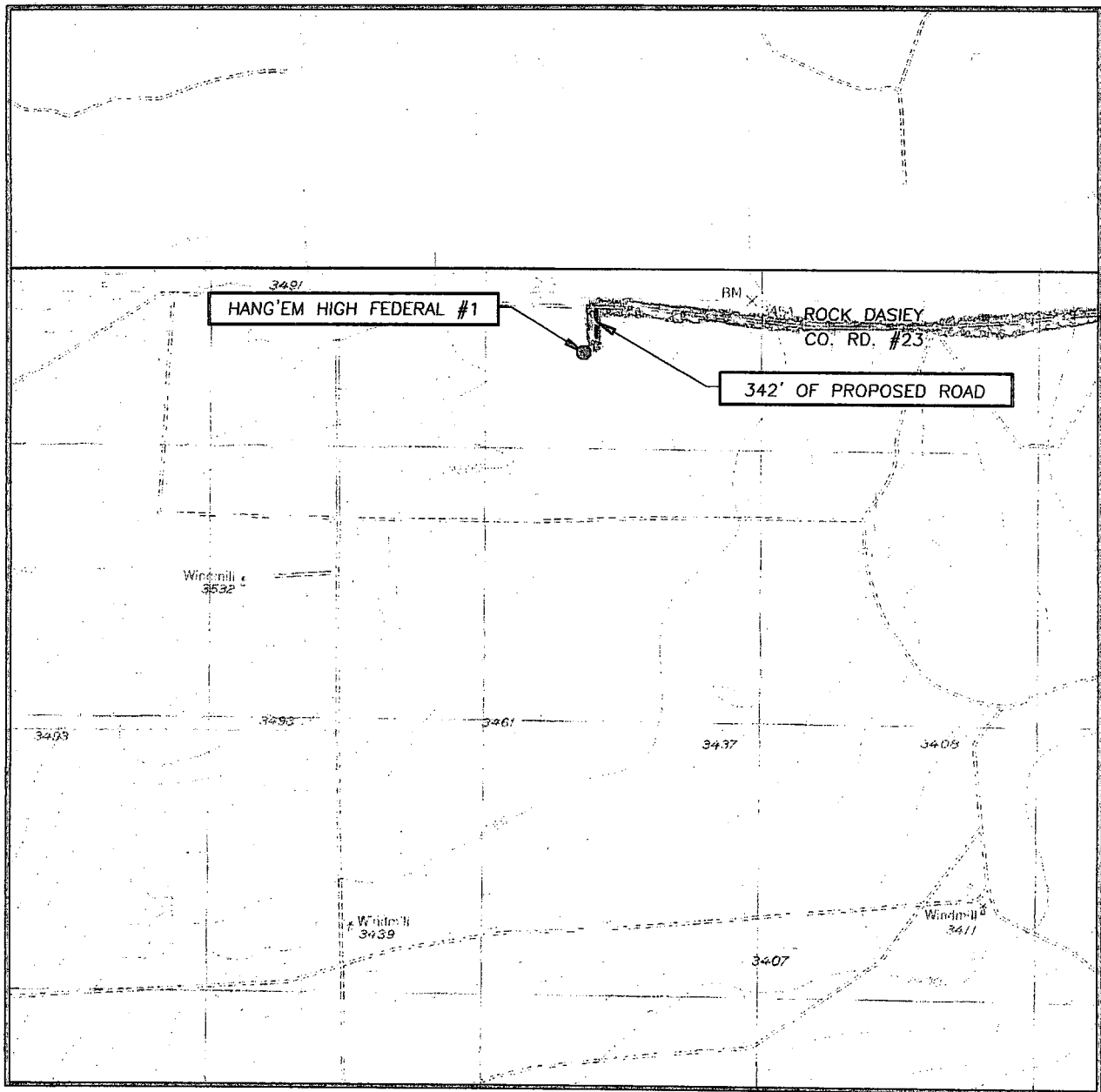
#### **USING SELF-CONTAINED BREATHING AIR EQUIPMENT (SCBA)**

- 1) SCBA should be worn when any of the following are performed:
  - Working near the top or on top of a tank.
  - Disconnecting any line where H<sub>2</sub>S can reasonably be expected.
  - Sampling air in the area to determine if toxic concentrations of H<sub>2</sub>S exist.
  - Working in areas where over 10 ppm of H<sub>2</sub>S has been detected.
  - At any time there is a doubt of the level of H<sub>2</sub>S in the area.
- 2) All personnel shall be trained in the use of SCBA prior to working in a potentially hazardous location.
- 3) Facial hair and standard eyeglasses are not allowed with SCBA.
- 4) Contact lenses are never allowed with SCBA.
- 5) Air quality shall be continuously checked during the entire operation.
- 6) After each use, the SCBA unit shall be cleaned, disinfected, serviced and inspected.
- 7) All SCBA shall be inspected monthly.

**RESCUE & FIRST AID FOR VICTIMS OF H<sub>2</sub>S POISONING**

- Do not panic.
- Remain calm & think.
- Get on the breathing apparatus.
- Remove the victim to the safe breathing area as quickly as possible, upwind and uphill from source or cross wind to achieve upwind.
- Notify emergency response personnel.
- Provide artificial respiration and/or CPR as necessary.
- Remove all contaminated clothing to avoid further exposure.
- A minimum of two (2) personnel on location shall be trained in CPR and First Aid.

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL:  
SEVEN RIVERS, N.M. - 10'  
DAYTON, N.M. - 10'

SEC. 35 TWP. 19-S RGE. 25-E

SURVEY N.M.P.M.

COUNTY EDDY

DESCRIPTION 660' FNL & 1980' FEL

ELEVATION 3472'

OPERATOR MARBOB ENERGY CORPORATION

LEASE HANG'EM HIGH FEDERAL

U.S.G.S. TOPOGRAPHIC MAP  
SEVEN RIVERS, N.M., & DAYTON, N.M.

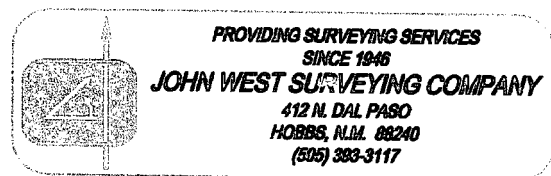


EXHIBIT TWO

**H<sub>2</sub>S TOXIC EFFECTS**

H<sub>2</sub>S is extremely toxic. The acceptable ceiling for eight hours of exposure is 10 ppm, which is .001% by volume. H<sub>2</sub>S is approximately 20% heavier than air (Sp.Gr=1.19 / Air=1) and colorless. It forms an explosive mixture with air between 4.3% and 46.0%. By volume hydrogen sulfide (H<sub>2</sub>S) is almost as toxic as hydrogen cyanide and is 5-6 times more toxic than carbon monoxide.

**Various Gases**

Common Name	Chemical Abbrev.	Sp. Gr.	Threshold Limits	Hazardous Limits	Lethal Concentration
Hydrogen Sulfide	H <sub>2</sub> S	1.19	10 ppm 15 ppm	100 ppm/hr	600 ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Sulfur Dioxide	SO <sub>2</sub>	2.21	2 ppm	N/A	1000 ppm
Chlorine	CL <sub>2</sub>	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	CO <sub>2</sub>	1.52	5000 ppm	5%	10%
Methane	CH <sub>4</sub>	0.55	90,000	Combustible @ 5%	N/A

- 1 Threshold limit – Concentrations at which it is believed that all workers may be repeatedly exposed, day after day, without adverse effects
- 2 Hazardous limit – Concentration that may cause death
- 3 Lethal concentration – Concentration that will cause death with short-term exposure
- 4 Threshold limit – 10 ppm – NIOSH guide to chemical hazards
- 5 Short-term threshold limit

**PHYSICAL EFFECTS OF HYDROGEN SULFIDE (H<sub>2</sub>S)**

CONCENTRATIONS		PHYSICAL EFFECTS
.001%	10 ppm	Obvious and unpleasant odor. Safe for 8 hr. exposure
.005%	50 ppm	Can cause some flu-like symptoms and can cause pneumonia
.01%	100 ppm	Kills the sense of smell in 3-15 minutes. May irritate eyes and throat
.02%	200 ppm	Kills the sense of smell rapidly. Severely irritates eyes and throat. Severe flu-like symptoms after 4 or more hrs. May cause lung damage and/or death.
.06%	600 ppm	Loss of consciousness quickly, death will result if not rescued promptly.