

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB No. 1004-0136  
Expires November 30, 2000

## APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		<b>CONFIDENTIAL</b>	
1b. Type of Well: <input type="checkbox"/> Oil Well <input checked="" type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		5. Lease Serial No. JICARILLA 464	
2. Name of Operator MALLON OIL COMPANY		6. If Indian, Allottee or Tribe Name JICARILLA/APACHE	
3a. Address PO BOX 2797 DURANGO, CO 81302		7. If Unit or CA Agreement, Name and No.	
3b. Phone No. (include area code) Ph: 303.293.2333 Fx: 303.293.3601		8. Lease Name and Well No. JIC 464-29 16	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At surface NENW 650FNL 2400FWL At proposed prod. zone NENW 650FNL 2400FWL		9. API Well No. 30-039-27776	
14. Distance in miles and direction from nearest town or post office* 52 MILES EAST OF BLOOMFIELD, NEW MEXICO		10. Field and Pool, or Exploratory E. BLANCO/PICTURED CLIFFS	
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 650 FEET		11. Sec., T., R., M., or Blk. and Survey or Area C Sec 29 T30N R3W Mer NMP	
16. No. of Acres in Lease 2376.00		12. County or Parish RIO ARRIBA	
17. Spacing Unit dedicated to this well 160 NW/4		13. State NM	
18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 1,400 FEET		20. BLM/BIA Bond No. on file 1318288	
21. Elevations (Show whether DF, KB, RT, GL, etc.) 7262 GL		22. Approximate date work will start 07/08/2002	
23. Estimated duration 45-60		24. Attachments	

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

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

25. Signature (Electronic Submission) <i>Kathy L. Schneebeck</i>	Name (Printed/Typed) KATHY L. SCHNEEBECK Ph: 303.820.4480	Date 06/04/2002
Title AGENT		
Approved by (Signature) <i>/s/ David R. Sitzler</i>	Name (Printed/Typed)	Date JUN 16 2004
Title Assistant Field Manager		

Application approval does not warrant or certify 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.

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.

## Additional Operator Remarks (see next page)

Electronic Submission #11709 verified by the BLM Well Information System  
For MALLON OIL COMPANY, sent to the Rio Puerco

\*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\* ORIGINAL \*\*

DISTRICT I  
P.O. Box 1980, Hobbs, N.M. 88241-1980

DISTRICT II  
P.O. Drawer DD, Artesia, N.M. 88211-0719

DISTRICT III  
1000 Rio Brazos Rd., Artesia, N.M. 87410

DISTRICT IV  
PO Box 2088, Santa Fe, NM 87504-2088

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

P.O. Box 2088  
Santa Fe, NM 87504-2088

Form C-102

Revised February 21, 1994

Instructions on back

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

<sup>1</sup> API Number 30-039-27776	<sup>2</sup> Pool Code 72400	<sup>3</sup> Pool Name East Blanco; Pictured Cliffs
<sup>4</sup> Property Code 24245 22184	<sup>5</sup> Property Name JICARILLA 464-29	<sup>6</sup> Well Number 16
<sup>7</sup> OGRD No. 013925	<sup>8</sup> Operator Name MALLON OIL COMPANY	<sup>9</sup> Elevation 7262

<sup>10</sup> Surface Location

UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	29	30-N	3-W		650	NORTH	2400	WEST	RIO ARRIBA

<sup>11</sup> 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

<sup>12</sup> Dedicated Acres 160	<sup>13</sup> Joint or Infill I	<sup>14</sup> Consolidation Code	<sup>15</sup> Order No. R-11858 (b) (v) infill.
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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

18

SEC. CORNER FD. GLO BC 1917	N 89-58-21 E 2636.5'	650'	QTR. CORNER FD. GLO BC 1917	17 OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.  Signature Kathy L. Schneebeck Printed Name Agent for Mallon Oil Company Title Resubmitted Feb. 19, 2004 Date Originally June 4, 2002
2400'	1081'	237'		
		670'		
			LAT. 36°47'21" N LONG. 107°10'30" W	
S 00-03-45 W 5572.8'				18 SURVEYOR CERTIFICATION 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.  Date of Survey Signature and Seal of Professional Surveyor 8894 Certificate Number
SEC. CORNER FD. GLO BC 1917				

Mallon Oil Company  
**Jicarilla 464-29 #16**  
 650' FNL 2,400' FWL (NE/4 NW/4)  
 Sec. 29 T30N R3W  
 Rio Arriba County, New Mexico  
 Lease: Jicarilla 464

**DRILLING PROGRAM**  
 (Per Rule 320)

SURFACE FORMATION – Upper San Jose

GROUND ELEVATION -7,262'

ESTIMATED FORMATION TOPS - (Water, oil, gas and/or other mineral-bearing formations)

Lower San Jose	1,630'	Sandstone, shales & siltstones
Nacimiento	2,082'	Sandstone, shales & siltstones
Ojo Alamo	3,290'	Sandstone, shales & siltstones
Kirtland	3,525'	Sandstone, shales & siltstones
Fruitland	3,716'	Sandstone, shales & siltstones
Pictured Cliffs	3,804'	Sandstone, shales & siltstones
<del>Lewis</del>	<del>3,913'</del>	<del>Sandstone, shales &amp; siltstones</del>
<del>Mesa Verde</del>	<del>5,946'</del>	<del>Sandstone, shales &amp; siltstones</del>
<del>Mancos</del>	<del>6,250'</del>	<del>Sandstone, shales &amp; siltstones</del>

Total Depth 7,000' Sandstone, shales & siltstones

Estimated depths of anticipated fresh water, oil, or gas:

Cretaceous

Mesa Verde	5,968'	Gas
Mancos	6,262'	Gas

TOTAL DEPTH ~~7,000'~~ 4015'

CASING PROGRAM

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0' – 500'	12-1/4"	8-5/8"	K-55 24# ST&C New	To surface (500 sxs Class B) <i>500 sxs w/ 100% exclud</i>
0' – T.D.	7-7/8"	5-1/2"	K-55 15.5# LT&C New	TD to surface (±700 sxs lite or 65:35 poz and ±550 sxs 50:50 poz *)

\* Actual cement volume to be determined by caliper log.

Yields: Class B yield = 1.18 ft<sup>3</sup>/sx  
 65:35 Poz yield = 1.62 ft<sup>3</sup>/sx  
 50:50 Poz yield = 1.26 ft<sup>3</sup>/sx

All fresh water and prospectively valuable minerals encountered during drilling, will be recorded by depth and protected.

PRESSURE CONTROL

BOP's and choke manifold will be installed and pressure tested before drilling out under surface casing (subsequent pressure test will be performed whenever pressure seals are broken), and then will be checked daily as to mechanical operating condition. BOP's will be pressure tested at least once every 30 days. Ram type preventors and related pressure control equipment will be pressure tested to rated working pressure of the stack assembly if a test plug is used. If a plug is not used, the stack assembly will be tested to the rated working pressure of the stack assembly or to 70% of the minimum internal yield of the casing, whichever is less. Annular type preventors will be pressure tested to 50% of their rated working pressure. All casing strings will be pressure tested to 0.22 psi/ft. or 1,500 psi, whichever is greater, not to exceed 70% of internal yield.

Statement on Accumulator System and Location of Hydraulic Controls

The drilling rig has not yet been selected for this well. Selection will take place after approval of this application. Manual and/or hydraulic controls will be in compliance with Onshore Order No. 2 for 2,000 psi systems.

A remote accumulator will be used. Pressures, capacities, location of remote hydraulic and manual controls will be identified at the time of the BLM supervised BOP test.

MUD PROGRAM

0' - 500'	Spud mud
500' - TD	Low solids non-dispersed
	M.W. 8.5 – 9.2 ppg
	Vis – 28 – 50 sec
	W.L. 15cc or less

Sufficient mud materials to maintain mud properties, control lost circulation and to contain "kick" will be available at wellsite.

AUXILIARY EQUIPMENT

- A) Inside BOP or stab-in valve (available on rig floor)
- B) Mud monitoring will be visually observed.

LOGGING, CORING, TESTING PROGRAM

- A) Logging: DIL- CNL-FDC-GR - TD - BSC (GR to surface) (Triple Combo)
- B) Coring: None
- C) Testing: Possible DST – None anticipated. Drill stem tests may be run on shows of interest

ABNORMAL CONDITIONS

- A) Pressures: No abnormal conditions are anticipated  
Bottom hole pressure gradient – 0.31 psi/ft
- B) Temperatures: No abnormal conditions are anticipated
- C) H<sub>2</sub>S: Hydrogen sulfide gas is potentially present in the San Jose and Ojo Alamo formation and an H<sub>2</sub>S drilling plan is attached.
- D) Estimated bottomhole pressure: 2,170 psi

ANTICIPATED START DATE

July 8, 2002

COMPLETION

The location pad will be of sufficient size to accommodate all completion activities and equipment. A string of 2 3/8" J-55 4.7#/ft tubing will be run for a flowing string. A Sundry Notice will be submitted with a revised completion program if warranted.

Jicarilla 464-29 #16  
 650' FNL 2,400' FWL NE /4 NW /4  
 Sec. 29 T 30N R 3W  
 Rio Arriba County, New Mexico  
 Lease: Jicarilla 464

### SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth: 7,000 '  
 Proposed Depth of Surface Casing: 500 '  
 Estimated Pressure Gradient: 0.31 psi/ft  
 Bottom Hole Pressure at 7,000 '  
      $0.31 \text{ psi/ft} \times 7,000' = 2,170 \text{ psi}$   
 Hydrostatic Head of gas/oil mud: 0.22 psi/ft  
      $0.22 \text{ psi/ft} \times 7,000' = 1,540 \text{ psi}$

#### Maximum Design Surface Pressure

Bottom Hole Pressure	–	Hydrostatic Head	=	
( 0.31 psi/ft x 7,000 ' )	–	( 0.22 psi/ft x 7,000 ' )	=	
2,170 psi	–	1,540 psi	=	630 psi

#### Casing Strengths      8-5/8" 24# K-55 ST&C

<u>Wt.</u>	<u>Tension (lbs)</u>	<u>Burst (psi)</u>	<u>Collapse (psi)</u>
24 #	263,000	2,950	1370
32 #	402,000	3,930	2,530

#### Safety Factors

Tension (Dry): 1.8      Burst: 1.0      Collapse: 1.125

Tension (Dry):       $28 \text{ #/ft} \times 500' = 14,000 \text{ #}$   
     Safety Factor =  $\frac{402,000 \text{ #}}{14,000 \text{ #}} = 28.71$       ok

Burst:      Safety Factor =  $\frac{3,930 \text{ psi}}{630 \text{ psi}} = 6.24$       ok

Collapse:      Hydrostatic =  $0.052 \times 9.0 \text{ ppg} \times 500' = 234 \text{ psi}$   
     Safety Factor =  $\frac{2,530 \text{ psi}}{234 \text{ psi}} = 10.81$       ok

Use 500' 8-5/8" 24# K-55 ST&C

Use 2,000 psi minimum casinghead and BOP's

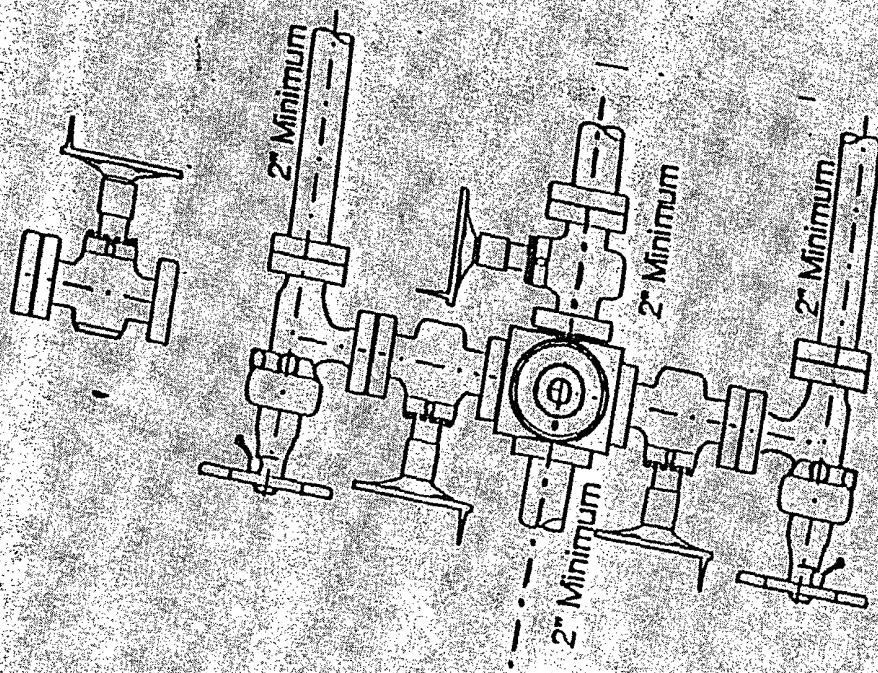
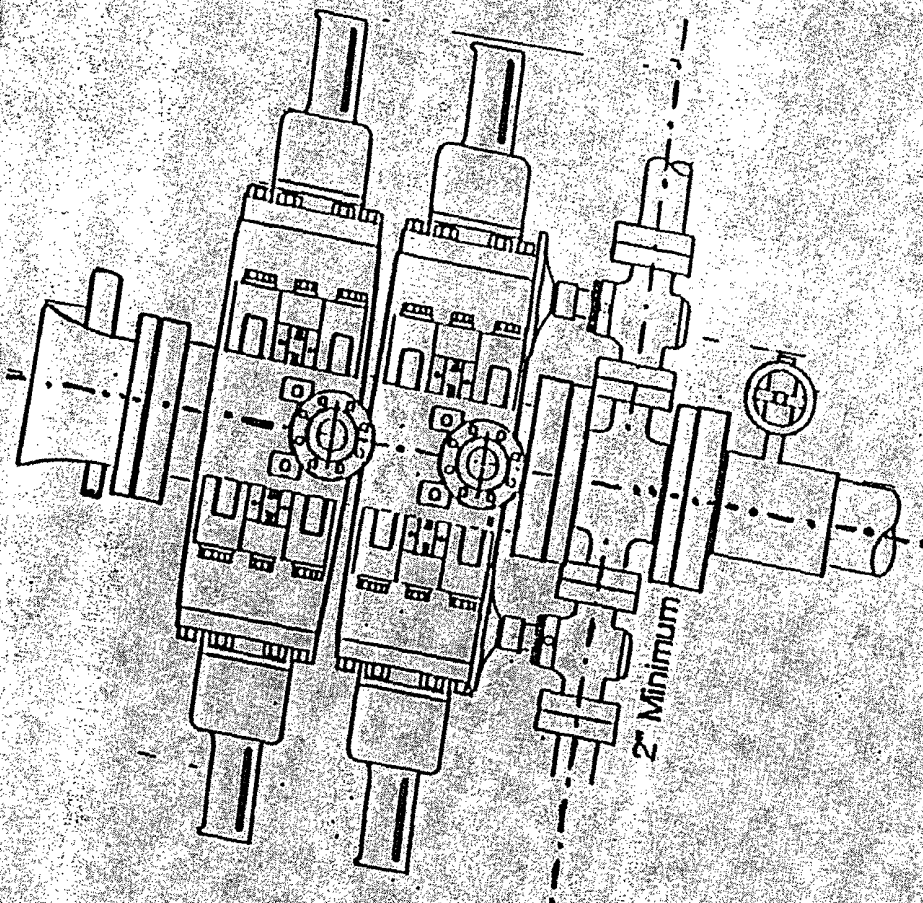
#### Centralizers

4 Total  
 1 near surface at 80'  
 1 10' up on bottom joint  
 2 on the first, second, and third collar from bottom.

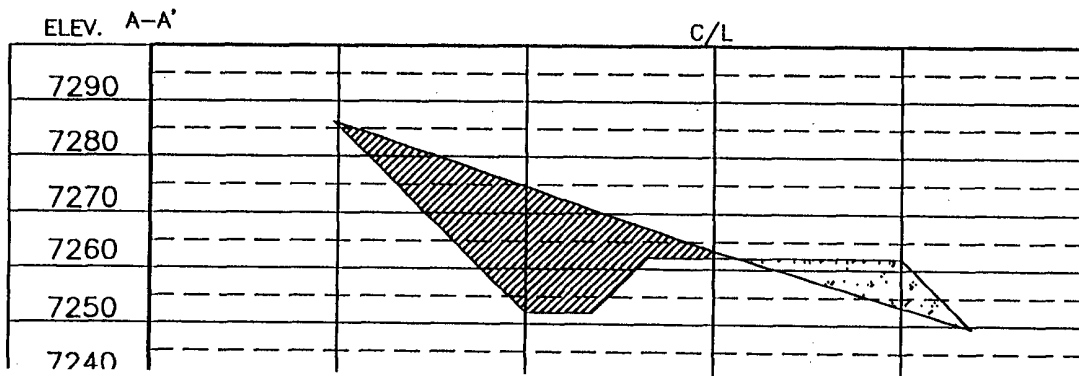
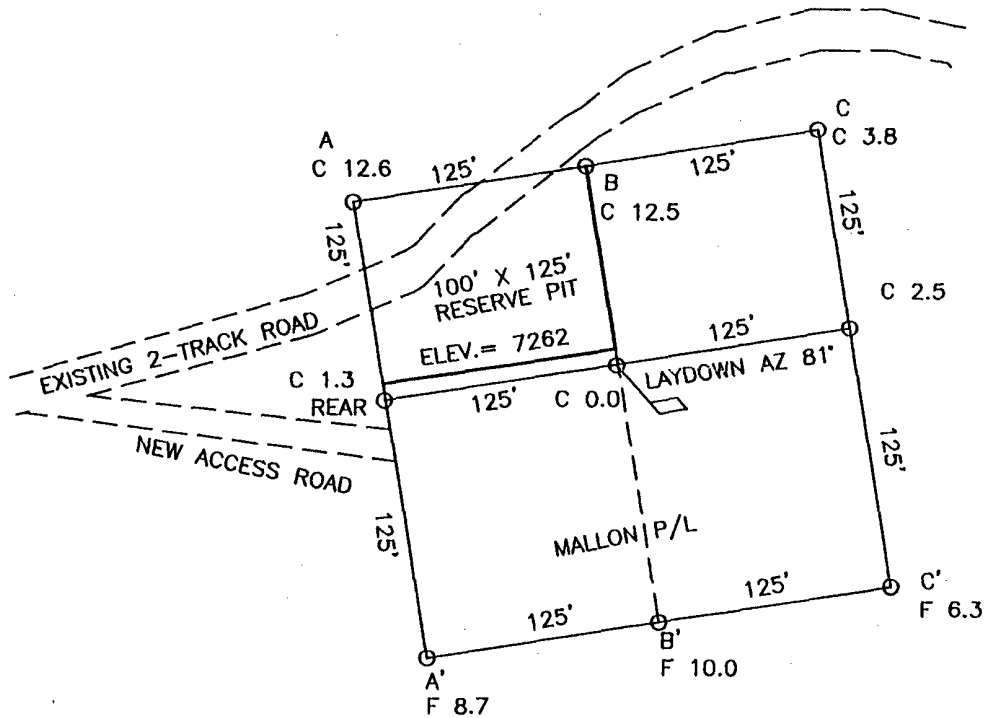
Note that field experience indicates that additional centralizers greatly increase the chance of "sticking" the surface casing prior to reaching surface casing total depth.

# 2-M SYSTEM

MALLON OIL COMPANY



COMPANY: MALLON OIL COMPANY  
 LEASE: JICARILLA 464-29 #16  
 FOOTAGE: 650' FNL, 2400' FWL  
 SEC.: 29, TWN: 30-N, RNG: 3-W, NMPM  
 ELEVATION: 7262'



# 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:

1. The hazards and characteristics of hydrogen sulfide ( $H_2S$ ).
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of  $H_2S$  detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

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

1. The effects of  $H_2S$  on metal components. If high tensile tubulars are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the  $H_2S$  Drilling Operations Plan and the Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable  $H_2S$  zone (within 3 days or 500 feet) and weekly  $H_2S$  and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific  $H_2S$  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. $H_2S$ Safety Equipment and Systems

Note: All  $H_2S$  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  $H_2S$ .

### A. Well control equipment:

1. Choke manifold with a minimum of one remote choke.
2. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

### B. Protective equipment for essential personnel:

1. Mark II Surviveair 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.



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

1. Two portable H<sub>2</sub>S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H<sub>2</sub>S levels of 10 ppm are reached.

D. Visual warning systems:

1. Wind direction indicators as shown on well site diagram.
2. 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:

1. The mud program has been designed to minimize the volume of H<sub>2</sub>S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H<sub>2</sub>S scavengers will minimize hazards when penetrating H<sub>2</sub>S bearing zones.

F. Metallurgy:

1. 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.
2. All elastomers used for packing and seals shall be H<sub>2</sub>S trim.

G. Communication:

1. Cellular telephone communications in company vehicles:

H. Well testing:

1. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill stem testing operations conducted in an H<sub>2</sub>S environment will use the closed chamber method of testing.