

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

| | | | | |
|---|-----------------------|--|---------------|---------------------------|
| 1a. TYPE OF WORK Drill <input checked="" type="checkbox"/> Deepen <input type="checkbox"/> | | 5. LEASE DESIGNATION AND SERIAL NO. MDA 701-98-0013 | | |
| b. TYPE OF WELL Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other <input type="checkbox"/> | | 6. IF INDIAN, ALLOTTEE OR TRIBE NAME Jicarilla Apache | | |
| Single Zone <input type="checkbox"/> Multiple Zone <input type="checkbox"/> | | 7. UNIT AGREEMENT NAME N/A | | |
| 2. NAME OF OPERATOR Mallon Oil Company | | 8. FARM OR LEASE NAME, WELL NO. Jicarilla 29-02-08 No. 4 | | |
| 3. ADDRESS AND TELEPHONE NO. P.O. Box 2797 Durango, CO 81302 (970) 382-9100 | | 9. API WELL NO. 30-039-26864 | | |
| 4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements.) At surface 500' FNL and 865' FWL (NW/NW) Unit D | | 10. FIELD AND POOL, OR WILDCAT E. Blanco, Pictured Cliffs | | |
| At proposed prod. zon 500' FNL and 865' FWL (NW/NW) Unit D | | 11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec. 8, T29N-R02W | | |
| 14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE 70 miles east of Bloomfield, New Mexico | | 12. COUNTY OR PARISH Rio Arriba | | |
| 15. DISTANCE FROM PROPOSED LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. (Also to nearest drlg. unit line, if any) 5,766' to edge of IMDA | | 13. STATE NM | | |
| 16. NO. OF ACRES IN LEASE 39,360 | | 17. NO. OF ACRES ASSIGNED TO THIS WELL 150.0 | | |
| 18. DISTANCE FROM PROPOSED LOCATION TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 2,516' Jic29-02-05 #1 | | 19. PROPOSED DEPTH 4000' | | |
| 20. ROTARY OR CABLE TOOLS Rotary | | 21. ELEVATIONS (SHOW WHETHER DF, RT, GR, Etc.) 7,425' GR | | |
| 22. APPROX DATE WORK WILL START 07/15/01 | | 23. PROPOSED CASING AND CEMENTING PROGRAM | | |
| SIZE OF HOLE | GRADE, SIZE OF CASING | WEIGHT PER FOOT | SETTING DEPTH | QUANTITY OF CEMENT |
| 12-1/4" | 8-5/8" | 24# | 250' | 175 sx, circ. to surface. |
| 7-7/8" | 5-1/2" | 15.5# | 4000' | 110 sx, circ. to surface. |
| | | | | 900 sx, circ. to surface. |

Mallon Oil Company proposes to drill to a depth sufficient to test the Pictured Cliffs formation. If productive, 5-1/2" casing will be cemented at TD. If non-productive, the well will be plugged and abandoned in a manner consistent with Federal regulations. Specific programs as per on-shore Oil and Gas Order No. 1 are outlined in the following attachments:

Drilling Program

Exhibit 1: Blow Out Preventor Equipment/Plan
Exhibit A: Location and Elevation Plat
Exhibit B: Roads and Pipelines
Exhibit C: One Mile Radius Map

Exhibit D: Drilling Site Layout
Exhibit E: Production Facilities
Exhibit F: H2S Contingency Plan
Exhibit G: Environmental Assessment

IN ABOVE SPACE DESCRIBE PROPOSED PROGRAM: If proposal is to deepen, give data on present productive zone and proposed new productive zone. If proposal is to drill or deepen directionally, give pertinent data on subsurface locations and measured and true vertical depths. Give blowout preventer program, if any.

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SIGNED: Terry Lindeman TITLE: Operations Superintendent DATE: 06/5/2001

(This space for Federal or State office use)

PERMIT NO. _____ APPROVAL DATE _____

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: *

APPROVED BY: 15/ David R. Sitzler TITLE: Acting AFM DATE: 06/05/2001

*See Instructions On Reverse Side

Title 18 U.S.C. Section 1001, makes 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.

- * 1) 4 1/2" casing strings will be cemented
2) Increase surface cement to 175 sxs for 100% excess
3) Attached HOLD CLOSING FOR NSL

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., Aztec, N.M. 87410

DISTRICT IV
P.O. 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

| | | | |
|-----------------------------|--------------------------------------|---------------------|--|
| *API Number 30-039-26864 | | *Pool Code 72400 | *Pool Name East Blanco; Pictured Cliffs |
| *Property Code 25287 | *Property Name JICARILLA 29-02-08 | | *Well Number 4 |
| *OGRID No. 013925 | *Operator Name MALLON OIL COMPANY | | *Elevation 7425 |

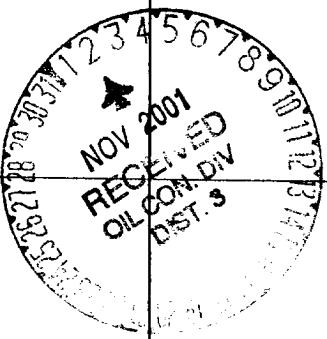
¹⁰ Surface Location

| | | | | | | | | | |
|--------------------|--------------|------------------|--------------|---------|----------------------|---------------------------|----------------------|------------------------|----------------------|
| UL or lot no. D | Section 8 | Township 29-N | Range 2-W | Lot Idn | Feet from the 500 | North/South line NORTH | Feet from the 865 | East/West line WEST | County RIO ARRIBA |
|--------------------|--------------|------------------|--------------|---------|----------------------|---------------------------|----------------------|------------------------|----------------------|

¹¹ 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 156.6 160 | | | *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

| | | | | | | | |
|-------------------------|--|------|--|--|---|--|--|
| MARKED STONE 865' | | 500' | S 89-07-32 E 5238.9' | | CALC. CORNER | ¹⁷ OPERATOR CERTIFICATION I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief Signature Terry Lindeman Printed Name Operations Superintendent Title 6/5/01 Date | |
| 445' | | 802' | LAT. 36°44'43" N LONG. 107°04'22" W | |  | 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. 4-18-01 NEW MEXICO Date of Survey Signature and Seal of Professional Surveyor 8894 Certificate Number | |
| S 00-20-19 W 5208.8' | | 8 | | | | | |
| FD. P & C LS 8894 | | | | | | | |

Jicarilla 29-02-08 No. 4

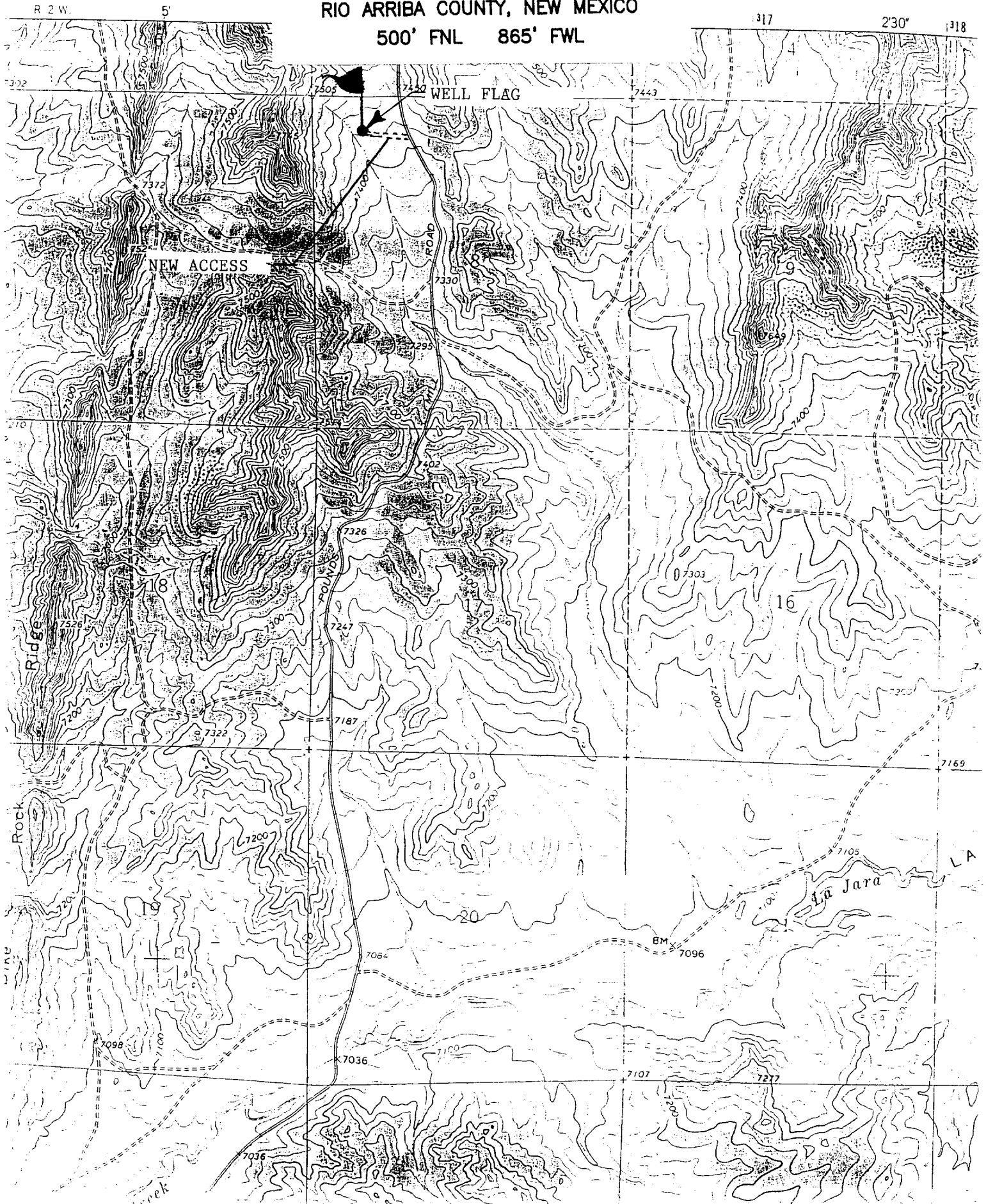
MALDON OLD CORNER

JICARILLA 29-02-08 #4

NW/4 SEC. 8, T-29-N, R-2-W, N.M.P.M.

RIO ARriba COUNTY, NEW MEXICO

500' FNL 865' FWL



DRILLING PROGRAM

Attached to Form 3160-3

Mallon Oil Company

Jicarilla 29-02-08 No. 4

500' FNL and 865' FWL (NW/NW) Unit D

Sec. 8, T29N- R02W

Rio Arriba County, New Mexico

LEASE NUMBER: MDA 701-98-0013

1. **Geologic name of surface formation:** San Jose

2. **Estimated tops of important geologic markers:**

| | |
|-----------------|---------|
| San Jose | Surface |
| Nacimiento | 2600' |
| Ojo Alamo | 3030' |
| Kirtland | 3358' |
| Fruitland | 3468' |
| Pictured Cliffs | 3660' |
| Lewis | 3800' |
| Total Depth | 4000' |

3. **Estimated depths of anticipated fresh water, oil, or gas:**

| | | |
|-----------------|-------|-----|
| San Jose | 1300' | Gas |
| Nacimiento | 2600' | Gas |
| Ojo Alamo | 3030' | Gas |
| Fruitland | 3468' | Gas |
| Pictured Cliffs | 3660' | Gas |

No other formations are expected to produce oil, gas, or fresh water in measurable quantities. The surface fresh water sands will be protected by setting 8-5/8" casing at 250' and circulating cement back to surface.

4. **Proposed casing program:**

| <u>Hole Size</u> | <u>Interval</u> | <u>Casing OD</u> | <u>Casing weight, grade, and thread</u> |
|------------------|-----------------|------------------|---|
| 12-1/4" | 0-250' | 8-5/8" | 24 lb/ft, K55, ST&C |
| 7-7/8" | 0-4000' | 5-1/2" | 15.5 lb/ft, K55, LT&C |

Cement program:

8-5/8" surface casing: Cemented to surface with 110 sx Class B, or Type III cement containing 2% CaCl₂, 1/4 lb/sk Celloflake, slurry to be mixed at 15.6 lb/gal, yield 1.18 cu ft/sk. Circulate cement to surface.

5-1/2" production casing: 900 sks 50/50 POZ 2% Gel, with 6-1/4 lb/sk Gilsonite, 3% KCl, mixed at 13.7 lb/gal, 1.26 cu ft/sk, 30% excess. Circulate cement to surface.

5. Minimum specifications for pressure control (2M System):

The blowout preventor equipment (BOP) shown in Exhibit 1 will consist of a double ram-type (2000 psi WP) preventor. The unit will be hydraulically operated and the ram-type preventor will be equipped with blind rams on top and drill pipe rams on bottom. The BOP will be nipped up on the 8-5/8" surface casing and used continuously until TD is reached. BOP and accessory equipment will be tested to 1000 psi before drilling out of surface casing. Pipe rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. A 2" kill line and 2" choke line will be included in the drilling spool located below the ram-type BOP. Other accessories to the BOP equipment will include a kelly cock and floor safety valve, and choke lines and choke manifold with 2000 psi WP rating.

6. Types and characteristics of the proposed mud system:

The well will be drilled to TD with a combination of fresh water and fresh water polymer mud system. The applicable depths and properties of this system are as follows:

| <u>Depth</u> | <u>Type</u> | <u>Weight</u> (ppg) | <u>Viscosity</u> (sec) | <u>Water loss</u> (cc) |
|--------------|------------------|------------------------|---------------------------|---------------------------|
| 0-250' | FW | ± 8.5 | 30-33 | NC |
| 250' - TD | FW (Gel polymer) | ± 9.0 | 32-35 | 10 - 20 cc |

7. Auxiliary well control and monitoring equipment:

- A. A kelly cock will be kept in the drill string at all times.
- B. A full-opening drill pipe stabbing valve (inside BOP) with proper drill pipe connections will be on the rig floor at all times.
- C. The drilling fluids systems will be visually monitored at all times.

8. Testing, logging, and coring program:

| | |
|-------------------|---|
| Drill stem tests: | None anticipated |
| Logging: | TD to surface casing, Open Hole GR, SP, Neutron, Density, Induction |
| Coring: | None planned |

9. Abnormal conditions, pressures, temperatures, and potential hazards:

No abnormal pressures or temperatures are anticipated. The proposed mud program will be modified to control excess pressure if abnormal pressures are encountered. The estimated bottom-hole pressure (BHP) is 1200 psig. Hydrogen sulfide gas is potentially present in the San Jose and Ojo Alamo formation and an H₂S drilling plan is attached.

10. Anticipated starting date: July 1, 2001

Anticipated completion of drilling operations: Expected duration of 6 days

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. H₂S detection and monitoring equipment:

1. Two portable H₂S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H₂S levels of 20 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 H₂S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H₂S scavengers will minimize hazards when penetrating H₂S 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 H₂S service.
2. All elastomers used for packing and seals shall be H₂S 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 H₂S environment will use the closed chamber method of testing.