Form 3160-3
(August 1999)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No. 1004-0136
Expires November 30, 2000

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
MDA 701-98-0013

6. If Indian, Allottee or Tribe Name

1a. Type of Work: ☒ DRILL ☐ REENTER CONFIDENTIAL

7. If Unit or CA Agreement, Name and No.
30498

1b. Type of Well: ☐ Oil Well ☒ Gas Well ☐ Other ☒ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
JIC 29-02-28 1

2. Name of Operator
MALLON OIL COMPANY 13925
Contact: DON ERICKSON
E-Mail: dmerickson@aol.com

9. API Well No.
30-039-27066

3a. Address
PO BOX 2797
DURANGO, CO 81302

3b. Phone No. (include area code)
Ph: 303.293.2333
Fx: 303.293.3601

10. Field and Pool, or Exploratory
BLANCO/E.PICTURED CLIFFS

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*

At surface NWNW 884FNL 535FWL

At proposed prod. zone NWNW 884FNL 535FWL

11. Sec., T., R., M., or Blk. and Survey or Area
D Sec 28 T29N R2W Mer NMP

14. Distance in miles and direction from nearest town or post office*
57 MILES EAST OF BLOOMFIELD, NEW MEXICO

12. County or Parish
RIO ARRIBA

13. State
NM

15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
884 FEET

16. No. of Acres in Lease
39360.00

17. Spacing Unit dedicated to this well
~~80.00~~ 160 NW/4 A

18. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.
5300 FEET

19. Proposed Depth
4000 MD

20. BLM/BIA Bond No. on file
1318288

21. Elevations (Show whether DF, KB, RT, GL, etc.
7148 GL

22. Approximate date work will start
08/20/2002

23. Estimated duration
45-60 DAYS

24. Attachments

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.
2. A Drilling Plan.
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).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification
6. Such other site specific information and/or plans as may be required by the authorized officer.

25. Signature	Name (Printed/Typed)	Date
(Electronic Submission)	KATHY L. SCHNEEBECK Ph: 303.820.4480	07/09/2002

Title
AGENT

Approved by (Signature)	Name (Printed/Typed)	Date
/s/ Jim Lovato SUA		8/22/02
Title	Office	

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. * Note Surface Cement needs to be increased to 100% excess

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 #12600 verified by the BLM Well Information System
For MALLON OIL COMPANY, sent to the Rio Puerco
Committed to AFMSS for processing by Angie Medina-Jones on 07/10/2002 ()

**** 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., Aztec, 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 Febuary 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

[1] API Number	[2] Pool Code	[3] Pool Name
30-039-27066	72400	East Blanco Pictured Cliffs Pool

[4] Property Code	[5] Property Name	[6] Well Number
27066 30498	JICARILLA 29-02-28	1

[7] OGRID No.	[8] Operator Name	[9] Elevation
13925	MALLON OIL COMPANY	7148'

[10] Surface Location

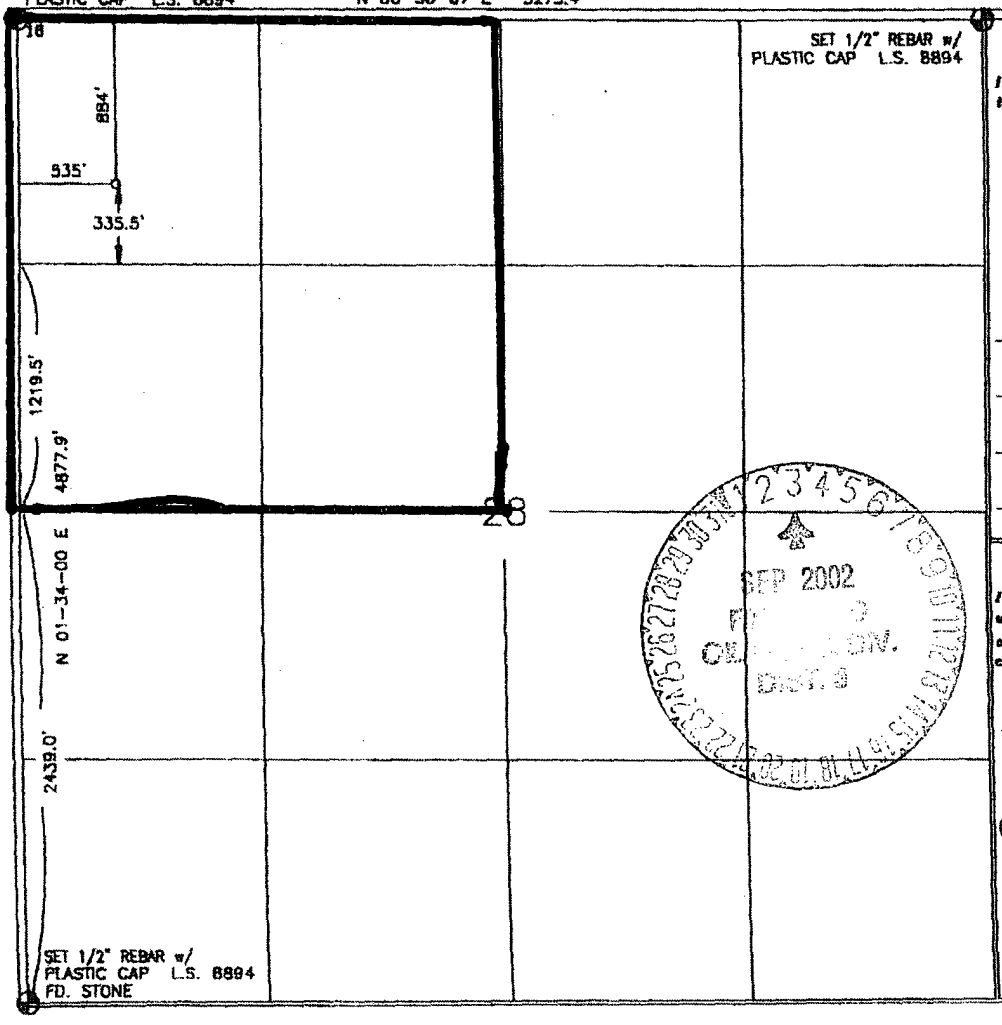
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
D	28	29-N	2-W		884	NORTH	535	WEST	RIO ARRIBA

[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

[12] Dedicated Acres	[13] Joint or Infill	[14] Consolidation Code	[15] Order No.
160			

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



[17] OPERATOR CERTIFICATION

I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief

Signature

Robert Blaylock
Printed Name

District Manager
Title

8-28-02
Date

[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

SEP 2002
OIL CONSERVATION DIV.
DIST. 3

1-2-

Date of Survey

Signature and Seal of Professional Surveyor

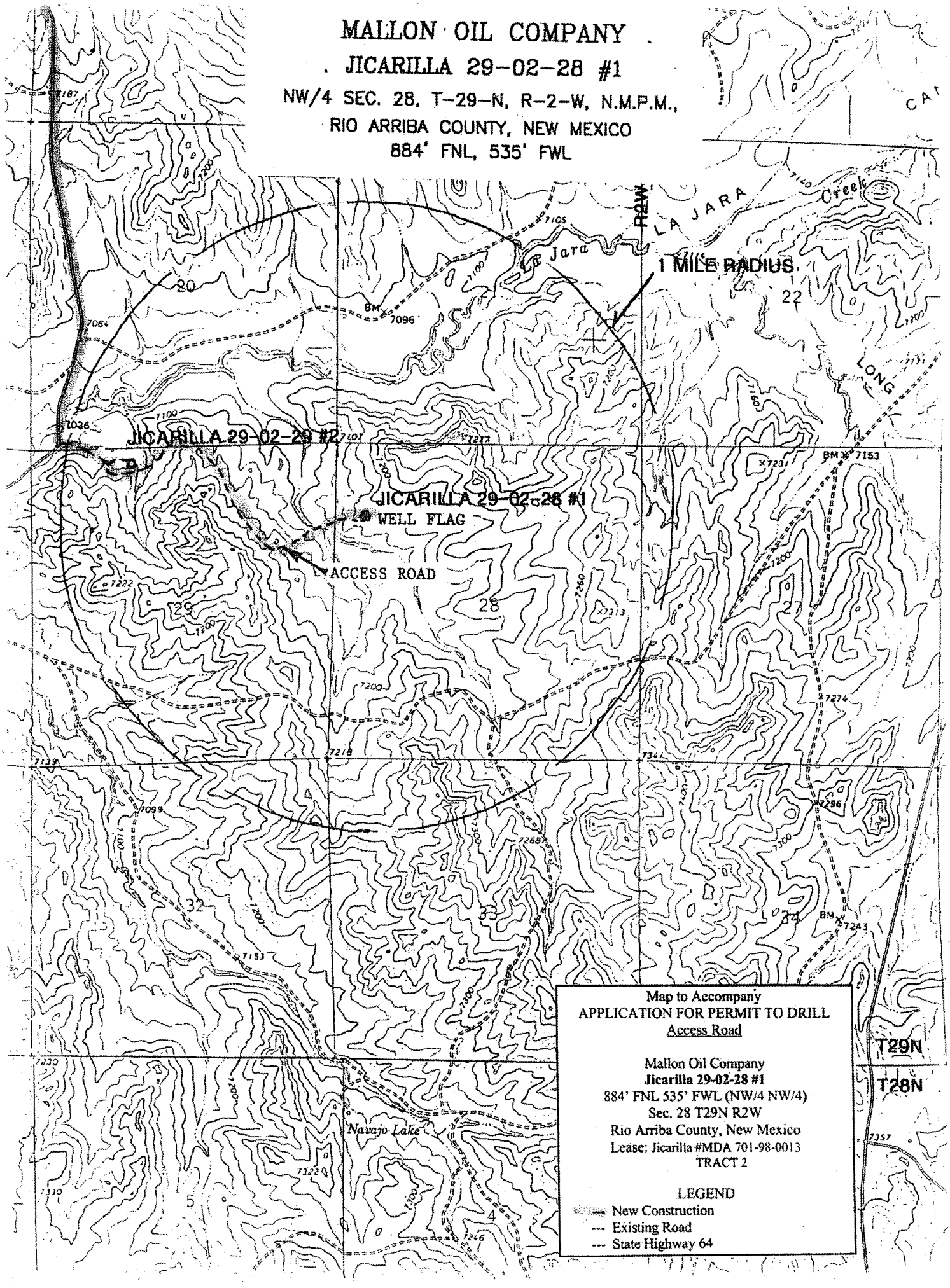
NEW MEXICO 8894 REGISTERED PROFESSIONAL LAND SURVEYOR

8894
Certificate Number

MALLON OIL COMPANY

JICARILLA 29-02-28 #1

NW/4 SEC. 28, T-29-N, R-2-W, N.M.P.M.,
RIO ARRIBA COUNTY, NEW MEXICO
884' FNL, 535' FWL



Map to Accompany
APPLICATION FOR PERMIT TO DRILL
Access Road

Mallon Oil Company
Jicarilla 29-02-28 #1
884' FNL 535' FWL (NW/4 NW/4)
Sec. 28 T29N R2W
Rio Arriba County, New Mexico
Lease: Jicarilla #MDA 701-98-0013
TRACT 2

LEGEND
- New Construction
- Existing Road
- State Highway 64

Mallon Oil Company
Jicarilla 29-02-28 #1
884' FNL 535' FWL (NW/4 NW/4)
Sec. 28 T29N R2W
Rio Arriba County, New Mexico
Lease: Jicarilla MDA 701-98-0013, TRACT 2

DRILLING PROGRAM
(Per Rule 320)

This Application for Permit to Drill (APD) is filed under the APD process as stated in Onshore Order No. 1 and supporting Bureau of Land Management (BLM) documents. The process was changed to the "APD" process per Onshore Order No. 1. This APD process will include an on-site meeting as determined by BLM, at which time the specific concerns of Mallon Oil Company (Mallon) and BLM will be discussed. Best efforts have been made to address specific concerns of the BLM representatives.

SURFACE FORMATION – San Jose

GROUND ELEVATION – 7,087'

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

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	2,592'	Sandstone, shales & siltstones
Ojo Alamo	3,022'	Sandstone, shales & siltstones
Kirtland	3,350'	Sandstone, shales & siltstones
Fruitland	3,559'	Sandstone, shales & siltstones
Pictured Cliffs	3,692'	Sandstone, shales & siltstones
Lewis	3,771'	Sandstone, shales & siltstones
Total Depth	4,000'	Sandstone, shales & siltstones

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

Tertiary		
San Jose	1,382'	Gas
Nacimiento	2,622'	Gas
Ojo Alamo	3,712'	Gas
Fruitland	3,680'	Gas
Pictured Cliffs	3,780'	Gas

TOTAL DEPTH 4,000'

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 (±175 sxs Class B)
0' – T.D.	7-7/8"	5-1/2"	K-55 15.5# LT&C New	TD to surface (±1,170 sxs lite or 65:35 poz and ±270 sxs 50:50 poz *

Jicarilla 29-02-28 #1
884' FNL 535' FWL NW /4 NW /4
Sec. 28 T 29N R 2W
Rio Arriba County, New Mexico
Lease: Jicarilla - MDA 701-98-0013

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 psi/ft x 7,000 ' =	2,170 psi
Hydrostatic Head of gas/oil mud:	0.22 psi/ft
0.22 psi/ft x 7,000 ' =	1,540 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

Wt.	Tension (lbs)	Burst (psi)	Collapse (psi)
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): 24 # / ft x 500 ' = 12,000 #
Safety Factor = 402,000 # / 12,000 # = 33.50 ok

Burst: Safety Factor = 3,930 psi / 630 psi = 6.24 ok

Collapse: Hydrostatic = 0.052 x 9.0 ppg x 500 ' = 234 psi
Safety Factor = 2,530 psi / 234 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.

* Actual cement volume to be determined by caliper log.

Yields: Class B yield = 1.18 ft^3/sx
65:35 Poz yield = 1.62 ft^3/sx
50:50 Poz yield = 1.26 ft^3/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_2S: Hydrogen sulfide gas is potentially present in the San Jose and Ojo Alamo formation and an H_2S drilling plan is attached.

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 accomodate 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_2S detection and monitoring equipment:

1. Two portable H_2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H_2S 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_2S circulated to the surface. Proper mud weight, safe drilling practices, and the use of H_2S scavengers will minimize hazards when penetrating H_2S 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_2S service.

2. All elastomers used for packing and seals shall be H_2S 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_2S environment will use the closed chamber method of testing.