

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

SUBMIT IN TRIPLICATE

(Other instructions on
reverse side)

FORM APPROVED

OMB NO. 1004-0136

Expires February 28, 1995

APPLICATION FOR PERMIT TO DRILL OR DEEPEN

1a. TYPE OF WORK Drill <input type="checkbox"/> Deepen <input type="checkbox"/>		5. LEASE DESIGNATION AND SERIAL NO MDA 701-98-0013 Tract 4	
b. TYPE OF WELL Oil Well <input type="checkbox"/> Gas Well <input checked="" type="checkbox"/> Other <input type="checkbox"/> Single Zone <input checked="" type="checkbox"/> Multiple Zone <input type="checkbox"/>		6. IF INDIAN, ALLOTTEE OR TRIBE NAME Jicarilla Apache	
2. NAME OF OPERATOR Mallon Oil Company		7. UNIT AGREEMENT NAME N/A	
3. ADDRESS AND TELEPHONE NO. P.O. Box 2797 Durango, Colorado (970)382-9100		8. FARM OR LEASE NAME, WELL NO. Jicarilla 29-02-04 No. 2	
4. LOCATION OF WELL (Report location clearly and in accordance with any State requirements. *) At surface 1105'FNL and 1085' FWL (NW/4 NW/4) Unit D At proposed prod. zone		9. API WELL NO. 30-039-27674	
14. DISTANCE IN MILES AND DIRECTION FROM NEAREST TOWN OR POST OFFICE * 65 Miles East of Bloomfield, New Mexico		10. FIELD AND POOL, OR WILDCAT East Blanco Pictured Cliffs	
15. DISTANCE FROM PROPOSED * LOCATION TO NEAREST PROPERTY OR LEASE LINE, FT. 500' (Also to nearest drlg. unit line, if any)		11. SEC., T., R., M., OR BLK. AND SURVEY OR AREA Sec 4, T29N-R2W	
18. DISTANCE FROM PROPOSED LOCATION* TO NEAREST WELL, DRILLING, COMPLETED, OR APPLIED FOR, ON THIS LEASE, FT. 3000'		12. COUNTY OR PARISH Rio Arriba	
21. ELEVATIONS (SHOW WHETHER DF, RT, GR, Etc.) 4772'		13. STATE NM	
22. APPROX. DATE WORK WILL START			
23. PROPOSED CASING AND CEMENTING PROGRAM			
SIZE OF HOLE	GRADE, SIZE OF CASING	WEIGHT PER FOOT	SETTING DEPTH
12 1/4"	8 5/8"	24#	250'
7 7/8"	5 1/2"	15.5#	4000'
QUANTITY OF CEMENT			
175 sx circ. To surface			
900 sx to circ. To surface			

Mallon Oil Company proposes to drill to a depth sufficient to test the pictured cliffs formation. If productive, 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 I: Drilling Program
Exhibit II: Surface Use 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: 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.

SIGNED: Robert Blaylock TITLE: Engineering Manager DATE: 5/13/03

(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: 5/John Bristol Acting Assistant Field Manager TITLE: _____ DATE: MAR 24 2004

*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.

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 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

¹ API Number 30-039-27674	² Pool Code 72400	³ Pool Name East Blanco, Pictured Cliffs
⁴ Property Code 27470	⁵ Property Name JICARILLA 29-274 SJ	⁶ Well Number 2
⁷ GRID No. 013925	⁸ Operator Name MALLON OIL COMPANY	⁹ Elevation 7712'

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	4	29-N	2-W		1105'	NORTH	1085'	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 160			¹³ Joint or Infill		¹⁴ Consolidation Code		¹⁵ 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

¹⁶ FD. MARKED STONE LOT 4 1085' 1105'	EAST	5280' (R)	CALC'D CORNER	¹⁷ OPERATOR CERTIFICATION <i>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief</i> Signature _____ Robert Blaylock Printed Name Engineering Manager Title May 1, 2003 Date
	LOT 3	LOT 2	LOT 1	
5311.0' (M)	LAT. 36°45.5' N LONG. 107°03.2' W			¹⁸ SURVEYOR CERTIFICATION <i>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.</i> Date of Survey _____ Signature and Seal of Professional Surveyor 14827 Certificate Number
S 02-11-16 W				
CALC'D CORNER				

DRILLING PROGRAM

(Per Rule 320)

Mallon Oil Company

Lease: **Jicarilla 29-02-4 SJ No. 2**

1105' FNL and 1085' FWL (NW/NW) Unit D

Sec. 04, T29N- R-2W

Rio Arriba County, New Mexico

LEASE NUMBER: MDA 701-98-0013 Tract 4

1. Geologic name of surface formation: San Jose

2. Estimated tops of important geologic markers:

San Jose		Surface
Nacimiento	2633'	Sandstone,shales & siltstones
Ojo Alamo	3063'	Sandstone,shales & siltstones
Kirtland	3391'	Sandstone,shales & siltstones
Fruitland	3501'	Sandstone,shales & siltstones
Pictured Cliffs	3693'	Sandstone,shales & siltstones
Lewis	3805'	Sandstone,shales & siltstones
Total Depth	4000'	Sandstone,shales & siltstones

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

San Jose	1333'	Gas
Nacimiento	2633'	Gas
Ojo Alamo	3063'	Gas
Fruitland	3601'	Gas
Pictured Cliffs	3793'	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"	250'	8-5/8"	24 lb/ft, K55, ST&C
7-7/8"	4000'	5-1/2"	15.5 lb/ft, K55, LT&C

Cement program:

8-5/8" surface casing: Cemented to surface with 175 sks Class B, or Type III cement containing 2% CaCl₂, 0.25 lb/sk Cello Seal, slurry to be mixed at 15.6 lb/gal, yield 1.18 cu ft/sk. Circulate cement to surface. 100% excess.

5-1/2" production casing: 1170 sks 50/50 POZ, containing 6- 1/4 lb/sk Gilsonite, .3% 3% KCl mixed at 13.7 lb/gal, 1.26 cu ft/sk, 30% excess. Ci surface.

*Cement volume
does match
Form 3160-3*

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

The blowout preventor equipment (BOP) to be used on this well will consist of a double ram type preventor with a rating of 2000 PSIG working pressure. The unit will be hydraulically operated and the ram type preventor will be equipped with one set of blind rams and one set of pipe rams. The BOP will be nipped up on the 8 5/8" surface casing and in continuous use until production casing has been cemented or the well abandoned. The BOP, choke manifold, and accessory equipment will be tested to a pressure of 600 PSIG before drilling out of the surface casing. The pipe rams and blind 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 connected to the BOP stack below the bottom set of rams, as shown on Exhibit 1. The drilling spool in Exhibit 1 is optional depending on the drilling rig selected for this well. Other accessories to the BOP equipment will include a Kelly cock, floor safety valve, choke lines, and choke manifold with two chokes all with a minimum pressure rating of 2000 PSIG.

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.

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 or Air	± 8.5	30-33	NC
250' - TD	FW (Gel polymer)	± 9.0	32-35	10 - 20 cc

ack

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

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, GR, CNL - FDC, DLL, MSFL
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 1240' psig.

Jicarilla 29-02-4 SJ No. 2
 1105''FNL and 1085' FWL (NW/4 NW/4) Unit D
 Sec 24, T29N - R2W
 Rio Arriba, County, New Mexico
 MDA 701-98-0013 (Tract 4)

SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth:	4000'
Proposed Depth of Surface Casing:	250'
Estimated Pressure Gradient:	0.31 PSI/FT
Bottom Hole Pressure at	4000'
0.31 psi/ft x 4,000' =	1,240 psi
Hydrostatic Head of gas/oil mud:	0.22 psi/ft
0.22 psi/ft x 4000' =	880 psi

Maximum Design Surface Pressure

Bottom Hole Pressure	-	Hydrostatic Head	=	
(0.31 psi/ft x 4000')	-	(0.22 psi/ft x 4000')	=	
1,240 psi	-	880 psi	=	360psi

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	2530

Safety Factors:

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

Tension (Dry): 24 #/ft x 500 ' = 12,000#
 Safety Factor= $\frac{402,000}{12,000}$ # 33.50 ok

Burst: Safety Factor = $\frac{3,930}{405}$ psi = 9.70 ok

Collapse: Hydrostatic = 0.052 x 9.0 ppg x 500' = 234psi
 Safety Factor = 2,530 psi = 10.81 ok

Use 250' 8-5/8' 24# K-55 ST&C

Use 2000 psi minimum casinghead and BOP's

Centralizers

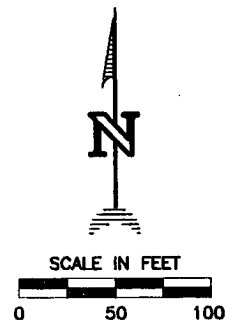
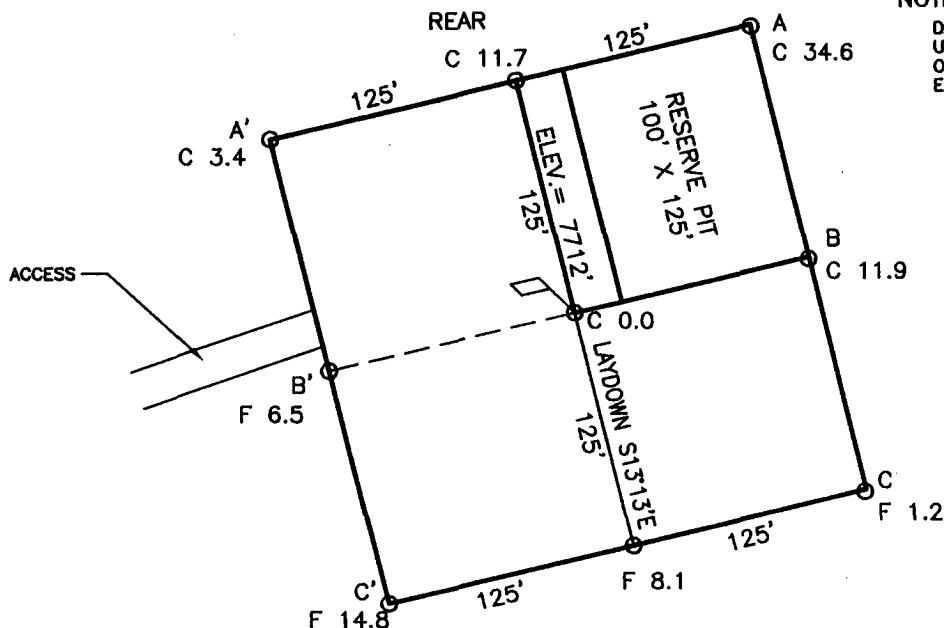
4 Total
 1 near surface at 80'
 1 10' up on bottom joint
 2 on the first, second, and third collar from bottom

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

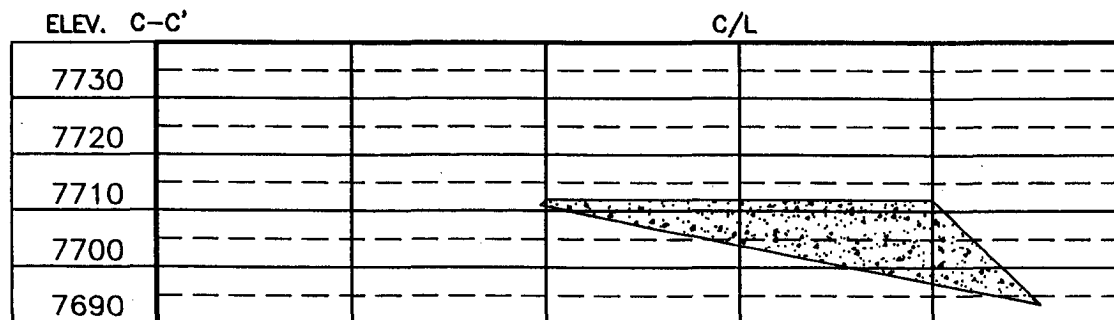
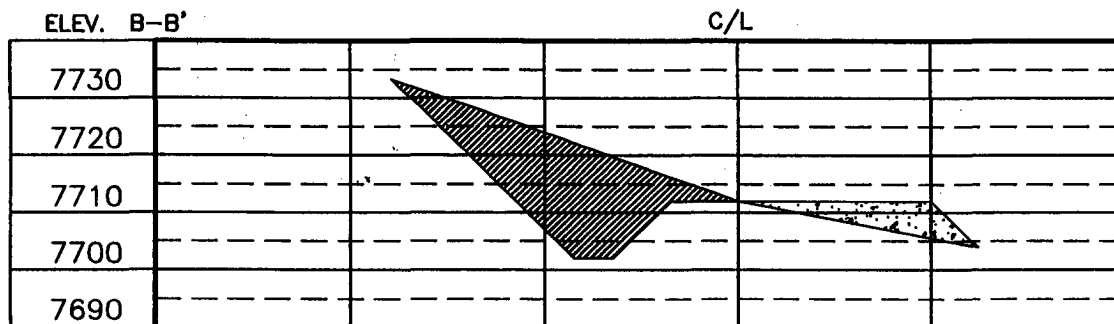
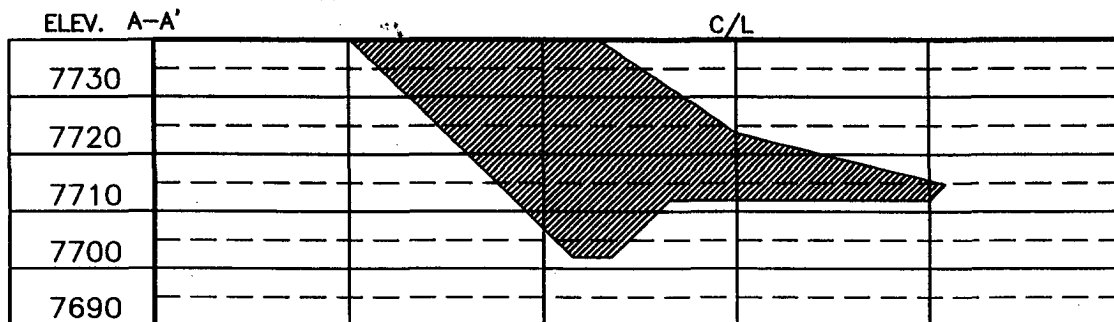
COMPANY: MALLON OIL COMPANY
 LEASE: JICARILLA 29-2-4 SJ #2
 FOOTAGE: 1105' FNL, 1085' FWL
 SEC.: 4, TWN: 29-N, RNG: 2-W, NMPM
 ELEVATION: 7712'

NOTE:

DAGGETT ENTERPRISES, INC. IS NOT LIABLE FOR
 UNDERGROUND UTILITIES OR PIPELINES. NEW MEXICO
 ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO
 EXCAVATION OR CONSTRUCTION.



REVISION:
 RESTAKE
 BY: B.L.
 DATE: 4/17/03



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