

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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

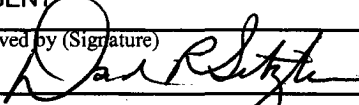
APPLICATION FOR PERMIT TO DRILL OR REENTER

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			
2. Name of Operator MALLON OIL COMPANY 13925		Contact: ART CHILDERS E-Mail: artchilder@bhep.com	
3a. Address 350 INDIANA STREET, SUITE 400 GOLDEN, CO 80401		3b. Phone No. (include area code) Ph: 505.382.9100	
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface SWNW 1800FNL 745FWL At proposed prod. zone SWNW 1800FNL 745FWL		5. Lease Serial No. CONTRACT 451	
14. Distance in miles and direction from nearest town or post office* 57 MILES EAST OF BLOOMFIELD, NM		6. If Indian, Allottee or Tribe Name JICARILLA APACHE	
15. Distance from proposed location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) 1800' FNL		7. If Unit or CA Agreement, Name and No.	
16. No. of Acres in Lease 2560.00		8. Lease Name and Well No. JIC 451-03 21	
17. Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft. 900' JICARILLA 451-03 #2		9. API Well No. 30-039-29267	
18. Proposed Depth 4000 MD		10. Field and Pool, or Exploratory EAST BLANCO/PICTURED CLIFFS	
19. Elevations (Show whether DF, KB, RT, GL, etc.) 7145 GL		11. Sec., T., R., M., or Blk. and Survey or Area Sec 3 T29N R3W Mer NMP SME: BIA	
20. Approximate date work will start 07/14/2004		12. County or Parish RIO ARRIBA ✓	
21. Estimated duration 45-60 DAYS		13. State NM	
22. Spacing Unit dedicated to this well 100.00 154.44 NW/4		23. BLM/BIA Bond No. on file 1318288	

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)	Name (Printed/Typed) KATHY L. SCHNEEBECK Ph: 303.820.4480	Date 06/14/2004
Title AGENT		
Approved by (Signature) 	Name (Printed/Typed)	Date SEP 30 2004
Title Assistant Field Manager	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.

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 #31854 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 06/15/2004 ()

\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\*

DISTRICT I  
1625 N. French Dr., Hobbs, N.M. 88240

DISTRICT II  
811 South First, Artesia, N.M. 88210

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

DISTRICT IV  
2040 South Pacheco, Santa Fe, NM 87505

State of New Mexico  
Energy, Minerals & Natural Resources Department

Form C-102  
Revised August 15, 2000

Submit to Appropriate District Office  
State Lease - 4 Copies  
Fee Lease - 3 Copies

OIL CONSERVATION DIVISION

2040 South Pacheco  
Santa Fe, NM 87505

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-039-29267</b>		Pool Code 72400	Pool Name Blanco/Pictured Cliffs
Property Code <b>24245</b>	Property Name JICARILLA 451-03		Well Number 21
OGRID No. 013925	Operator Name MALLON OIL CO.		Elevation 7145'

<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
E	3	29-N	3-W		1800	NORTH	745	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
Dedicated Acres <b>160 154.44</b>			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

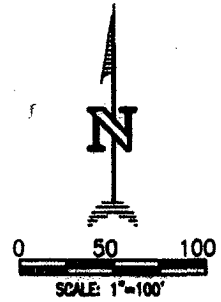
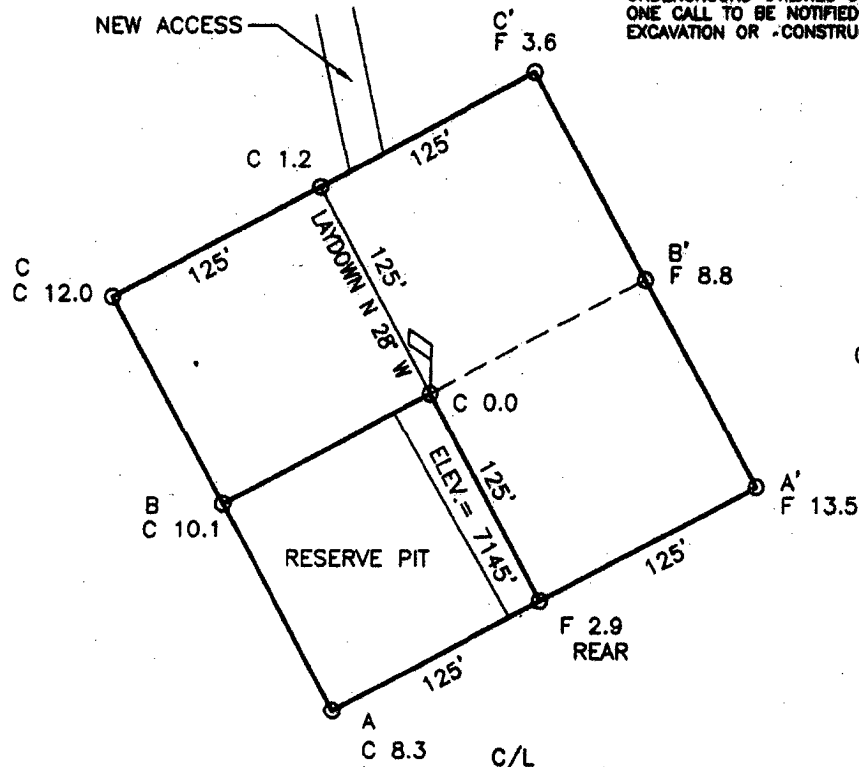
18

<p>LOT 4</p> <p>S 89-59-12 W 2608.25' (C)</p> <p>FD MARKED STONE</p> <p>N 89-34-24 E 211.26'</p> <p>CALC'D COR.</p> <p>LOT 3</p> <p>CLOSING COR. FD 2 1/2" BC GLO 1917</p> <p>1800'</p> <p>LOT 2</p> <p>CALC'D COR.</p> <p>S 89-25-12 W 2640.62' (C)</p> <p>LOT 1</p> <p>CALC'D COR.</p> <p>CLOSING COR. FD 2 1/2" BC GLO 1917</p> <p>FD MARKED STONE</p> <p>LAT.=36-45-22 N. (NAD 83) LONG.=107-08-41 W (NAD 83)</p> <p>745'</p> <p>S 00-04-51 W 5191.62' (M)</p> <p>FD. 2 1/2" BC 1917 GLO</p> <p>OCT 2004</p>	<p><sup>17</sup> OPERATOR CERTIFICATION</p> <p>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief.</p> <p><i>Kathy L. Schneebeck</i> Signature</p> <p>Kathy L. Schneebeck Printed Name</p> <p>Agent for Mallon Oil Company Title</p> <p>June 14, 2004 Date</p> <p><sup>18</sup> SURVEYOR CERTIFICATION</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 knowledge and belief.</p> <p><i>Michael Vukobratovich</i> Date of Survey Signature and Seal of Registered Professional Surveyor</p> <p>14831 Certificate Number</p>
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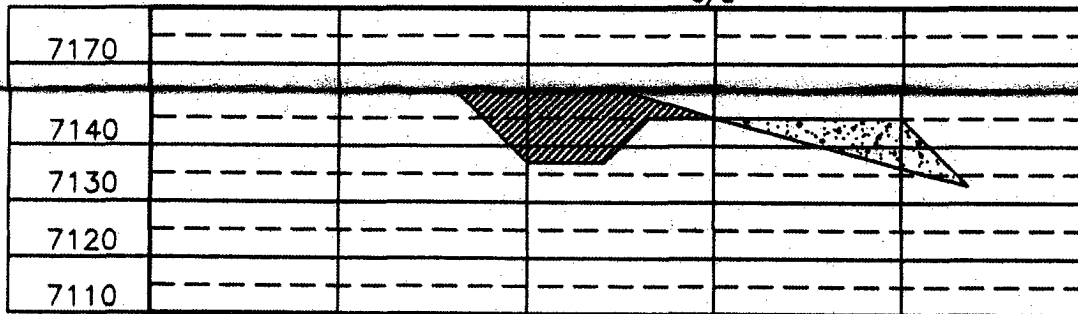
COMPANY: MALLON OIL COMPANY  
 LEASE: JICARILLA 451-03 No. 21  
 FOOTAGE: 1800' FNL, 745' FWL  
 SEC.: 3 TWN: 29-N RNG: 3-W NMPM  
 ELEVATION: 7145'

NOTE:

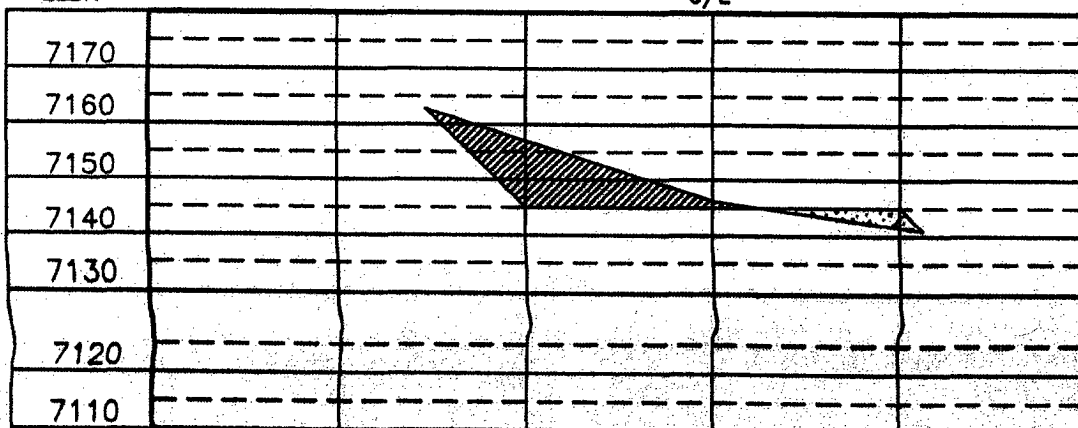
DAGGETT ENTERPRISES, INC. IS NOT LIABLE FOR  
 UNDERGROUND UTILITIES OR PIPELINES. NEW MEXICO  
 ONE CALL TO BE NOTIFIED 48 HOURS PRIOR TO  
 EXCAVATION OR CONSTRUCTION.



ELEV. A-A'



ELEV. C-C'



Daggett Enterprises, Inc.  
 Surveying and Oil Field Services  
 P. O. Box 15068 • Farmington, NM 87401  
 Phone (505) 326-1772 • Fax (505) 326-8019

NEW MEXICO L.S. No. 14831  
 SURVEY MAPS-4578  
 DATE: 03/30/04



Mallon Oil Company  
**Jicarilla 451-03 #21**  
1,800' FNL 745' FWL (SW/4 NW/4)  
Sec. 3 T29N R3W  
Rio Arriba County, New Mexico  
Lease: Contract 451

**CONFIDENTIAL**

**DRILLING PROGRAM**  
(Per Rule 320)

This Application for Permit to Drill (APD) was initiated under the NOS process as stated in Onshore Order No. 1 and supporting Bureau of Land Management (BLM) documents. This NOS process includes an onsite meeting which was held on May 6, 2004 as determined by Bureau of Land Management (BLM), Bureau of Indian Affairs (BIA) and Jicarilla Oil & Gas Administration (JOGA), and at which time the specific concerns of Mallon Oil Company (Mallon), BLM, BIA and JOGA were discussed.

**MALLON RESPECTFULLY REQUESTS THAT ALL INFORMATION REGARDING THIS WELL BE KEPT CONFIDENTIAL.**

SURFACE FORMATION – San Jose

GROUND ELEVATION – 7,145'

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

San Jose	Surface	Sandstone, shales & siltstones
Nacimiento	1,977'	Sandstone, shales & siltstones
Ojo Alamo	3,185'	Sandstone, shales & siltstones
Fruitland	3,611'	Sandstone, shales & siltstones
Pictured Cliffs	3,700'	Sandstone, shales & siltstones
Lewis	3,808'	Sandstone, shales & siltstones

**TOTAL DEPTH**                4,000'

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

Tertiary

San Jose	surface	Gas
Nacimiento	1,977'	Gas
Ojo Alamo	3,185'	Gas
Fruitland	3,611'	Gas
Pictured Cliffs	3,700'	Gas

**CASING PROGRAM**

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement
0' – 250'	12-1/4"	8-5/8"	J-55 24# ST&C New	To surface (±175 sxs Class B)
0' – T.D.	7-7/8"	5-1/2"	J-55 15.5# LT&C New	TD to surface (±630 sxs lite or 65:35 poz and ±270 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**

BOPs 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 1,000 psi. Annular type preventor will be pressure tested to 50% of the rated working pressure, not to exceed 1,000 psi. All casing strings will be pressure tested to 0.22 psi/ft. or 1,000 psi, whichever is greater, not to exceed 70% of internal yield.

BOP to be either double gate rams or an annular preventor as per Onshore Order No. 2.

**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 2M 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' - 250' Fresh water – M.W. 8.5 ppg, Vis 30-33  
 250' - TD Fresh water - 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) A Kelly cock will be kept in the drill string at all times
- B) Inside BOP or stab-in valve (available on rig floor)
- C) Mud monitoring will be visually observed

LOGGING, CORING, TESTING PROGRAM

- A) Logging: DIL- CNL-FDC-GR - TD - BSC (GR to surface)  
Sonic (BSC to TD)
- 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: None is anticipated.
- D) Estimated bottomhole pressure: 1,240 psi

ANTICIPATED START DATE

July 14, 2004

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 451-03 #21  
 1,800' FNL 745' FWL ( SW /4 NW /4)  
 Sec. 3 T T29N R R3W  
 Rio Arriba County, NM  
 Contract 451

### SURFACE CASING AND CENTRALIZER DESIGN

Proposed Total Depth: 4,000 '  
 Proposed Depth of Surface Casing 250 '  
 Estimated Pressure Gradient: 0.31 psi/ft  
 Bottom Hole Pressure at 4,000 '  
     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 4,000 ' = 880 psi

#### Maximum Design Surface Pressure

Bottom Hole Pressure      -      Hydrostatic Head      =  
 ( 0.31 psi/ft x 4,000 ' ) - ( 0.22 psi/ft x 4,000 ' ) =  
     1,240      psi      -      880      psi      =      360 psi

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

Wt.	Tension (lbs)	Burst (psi)	Collapse (psi)
24 #	244,000	2,950	1,370
32 #	372,000	3,930	2,530

#### Safety Factors

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

Tension (Dry):      24 # / ft x      250 ' =      6,000 #  
     Safety Factor =       $\frac{244,000}{6,000}$  =      40.67      ok

Burst:      Safety Factor =       $\frac{2,950 \text{ psi}}{360 \text{ psi}}$  =      8.19      ok

Collapse:      Hydrostatic = 0.052 x 9.0 ppg x      250 ' =      117 psi  
     Safety Factor =       $\frac{1,370 \text{ psi}}{117 \text{ psi}}$  =      11.71      ok

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

Use 2,000 psi minimum casinghead and BOP's

#### Centralizers

8 Total  
 1 near surface at 160'  
 3 middle of bottom joint, second joint, third joint  
 4 every other joint ±80'

Total centralized ± 440 ' ( -190 ' - 250 ' )

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

ANNULAR PREVENTOR MAY BE SUBSTITUTED FOR DOUBLE GATE PREVENTORS  
BOP PRESSURE TEST TO 1,000 PSI

