Form 3160-3 (August 1999)

FORM APPROVED OMB No. 1004-0136

UNITED STA		Expires November	r 30, 2000
DEPARTMENT OF TH BUREAU OF LAND MA		5. Lease Serial No. JICARILLA 459	γ
APPLICATION FOR PERMIT TO	D DRILL OR REENTER	6. If Indian, Allottee or Tribe JICARILLA APACHE	Name
la. Type of Work:  DRILL  REENTER	CONFIDENTIAL	7. If Unit or CA Agreement, 1	Name and No.
	Single Zone ☐ Multiple Zone	8. Lease Name and Well No. JIC 459-18 15	<del></del>
MALLON OIL COMPANY 13475 E-	ON ERICKSON Mail: dmerickson@aol.com	9. API Well No. 30-039-2	7777
PO BOX 2797	3b. Phone No. (include area code) Ph: 303.293.2333 Fx: 303.293.3601	10. Field and Pool, or Explora E BLANCO/PICTURE	
4. Location of Well (Report location clearly and in accordance	e with any State requirements.*)	11. Sec., T., R., M., or Blk. ar	nd Survey or Area
At surface NENE 330FNL 1090FEL		A_Sec 18 T30N R3W Ma	er NMP
At proposed prod. zone NENE 330FNL 1090FEL	TO THE PARTY OF TH	7	
<ol> <li>Distance in miles and direction from nearest town or post off</li> <li>MILES EAST OF BLOOMFIELD, NM</li> </ol>	fice*	12. County or Parish RIO ARRIBA	13. State NM
lease line, ft. (Also to nearest drig. unit line, if any) 330 FEET	16. No. of Acres in Lease JUN 2004 2267.00	17. Spacing Unit dedicated to	this well
<ol> <li>Distance from proposed location to nearest well, drilling, completed, applied for, on this lease, ft.</li> <li>1,450 FEET</li> </ol>	19. Proposed Depth	220. BLM/BIA Bond No. on f 1318288	ile
21. Elevations (Show whether DF, KB, RT, GL, etc. 7025 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 t	his form:	:
<ol> <li>Well plat certified by a registered surveyor.</li> <li>A Drilling Plan.</li> <li>A Surface Use Plan (if the location is on National Forest Syster SUPO shall be filed with the appropriate Forest Service Office</li> </ol>	Item 20 above).  The Lands, the State of the Lands, the State of the Lands, the State of the Lands of the Lan	ns unless covered by an existing ormation and/or plans as may be	,
25. Signature (Electronic Submission) Kethy & Schnebuk	Name (Printed/Typed) KATHY L. SCHNEEBECK Ph: 303.820.	4480	Date 06/04/2002
Title AGENT			
Approved by (Signature)  /s/ David R. Sitzler	Name (Printed/Typed)		Date <b>JUN 1</b> 6 2004
Assistant Field Manager	Office		
Application approval does not warrant or certify the applicant hole operations thereon.  Conditions of approval, if any, are attached.	ds legal or equitable title to those rights in the subject le	ase which would entitle the app	licant to conduct
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, m States any false, fictitious or fraudulent statements or representation	ake it a crime for any person knowingly and willfully to	make to any department or age	ency of the United

Additional Operator Remarks (see next page)

Electronic Submission #11669 verified by the BLM Well Information System For MALLON OIL COMPANY, sent to the Rio Puerco

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

DISTRICT 1. P.O., Eox 1980, Hobbs, N.M. 88241-1980

#### State of New Mexico Energy, Minerals & Natural Resources Department

Form C-102
Revised February 21, 1994
Instructions on back
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DESTRICT II
P.O. Drawer DD. Artesia, N.M. 88211-0719
PISTRICT III
1000 Rio Brazos Rd., Axteo, N.M. 87410

OIL CONSERVATION DIVISION
P.O. Box 2088
Santa Fe, NM 87504-2088

☐ AMENDED REPORT

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

Projects Code   Projects   Projects   Projects   Projects   Code   Projects				VELL L	OCATION	N AND ACE	REAC	E DEDIC	CATI	ON PL	AT		
**Property Data**		A = "A" = = A(A)											
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#### Mallon Oil Company Jicarilla 459-18 #15

330' FNL 1,090' FEL (NE/4 NE/4)

Sec. 18 T30N R3W

Rio Arriba County, New Mexico

Lease: Jicarilla 459

# DRILLING PROGRAM (Per Rule 320)

#### SURFACE FORMATION - Upper San Jose

#### **GROUND ELEVATION** -7,025'

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

Lower San Jose	1,418'	Sandstone, shales & siltstones
Nacimiento	1,870'	Sandstone, shales & siltstones
Ojo Alamo	3,078	Sandstone, shales & siltstones
Kirtland	3,313'	Sandstone, shales & siltstones
Fruitland	3,504'	Sandstone, shales & siltstones
Pictured Cliffs	3,592'	Sandstone, shales & siltstones
Lewis	3,7012	Sandstone, shales & siltstones
Mesa Verde	5,734	Sandstone, shales & siltstones
Mancos	6,038	Sandstone, shales & siltstones

Mancos 6,038 Sano

Sandstone, shales & siltstones

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

Cretaceous

Total Depth

Mesa Verde

5,758'

Gas

Mancos

6,062

Gas

**TOTAL DEPTH** 

7,000'

#### **CASING PROGRAM**

Depth	Hole Diameter	Casing Diameter	Casing Weight and Grade	Cement W 100 % - CX	cess
0'-500'	12-1/4"	8-5/8"	K-55 24# ST&C New	To surface (±300 sxs Class B)	
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 *	

<sup>\*</sup> Actual cement volume to be determined by caliper log.

Yields:

Class B yield =  $1.18 \text{ ft}^3/\text{sx}$ 

 $65:35 \text{ Poz yield} = 1.62 \text{ ft}^3/\text{sx}$ 

 $50:50 \text{ Poz yield} = 1.26 \text{ ft}^3/\text{sx}$ 

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 459-18 #15

330' FNL 1,090' FEL

NE /4 NE /4

Sec. 18 T 30N

R 3W

Rio Arriba County, New Mexico

Lease: Jicarilla 459

#### 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

# 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): 
$$28 \# / \text{ ft } x = 500 \text{ } = 14,000 \#$$
  
Safety Factor =  $402,000 \# = 28.71 \text{ ok}$ 

Burst: Safety Factor = 
$$3,930$$
 psi = 6.24 ok

Collapse: Hydrostatic = 
$$0.052 \times 9.0 \text{ ppg } \times 500 \text{ '} = 234 \text{ psi}$$

$$Safety Factor = \underbrace{2,530 \text{ psi}}_{234 \text{ psi}} = 10.81 \text{ ok}$$

# Use 2,000 psi minimum casinghead and BOP's

#### Centralizers 4 Total

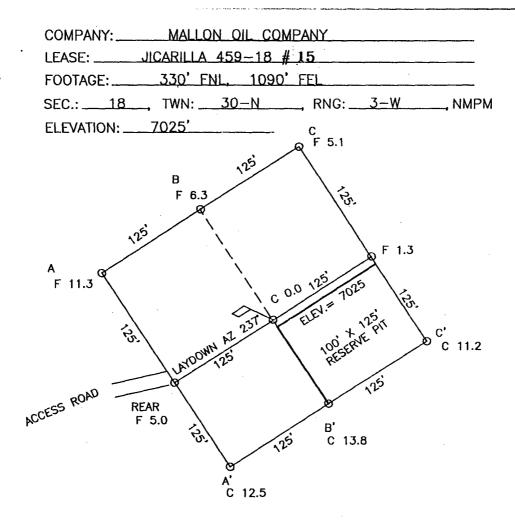
1 near surface at 80'

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-IN SYSTEM



ELEV. A-	A*	 C/	<u>L</u>	
7250		 		
7240		 		
7230		 		[]]]]
7220		 		Z
		4.7.18.7.18		

# 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 (H2S).
- 2. The proper use and maintenance of personal protective equipment and life support systems.
- 3. The proper use of H<sub>2</sub>S 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<sub>2</sub>S 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<sub>2</sub>S 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<sub>2</sub>S Safety Equipment and Systems

Note: All H<sub>2</sub>S 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<sub>2</sub>S.

- 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.
  - 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:

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.
- 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:

 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:

- 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:

 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.