# **OCD-ARTESIA**

Form 3160-3 (April 2004) Month - Year MAR - 5 2007 OCD - ARTESIA, NIM

# UNITED STATES DEPARTMENT OF THE INTERIOR BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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FORM APPROVED OMB No. 1004-0137 Expires March 31, 2007

	5.	Lease Serial No.	1'	٦.	,5	6	Ç
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6. If Indian, Allotee or Tribe Name

la. Type of work: X DRILL REENTER		7 If Unit or CA	Agreement, Name and No.
lb. Type of Well: Oil Well X Gas Well Other	Single Zone Multip	8. Lease Name a Stiletto	nd Well No. 3635 22 Fed Comm #1
2. Name of Operator		API Well No.	1-
Echo Production, Inc. 067	42	)0 - (	015-35405
3a. Address 3b.	Phone No. (include area code)	10. Field and Pool,	or Exploratory
PO Box 1210, Graham, TX 76450 (	940) 549-3292	Cemetary	; Morrow
4. Location of Well (Report location clearly and in accordance with any Sta	ate requirements.*)	11. Sec., T. R. M. (	or Blk. and Survey or Area
Atsurface 1060' FWL & 1920' FSL		Sec 22	T20S R25E
At proposed prod. zone			
14. Distance in miles and direction from nearest town or post office*		12. County or Pari	sh 13. State
13 miles NW of Carlsbad, NM		Eddy	NM
15. Distance from proposed*	5. No. of acres in lease	17. Spacing Unit dedicated to t	his well
location to nearest property or lease line, ft. 1060	220	320	
(Also to nearest drig. unit line, if any)	320		<u> </u>
	9. Proposed Depth	20. BLM/BIA Bond No. on file	•
to nearest well, drilling, completed, applied for, on this lease, ft.			
only well on lease	10,150	NM2692	
	Approximate date work will star	rt* 23. Estimated dur	anon
3468 GR	2-15-06	4 w	eeks
. 2	24. Attachments	* * * * * * * * * * * * * * * * * * *	
The following, completed in accordance with the requirements of Onshore O	il and Gas Order No.1, shall be a	ttached to this form:	
Well plat certified by a registered surveyor.     A Drilling Plan.	4. Bond to cover the litem 20 above).	he operations unless covered by	an existing bond on file (see
<ol> <li>A Surface Use Plan (if the location is on National Forest System Lan SUPO shall be filed with the appropriate Forest Service Office).</li> </ol>		specific information and/or plan	s as may be required by the
25. Signature	Name (Printed/Typed)		Date
Kan Seliamen	K	en Seligman	12/18/06
Title <b>/</b> Engineer			
Approved by (Signature) /s/ James Stovall	Name (Printed Typed)	Stovall	Date FEB 2 7 2007
ACTING FIELD MANAGER	Office CARLS	SBAD FIELD	ÖFFICE
Application approval does not warrant or certify that the applicant holds le conduct operations thereon. Conditions of approval, if any, are attached.	gal or equitable title to those righ		uld entitle the applicant to
Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime States any false, fictitious or fraudulent statements or representations as to an	for any person knowingly and the matter within its jurisdiction.	villfully to make to any departme	ent or agency of the United

\*(Instructions on page 2)

Roswell Controlled Water Basin

If earthen pits are used in association with the drilling of this well, an OCD pit permit must be obtained prior to pit construction.

SEE ATTACHED FOR CONDITIONS OF APPROVAL

# Witness Surface Casing

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED /



DISTRICT I 1625 N. French Dr., Hobbs, NM 88240 DISTRICT II

1301 W. Grand Avenue, Artesia, NM 88210

DISTRICT III

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102 Revised October 12, 2005

Submit to Appropriate District Office

# OIL CONSERVATION DIVISION 1220 South St. Francis Dr.

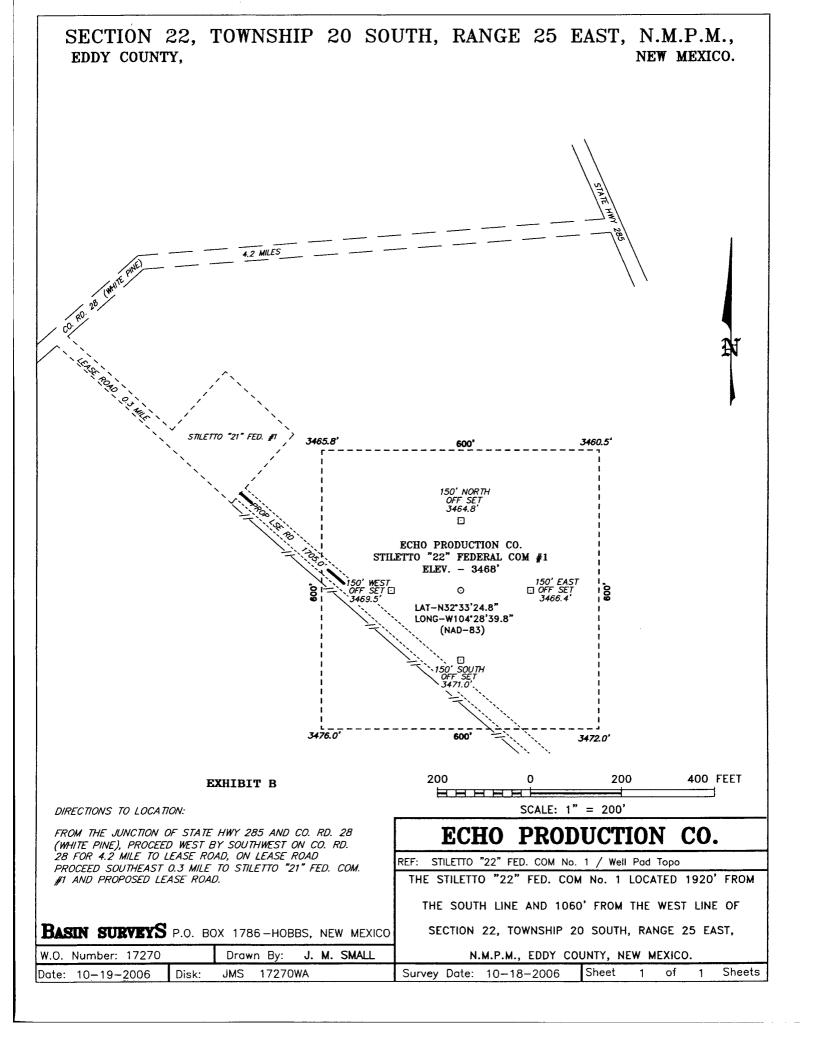
Santa Fe, New Mexico 87505

☐ AMENDED REPORT

State Lease - 4 Copies Fee Lease - 3 Copies

1000 Rio Brazos Rd., Aztec, NM 67410 DISTRICT IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT										
API Number			Pool Code Pool			Pool Name	Pool Name			
	74640 Cemetary; Morrow (Gas)									
Property	Property Code			כדוו ריד	Property Na			Well N	Well Number	
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# HOLE PROGNOSIS FORM 3160-3 APPLICATION FOR PERMIT TO DRILL ECHO PRODUCTION, INC. STILETTO '22' FEDERAL COMM. #1 1920' FSL & 1060' FWL SECTION 22-20S-25E EDDY COUNTY, NEW MEXICO

In conjunction with Form 3160-3 Application for Permit to Drill, Echo Production, Inc. submits the following items in accordance with Onshore Oil and Gas Order Numbers 1 and 2, and all other applicable federal and state regulations.

# 1. Geological Name of Surface Formation:

Permian

# 2. Estimated Tops of Geologic Markers:

San Andres	850'	Strawn	8200'
Glorieta	2460'	Atoka	9000,
Bone Spring	3350'	Morrow	9250'
3 <sup>rd</sup> Bone Spring Sand	6400'	Barnett	9650'
Wolfcamp	6750'		
Cisco Lime	7700'		

# 3. Estimated Depths of Anticipated Fresh Water, Oil or Gas:

Surface	100'	Fresh Water
Glorieta	2460'	Oil or Gas
Wolfcamp	6750'	Oil or Gas
Cisco Lime	7700'	Oil or Gas
Atoka	9000'	Oil or Gas
Morrow	9250'	Oil or 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 360' and circulating cement back to surface. Any shallower zones above TD that contain commercial quantities of oil and/or gas will have cement circulated across the zone.

# HOLE PROGNOSIS STILETTO '22' FEDERAL COMM. #1 PAGE 2

# 4. Casing Program:

Hole Size	<u>Interval</u>	OD Csg	Weight, Grade, JT. Cond, Type
12 ¼"	0-1400'	8 5/8"	32# J-55 LT&C
7 7/8"	1400'-TD	5 ½"	17# N-80

# 5. Cementing Program:

COA -

Surface Casing: 8 5/8" casing will be set at approximately 1400' and

cemented with approximately 800 sacks of 35/65 Poz "c" with additives and 200 sx of Cls C. The amount may be adjusted dependent upon fluid caliper results, however, cement in sufficient quantities to circulate

will be utilized.

Production Casing: If appropriate, 5 ½" casing will be set at Total Depth.

Echo will utilize cement in sufficient quantities to bring

cement back to intermediate string. Well will be cemented w/appropriate number of sacks of 50/50 POZ 'H' w/ additives and 200 sacks of 'C' Neat.

# 6. Minimum Specifications for Pressure Control:

The blowout preventer equipment (BOP) show in Exhibit "A" will consist of a double ram-type (5000 psi WP) preventer and a bag-type (hydril) preventer (5000 psi WP). Both units will be hydraulically operated and the ram-type preventer will be equipped with blind rams on top and 5 ½" drill pipe rams on bottom. Both BOP's will be nippled up on the 8 5/8" surface casing and used continuously until TD is reached. All BOP's and accessory equipment will be tested to 1000 psi before drilling out of surface casing. Before drilling out of intermediate casing, the ram-type BOP and accessory equipment will be tested to 5000 psi and the hydril to 70% of rated working pressure (2100 psi).

# HOLE PROGNOSIS STILETTO '22' FEDERAL COMM. #1 PAGE 3

# 7. Types and Characteristics of the Proposed Mud System:

O' to 1400' Fresh water with lime, gel paper and fiber will be used for

drilling purposes. MW 8.7 - 9.2, Vis 29-36, pH > 8.

1400' to 6000' Fresh water with lime, gel, and paper. Caustic to adjust pH.

Sweep hole w/ MF-55. MW 8.4-8.7, Vis 28, WL - NC, pH

>10, Chlorides 5-35k ppm.

6000' to 8000' Same as above, continuing to circulate reserve. Begin brine

additions to increase MW 9-9.3 lb/gal. Sweep hole

w/bentonite pills. MW 9.0-9.3 ppg, Vis 28, WL – NC, pH 10,

Chlorides 70-90k ppm.

8000 to 10150' Cut brine to brine mud. Return to steel pits and pre-treat w/

biocide. Use starch to control water loss (WL) and polymer for WL and viscosity. Increase MW up to 10.0 w/ brine and Barite if needed above 10.0 ppg. Use Mica for seepage control. MW 9.3-10.0 ppg, Vis 28-32, WL 10-6cc, pH 10.0,

Chlorides 70-140k ppm.

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be available at the well site at all times.

# 8. 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.

# 9. Testing, Logging and Coring Program:

A Mudlogging unit will be on location from the top of the Wolfcamp.

If indicated, AIT-GR, CNL-LDT-GR logs and Caliper logs will be run at TD. The Gamma Ray AIT will be run from TD back to the intermediate casing. The Gamma Ray Compensated Neutron Log will be run from TD back to surface.

HOLE PROGNOSIS STILETTO '22' FEDERAL COMM. #1 PAGE 4

# 10. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. Anticipated bottomhole pressure is 4300# PSI.

Loss of circulation is possible in the upper section of the hole, and possible total losses in surface section of the hole, no other major loss circulation zones have been reported in offsetting wells.

From previous drilling in the area, Hydrogen Sulfide is not expected. Hydrogen Sulfide training will be provided and appropriate breathing apparatus is located on site. If necessary, the well can be shut in utilizing the blow out preventer and other equipment to prevent the migration of Hydrogen Sulfide to the surface.

# 11. Anticipated Starting Date and Duration of Operations:

Road and location work will not begin until approval has been received from the BLM. The anticipated spud date is August 1, 2005. Once commenced, the drilling operation will be completed in approximately 21 days. If the well is productive, an additional 15 days will be required for completion and testing before a decision is made to install permanent facilities. In conjunction with Form 3160-3, Application for Permit to Drill, Echo Production, Inc submits the following items in accordance with Onshore Oil and Gas Order Numbers 1 and 2, and all other applicable federal and state regulations.

# EXHIBIT "A"

# EQUIPMENT DESCRIPTION - See #6 in

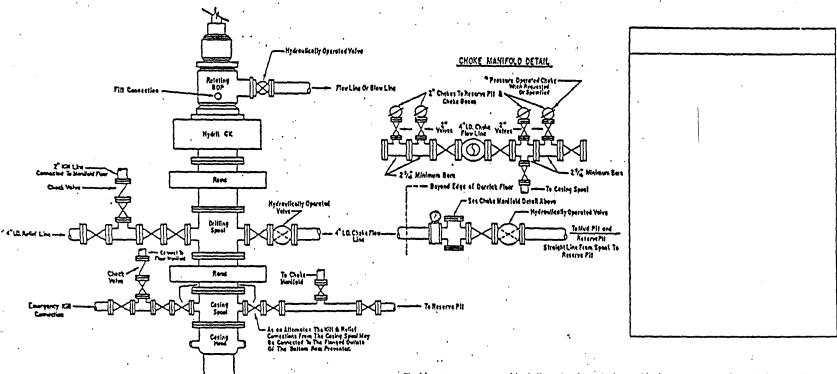
drilling prognosis

All equipment should be at least 3,000 psi WP or higher unless otherwise specified.

- Bell nipple 1.
- Hydril bag type preventer 2.
- Ram type pressure operated blowout preventer with blind rams. 3.
- Flanged spool with one 3"and one 2"(minimum) outlet. 4.
- 2"(minimum) flanged plug or gate valve. 5.
- 2"x 2"x 2"(minimum) flanged. 6.
- 3"gate valve. 7.
- Ram type pressure operated blowout preventer with pipe rams. 8.
- Flanged type casing head with one side outlet. 9.
- 2" threaded (or flanged) plug or gate valve. 10. Flanged on 5000# WP. threaded on 3000# WP or less.
- 3" flanged spacer spool. 11.
- 3"x 2"x 2"x 2" flanged cross. 12.
- 2" flanged plug or gate valve. 13.
- 2" flanged adjustable choke. 14.
- 2" threaded flange. 15.
- 2" XXH nipple. 16.
- 2" forged steel 90 Ell. 17.
- 18. Cameron (or equal) threaded pressure gauge.
- 19. Threaded flange.
- 2" flanged tee. .0S
- 2" flanged plug or gate valve. 21.
- 22. 2 1/2" pipe, 300' to pit, anchored.
- 2 1/2" SE valve. 23.
- 2 1/2" line to steel pit or separator. 24.

# NOTES:

- Items 3,4 and 8 may be replaced with double ram type preventer with side outlets between the rams.
- The two valves next tho the stack on the fill and kill line to be closed unless drill string is being pulled.
- 3). Kill line is for emergency use only. This connection shall not be used for filling.
- 4). Replacement pipe rams and blind rams shall be on location at all
- 5). Only type U, LSW and QRC ram type preventers with secondary seals are acceptable for 5000 psi WP and higher BOP stacks.
- Type E ram-type BOP's with factory modified side outlets may be 6). used on 3000 psi or lower WP BOP stacks.



The blowout preventer assembly shell consist of one single type blind rom preventer and one single type pipe rom preventer, both hydroulically operated; a Hydril "OK" preventer; a rotating blowut preventer; valves; chokes and connections, as illustrated. If a topared drill string is used, a rom preventer must be provided for each size of drill pipe. Casing and tubing roms to fit the preventers are to be available as needed. If correct in size, the linged outlets of the rom preventer may be used for connecting to the 4-Inch 1.D. choke flow line and 4-inch 1.D. reliaf line, except when oir or gas drilling. All preventer connections are to be open-face. Ilanged.

Minimum operating equipment for the preventers and hydraulically aperated valves shall be as follows: (1) Haultipla pumps, driven by a continuous source of power, copoble of fluid charging the total accumulator valume from the nitragen pracharge pressure to its rated pressure within \_\_\_\_\_ minutes. Also, the pumps are to be connected to the

hydraulic operating system which is to be a closed system. (2) Accumulators with a precharge of nitrogen of not less than 750 PSI and connected so as to receive the aforementioned fluid charge. With the charging pumps shul down, the pressure-aperated devices simultaneously within \_\_\_\_\_\_\_ seconds; after closure, the remaining accumulator pressure-aperated devices simultaneously within \_\_\_\_\_\_ seconds; after closure, the remaining accumulator pressure shall be not less than 1000 PSI with the remaining accumulator fluid volume at least \_\_\_\_\_\_ percent of the original. (2) When requested, an additional source of power, remain and equivalent, is to be evalidate to operate the above pumps; or there shall be additional pumps operated by separate power and equal in performance copabilities.

The closing menifold and remote closing manifold shall have a separate control for each pressure-operated device. Controls are to be lobeled, with control handles incleasing open and closed positions.

A pressure reducer and regulator must be provided for operating the Hydril preventer. When requested, a second pressure reducer shall be available to limit exercting fluid pressures to rom preventen.

Guil Legion No. 38 hydraulic all, an equivalent or batter, is to be used as the fluid to operate the hydraulic equipment.

The chake mentiold, where flow line, relief line, and chake lines are to be supported by motal stands and adequately anchored. The chake flow line, relief line, and chake lines shall be constructed as straight as possible and without sharp bonds. Easy and safe access is to be maintained to the chake manifold. If deemed necessary, walkways and stainways shall be excited in and account the chake manifold. All valves are to be selected for operation in the presence of all, gas, and drilling fluids. The chake flow line valves and relief line valves connected to the drilling spool and all rom type preventers must be equipped with stam extensions, universal joints if needed, and hand wheels which are to extend beyond the edge of the derrick substructure. All other valves are to be equipped with handless.

3000 # PSI WORKING PRESSURE

BLOWOUT PREVENTER HOOK-UP

# **Conditions of Approval**

# **Cave and Karst**

EA#: NM-080-07-0281 Lease # NM-116566 Echo Production, Inc. Stiletto 22 Fed. Com. #1

# **Cave/Karst Surface Mitigation**

The following stipulations will be applied to minimize impacts during construction, drilling and production.

# Berming:

Any tank batteries will be constructed and bermed large enough to contain any spills that may occur.

Bermed areas will be lined with rip-stop padding to prevent tears or punctures in liners and lined with a permanent 20 mil plastic liner.

# **Closed Mud System with Buried Cuttings Pit:**

All fluids will be in steel tanks and hauled off. A 120 X 120 foot cuttings pit will be utilized for this location. The cuttings pit will be lined with 4 oz. felt and a layer of 20 mil. plastic. Upon completion of the well all excess fluids will be vacuumed off the cuttings pit and allowed to dry. The pit liner will then be folded over the cuttings, covered with a 20 mil plastic cover and then covered with at least three feet of top soil.

# Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

# **Rotary Drilling with Fresh Water:**

Rotary drilling techniques in cave or karst areas will include the use of fresh water as a circulating medium in zones where caves or karst features are expected. See geologist report for depth.

# Casing:

All casing will meet or exceed National Association of Corrosion Engineers specifications pertaining to the geology of the location and be run to American Petroleum Institute and BLM standards.

# Cementing:

All casing strings will be cemented to the surface.

# **Lost Circulation:**

ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported.

Regardless of the type of drilling machinery used, if a bit drops of four feet or more and circulation losses greater then 75 percent occur simultaneously while drilling in any cavebearing zone, drilling operations will immediately stop and the BLM will be notified by the operator. The BLM will assess the consequences of the situation and work with operator on corrective actions to resolve the problem.

# **Delayed Blasting:**

Any blasting will be a phased and time delayed.

# **Abandonment Cementing:**

Upon well abandonment the well bore will be cemented completely from 100 feet below the bottom of the cave bearing zone to the surface.

# **Pressure Tests:**

Annual pressure tests will be performed by the Operator on all casing annuli. If the test results indicated a casing failure, remedial actions approved by the BLM will be undertaken to correct the problem.

# **Record Keeping:**

The Operator will track customary drilling activities, including the rate of penetration, pump pressure, weight on bit, bit drops, percent of mud returns, and presence of absence of cuttings returning to the surface. As part of customary record keeping, each detectable void or sudden increase in the rate of penetration not attributable to a change in the formation type should be documented and evaluated as it is encountered.

### CONDITIONS OF APPROVAL - DRILLING

Well Name & No. Operator's Name: 1-Stiletto 22 Fed Com Echo Production, Inc.

Location:

1060FWL, 1920FEL, Section 22, T-20-S, R-25-E

Lease:

NM-116566

# **I. DRILLING OPERATIONS REQUIREMENTS:**

- 1. The Bureau of Land Management (BLM) is to be notified at the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (505) 361-2822 (After hours) for wells in Eddy County, in sufficient time for a representative to witness:
- A. Spudding
- B. Cementing casing: 8-5/8 inch 5-1/2 inch
- C. BOP tests
- 2. Although Hydrogen Sulfide has not been detected in this section, it is always a possible hazard. It has been reported in Sec. 5 from the Dagger Draw Upper Penn pool on the order of 2000 ppm in the gas stream. It is the only measured value in the entire township.
- 3 Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval.
- 4. Submit a Sundry Notice (Form 3160-5, one original and four copies) for each casing string, describing the casing and cementing operations. Include pertinent information such as; spud date, hole size, casing ( size, weight, grade and thread type), cement (type, quantity and top), water zones and problems or hazards encountered. The Sundry shall be submitted within 15 days of completion of each casing string. The reports may be combined into the same Sundry if they fall within the same 15 day time frame.
- 5. The API No. assigned to the well by NMOCD shall be included on the subsequent report of setting the first casing string.
- 6. A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales.
- 7. Gamma-Ray/Neutron logs shall be run from the base of the Salado Formation to the surface; cable speed not to exceed 30 feet per minute.

# II. CASING:

NB! A 20" conductor casing will be set, which will enable running a 13-3/8" casing string if problems are encountered while drilling the 8-5/8" casing string hole. See alternate casing program (Item V.) at end of these conditions.

1. The <u>8-5/8</u> inch surface casing shall be set at <u>approximately 1400 feet</u>, below usable water and cement circulated to the surface. If cement does not circulate to the surface the appropriate BLM office shall be notified and a temperature survey or cement bond log shall be run to verify the top of the cement. Remedial cementing shall be completed prior to drilling out that string.

Possible lost circulation in the San Andres, Wolfcamp, and Strawn formations.

Although unusual for the area, the Pennsylvanian age rocks may be over pressured.

2. The minimum required fill of cement behind the <u>5-1/2</u> inch production casing is <u>cement to circulate to</u> surface due to high cave/karst area.

# III. PRESSURE CONTROL:

- 1. All BOP systems and related equipment shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2. The BOP and related equipment shall be installed and operational before drilling below the <u>8-5/8</u> inch casing shoe and shall be tested as described in Onshore Order No. 2. Any equipment failing to test satisfactorily shall be repaired or replaced.
- 2. Minimum working pressure of the blowout preventer and related equipment (BOPE) required for drilling below the **8-5/8** inch casing shall be **5M** psi.
- 3. The appropriate BLM office shall be notified in sufficient time for a representative to witness the tests.
- The tests shall be done by an independent service company.
- The results of the test shall be reported to the appropriate BLM office.
- Testing fluid must be water or an appropriate clear liquid suitable for sub-freezing temperatures. Use of drilling mud for testing is not permitted since it can mask small leaks.
- Testing must be done in a safe workman-like manner. Hard line connections shall be required.
- BOPE must be tested **500'** prior to drilling into the **Wolfcamp** Formation by an independent service company.

# IV. DRILLING MUD:

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the **Wolfcamp** Formation, and shall be used until production casing is run and cemented. Monitoring equipment shall consist of the following:

- 1. Recording pit level indicator to indicate volume gains and losses.
- 2. Mud measuring device for accurately determining the mud volumes necessary to fill the hole during trips.
- 3. Flow-sensor on the flow line to warn of abnormal mud returns from the well.

# V. Alternate Casing Program

If circulation is lost while drilling the surface casing hole, the hole is to be enlarged and drilled to a solid formation Grayburg (Premier Sandstone) at approximately 600 feet to enable setting the 13-3/8 inch casing string and cement circulated to surface. Fresh water mud is to be used to the setting of the 8-5/8 inch casing.

Engineer on call phone: 505-706-2779

WWI 011207