NTS-09-125

OCD-ARTESIA

JAN 13 2009

OCD-ARTESIA

Form 3160-3
(February 2005)

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

Split Estate

269

# APPLICATION FOR PERMIT TO DRILL OR REENTER

| | |
|---|---|
| 1a. Type of work: ☑ DRILL ☐ REENTER | Lease Serial No. **NMNM115411** |
| 1b. Type of Well: ☐ Oil Well ☑ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone | 6 If Indian, Allotee or Tribe Name |
| 2 Name of Operator **Marbob Energy Corporation** | 7 If Unit or CA Agreement, Name and No. |
| 3a Address **P.O. Box 227, Artesia, NM 88211-0228** | 3b Phone No. *(include area code)* **505-748-3303** |
| 4. Location of Well *(Report location clearly and in accordance with any State requirements.*)* At surface ~~1980'~~ **FNL & 660' FWL** 1980' FSL At proposed prod. zone | 8. Lease Name and Well No. **Spanky Federal Com #1** |
| | 9 API Well No. 30-015-36895 |
| | 10 Field and Pool, or Exploratory **Malaga; Morrow, West** |
| Carlsbad Controlled Water Basin | 11 Sec., T R M or Blk and Survey or Area **Section 33, T24S - R28E** |
| 14 Distance in miles and direction from nearest town or post office* **About 4.5 miles from Malaga, NM** | 12 County or Parish **Eddy County** / 13 State **NM** |

| | | |
|---|---|---|
| 15 Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line, if any) | 16 No of acres in lease **600.00** | 17 Spacing Unit dedicated to this well **320** |
| 18 Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft | 19 Proposed Depth **13,500'** | 20 BLM/BIA Bond No. on file **NMB000412** |
| 21 Elevations (Show whether DF, KDB, RT, GL, etc ) **3025' GL** | 22. Approximate date work will start* **12/10/2008** | 23 Estimated duration **45 Days** |

## 24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No 1, must 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 must 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 BLM.

| | | |
|---|---|---|
| 25. Signature Nancy T. Agnew | Name *(Printed/Typed)* **Nancy T. Agnew** | Date **11/10/2008** |
| Title **Land Department** | | |
| Approved by *(Signature)* /S/ DAVID D. EVANS | Name *(Printed/Typed)* /S/ DAVID D. EVANS | Date JAN - 9 2009 |
| Title FIELD MANAGER | Office CARLSBAD FIELD OFFICE | |

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, are attached

Title 18 USC Section 1001 and Title 43 USC 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.

*(Instructions on page 2)

SEE ATTACHED FOR CONDITIONS OF APPROVAL

1-9-09

APPROVAL SUBJECT TO GENERAL REQUIREMENTS AND SPECIAL STIPULATIONS ATTACHED

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD-ARTESIA

FORM APPROVED
OMB No 1004-0137
Expires: July 31, 2010

## SUNDRY NOTICES AND REPORTS ON WELLS

***Do not use this form for proposals to drill or to re-enter an abandoned well. Use Form 3160-3 (APD) for such proposals.***

***SUBMIT IN TRIPLICATE*** – *Other instructions on page 2.*

5 Lease Serial No.
NMNM115411

6. If Indian, Allottee or Tribe Name

7 If Unit of CA/Agreement, Name and/or No

1. Type of Well
☐ Oil Well ☑ Gas Well ☐ Other

8 Well Name and No.
Spanky Federal Com #1

2. Name of Operator
Marbob Energy Corporation

9. API Well No.
30-015-36895

3a. Address
P O Box 227, Artesia, NM 88211-0227

3b. Phone No. *(include area code)*
575-748-3303

10 Field and Pool or Exploratory Area
Malaga, Morrow, West

4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
1920' FNL & 660' FWL, Section 33, T24S - R28E

11. Country or Parish, State
Eddy County, New Mexico

12. CHECK THE APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT OR OTHER DATA

| TYPE OF SUBMISSION | TYPE OF ACTION | | | |
|---|---|---|---|---|
| ☑ Notice of Intent | ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| | ☐ Alter Casing | ☐ Fracture Treat | ☐ Reclamation | ☐ Well Integrity |
| ☐ Subsequent Report | ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☑ Other Location Change |
| | ☐ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | |
| ☐ Final Abandonment Notice | ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | |

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomplete horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

Marbob Energy respectfully requests approval for the following location change:

From: 1980' FNL & 660' FWL
To: 1920' FNL & 660' FWL

14. I hereby certify that the foregoing is true and correct Name *(Printed/Typed)*
Nancy T. Agnew

Title Land Department

Signature Nancy T. Agnew

Date 12/15/2008

## THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by /S/ DAVID D. EVANS

Title FIELD MANAGER

Date JAN - 9 2009

Conditions of approval, if any, are attached. Approval of this notice 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.

Office CARLSBAD FIELD OFFICE

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.

(Instructions on page 2)

State of New Mexico
Energy, Minerals and Natural Resources Department

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

# OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease – 4 Copies
Fee Lease – 3 Copies

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

| API Number | Pool Code | Pool Name |
|---|---|---|
| 30.015.36895 | 80925 | Malaga; Morrow, West |

| Property Code | Property Name | Well Number |
|---|---|---|
| 37555 | SPANKY FEDERAL COM | 1 |

DEC 10 2008

| OGRID No. | Operator Name | Elevation |
|---|---|---|
| 14049 | MARBOB ENERGY CORPORATION | 3024' |

### Surface Location

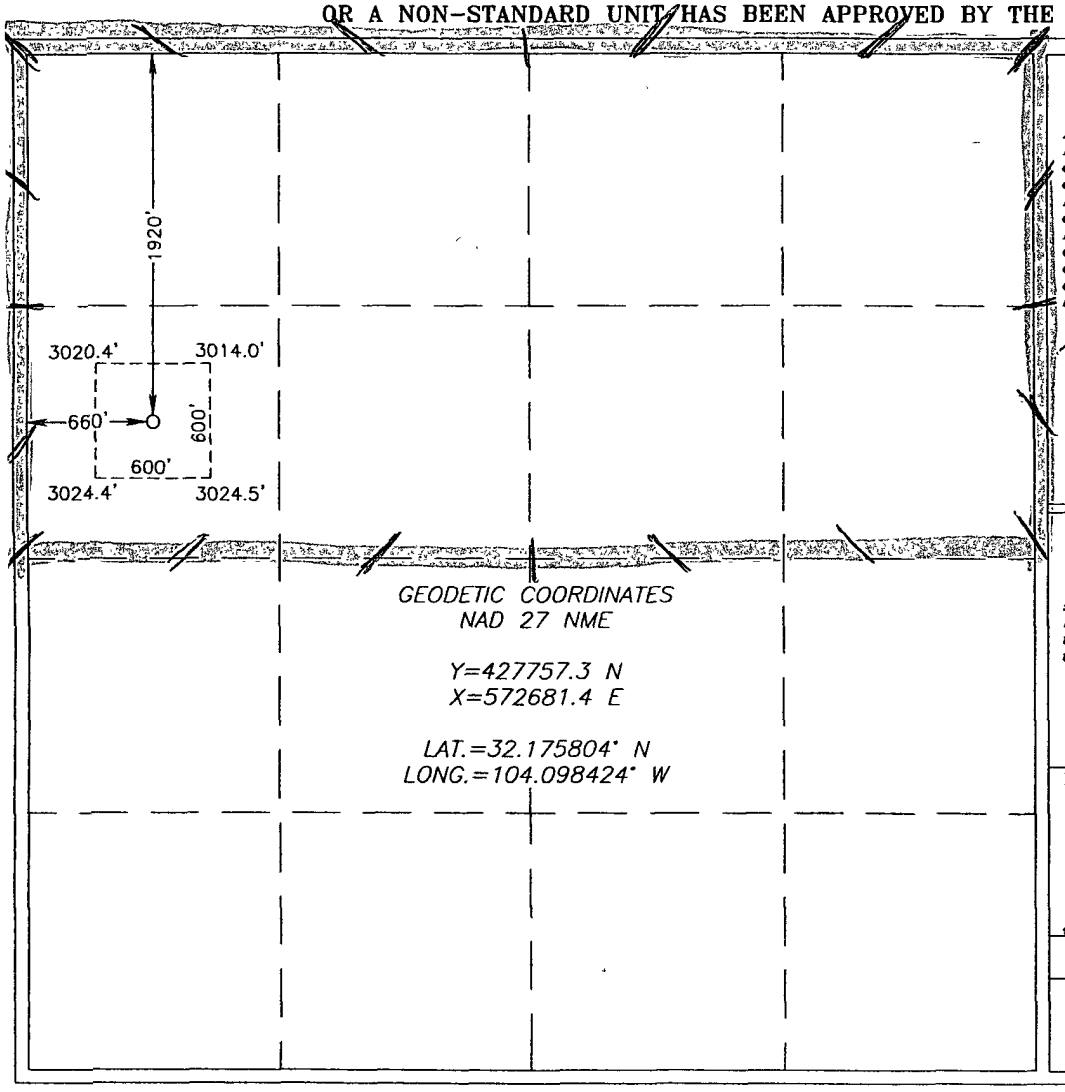
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| E | 33 | 24-S | 28-E | | 1920 | NORTH | 660 | WEST | EDDY |

### 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 | Joint or Infill | Consolidation Code | Order No. |
|---|---|---|---|
| 320 | | | |

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




GEODETIC COORDINATES
NAD 27 NME

Y=427757.3 N
X=572681.4 E

LAT.=32.175804° N
LONG.=104.098424° W

### OPERATOR CERTIFICATION

*I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.*

Nancy T. Agnew 12/15/08
Signature Date

Nancy T. Agnew
Printed Name

### 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 belief.*

RONALD J. EIDSON
NEW MEXICO
3239
REGISTERED PROFESSIONAL SURVEYOR

DECEMBER 7, 2008

Date Surveyed JC

Signature & Seal of Professional Surveyor

Ronald J. Eidson 12/09/08

08-07-2030

Certificate No. GARY EIDSON 12641
RONALD J. EIDSON 3239

OCD-ARTESIA

Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

FORM APPROVED
OMB No 1004-0137
Expires: July 31, 2010

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***SUBMIT IN TRIPLICATE*** – *Other instructions on page 2.*

5. Lease Serial No
NMNM115411

6. If Indian, Allottee or Tribe Name

7. If Unit of CA/Agreement, Name and/or No.

1. Type of Well
☐ Oil Well ☑ Gas Well ☐ Other

8. Well Name and No.
Spanky Federal Com #1

2. Name of Operator
Marbob Energy Corporation

9. API Well No

3a. Address
P.O Box 227, Artesia, NM 88211-0227

3b. Phone No. *(include area code)*
575-748-3303

10. Field and Pool or Exploratory Area
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4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)*
1980' FNL & 660' FWL, Section 33, T24S - R28E

11. Country or Parish, State
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| ☑ Notice of Intent | ☐ Acidize | ☐ Deepen | ☐ Production (Start/Resume) | ☐ Water Shut-Off |
| | ☐ Alter Casing | ☐ Fracture Treat | ☐ Reclamation | ☐ Well Integrity |
| ☐ Subsequent Report | ☐ Casing Repair | ☐ New Construction | ☐ Recomplete | ☑ Other Well Padlayout |
| | ☐ Change Plans | ☐ Plug and Abandon | ☐ Temporarily Abandon | |
| ☐ Final Abandonment Notice | ☐ Convert to Injection | ☐ Plug Back | ☐ Water Disposal | |

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Marbob Energy respectfully requests approval for the following pad change:

see attached plat

14 I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*
william miller

Title Land Department

Signature

Date 12/19/2008

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved by
/S/ DAVID D. EVANS

Title FIELD MANAGER

Date JAN - 9 2009

Conditions of approval, if any, are attached. Approval of this notice 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

Office CARLSBAD FIELD OFFICE

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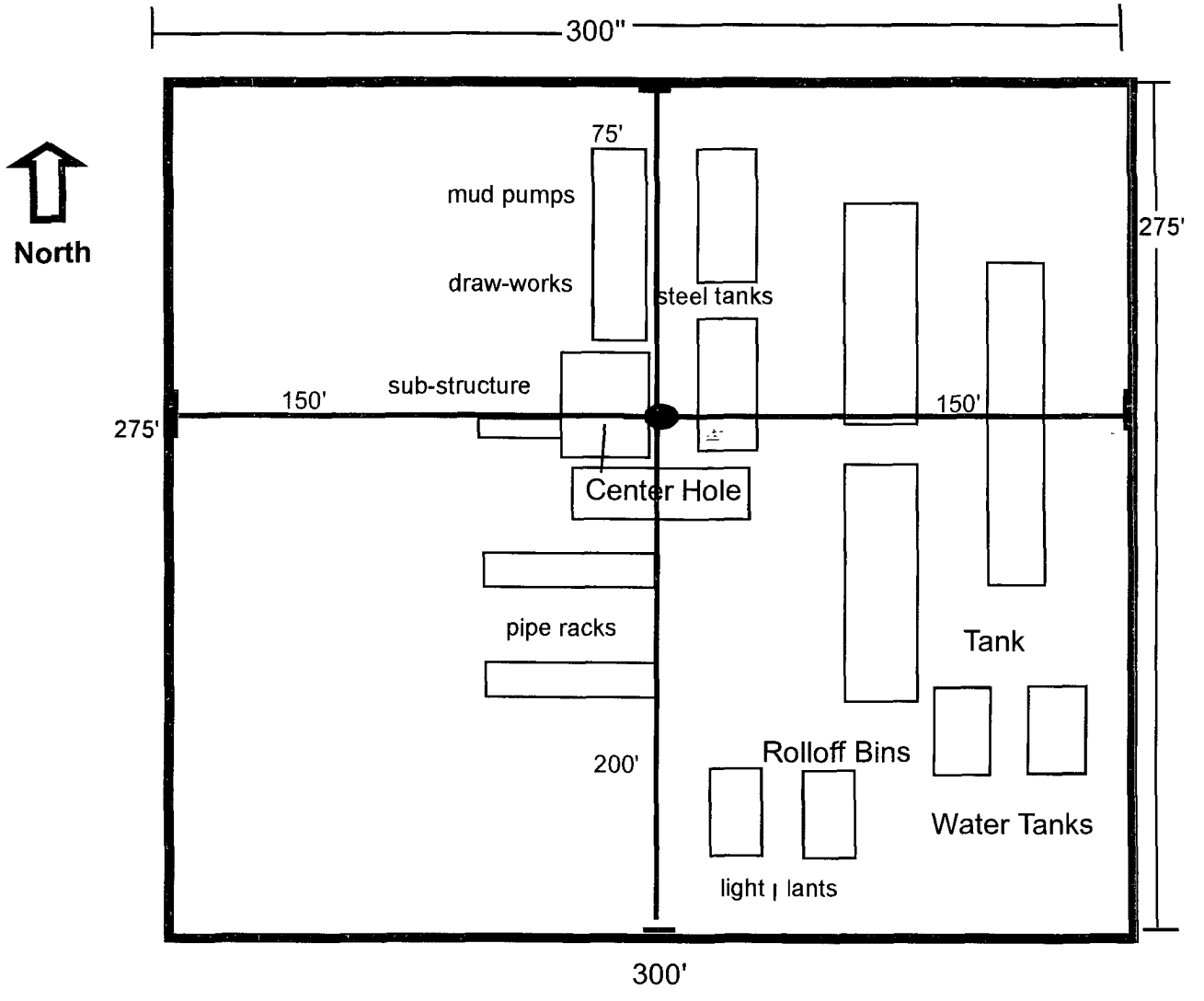
(Instructions on page 2)

# Well Site Lay-Out Plat




**Spanky Federal Com #1**
**1980' FNL & 660' FWL**
**Section 33, T24S, R28E**
**Eddy County, New Mexico**

EXHIBIT THREE

STATEMENT ACCEPTING RESPONSIBILITY FOR OPERATIONS

The undersigned accepts all applicable terms, conditions, stipulations, and restrictions concerning operations conducted on the leased land or portion thereof, as described below:

Date: November 10, 2008

Lease #: NMNM 115411
Spanky Federal Com #1

Legal Description: Sec. 33-T24S-R28E
Eddy County, New Mexico

Formation(s): Permian

Bond Coverage: Statewide

BLM Bond File #: NMB000412

Nancy Agnew
Land Department

**SELF-CERTIFICATION STATEMENT**
**FROM LESSEE/OPERATOR**

**SURFACE OWNER IDENTIFICATION**

Federal or Indian Lease No. NMNM-115411

I hereby certify to the Authorized Officer of the Bureau of Land Management that I have reached one of the following agreements with the Surface Owner; or after failure of my good-faith effort to come to an agreement of any kind with the Surface Owner, have provided a bond and will provide evidence of service of such bond to the Surface Owner:

1) ✓ I have a signed access agreement to enter the leased lands;

2) _____ I have a signed waiver from the surface owner;

3) _____ I have entered into an agreement regarding compensation to the surface owner for damages for loss of crops and tangible improvements.

4) _____ because I have been unable to reach either 1), 2), or 3) with the surface owner, I have obtained a bond to cover loss of crops and damages to tangible improvements and served the surface owner with a copy of the bond.

Surface owner information: (if available after diligent effort)

Surface Owner Name: Pardue Limited Company

Surface Owner Address: P.O. Box 2018, Carlsbad, NM 88221

Surface Owner Phone Number: (505) 887-9525

Signed this 3rd -- day of July -, 2007.

Marbob Energy Corporation By: Ross Duncan
(Name of lessee/operator)

---

I (Surface Owner) accept ✓ do not accept _____ the lessee or operator=s Surface Owner Agreement under 1, 2, or 3 above.

Signed this 3rd - day of July -, 2007.

Pardue Limited Company By: Brian De Pardue, Manager
(Signature of Surface Owner if an agreement has been reached)

**MARBOB ENERGY CORPORATION**
**DRILLING AND OPERATIONS PROGRAM**

**Spanky Federal Com #1**
**1980' FNL & 660' FWL**
**Section 33, T24S, R28E**
**Eddy County, New Mexico**

In conjunction with Form 3160-3, Application for Permit to Drill subject well, Marbob Energy Corporation submits the following ten items of pertinent information in accordance with BLM requirements.

1. Geological surface formation: Permian

2. The estimated tops of geologic markers are as follows:

| | | | |
|---|---|---|---|
| Top Salt | 700' | Strawn | 11500' |
| Base Salt | 2400' | Atoka | 11750' |
| Delaware | 2600' | Morrow | 12400' |
| Bone Spring | 6100' | TD | 13500' |
| Wolfcamp | 9550' | | |

3. The estimated depths at which anticipated water, oil or gas formations are expected to be encountered:

| | | |
|---|---|---|
| Delaware | 2600' | Oil |
| Bone Spring | 6100' | Oil |
| Atoka | 11750' | Gas |
| Morrow | 12400' | Gas |

No other formations are expected to give up oil, gas, or fresh water in measurable quantities. The surface fresh water sands will be protected by setting 13 3/8" casing at 400' and circulating cement back to surface. All intervals will be isolated by setting 4 ½" casing to total depth and circulating cement above the base of the 13 3/8" casing.

4. **Proposed Casing Program:**

| Hole Size | Interval | OD Casing | New or Used | Wt | Collar | Grade | Collapse Design Factor | Burst Design Factor | Tension Design Factor |
|---|---|---|---|---|---|---|---|---|---|
| 17 ½" | 0' – 400' | 13 3/8" | New | 48# | STC | H-40 | 1.125 | 1.125 | 1.6 |
| 12 1/4" | 400'– 2500' | 9 5/8" | New | 36# | STC | J-55 | 1.125 | 1.125 | 1.6 |
| 8 ¾" | 2500' – 7000' | 7" | New | 23# | LTC | N-80 | 1.125 | 1.125 | 1.6 |
| 8 ¾" | 7000' – 9800' | 7" | New | 23# | LTC | P-110 | 1.125 | 1.125 | 1.6 |
| 6 1/8" | 9800' – 13500' | 4 1/2" | New | ~~17~~ 11.6 | LTC | P-110 | 1.125 | 1.125 | 1.6 |

per S. Baker 1-6-09

**5. Proposed Cement Program:**

a. 13 3/8" Surf — Cement to surface with 400 sk "C" wt 14.8 ppg yield 1.34.

b. 9 5/8" Int — Cement to surface with 400 sk "c" light wt 12.7 yield 1.91. Tail in with 200 sk "c" wt 14.8 yield 1.34

c. 7" Int — see COA

1st stage 300 sk "H" Light wt 12.7 yield 1.91 Tail in with 150 sk "H" wt 13.0 yield 1.64

2nd stage with 325 sk "H" Light wt 12.7 yield 1.91 Tail in with 150 sk "H" wt 13.0 yield 1.64 TOC 2000 DV @ 6100'

see COA

d. 4 1/2" Prod — Cement with 150 sk "H" Light wt 12.7 yield 1.91 Tail in with 175 sk "H" wt 13.0 yield 1.64 TOC @ 9500'

The above cement volumes could be revised pending the caliper measurement from the open hole logs. ~~The top of cement is designed to reach approximately 200' above the 13 3/8" casing shoe~~. **All casing is new and API approved.** ??

**6. Minimum Specifications for Pressure Control:** see COA

Nipple up on 13 3/8" surface with 2M system tested to ~~1000#~~ with rig pumps. Nipple up on 9 5/8" with 3000# system tested to 3000 with independent tester nipple up on 7" intermediate with 5M system and test to 5000# with independent tester.

Pipe rams will be operationally checked each 24 hour period. 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 a 3" choke line will be included in the drilling spool located below the ram-type BOP. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold with 5000 psi WP rating.

**7. Estimated BHP:** 5616 psi

**8. Mud Program:** The applicable depths and properties of this system are as follows:

| Depth | Type System | Mud Weight | Viscosity (sec) | Waterloss (cc) |
|---|---|---|---|---|
| 0' – 400' | Fresh Water | 8.4 | 28 | N.C. |
| 400' – 2500' | Brine | 9.9 – 10.0 | 28 | N.C. |
| 2500' – 9800' | Cut Brine | 8.9 | 28 | N.C. |
| 9800' – 13500' | Cut Brine | 9.0 – 9.1 | 28-32 | N.C./6CC |

The necessary mud products for weight addition and fluid loss control will be on location at all times.

## 9. Auxiliary Well Control and Monitoring Equipment:

a. A Kelly cock will be in the drill string at all times.
b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 4 ½" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

## 10. Testing, Logging and Coring Program:

a. Drill stem tests will be based on geological sample shows.
b. The open hole electrical logging program will be:
    i. Total Depth to Intermediate Casing: Dual Laterolog-Micro Laterolog and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
    ii. Total Depth to Surface: Compensated Neutron with Gamma Ray
    iii. No coring program is planned
    iv. Additional testing will be initiated subsequent to setting the 4 ½" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

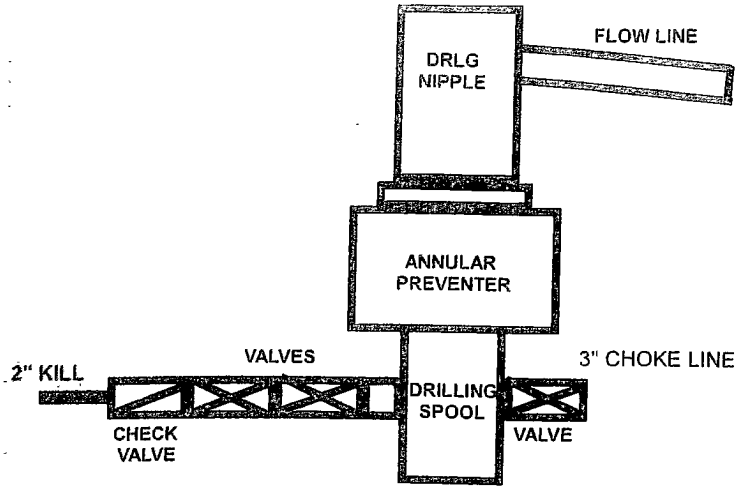
## 11. Potential Hazards:

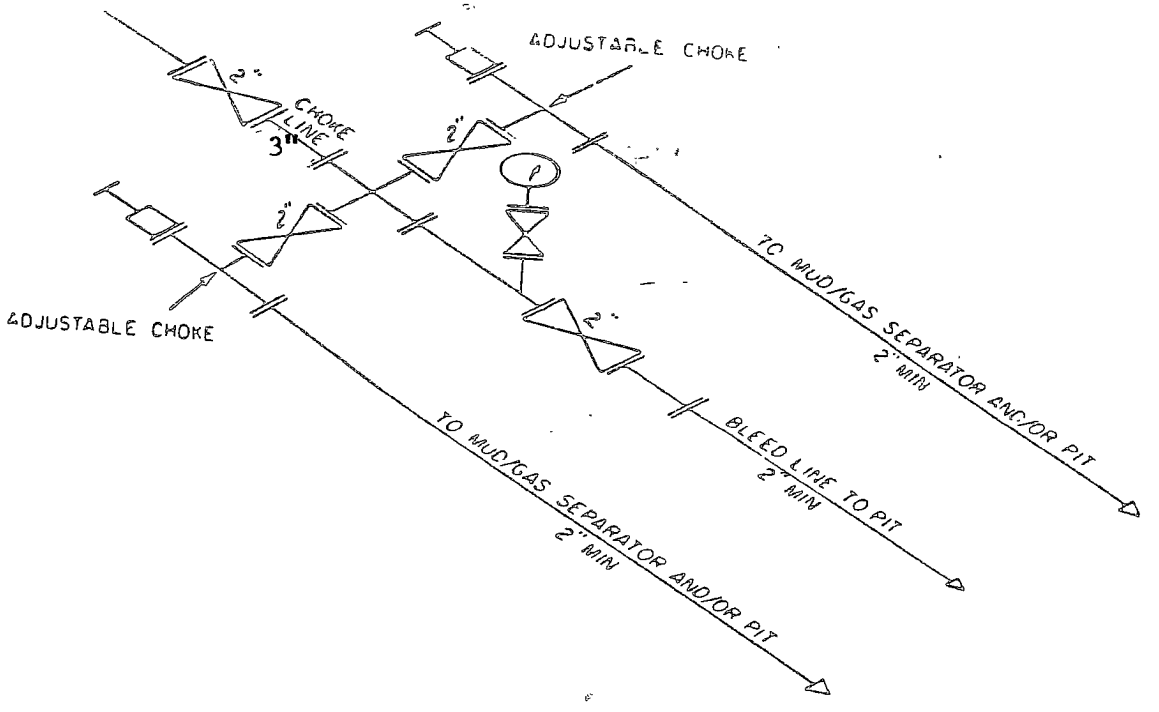
a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP: 5616 psi. No H2S is anticipated to be encountered.

## 12. Anticipated starting date and Duration of Operations:

a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as possible after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 45 days.

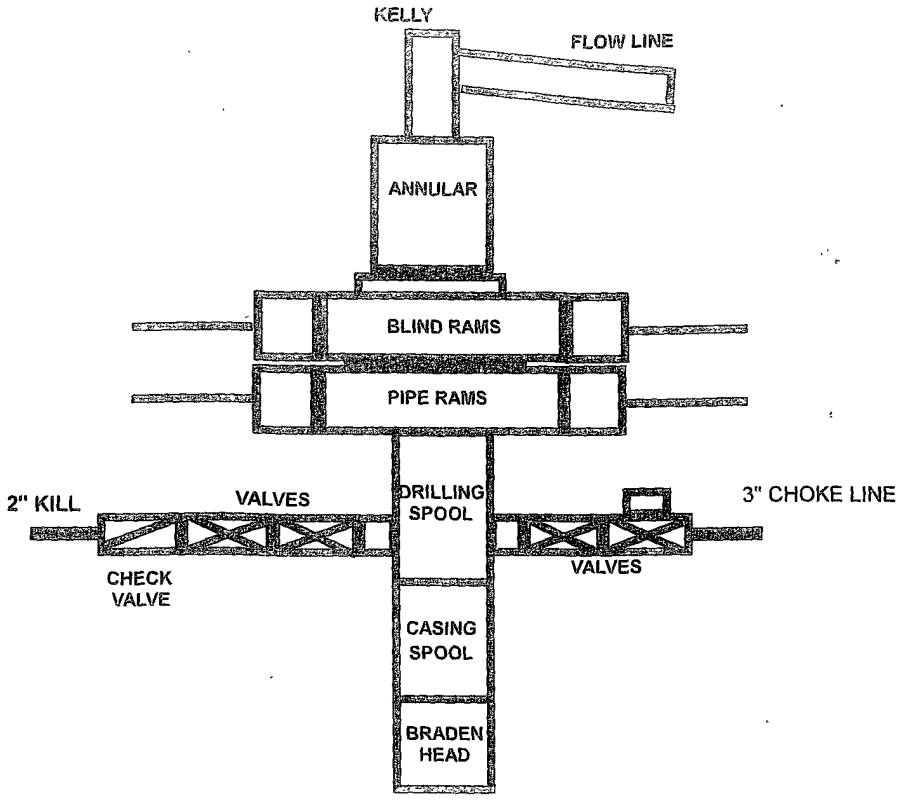
## 2M SYSTEM

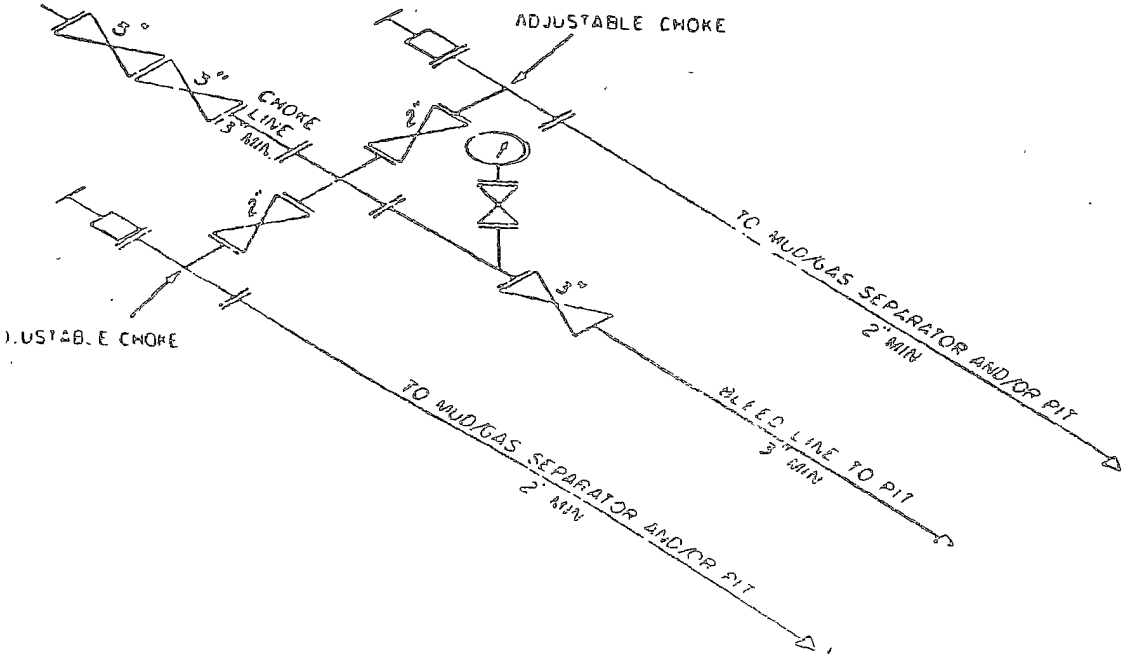



2M CHOKE MANIFOLD EQUIPMENT — CONFIGURATION OF CHOKES MAY VARY

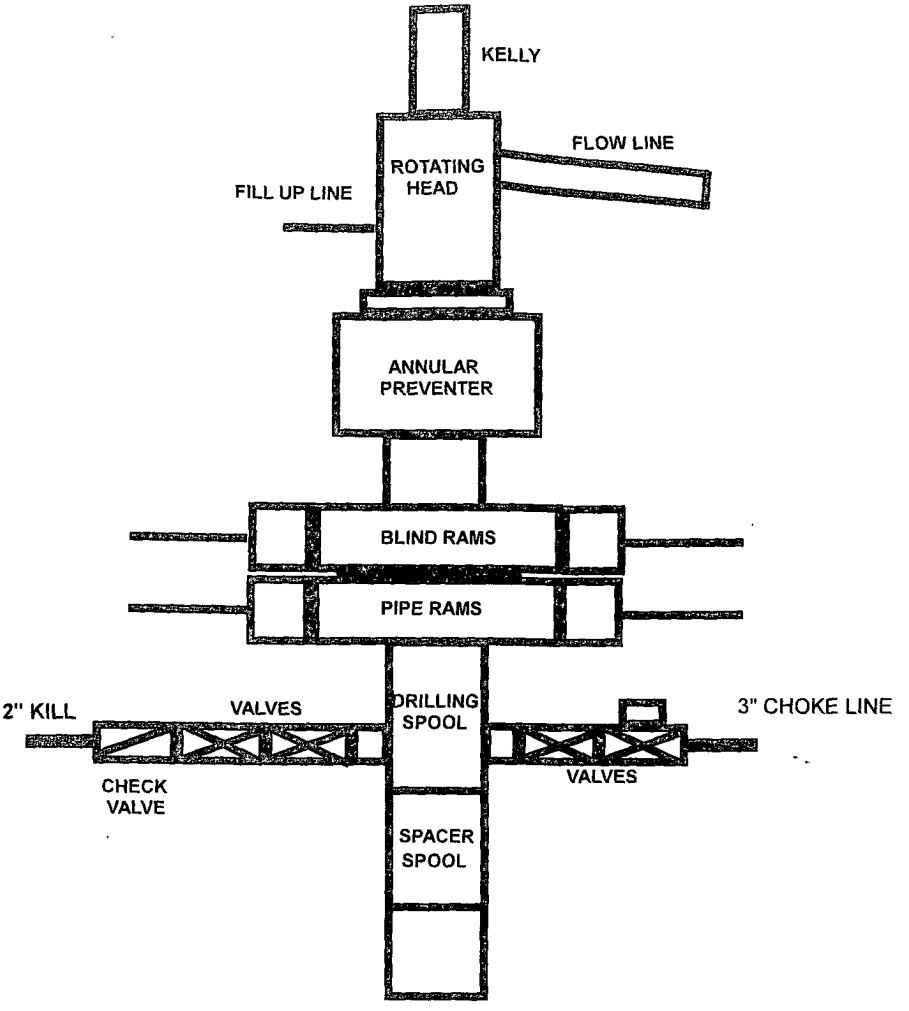
# 3M SYSTEM

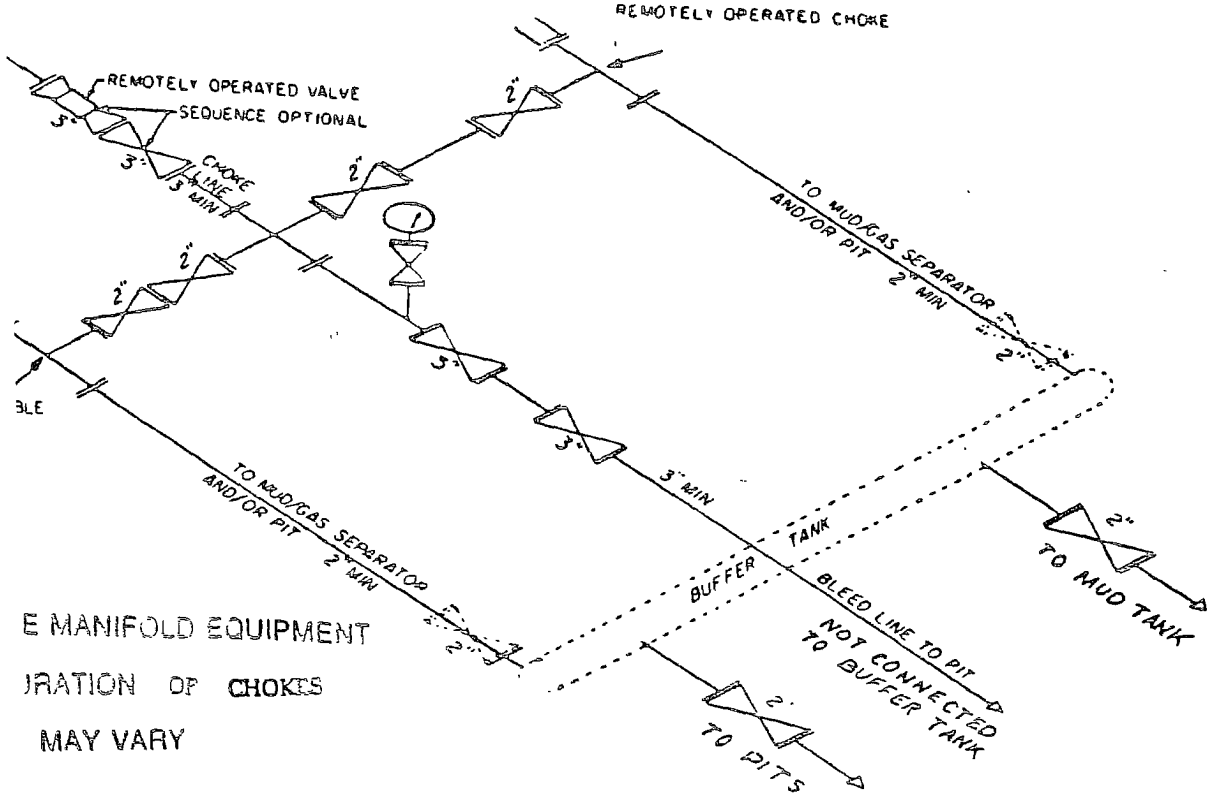



3M CHOKE MANIFOLD EQUIPMENT — CONFIGURATION OF CHOKES MAY VARY

# 5M SYSTEM




E MANIFOLD EQUIPMENT

JRATION OF CHOKES

MAY VARY

**Exhibit One**

**MARBOB ENERGY CORPORATION**

**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:

A. The hazards and characteristics of hydrogen sulfide ($H_2S$).

B. The proper use and maintenance of personal protective equipment and life support systems.

C. The proper use of $H_2S$ detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.

D. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

A. 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.

B. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.

C. 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:

Flare line.

Choke manifold.

Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.

Auxiliary equipment to include: annular preventer, mud-gas separator, rotating head.

B. Protective equipment for essential personnel:

Mark II Surviveair 30-minute units located in the dog house and at briefing areas.

C. $H_2S$ detection and monitoring equipment:

2 - portable $H_2S$ monitor positioned on location for best coverage and response. These units have warning lights and audible sirens when $H_2S$ levels of 20 ppm are reached.

D. Visual warning systems:

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 $H_2S$ circulated to the surface.

F. Metallurgy:

All drill strings, casings, tubing, wellhead, blowout preventers, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for $H_2S$ service.

G. Communication:

Company vehicles equipped with cellular telephone and 2-way radio.

Marbob Energy has conducted a review to determine if an H2S contingency plan is required for the above referenced well. We were able to conclude that any potential hazardous volume would be minimal. H2S concentrations of wells in this area from surface to TD are low enough; therefore we do not believe that an H2S Contingency Plan would be necessary.

# WARNING

**YOU ARE ENTERING AN $H_2S$ AREA**
**AUTHORIZED PERSONNEL ONLY**

1. ***BEARDS OR CONTACT LENSES NOT ALLOWED***
2. ***HARD HATS REQUIRED***
3. ***SMOKING IN DESIGNATED AREAS ONLY***
4. ***BE WIND CONSCIOUS AT ALL TIMES***
5. ***CK WITH MARBOB FOREMAN AT MAIN OFFICE***

MARBOB ENERGY CORPORATION

1-505-748-3303

## EMERGENCY CALL LIST

| | Office | Mobile | Home |
|---|---|---|---|
| Marbob Energy Corp. | 575-748-3303 | | |
| Sheryl Baker | 575-748-3303 | 575-748-5489 | 575-748-2396 |
| Johnny C. Gray | 575-748-3303 | 575-748-5983 | 575-885-3879 |
| Raye Miller | 575-748-3303 | 575-513-0176 | 575-746-9577 |
| Dean Chumbley | 575-748-3303 | 575-748-5988 | 575-748-2426 |

## EMERGENCY RESPONSE NUMBERS
**Eddy County, New Mexico**

| | |
|---|---|
| State Police | 575-748-9718 |
| Eddy County Sheriff | 575-746-2701 |
| Emergency Medical Services (Ambulance) | 911 or 575-746-2701 |
| Eddy County Emergency Management (Harry Burgess) | 575-887-9511 |
| State Emergency Response Center (SERC) | 575-476-9620 |
| Carlsbad Police Department | 575-885-2111 |
| Carlsbad Fire Department | 575-885-3125 |
| New Mexico Oil Conservation Division | 575-748-1283 |
| Indian Fire & Safety | 800-530-8693 |
| Halliburton Services | 800-844-8451 |

**MARBOB ENERGY CORPORATION**
**MULTI-POINT SURFACE USE AND OPERATIONS PLAN**

**Spanky Federal Com #1**
**1980' FNL & 660' FWL**
**Section 33, T24S, R28E**
**Eddy County, New Mexico**

This plan is submitted with Form 3160-3, Application for Permit to Drill, covering the above described well. The purpose of this plan is to describe the location of the proposed well, the proposed construction activities and operations plan, the magnitude of the surface disturbance involved and the procedures to be followed in rehabilitating the surface after completion of the operations, so that a complete appraisal can be made of the environmental effect associated with the operations.

**1. EXISTING ROADS:**

a. The well site and elevation plat for the proposed well are reflected on the well site layout; Form C-102. The well was staked by John West Surveying Company.
b. Exhibit 2 is a portion of a topo map showing the well and roads in the vicinity of the proposed location. The proposed wellsite and the access route to the location are indicated in red on Exhibit 2. Right of way using this proposed route is being requested if necessary.
c. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease.

**DIRECTIONS:**

From Malaga, New Mexico, go south on US Hwy. #285 approx. 4.4 miles. Turn right and go west, then south, then northwest approx. 1.4 miles to the Really Scary Hawk Federal #1 well pad and proposed road survey. Follow Road Survey approx. 0.1 miles south. Turn right and go west approx. 0.7 miles. Turn right and go northwest approx. 0.5 miles. Turn right and go north approx. 0.2 miles. Turn right and go east approx. 412 feet to this location.

**2. PLANNED ACCESS ROAD:**

A proposed access road of 7955' feet will come in on the southwestern side of the well pad.

**3. LOCATION OF EXISTING AND/OR PROPOSED FACILITIES:**

A. In the event the well is found productive, the Spanky Federal Com #1 tank battery would be utilized and the necessary production equipment will be installed at the well site. A Site Facilities Diagram will be submitted upon completion of facility.
B. All flowlines will adhere to API standards

C. If electricity is needed, power will be obtained from Central Valley Electric. Central Valley Electric will apply for ROW for their power lines.
D. If the well is productive, rehabilitation plans are as follows:
    i. The original topsoil from the well site will be returned to the location. The drill site will then be contoured as close as possible to the original state.

**4. LOCATION AND TYPES OF WATER SUPPLY:**

This location will be drilled using a combination of water mud systems (outlined in the Drilling Program). The water will be obtained from commercial water stations in the area and hauled to location by transport truck using the existing and proposed roads shown in Exhibit #2. On occasion, water will be obtained form a pre-existing water well, running a pump directly to the drill rig. In these cases where a poly pipeline is used to transport water for drilling purposes, the existing and proposed road shown in Exhibit "2" will be utilized.

**5. CONSTRUCTION MATERIALS:**

All Caliche utilized for the drilling pad and proposed access road will be obtained from an existing BLM approved pit or from prevailing deposits found under the location. All roads will be constructed of 6" rolled and compacted caliche. Will use BLM recommended use of extra caliche from other locations close by for roads, if available.

**6. METHODS OF HANDLING WASTE MATERIAL:**

a. All trash, junk and other waste material will be removed from the wellsite within 30 days after finishing drilling and/or completion operations. All waste material will be contained in trash cages or trash bins to prevent scattering. When the job is completed, all contents will be removed and disposed of in an approved sanitary landfill.

b. The supplier, including broken sacks, will pick up slats remaining after completion of well.

c. A porto-john will be provided for the rig crews. This equipment will be properly maintained during the drilling and completion operations and will be removed when all operations are complete.

d. Disposal of fluids to be transported by an approved disposal company.

**7. ANCILLARY FACILITIES:**

No campsite or other facilities will be constructed as a result of this well.

**8. WELLSITE LAYOUT:**

a. Exhibit 3 shows the proposed well site layout with dimensions of the pad layout.

b. This exhibit indicates proposed location of fresh water sump pits if utilized and living facilities.
c. Mud pits in the active circulating system will be steel pits and a closed loop system will be utilized.

## 9. PLANS FOR SURFACE RECLAMATION:

a. After finishing drilling and/or completion operations, if the well is found non-commercial, the caliche will be removed from the pad and transported to the original caliche pit or used for other drilling locations. The road will be reclaimed as directed by the BLM. The original top soil will again be returned to the pad and contoured, as close as possible, to the original state.

b. The location and road will be rehabilitated as recommended by the BLM.

c. If the well is deemed commercially productive, the reserve pit will be restored as described in 10(A) within 120 days subsequent to the completion date. Caliche from areas of the pad site not required for operations will be reclaimed. The original top soil will be returned to the area of the drill pad not necessary to operate the well. These unused areas of the drill pad will be contoured, as close as possible, to match the original topography.

## 10. SURFACE OWNERSHIP:

The surface is owned by Pardue Limited Surface. We do have a surface agreement.

## 11.OTHER INFORMATION:

a. The area surrounding the well site is grassland. The topsoil is very sandy in nature. The vegetation is moderately sparse with native prairie grass, some mesquite bushes and shinnery oak. No wildlife was observed but it is likely that deer, rabbits, coyotes, and rodents traverse the area.

b. There is no permanent or live water in the general proximity of the location.

c. There are no dwellings within 2 miles of location.

d. A Cultural Resources Examination will be completed by Boone Archeological and forwarded to the BLM office in Carlsbad, New Mexico.

## 12.OPERATOR'S REPRESENTATIVE:

A. Through A.P.D. Approval:

Dean Chumbley, Landman
Marbob Energy Corporation
P. O. Box 227
Artesia, NM 88211-0227
Phone (505)748-3303
Cell (505) 748-5988

B. Through Drilling Operations

Sheryl Baker, Drilling Supervisor
Marbob Energy Corporation
P. O. Box 227
Artesia, NM 88211-0227
Phone (505)748-3303
Cell (505)748-5489

**CERTIFICATION:**

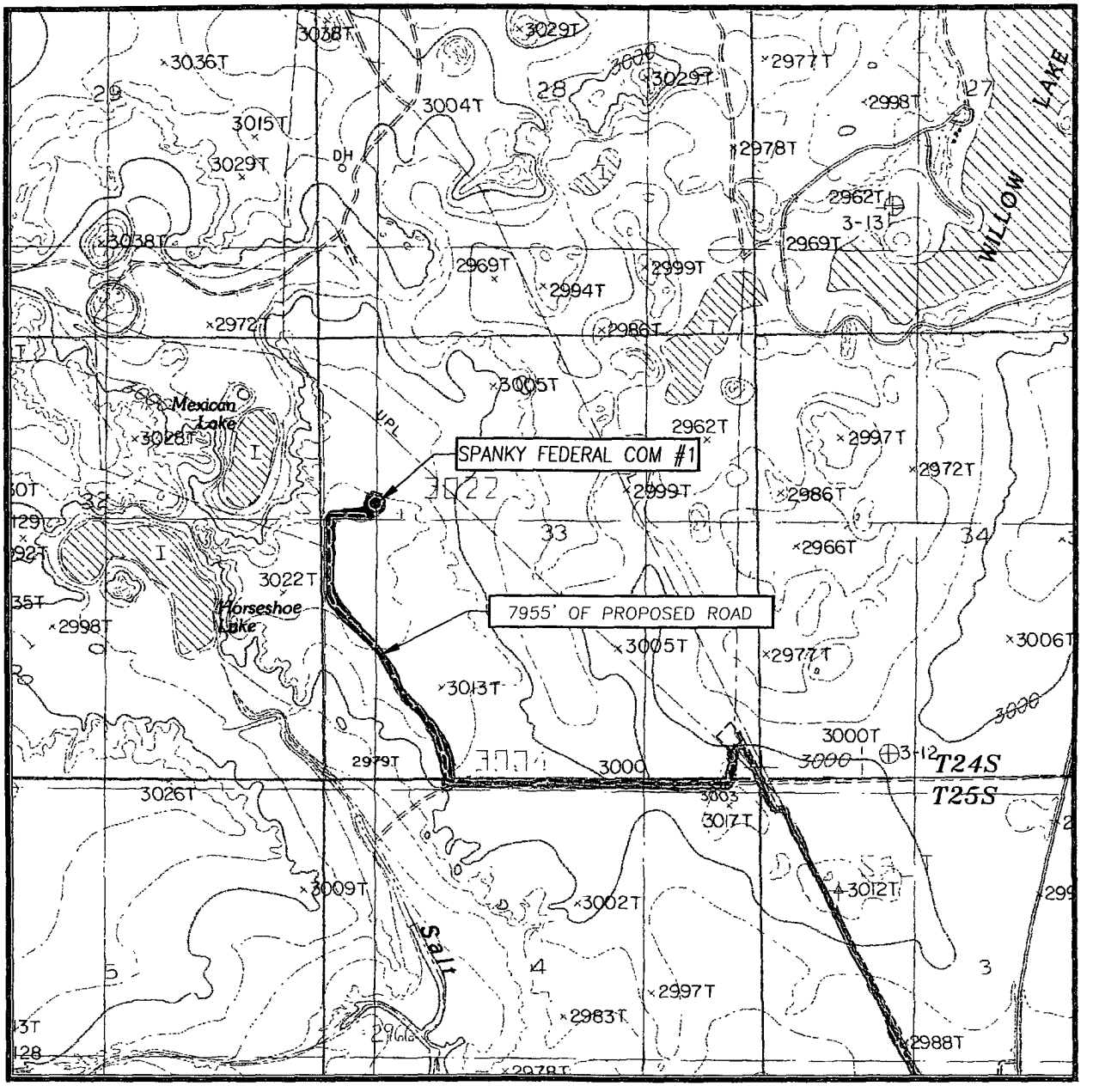
I hereby certify that I, or persons under my direct supervision, have inspected the proposed drillsite and access route, that I am familiar with the conditions which presently exist; that the statements made in this plan are to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Marbob Energy Corporation and its contractors and subcontractors in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provisions of 18 U.S.C. 1001 for the filing of a false statement.

Marbob Energy Corporation

11/10/08
Date

Ross Duncan
Land Department

# LOCATION VERIFICATION MAP




SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'
MALAGA, NM
SUPPLEMENTAL CONT. INT. – 5'

SEC. 33 TWP. 24-S RGE. 28-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 1980' FNL & 660' FWL

ELEVATION 3025'

OPERATOR MARBOB ENERGY CORPORATION

LEASE SPANKY FEDERAL COM

U.S.G.S. TOPOGRAPHIC MAP
MALAGA, NM

**Existing Roads**

PROVIDING SURVEYING SERVICES
SINCE 1946
*JOHN WEST SURVEYING COMPANY*
412 N. DAL PASO
HOBBS, N.M. 88240
(505) 393-3117

**Exhibit #2**

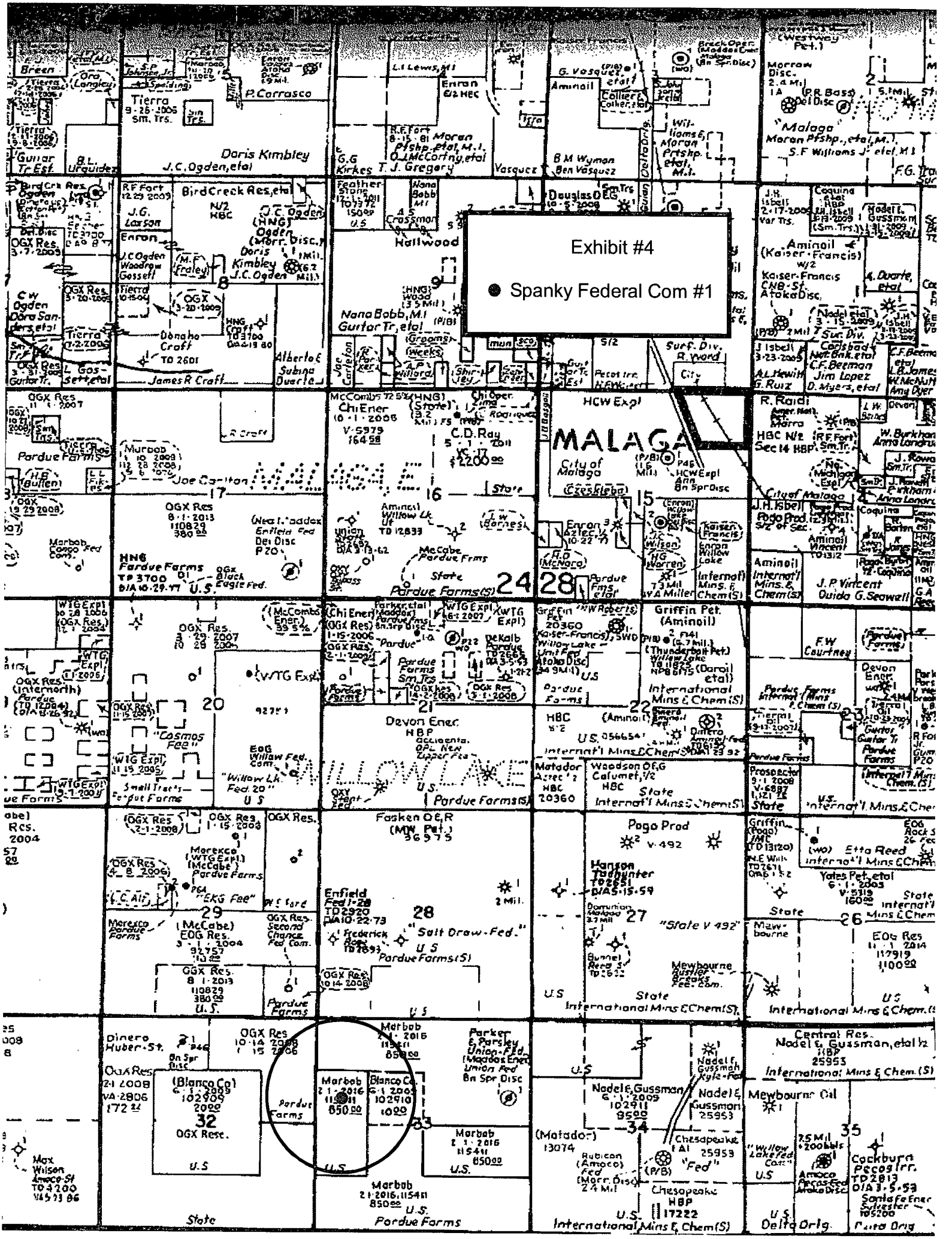


Exhibit #4
Spanky Federal Com #1
MALAGA
HOWARD

# PECOS DISTRICT
# CONDITIONS OF APPROVAL

| | |
|---|---|
| OPERATOR'S NAME: | Marbob Energy Corp |
| LEASE NO.: | NM115411 |
| WELL NAME & NO.: | 1 Spanky Federal Com |
| SURFACE HOLE FOOTAGE: | 1920' FNL & 660' FWL |
| BOTTOM HOLE FOOTAGE | |
| LOCATION: | Section 33, T. 24S., R 28 E., NMPM |
| COUNTY: | Eddy County, New Mexico |

## TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.


- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
  - Cave/Karst
  - Cultural
  - Communitization Agreement
- ☒ **Construction**
  - Notification
  - Topsoil
  - **Closed Loop System**
  - Federal Mineral Material Pits
  - **Well Pads**
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
  - **High cave/karst**
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
  - Pipelines
  - Electric Lines
- ☒ **Reseeding Procedure/Interim Reclamation**
- ☐ **Final Abandonment/Reclamation**

## I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

## II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

## III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

## IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

## V. SPECIAL REQUIREMENT(S)

### Hydrology

**Well Pad Construction:**
Due to a large drainage to the north and high cave and karst occurrences in the area, the orientation of the pad will be different on the north/south sides.

- It will be 75 feet from the center hole to the north and 200 ft. to the south from the center hole.
- In addition, it is recommended that the location be slightly sloped, a minimum of 2%, to the south, the entire location be bermed.

**Interim Reclamation:**
After drilling and completion procedures are complete, interim reclamation needs to begin as soon as possible.

- Interim reclamation will consist of moving the north side of the pad back to as close to the well head as possible and pulling the fill material back up out of the draw.
- Once this is complete then re-berm the location at this point, near the well head.
- If the well is productive a collection facility will be established on the proposed location.
- This facility should be placed on the south side of the pad, away from the draw face.

### Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

**Cave/Karst Surface Mitigation**
The following stipulations will be applied to minimize impacts during construction, drilling and production.

**Construction:**
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

**No Blasting:**
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

**Closed Mud System Using Steel Tanks with All Fluids and Cuttings Hauled Off.**
A closed mud system using steel tanks for all cuttings and fluids is required. All fluids and cuttings will be hauled off site for disposal. No pits are allowed.

**Tank Battery Liners and Berms:**
Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

**Leak Detection System:**
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

## Cave/Karst Subsurface Mitigation

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

**Rotary Drilling with Fresh Water:**
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

**Lost Circulation:**
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

**Abandonment Cementing:**
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

**Pressure Testing:**
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

## Communitization Agreement

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.

EXHIBIT NO. 1

Date of Issue:
10/10/2008

**Bureau of Land Management, Carlsbad Field Office**
620 E. Greene Street Carlsbad, NM 88220

Cultural and Archaeological Resources

# NOTICE OF STIPULATIONS

BLM Report No.
08-NM-523-977

**Historic properties in the vicinity of this project are protected by federal law. In order to ensure that they are not damaged or destroyed by construction activities, the project proponent and construction supervisors shall ensure that the following stipulations are implemented.**

| | |
|---|---|
| Project Name: | Class III Survey for the Proposed Spanky Federal Com No. 1 Well and Access Road |
| Required | ***1). A 3-day preconstruction call-in notification.*** Contact BLM Inspection and Enforcement at (505) 234-5977, 5909, or 5958, to establish a construction start date. |
| Required | ***2. Professional archaeological monitoring***. Contact your project archaeologist, or BLM's Cultural Resources Section at (505) 234- 5917, 5967,or 5986, for assistance. |
| A. ☒ | These stipulations must be given to your monitor at least **5 days** prior to the start of construction. |
| B. ☒ | No construction, including vegetation removal or other site prep may begin prior to the arrival of the monitor. |
| | ***3. Cultural site barrier fencing.*** (Your monitor will assist you). |
| A. ☐ | **A temporary site protection barrier**(s) shall be erected prior to all ground-disturbing activities. The minimum barrier(s) shall consist of upright wooden survey lath spaced no more than ten (10) feet apart and marked with blue ribbon flagging or blue paint. There shall be no construction activities or vehicular traffic past the barrier(s) at any time. |
| B. ☐ | **A permanent, 4-strand barbed wire fence** strung on standard "T-posts" shall be erected prior to all ground-disturbing activities. No construction activities or vehicle traffic are allowed past the fence. |
| Required | ***4. The archaeological monitor shall:*** |
| A. ☐ | Ensure that all site protection barriers are located as indicated on the attached map(s). |
| B. ☒ | Observe ground-disturbing activities within **100 FEET OF LA 160623, LA 160624, LA 160625** |
| C. ☒ | Ensure that all reroutes are adhered to avoid cultural site no.(s) **LA 160624 AND LA 160625** |
| D. ☒ | Ensure the proposed well pad construction, equipment, and vehicles remain outside LA 160623 |
| E. ☒ | Submit a brief monitoring report within 30 days of completion of monitoring. |
| | If subsurface cultural resources are encountered during the monitoring, all activities shall cease and a BLM-CFO archaeologist shall be notified immediately. |
| Other: | **IF THE CONTRACT ARCHAEOLOGIST DOES NOT KNOW WHERE THE SITES ARE LOCATED AT PLEASE COME BY THE CARLSBAD BLM AND MAPS AND OTHER DATA WILL BE PROVIDED UPON REQUEST** |

**Site Protection and Employee Education: It is the responsibility of the project proponent and his construction supervisor to inform all employees and subcontractors that cultural and archaeological sites are to be avoided by all personnel, vehicles, and equipment; and that it is illegal to collect, damage, or disturb cultural resources on Public Lands.**

For assistance, contact BLM Cultural Resources: Martin Stein (575) 234-5967 Bruce Boeke (575) 234-5917 George MacDonell (575) 234-2228

Lynn Robinson (575) 234-2236

# VI. CONSTRUCTION

## A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5972 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

## B. TOPSOIL

The operator shall stockpile the topsoil of the well pad. The topsoil to be stripped is approximately 6 inches in depth. The topsoil shall not be used to backfill the reserve pit and will be used for interim and final reclamation.

## C. CLOSED LOOP SYSTEM

Although this is a closed loop system and no reserve pits will be utilized, the v-door will be to the East.

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

## D. FEDERAL MINERAL MATERIALS PIT

If the operator elects to surface the access road and/or well pad, mineral materials extracted during construction of the reserve pit may be used for surfacing the well pad and access road and other facilities on the lease.

Payment shall be made to the BLM prior to removal of any additional federal mineral materials from any site other than the reserve pit. Call the Carlsbad Field Office at (575) 234-5972.

## E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

## F. ON LEASE ACCESS ROADS

**Road Width**
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed thirty (30) feet.

**Surfacing**
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

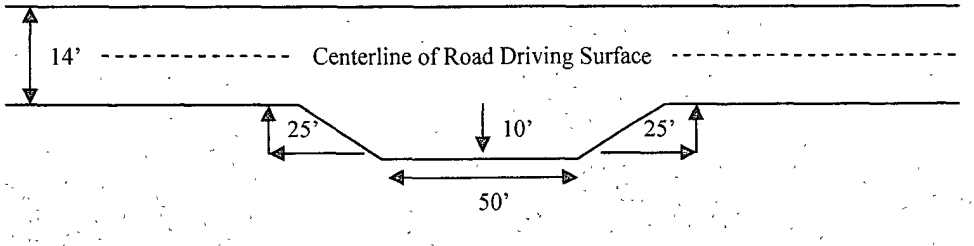
The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

**Crowning**
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

**Ditching**
Ditching shall be required on both sides of the road.

**Turnouts**
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:

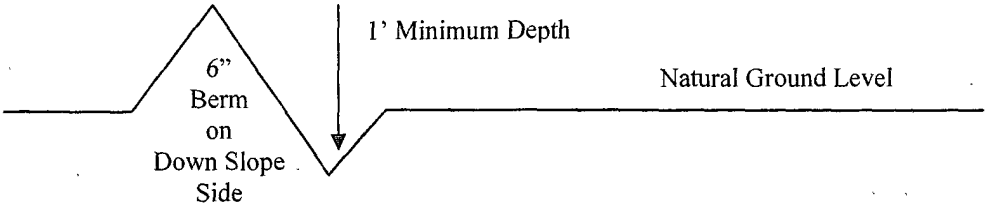
**Standard Turnout – Plan View**



**Drainage**
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

**Cross Section of a Typical Lead-off Ditch**




All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

**Formula for Spacing Interval of Lead-off Ditches**

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

**Culvert Installations**
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

**Cattleguards**
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

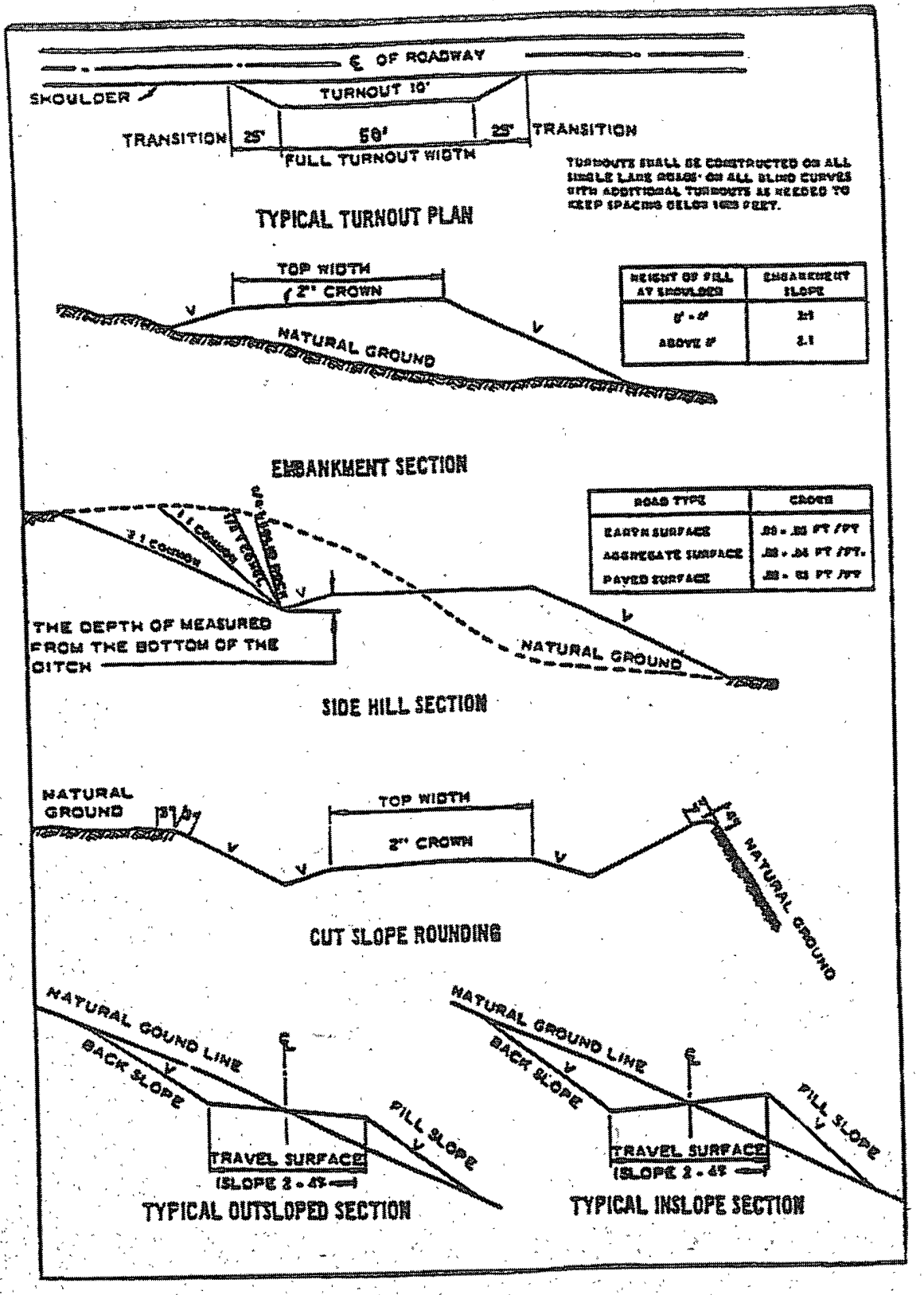
A gate shall be constructed and fastened securely to H-braces.

**Fence Requirement**
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

**Public Access**
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

## Figure 1 – Cross Sections and Plans For Typical Road Sections



# VII. DRILLING

## A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts and formations to the BLM.**

2. 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.

3. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

## B. CASING

**Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.**

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**

**Wait on cement (WOC) time for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.**

**No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.**

**High cave/karst.**
**Possible lost circulation in the Triassic redbeds and the Castile Group.**
**Wolfcamp formation will probably be overpressured, with higher pressured gas pockets.**
**The Atoka Clastics may also be overpressured.**

1. The **13-3/8** inch surface casing shall be set **at approximately 400 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **Rustler Anhydrite could be deeper than 400'.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with a surface log readout will be used or a cement bond log shall be run to verify the top of the cement.

    **b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry. Not applicable if current cement program is followed.**

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch first intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Casing to be set in the Lamar Limestone. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst concerns.**

**If 75% or greater lost circulation occurs while drilling the first intermediate casing hole, the cement on the second intermediate casing must come to surface. The wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst concerns.**

3. The minimum required fill of cement behind the 7 inch second intermediate casing is:

   a. First stage to DV tool, cement shall:

   ☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office, before proceeding with second stage cement job.

   b. Second stage above DV tool, cement shall:

   ☒ Cement should tie-back at least 500 feet into previous casing string. Operator shall provide method of verification.

**Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

4. The minimum required fill of cement behind the **4-1/2** inch production casing is:

   ☒ Cement should tie-back at least 300 feet into previous casing string. Operator shall provide method of verification.

5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

## C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8"** intermediate casing shoe shall be **3000 (3M)** psi.

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7"** intermediate casing shoe shall be **5000 (5M)** psi.

5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

   a. The tests shall be done by an independent service company.

   b. The results of the test shall be reported to the appropriate BLM office.

   c. All tests are required to be recorded on a calibrated test chart. A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.

   d. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

   e. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the **Wolfcamp** formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

   f. **Effective November 1, 2008, no variances will be granted on reduced pressure tests on the surface casing and BOP/BOPE. Onshore Order 2 requirements will be in effect.**

## D. 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.

**Proposed mud weight may not be adequate for drilling through Wolfcamp.**

## E. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

**WWI 010609**

# VIII. PRODUCTION (POST DRILLING)

## A. WELL STRUCTURES & FACILITIES

**Placement of Production Facilities**
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

**Containment Structures**
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

**Painting Requirement**
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color
Shale Green, Munsell Soil Color Chart # 5Y 4/2

# IX. INTERIM RECLAMATION & RESEEDING PROCEDURE

## A. INTERIM RECLAMATION

If the well is a producer, interim reclamation shall be conducted on the well site in accordance with the orders of the Authorized Officer. The operator shall submit a Sundry Notices and Reports on Wells (Notice of Intent), Form 3160-5, prior to conducting interim reclamation.

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Operators should work with BLM surface management specialists to devise the best strategies to reduce the size of the location. Any reductions should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

## B. RESEEDING PROCEDURE

Once drilling has been completed, completion procedures have been accomplished, and all trash removed, reseed the entire location and any surrounding disturbed areas as follows:

Seed Mixture 4, for Gypsum Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

| Species | lb/acre |
|---|---|
| Alkali Sacaton (Sporobolus airoides) | 1.0 |
| DWS Four-wing saltbush (Atriplex canescens) | 5.0 |

DWS: DeWinged Seed

*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed

## X. FINAL ABANDONMENT & REHABILITATION REQUIREMENTS

Upon abandonment of the well and/or when the access road is no longer in service the Authorized Officer shall issue instructions and/or orders for surface reclamation and restoration of all disturbed areas.

On private surface/federal mineral estate land the reclamation procedures on the road and well pad shall be accomplished in accordance with the private surface land owner agreement.