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MAR 19 2008

OCD-ARTESIA

Form 3160-3  
(April 2004)

OCD-ARTESIA

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

569

5. Lease Serial No.  
NM-0749315

6. If Indian, Allottee or Tribe Name

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

8. Lease Name and Well No.

Hydrus 10 Federal No. 1

9. API Well No.

30-015-36233

10. Field and Pool, or Exploratory

Loco Hills; Glorieta-Yeso

11. Sec., T. R. M. or Blk. and Survey or Area

10-17S-30E

12. County or Parish

Eddy

13. State

NM

14. Distance in miles and direction from nearest town or post office\*

2 miles North of Loco Hills, NM

15. Distance from proposed\* location to nearest property or lease line, ft (Also to nearest drig. unit line if any)

330'

16. No of acres in lease

320

17. Spacing Unit dedicated to this well

SWSE 40

18. Distance from proposed location\* to nearest well, drilling, completed, applied for, on this lease, ft.

N/A

19. Proposed Depth

6,000'

20. BLM/BIA Bond No. on File

NM-2575

21. Elevations (Show whether DF, KDB, RT, GL, etc.)

3,711' GR

22. Approximate date work will start\*

3/20/2008

23. Estimated duration

20-25 days

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall 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 shall 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 authorized officer

25. Signature Zeno Farris Name (Printed/Typed) Zeno Farris Date 01.25.08

Title

Manager Operations Administration

Approved By (Signature) /s/ James Stovall Name (Printed/Typed) Date MAR 17 2008

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.

**APPROVAL FOR TWO YEARS**

Title 18 U.S.S. 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)

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

Roswell Controlled Water Basin

Approval Subject to General Requirements  
& Special Stipulations Attached

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

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised October 12, 2005

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

**OIL CONSERVATION DIVISION**  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

☐ AMENDED REPORT

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

API Number <b>30-015-36233</b>	Pool Code <b>96718</b>	Pool Name <b>Loco Hills; Glorieta-Yeso</b>
Property Code <b>37059</b>	Property Name <b>HYDRUS "10" FEDERAL</b>	Well Number <b>1</b>
OGRID No. <b>162683</b>	Operator Name <b>CIMAREX ENERGY CO. OF COLORADO</b>	Elevation <b>3711'</b>

**Surface Location**

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>0</b>	<b>10</b>	<b>17 S</b>	<b>30 E</b>		<b>330</b>	<b>SOUTH</b>	<b>1650</b>	<b>EAST</b>	<b>EDDY</b>

**Bottom Hole Location If Different From Surface**

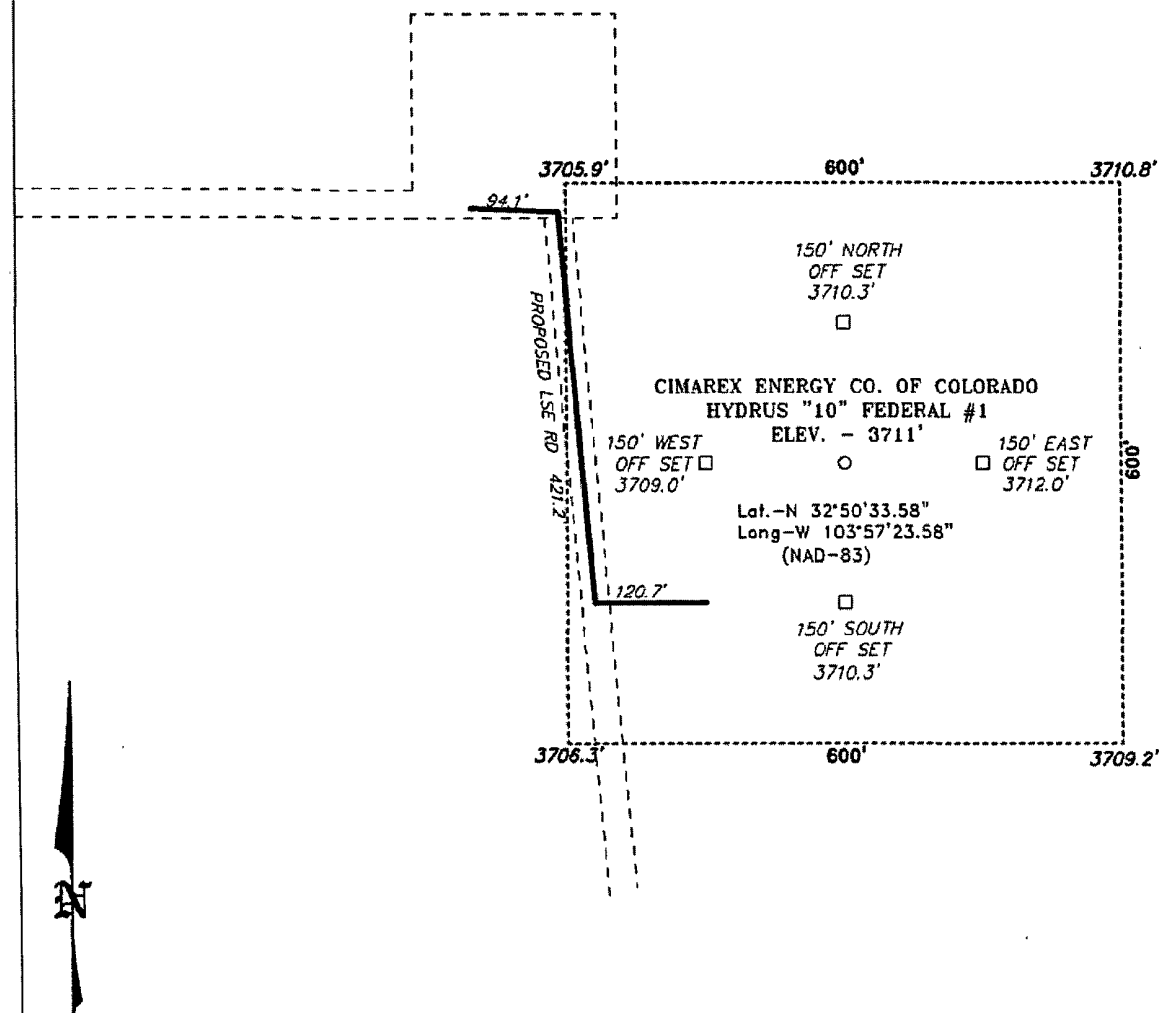
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres <b>40</b>	Joint or Infill	Consolidation Code	Order No.
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**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**

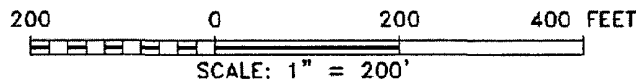
<p><b>SURFACE LOCATION</b> Lat - N32°50'33.58" Long - W103°57'23.51" NMSPCE- N 670499.7 E 657055.6 (NAD-83)</p> <p><b>NM-074937</b></p> <p>3705.9' - 3700.8' 1650' 330'</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information contained herein is true and complete to the best of 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 pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><u>Zeno Farris</u> 01-25-08 Signature Date</p> <p><u>Zeno Farris</u> Printed Name</p>
	<p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p><b>JANUARY 17, 2008</b></p> <p>Date Surveyed</p> <p><u>Gary L. Jones</u> Signature Professional Surveyor No. 7977</p> <p>Certificate No. Gary L. Jones 7977</p> <p><b>Basin Surveys</b></p>

SECTION 10, TOWNSHIP 17 SOUTH, RANGE 30 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM THE JUNCTION OF US HWY 82 AND HAGERMAN CUTOFF, GO NORTH ON HAGERMAN CUTOFF FOR 1.8 MILES TO LEASE ROAD, ON LEASE ROAD GO EAST 1.7 MILES TO PROPOSED LEASE ROAD.



**CIMAREX ENERGY CO. OF COLORADO**

REF: HYDRUS "10" FEDERAL #1 / WELL PAD TOPO

THE HYDRUS "10" FEDERAL #1 LOCATED 330'

FROM THE SOUTH LINE AND 1650' FROM THE EAST LINE OF  
SECTION 10, TOWNSHIP 17 SOUTH, RANGE 30 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO.

**BASIN SURVEYS** P.O. BOX 1786 - HOBBS, NEW MEXICO

W.O. Number: 19047

Drawn By: J. SMALL

Date: 01-21-2008

Disk: JMS 19047W

Survey Date: 01-17-2008

Sheet 1 of 1 Sheets

**Application to Drill**  
**Cimarex Energy Co. of Colorado**  
**Hydrus 10 Federal No. 1**  
Unit O      Section 10  
T17S R30E      Eddy County, NM

In response to questions asked under Section II B of Bulletin NTL-6, the following information is provided for your consideration:

- 1 Location:                      330' FSL & 1650' FEL
- 2 Elevation above sea level:      3,711 GR
- 3 Geologic name of surface formation:      Quaternary Alluvium Deposits
- 4 Drilling tools and associated equipment:      Conventional rotary drilling rig using fluid as a circulating medium for solids removal.
- 5 Proposed drilling depth:              6,000'
- 6 Estimated tops of geological markers:  
Yates                      1,240'  
Seven Rivers              1,535'  
Queen                      2,135'  
San Andres              2,870'  
Glorieta                      4,285'  
Paddock                      4,400'  
Blaine                      4,890'  
Tubb                      5,830'
- 7 Possible mineral bearing formation:  
Paddock              Oil  
Blaine              Oil

8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 450'	8.5	28	NC	FW
450' to 1,100'	9.8 - 10.2	40-45	NC	Brine
1,100' to 6,000'	9.0 - 9.2	30-32	NC	Cut Brine

Sufficient mud materials will be kept on location at all times in order to combat lost circulation or unexpected kicks. In order to run DSTs, open hole logs, and casing, the viscosity and water loss may have to be adjusted in order to meet these needs.

Application to Drill  
Cimarex Energy Co. of Colorado  
Hydrus 10 Federal No. 1  
Unit O                      Section 10  
T17S R30E                  Eddy County, NM

9 Casing & Cementing Program:

String	Hole Size	Depth		Casing OD		Weight	Thread	Collar	Grade
Surface	14 3/4"	0	to 450'	New	11 3/4"	42#	8-R	STC	H-40
Intermediate	11"	0	to 1,100'	New	8 3/4"	24#	8-R	STC	J-55
Production	7 1/2"	0	to 6,000'	New	5 1/2"	15.5#	8-R	LTC	J-55

10 Cementing:

**Surface**                      530 sx Class H + 2% CaCl<sub>2</sub> (wt 14.8, yld 1.34)  
**TOC    Surface**

**Intermediate**            Lead: 300 sx Class C Lite + 6# Salt + 1/4# CF (wt 12.7, yld 1.99)  
                                  Tail: 200 sx Class C + 2% CaCl<sub>2</sub> (wt 14.8, yld 1.34)  
**TOC    Surface**

**Production**  
    Stage 1                580 sx 50/50/2 Class C + 1% FL25 + 0.3% FL52 + 5% Salt + 0.5% SMS (wt 13.0, yld 1.68)  
    Stage 2                **DV Tool @ 3500'**  
                                  Lead: 550 sx Class H Lite + 6# Salt + 1/4# CF (wt 12.7, yld 1.92)  
                                  Tail: 200 sx Class H + 2% CaCl<sub>2</sub> (wt 13.0, yld 1.68)  
                                  **TOC    ~~1140'~~ See COA**

Fresh water zones will be protected by setting 13 3/4" casing at 420' and cementing to surface. Hydrocarbon zones will be protected by setting 8 3/4" casing at 1340' and cementing to surface and by setting 5 1/2" casing at 6000' and cementing to 1140.'

<u>Collapse Factor</u>	<u>Burst Factor</u>	<u>Tension Factor</u>
1.125	1.125	1.6

**Application to Drill**  
**Cimarex Energy Co. of Colorado**  
**Hydrus 10 Federal No. 1**  
Unit O      Section 10  
T17S R30E      Eddy County, NM

**11 Pressure control Equipment:**

Exhibit "E-1" - Surface Casing - An 11¾" 3000 PSI working pressure B.O.P. consisting of a 3000# annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor. Annular preventor to be function-tested once per day. Annular preventor will be tested to 250 psi low and 3000 psi high.

Exhibit "E-2" - Intermediate & Production Casing - An 8½" 5000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams and a 5000# hydril. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 1100'. A kelly cock will be installed and maintained in operable condition and a drill string safety valve in the open position will be available on the rig floor.

BOP unit will be hydraulically operated. Below intermediate casing shoe, BOP will be operated at least once a day while drilling and the blind rams will be operated when out of hole during trips. No abnormal pressure or temperature is expected while drilling. From the base of the surface pipe through the running of production casing, the well will be equipped with a 5000 psi BOP system.

The BOPs will be tested by an independent service company. Ram type BOPs to 250 psi low and 5000 psi high. Annular BOP 250 psi low and 3000 psi high.

**12 Testing, Logging and Coring Program:**

- A. Mud logging      No mud logging program.
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. No DSTs or cores are planned at this time.

**13 Potential Hazards:**

No abnormal pressures or temperatures are expected. The area has a potential H2S hazard. An H2S drilling plan is attached. Adequate flare lines will be installed off the mud / gas separator where gas may be flared safely. All personnel will be familiar with all aspects of safe operation of equipment being used.

Estimated BHP      **2300 psi**      Estimated BHT      **110°**

**14 Road and location construction will begin after BLM approval of APD. Anticipated spud date as soon as approved.**

Drilling expected to take      20-25 days

If production casing is run an additional 30 days will be required to complete and construct surface facilities.

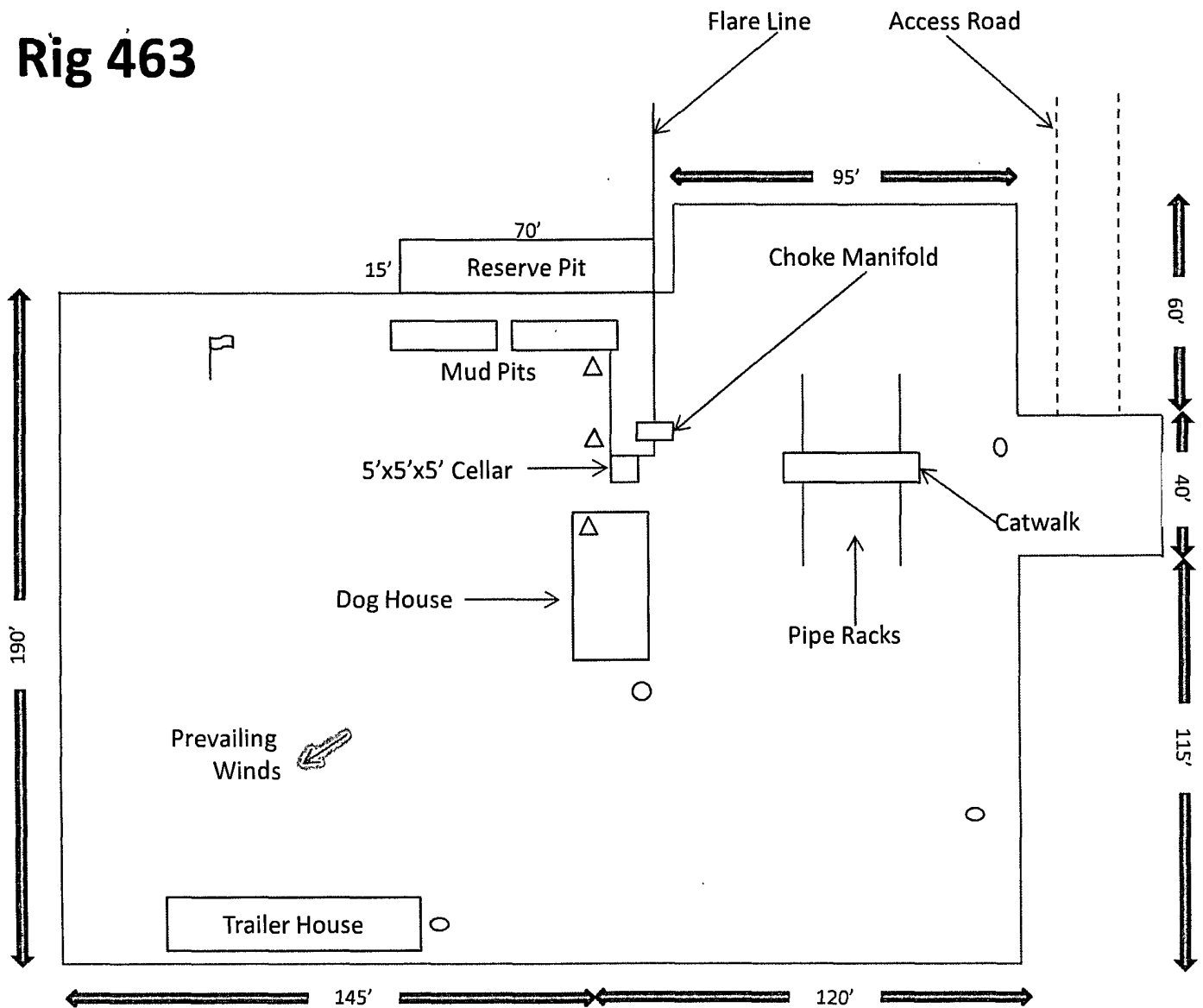
**15 Other Facets of Operations:**

After running casing, cased hole gamma ray neutron collar logs will be run from total depth over possible pay intervals.

Blinebry      pay will be perforated and stimulated.

The proposed well will be tested and potentialized as      **an oil well.**

# Rig 463







-  Wind Direction Indicators  
(wind sock or streamers)
-  H2S Monitors  
(alarms at bell nipple and shale shaker)
-  Briefing Areas
-  Remote BOP Closing Unit

Exhibit D – Rig Diagram  
**Hydrus 10 Federal No. 1**  
 Cimarex Energy Co. of Colorado  
 10-17S-30E  
 330' FSL & 1650' FEL  
 Eddy County, NM

## SR & A

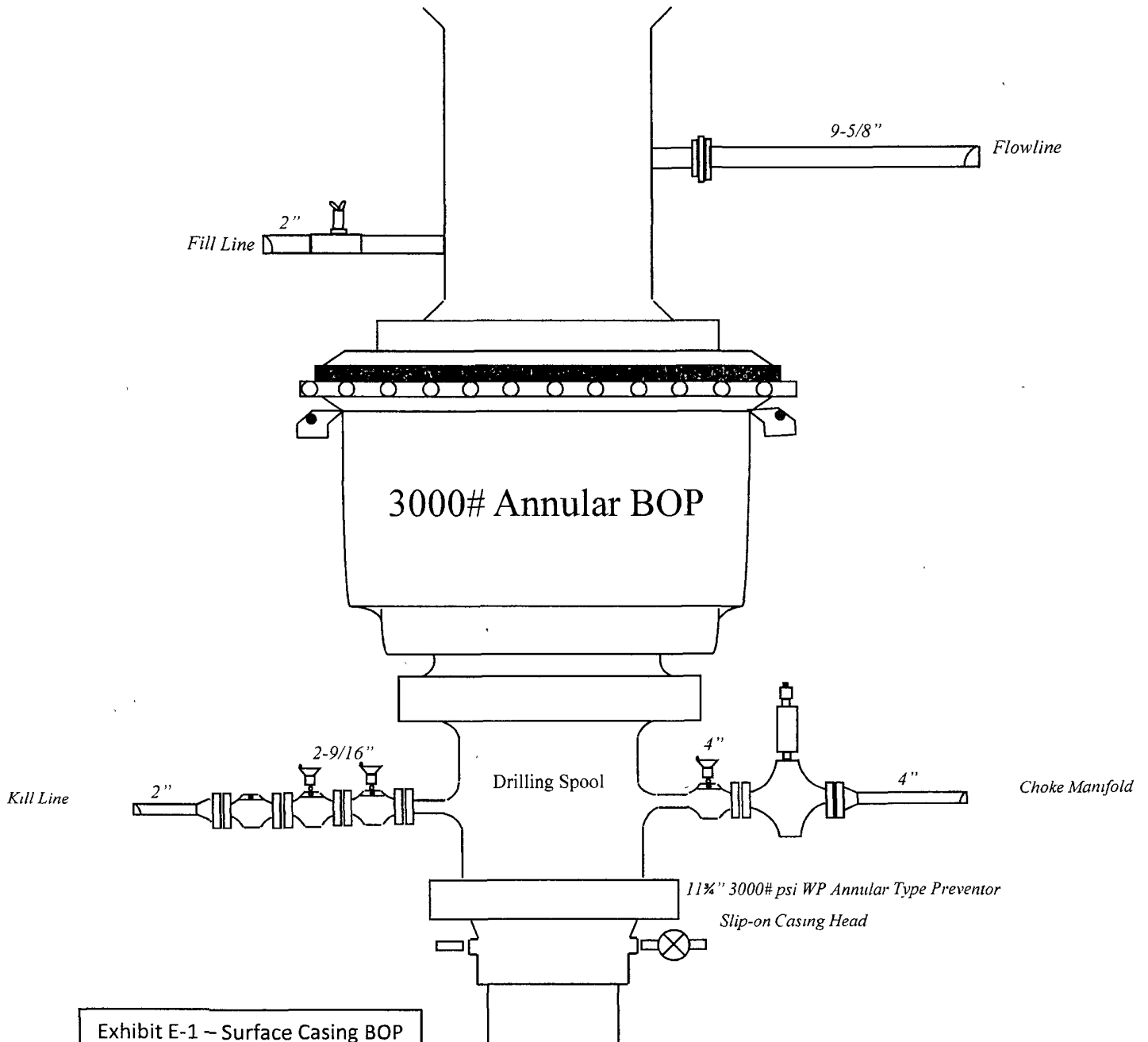


Exhibit E-1 ~ Surface Casing BOP  
**Hydrus 10 Federal No. 1**  
Cimarex Energy Co. of Colorado  
10-17S-30E  
330' FSL & 1650' FEL  
Eddy County, NM



SR & A

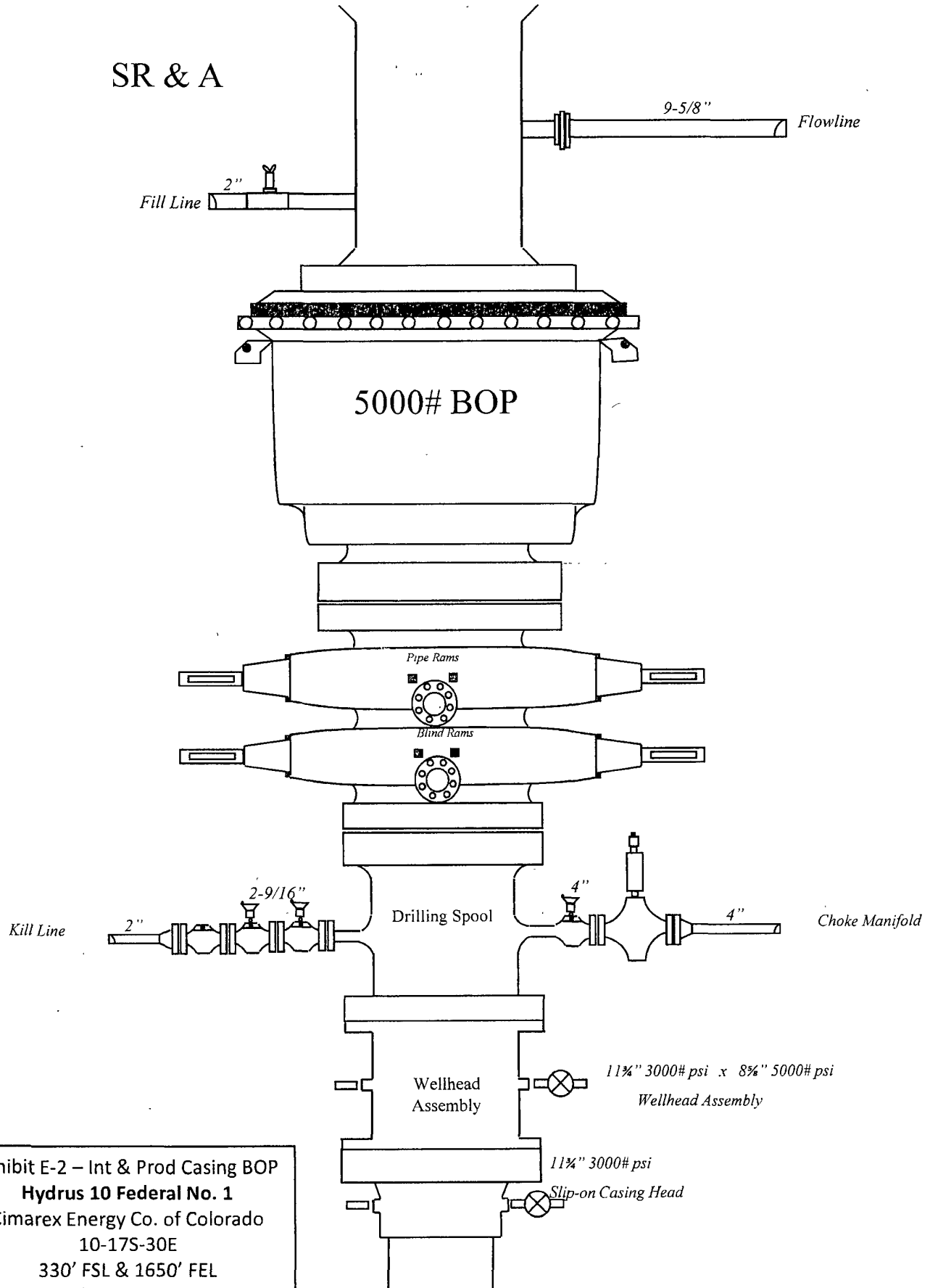


Exhibit E-2 – Int & Prod Casing BOP  
**Hydrus 10 Federal No. 1**  
 Cimarex Energy Co. of Colorado  
 10-17S-30E  
 330' FSL & 1650' FEL  
 Eddy County, NM

**DRILLING OPERATIONS  
CHOKE MANIFOLD  
5M SERVICE**

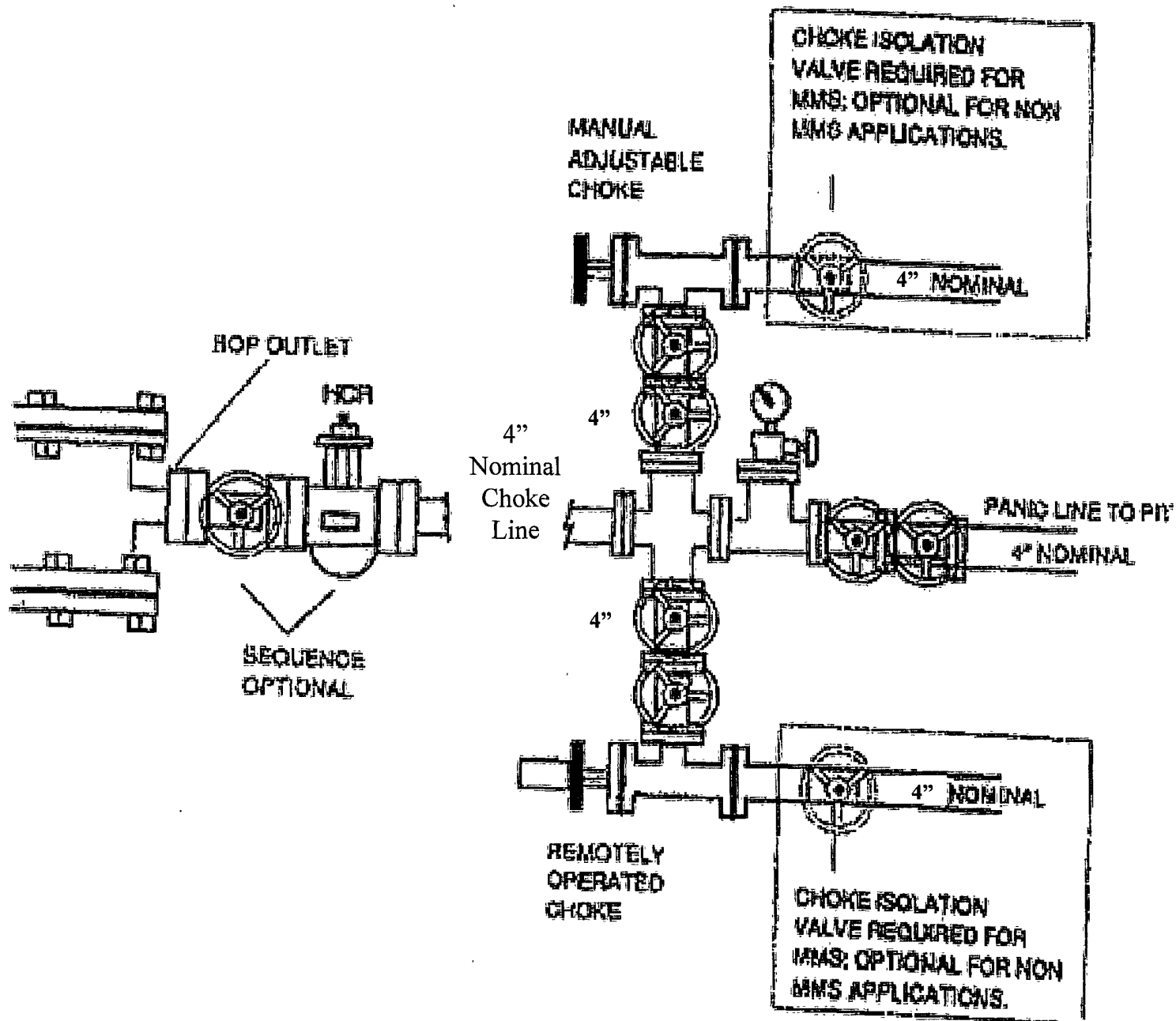


Exhibit E-1 – Choke Manifold Diagram  
Hydrus 10 Federal No. 1  
Cimarex Energy Co. of Colorado  
10-17S-30E  
330' FSL & 1650' FEL  
Eddy County, NM

**Hydrogen Sulfide Drilling Operations Plan**  
**Cimarex Energy Co. of Colorado**  
**Hydrus 10 Federal No. 1**  
Unit O      Section 10  
T17S R30E      Eddy County, NM

- 1 All Company and Contract personnel admitted on location must be trained by a qualified H2S safety instructor to the following:
  - A. Characteristics of H2S
  - B. Physical effects and hazards
  - C. Proper use of safety equipment and life support systems.
  - D. Principle and operation of H2S detectors, warning system and briefing areas.
  - E. Evacuation procedure, routes and first aid.
  - F. Proper use of 30 minute pressure demand air pack.
- 2 H2S Detection and Alarm Systems:
  - A. H2S detectors and audio alarm system to be located at bell nipple, end of flow line (mud pit) and on derrick floor or doghouse.
- 3 Windsock and/or wind streamers:
  - A. Windsock at mudpit area should be high enough to be visible.
  - B. Windsock at briefing area should be high enough to be visible.
- 4 Condition Flags and Signs:
  - A. Warning sign on access road to location.
  - B. Flags to be displayed on sign at entrance to location. Green flag indicates normal safe condition. Yellow flag indicates potential pressure and danger. Red flag indicates danger (H2S present in dangerous concentration). Only emergency personnel admitted to location.
- 5 Well control equipment:
  - A. See exhibit "E"
- 6 Communication:
  - A. While working under masks chalkboards will be used for communication.
  - B. Hand signals will be used where chalk board is inappropriate.
  - C. Two way radio will be used to communicate off location in case of emergency help is required. In most cases cellular telephones will be available at most drilling foreman's trailer or living quarters.
- 7 Drillstem Testing:

No DSTs or cores are planned at this time.
- 8 Drilling contractor supervisor will be required to be familiar with the effects H2S has on tubular goods and other mechanical equipment.
- 9 If H2S is encountered, mud system will be altered if necessary to maintain control of formation. A mud gas separator will be brought into service along with H2S scavengers if necessary.

**Surface Use Plan**  
**Cimarex Energy Co. of Colorado**  
**Hydrus 10 Federal No. 1**  
Unit O      Section 10  
T17S R30E      Eddy County, NM

- 1 Existing Roads: Area maps, Exhibit "B" is a reproduction of Eddy Co. General Highway Map. Exhibit "C" is a reproduction of a USGS Topographic Map, showing existing roads and proposed roads. All existing roads will be maintained in a condition equal to or better than current conditions. Any new roads will be constructed to BLM specifications.

A. Exhibit      FROM THE JUNCTION OF US HWY 82 AND HAGERMAN  
CUTOFF, GO NORTH 2.2 MILES TO LEASE ROAD, ON  
LEASE ROAD GO EAST 420' TO PROPOSED LEASE  
ROAD.

B. From the junction of US Hwy 82 and Hagerman Cutoff, go North 2.2 miles to lease road. On lease road, go East 420' to proposed lease road.

- 2 Planned Access Roads: 78' of new access road will be built *on-lease*.

- 3 Location of Existing Wells in a One-Mile Radius - Exhibit A

- A. Water wells -      None known
- B. Disposal wells -      None known
- C. Drilling wells -      None known
- D. Producing wells -      As shown on Exhibit "A"
- E. Abandoned wells -      As shown on Exhibit "A"

- 4 If on completion this well is a producer, Cimarex Energy Co. of Colorado will furnish maps and/or plats showing on site facilities or off site facilities if needed. This will be accompanied by a Sundry Notice.

- 5 Location and Type of Water Supply:

Water will be purchased locally from a commercial source and trucked over the access roads or piped in flexible lines laid on top of the ground.

- 6 Source of Construction Material:

If possible, construction will be obtained from the excavation of drill site. If additional material is needed, it will be purchased from a local source and transported over the access route as shown on Exhibit "C".

**Surface Use Plan**  
**Cimarex Energy Co. of Colorado**  
**Hydrus 10 Federal No. 1**  
Unit O      Section 10  
T17S R30E      Eddy County, NM

**7 Methods of Handling Waste Material:**

- A. Drill cuttings will be disposed of in the reserve pit.
- B. All trash, junk and other waste material will be contained in trash cages or bins to prevent scattering. When the job is completed all contents will be removed and disposed of in an approved sanitary land fill.
- C. Salts remaining after completion of well will be picked up by supplier including broken sacks.
- D. Sewage from living quarters will drain into holding tanks and be cleaned out periodically. A Porta-John will be provided for the rig crews. This equipment will be properly maintained during the drilling operations and removed upon completion of the well.
- E. Remaining drilling fluids will be allowed to dry in the reserve pit until the pit is dry enough for breaking out. In the event that drillings fluids do not dry out in a reasonable time they will be hauled off by transports and be disposed of at a State approved disposal facility. Water produced during drilling will be put in reserve pit. Any oil or condensate produced will be stored in test tanks until sold and hauled from the site.

**8 Ancillary Facilities:**

- A. No camps or airstrips to be constructed.

**9 Well Site Layout:**

- A. Exhibit "D" shows location and rig layout.
- B. This exhibit indicates proposed location of reserve and trash pits; and living
- C. Mud pits in the active circulating system will be steel pits and the reserve pit is proposed to be lined with PVC or polyethylene liner. The pit liner will be 12 mils thick. Pit liner will extend a minimum, 2'00" over the reserve pits dikes where the liner will be anchored down.
- D. The reserve pit will be fenced on three sides with four strands of barbed wire during drilling and completion phases. The fourth side will be fenced after all drilling operations have ceased. If the well is a producer, the reserve pit fence will be torn down. The reserve pit and those areas of the location not essential to production facilities will be reclaimed and seeded per BLM requirements.

**Surface Use Plan**  
**Cimarex Energy Co. of Colorado**  
**Hydrus 10 Federal No. 1**  
Unit O      Section 10  
T17S R30E      Eddy County, NM

**10 Plans for Restoration of Surface:**

Rehabilitation of the location and cuttings burial cell will start in a timely manner after all drilling operations cease. The type of reclamation will depend on whether the well is a producer or a dry hole.

However, in either event, the reserve pit will be allowed to dry properly, and fluid removed and disposed of in accordance with Article 7.B as previously noted. The pit area will then be leveled and contoured to conform to the original and surrounding area. Drainage systems, if any, will be reshaped to the original configuration with provisions made to alleviate erosion. These may need to be modified in certain circumstances to prevent inundation of the location's pad and surface facilities. After the area has been shaped and contoured, topsoil from the spoil pile will be placed over the disturbed area to the extent possible. Revegetation procedures will comply with BLM standards.

If the well is a dry hole, the pad and road area will be recountoured to match the existing terrain. Topsoil will be spread to the extent possible. Revegetation will comply with BLM standards.

Should the well be a producer, the previously noted procedures will apply to those areas which are not required for production facilities.

**11 Other Information:**

- A. Topography consists of a sloping plane with loose tan sands. Vegetation is mainly yu mesquite and shin oak.
- B. The wellsite is on surface owned by Department of the Interior, Bureau of L Management. The land is used mainly for farming, cattle ranching, recreational use, and gas production.
- C. An Archaeological survey will be conducted on the location and proposed roads, and report will be filed with the Bureau of Land Management in the Carlsbad BLM office.
- D. There are no know dwellings within 1 1/2 miles of this location.

**Operator Certification Statement**

**Cimarex Energy Co. of Colorado**

**Hydrus 10 Federal No. 1**

Unit O      Section 10

T17S R30E      Eddy County, NM

**Operator's Representative**

Cimarex Energy Co. of Colorado

P.O. Box 140907

Irving, TX 75014

Office Phone: (972) 443-6489

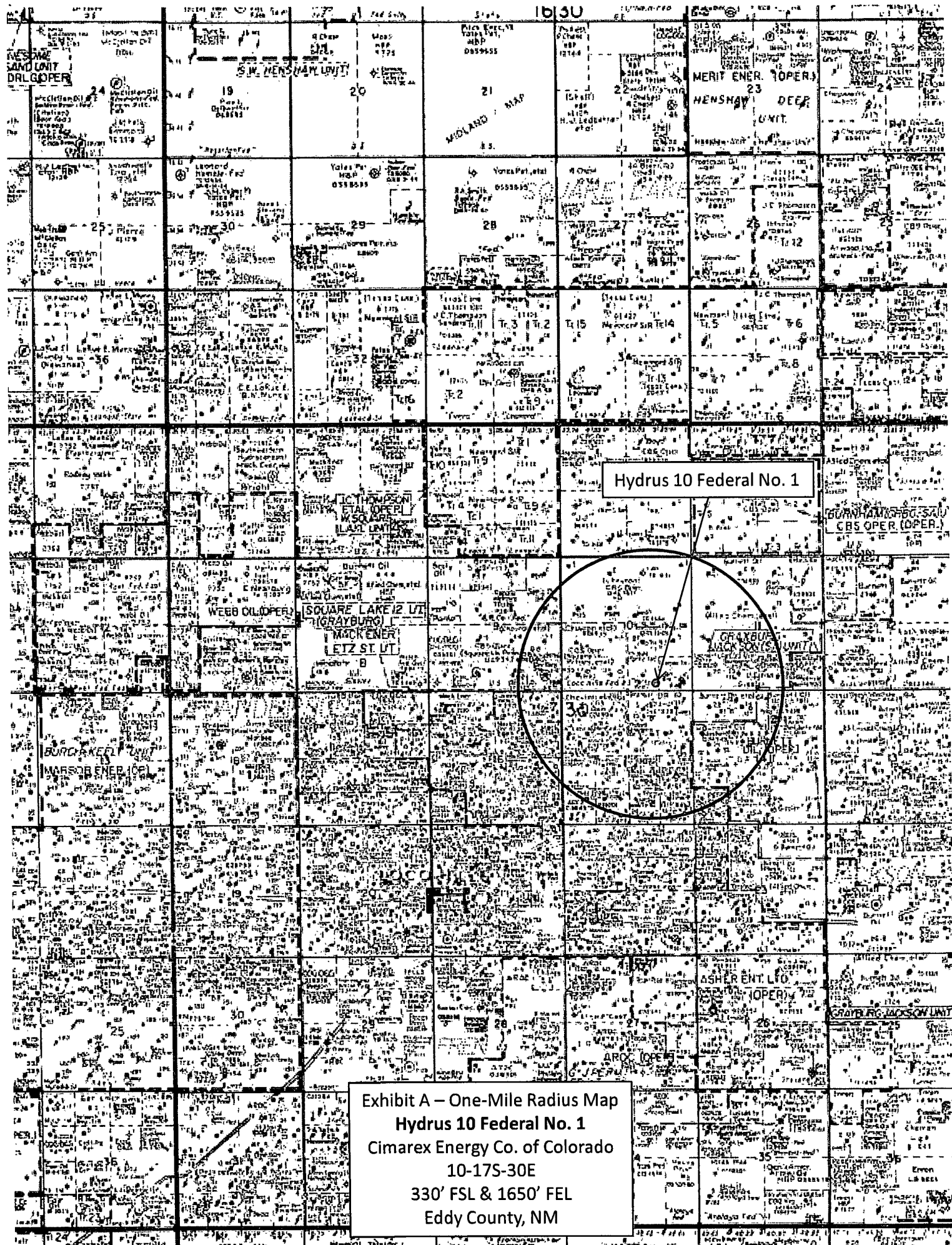
Zeno Farris

**CERTIFICATION:** I hereby certify that the statements and plans made in this APD are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed by Cimarex Energy Co. of Colorado and/or its contractors/subcontractors and is in conformity with this plan and the terms and conditions under which it is approved. This statement is subject to the provision of U.S.C. 1001 for the filing of a false statement.

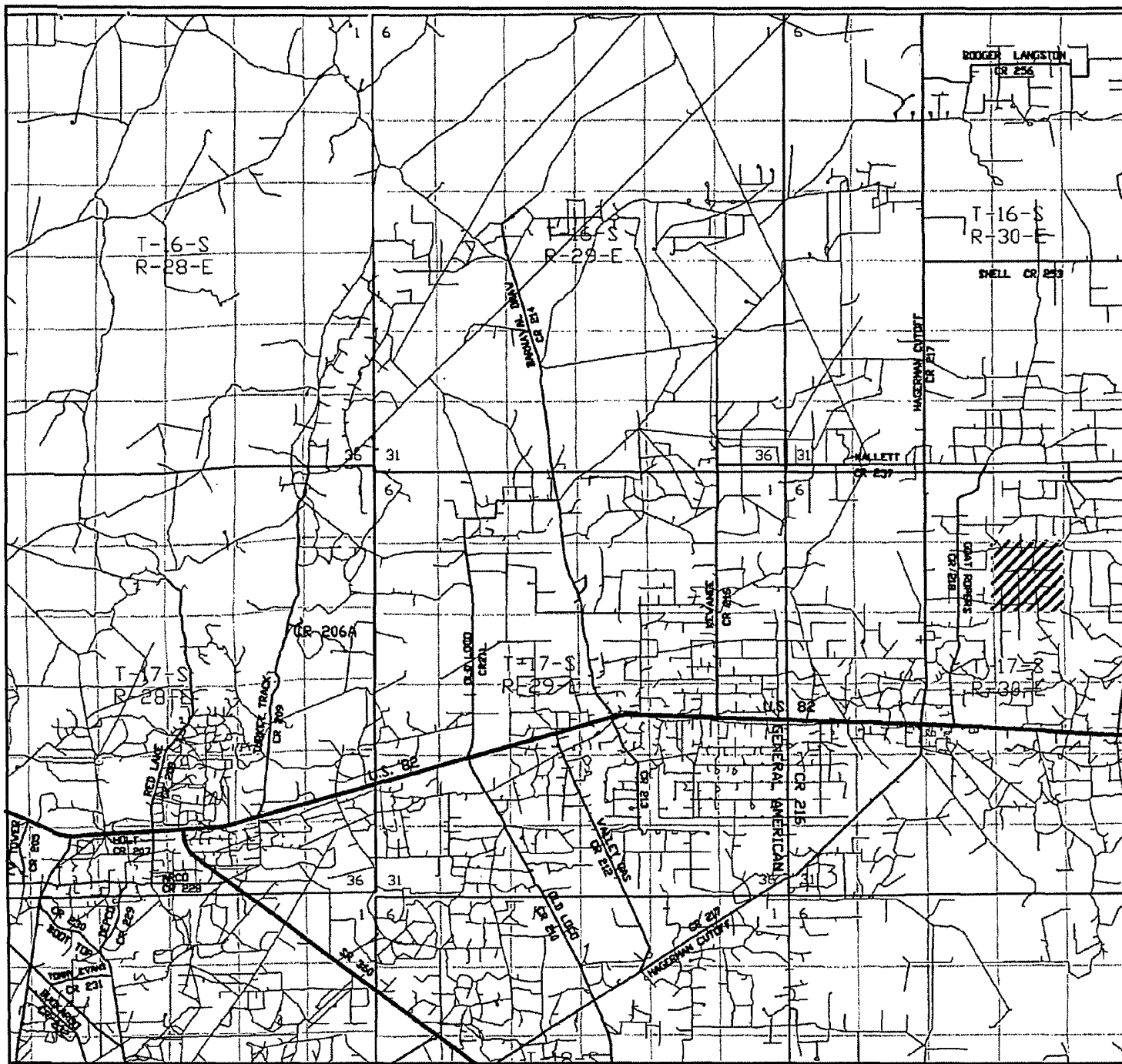
NAME: Zeno Farris  
Zeno Farris

DATE: January 25, 2008

TITLE: Manager Operations Administration







HYDRUS "10" FEDERAL #1  
 Located 330' FSL and 1650' FEL  
 Section 10, Township 17 South, Range 30 East,  
 N.M.P.M., Eddy County, New Mexico.

**basin**  
**surveys**  
 focused on excellence  
 in the oilfield

P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (505) 393-7316 - Office  
 (505) 392-3074 - Fax  
 basinsurveys.com

W.O. Number: JMS 19047TR

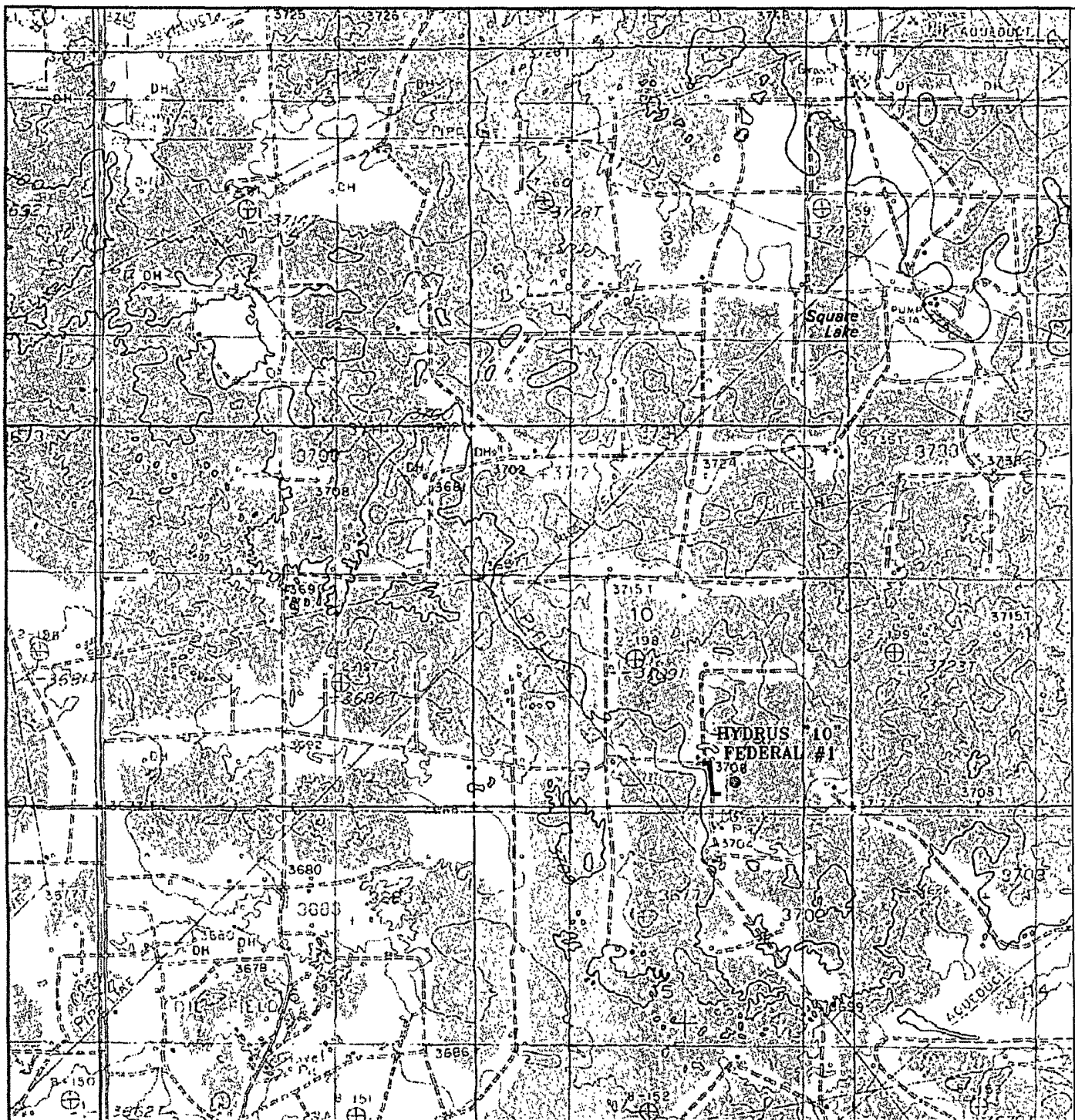
Survey Date: 01-17-2008

Scale: 1" = 2 MILES

Date: 01-21-2008

**CIMAREX**  
**ENERGY CO.**  
**OF COLORADO**

Exhibit B



HYDRUS "10" FEDERAL #1  
 Located 330' FSL and 1650' FEL  
 Section 10, Township 17 South, Range 30 East,  
 N.M.P.M., Eddy County, New Mexico.

**basin**  
**surveys**  
 focused on excellence  
 in the oilfield

P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (505) 393-7316 - Office  
 (505) 392-3074 - Fax  
 basinsurveys.com

W.O. Number JMS 19047T

Survey Date: 01-17-2008

Scale: 1" = 2000'

Date: 01-21-2008

**CIMAREX**  
**ENERGY CO.**  
**OF COLORADO**

Exhibit C

## PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy Co. of Colorado
LEASE NO.:	NM074935
WELL NAME & NO.:	Hydrus 10 Federal No. 1
SURFACE HOLE FOOTAGE:	330' FSL & 1650' FEL
BOTTOM HOLE FOOTAGE	Same
LOCATION:	Section 10, T. 17 S., R 30 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**
  - Pad restriction**
    - Lesser Prairie Chicken
- ☐ **Construction**
  - Notification
  - Topsoil
  - Reserve Pit
  - Federal Mineral Material Pits
  - Well Pads
  - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
- ☐ **Production (Post Drilling)**
  - Well Structures & Facilities
- ☐ **Reserve Pit Closure/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)**

### **V-DOOR NORTH. RESTRICT PAD TO THE WEST TO 80 FT.**

Timing Limitation Stipulation/Condition of Approval for Lesser Prairie-Chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 15 through June 15 annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, geophysical exploration other than 3-D operations, and pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 ft. from the source of the noise.

## **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 (505) 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**

There is no measurable soil on this well pad to stockpile. No topsoil stockpile is required.

### **C. RESERVE PITS**

The reserve pit shall be constructed and closed in accordance with the NMOCD rules.

The reserve pit shall be constructed 70' X 15' on the West side of the well pad.

The reserve pit shall be constructed, so that upon completion of drilling operations, the dried pit contents shall be buried a minimum depth of three feet below ground level. Should the pit content level not meet the three foot minimum depth requirement, the excess contents shall be removed until the required minimum depth of three feet below ground level has been met. The operator shall properly dispose of the excess contents at an authorized disposal site.

The reserve pit shall be constructed and maintained so that runoff water from outside the location is not allowed to enter the pit. The berms surrounding the entire perimeter of the pit shall extend a minimum of two (2) feet above ground level. At no time will standing fluids in the pit be allowed to rise above ground level.

The reserve pit shall be fenced on three (3) sides during drilling operations. The fourth side shall be fenced immediately upon rig release.

### **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 (505) 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.

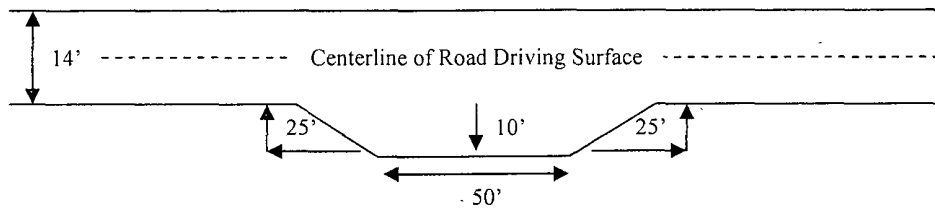
##### **Ditching**

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**

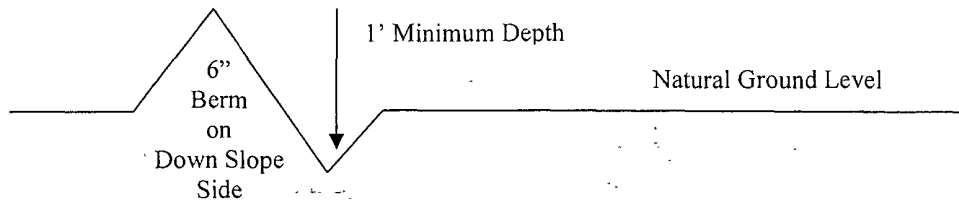


## Drainage

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outslowing 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:

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

### **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**

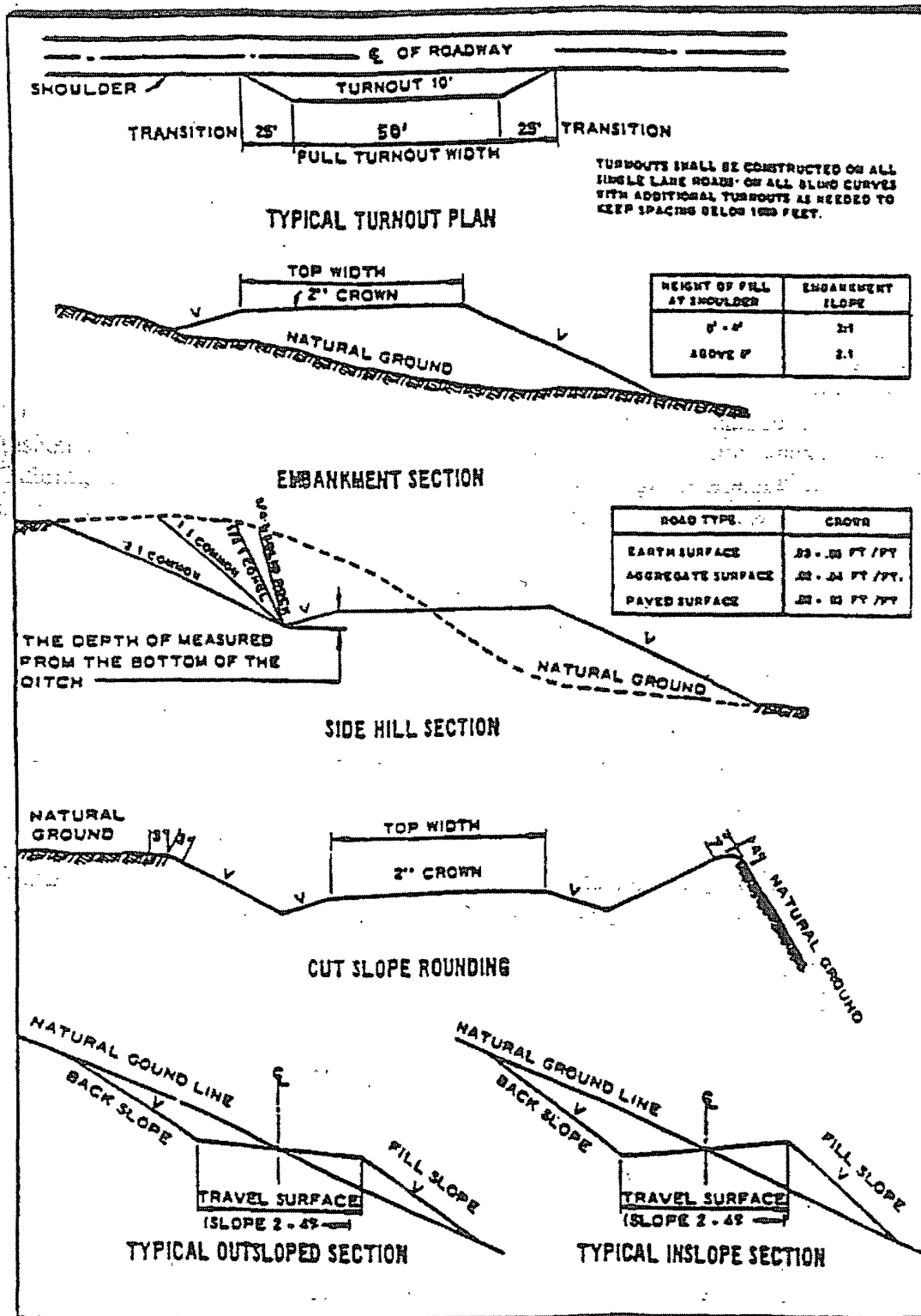
Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

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. A Hydrogen Sulfide (H<sub>2</sub>S) Drilling Plan should be activated 500 feet prior to drilling into the **Grayburg** formation. **Measurements between 500-1800 ppm in the gas stream.**
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

1. The 13-3/8 inch surface casing shall be set **at approximately 450 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**
  - 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 will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement). **Please provide WOC times to inspector for cement slurries.**

- 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 action will be done prior to drilling out that string.

**Possible lost circulation in the Grayburg and San Andres formations.  
Possible water flows in the Salado and Artesia Groups.**

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

☒ Cement to surface. If cement does not circulate see B.1.a-d above. **Please provide WOC times to inspector for cement slurries. Intermediate casing to be set below the salt in the Tansill formation at approximately 1100 feet.**

- 3. The minimum required fill of cement behind the 5-1/2 inch production casing is:

☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **First stage to circulate.**

- 4. 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 8-5/8" intermediate casing shoe shall be **5000 (5M)** psi.
- 4. 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.

#### **D. DRILL STEM TEST**

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

**WWI 022908**

## **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 & RESERVE PIT CLOSURE**

### **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.

At the time reserve pits are to be reclaimed, 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. RESERVE PIT CLOSURE**

The reserve pit, when dried and closed, shall be recontoured, all trash removed, and reseeded as follows:

## Seed Mixture for LPC Sand/Shinnery 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:

<u>Species</u>	<u>lb/acre</u>
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

\*\*Four-winged Saltbush 5lbs/A

\* This can be used around well pads and other areas where caliche cannot be removed.

\*Pounds of pure live seed:

Pounds of seed x percent purity x percent germination = pounds pure live seed  
(Insert Seed Mixture Here)



## **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.