

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

ATS-08-43  
EA-08-180

Form 3160-3  
(April 2004)



UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

DEC 11 2007  
OCD-ARTESIA

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

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of Work <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. LC-028784-B
1b Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name
2. Name of Operator Cimarex Energy Co. of Colorado		7. If Unit or CA Agreement, Name and No
3a Address PO Box 140907 Irving, TX 75014		8. Lease Name and Well No Keely 26 Federal No. 4
3b. Phone No (include area code) 972-401-3111		9. API Well No. 30-015- 35982
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 2040' FSL & 330' FEL At proposed prod. Zone		10. Field and Pool, or Exploratory Loco Hills; Wolfcamp, Northeast
14. Distance in miles and direction from nearest town or post office* 2 miles NW of Loco Hills		11. Sec, T R. M. or Blk. and Survey or Area 26-17S-29E
15. Distance from proposed* location to nearest property or lease line, ft (Also to nearest drg unit line if any) 330'		12. County or Parish Eddy
16. No of acres in lease 1264.52		13. State NM
17. Spacing Unit dedicated to this well SESE 40		
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. N/A		20. BLM/BIA Bond No on File NM-2575
19. Proposed Depth 9,350'		
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 3571' GR	22. Approximate date work will start* 12/1/2007	23. Estimated duration 30-35 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  | 4 Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)     |
| 2 A Drilling Plan   | 5. Operator Certification   |
| 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) | 6 Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature 	Name (Printed/Typed) Natalie Krueger	Date 10.08.07
Title Regulatory Analyst		
Approved By (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date DEC 07 2007
Title FOR 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

Roswell Controlled Water Basin

SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

APPROVAL SUBJECT TO  
GENERAL REQUIREMENTS  
AND SPECIAL REGULATIONS  
ATTACHED

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

1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 97601	Pool Name Loco Hills; Wolfcamp, NE	
Property Code 35864	Property Name KEELY "26" FEDERAL		Well Number 4
OGRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO		Elevation 3571'

### Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
1	26	17 S	29 E		2040	SOUTH	330	EAST	EDDY

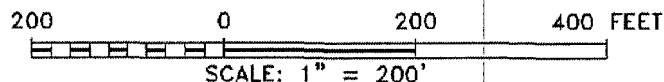
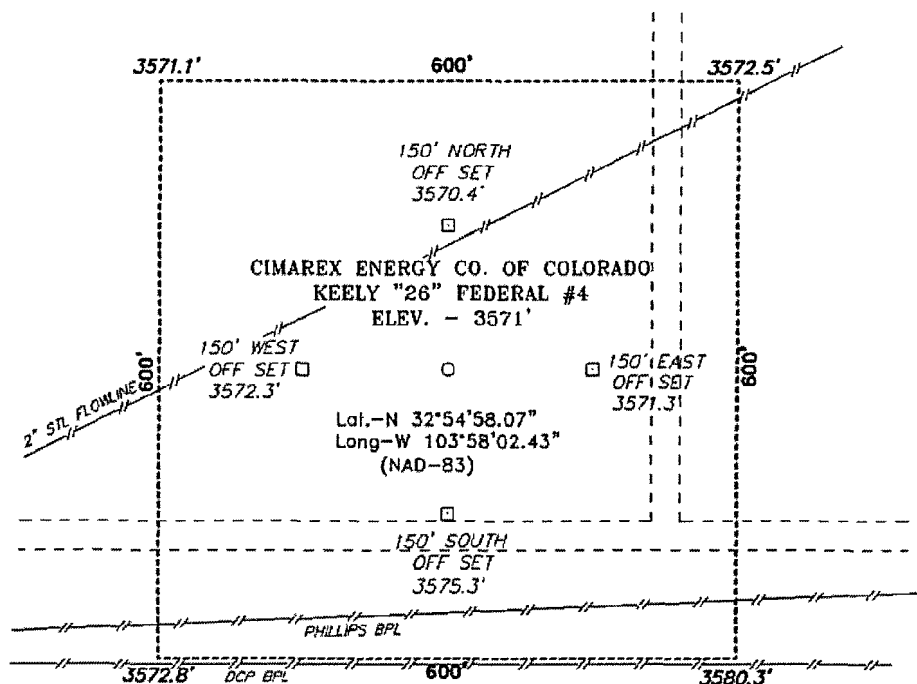
## Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
Dedicated Acres 40	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 80%;"> <p style="text-align: center;"><b><u>SURFACE LOCATION</u></b></p> <p>Lat - N32°48'13.96"</p> <p>Long - W104°02'16.59"</p> <p>NMSPCE- N 656306.535</p> <p style="padding-left: 40px;">E 632099.906</p> <p style="text-align: center;">(NAD-83)</p> </div> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: 30%;"> <p style="text-align: center;">LC-028784-B</p> <p style="text-align: center;">Keely 26 Fed #4</p> </div>	<div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><b>OPERATOR CERTIFICATION</b></p> <p><i>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.</i></p> <div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">               Signature           </div> <div style="text-align: center;">             10-08-07              Date           </div> </div> <div style="border-top: 1px solid black; padding-top: 5px; text-align: center;">             Natalie Krueger              Printed Name           </div> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;"><b>SURVEYOR CERTIFICATION</b></p> <p><i>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.</i></p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p style="text-align: center;">SEPTEMBER 27 2007</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>Date Surveyed</p> <p>Signature </p> <p>Professional Surveyor</p> </div> <div style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <div style="text-align: center;">               W. &amp; A. 1800           </div> </div> <div style="border: 1px solid black; padding: 5px;"> <p>Certificate No. Gary L. Jones 7977</p> <p style="text-align: center;"><b>BASIN SURVEYS</b></p> </div>
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SECTION 26, TOWNSHIP 17 SOUTH, RANGE 29 EAST, N.M.P.M.,  
EDDY COUNTY, NEW MEXICO.



Directions to Location:

FROM MILE MARKER 129 US HWY 82, GO WEST 0.3  
MILES TO LEASE ROAD, ON LEASE ROAD GO SOUTH  
0.8 MILES TO LEASE ROAD, ON LEASE ROAD GO  
EAST 0.3 MILES TO LEASE ROAD, ON LEASE ROAD  
GO SOUTH 0.1 MILES TO PROPOSED LOCATION

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

W.O. Number: 18659 Drawn By: J. SMALL

Date: 10-01-2007 Disk: JMS 18659W

**CIMAREX ENERGY CO. OF COLORADO**

REF: KEELY "26" FEDERAL #4 / WELL PAD TOPO

THE KEELY "26" FEDERAL #4 LOCATED 2040'

FROM THE SOUTH LINE AND 330' FROM THE EAST LINE OF

SECTION 26, TOWNSHIP 17 SOUTH, RANGE 29 EAST,

N.M.P.M., EDDY COUNTY, NEW MEXICO.

Survey Date: 09-27-2007 Sheet 1 of 1 Sheets

**Application to Drill**  
**Cimarex Energy Co. of Colorado**  
**Keely 26 Federal No. 4**  
Unit I      Section 26  
T17S R29E      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:      SHL    2040' FSL & 330' FEL
  
- 2 Elevation above sea level:      3571' 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:      9,350'
  
- 6 Estimated tops of geological markers:  
San Andres      2,635'  
Wolfcamp      7,645'  
Cisco      9,290'  
Strawn      10,130'  
Atoka      10,370'  
Morrow      10,840'  
Mississ.      11,125'
  
- 7 Possible mineral bearing formation:  
Wolfcamp      Oil      Primary

8 Proposed Mud Circulating System:

Depth			Mud Wt	Visc	Fluid Loss	Type Mud
0'	to	375'	8.4 - 9.4	28-30	May lose circ	FW spud mud
375'	to	4,700'	9.9 - 10.3	29-32	May lose circ	brine water
4,700'	to	9,350'	8.4 - 9.4	28-30	NC	FW/brine, maintain clear fluid as long as possible, use hi-vis sweeps to keep hole clean

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. Mud system monitoring equipment with derrick floor indicators and visual/audio alarms shall be installed and operative prior to drilling into the Wolfcamp formation. This equipment will remain in use until production casing is run and cemented.

Application to Drill  
Cimarex Energy Co. of Colorado  
Keely 26 Federal No. 4  
Unit I                      Section 26  
T17S R29E              Eddy County, NM

9 Casing & Cementing Program:

Hole Size	Depth		Casing OD		Weight	Thread	Collar	Grade
17-1/2	0	to 375'	New	13-3/8	48#	8-R	STC	H-40
11	0	to 4,700'	New	8-5/8	32#	8-R	LTC	J-55
7-7/8	0	to 9,350'	New	5-1/2	17#	8-R	LTC	N-80

10 Cementing & Setting Depth:

13-3/8      **Surface**      Set 375' of 13-3/8 48# H-40 STC  
Lead: 134 sx Lite Premium Plus + 0.125# Poly-e-flake + 1% CaCl (wt 14.2, yld 1.64)  
Tail: 220 sx Premium Plus + 2% CaCl (wt 14.8, yld 1.34)  
TOC              Surface

8-5/8      **Intermediate**      Set 4,700' of 8-5/8 32# J-55 LTC  
**Stage 1**  
Lead: 733 sx Interfill C + 0.125# Poly-e-flake (wt 11.9, yld 2.45)  
Tail: 200 sx Premium Plus + 1% CaCl (wt 14.8, yld 1.33)  
TOC              Surface

5-1/2      **Production**      Set 9,350' of 5-1/2 17# N-80 LTC  
Lead: 305 sx Super H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 5# Gilsonite + 0.125#  
Poly-e-flake + 0.35% HR-7 (wt 11.6, yld 2.79)  
Tail: 311 sx Super H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 5# Gilsonite + 0.125#  
Poly-e-flake + 0.35% HR-7 (wt 13.0, yld 1.67)  
**TOC      4500'**

Fresh water will be protected by setting 13-3/8 casing at 375' and cementing to Surface  
Hydrocarbon zones will be protected by setting 8-5/8 casing at 4,700' and cementing to Surface  
and by setting 5-1/2 casing at 9,350' and cementing to 4500'

Cimarex uses the following minimum safety factors:

Burst	Collapse	Tension
1.125	1.0	1.80

Application to Drill  
Cimarex Energy Co. of Colorado  
Keely 26 Federal No. 4  
Unit I      Section 26  
T17S R29E      Eddy County, NM

11 Pressure control Equipment:

Exhibit "E". A 13 3/8" 5000 PSI working pressure B.O.P. consisting of one set of blind rams and one set of pipe rams and a 5000 # annular type preventer. A choke manifold and 120 gallon accumulator with floor and remote operating stations and auxiliary power system. Rotating head below 6000'. 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. BOP will be nipped up on the 8-5/8" casing and 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.

We are requesting a variance for testing the 13-3/8" surface casing from Onshore Order No. 2, which states that all casing strings below the conductor shall be pressure tested to 0.22 psi per foot or 1500 psi, whichever is greater, but not to exceed 70% of the manufacturer's stated maximum internal yield. We are requesting to test the 13-3/8" casing to 1000 psi using rig pumps. The BOP will be tested to 5000 PSI by an independent service company.

12 Testing, Logging and Coring Program:

- A. Mud logging program: 2 man unit from 4700' to TD
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR
- C. No DSTs 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      4000 psi      Estimated BHT      175

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

Drilling expected to take      30-35 days

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

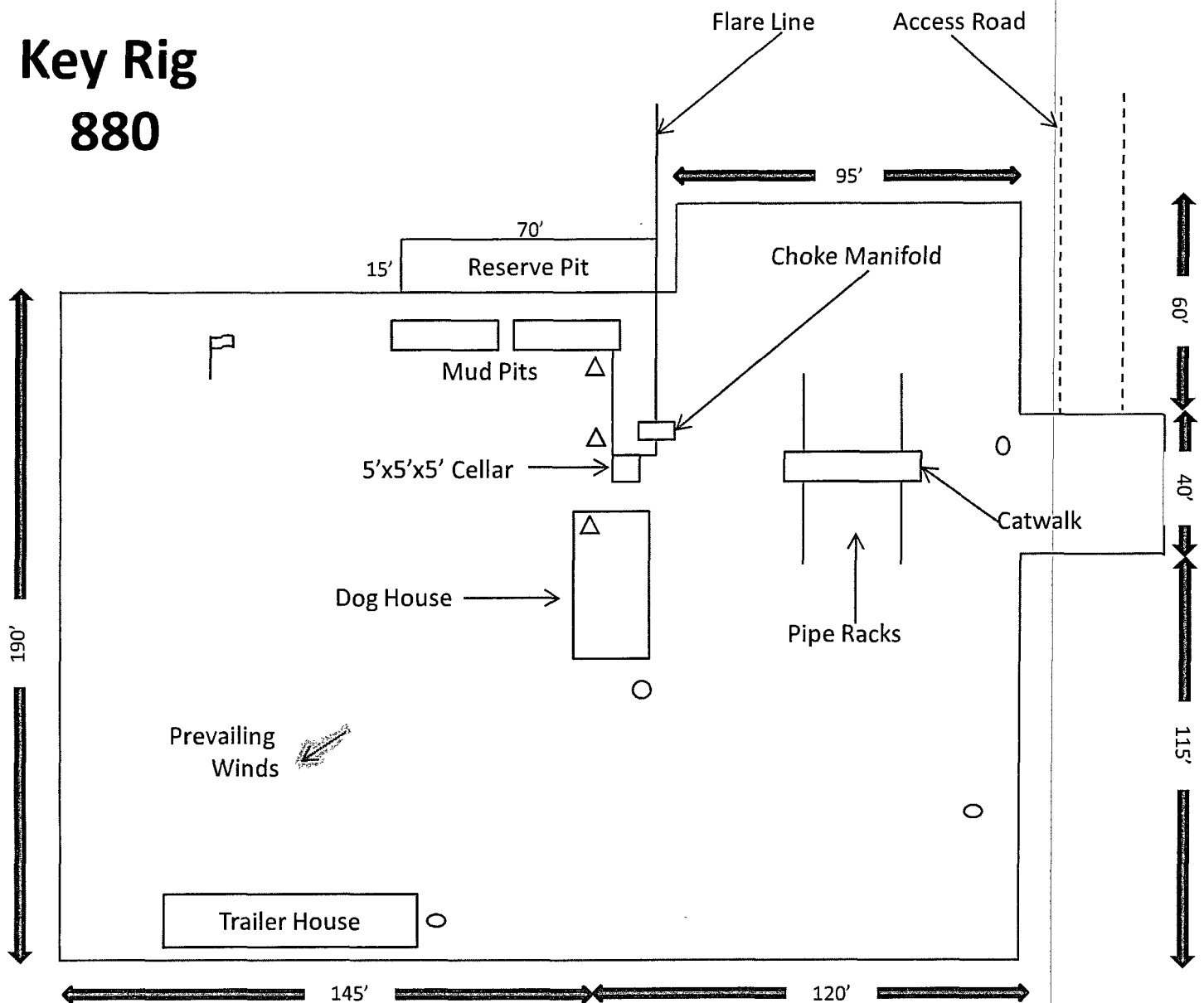
15 Other Facets of Operations:

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

**Wolfcamp** pay will be perforated and stimulated.

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

# Key Rig 880

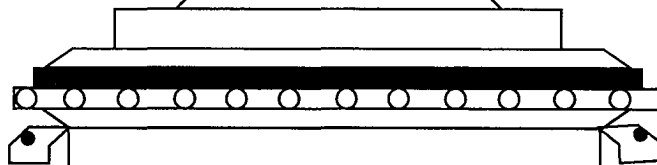
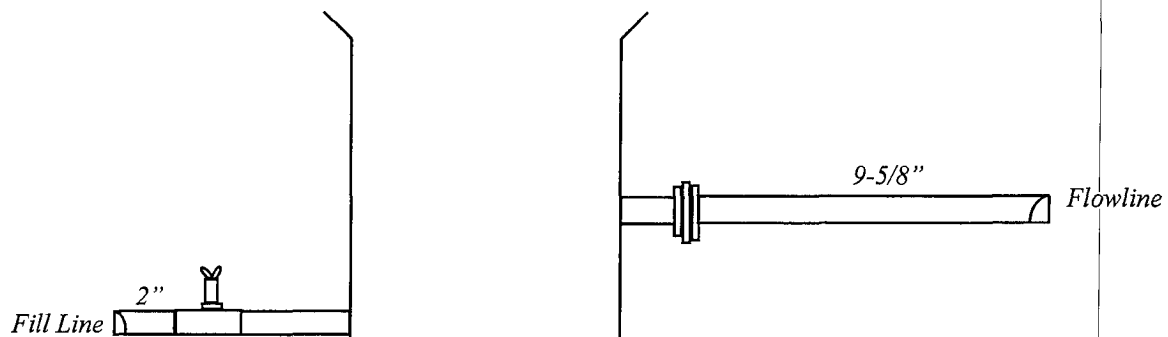


- Wind Direction Indicators  
(wind sock or streamers)
- △ H2S Monitors  
(alarms at bell nipple and shale shaker)
- Briefing Areas
- Remote BOP Closing Unit

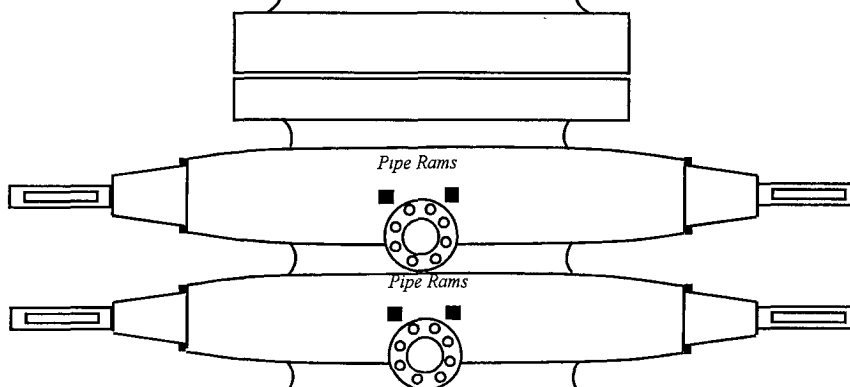
*See COA's*

Exhibit D -- Rig Diagram  
**Keely 26 Federal No. 4**  
 Cimarex Energy Co. of Colorado  
 2040' FSL & 330' FEL  
 Sec. 26-17S-29E  
 Eddy County, NM

# SR & A

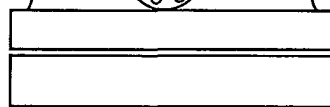


Hydril



Pipe Rams

Pipe Rams

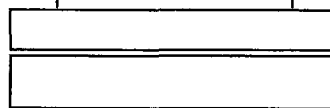


Drilling Spool

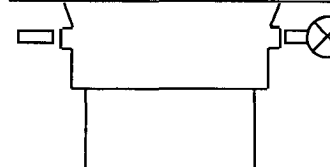


Kill Line

Choke Manifold



13-5/8" 5,000# psi WP Flange



Slip-on Casing Head  
2-9/16"

Exhibit E – 5000# BOP Diagram  
**Keely 26 Federal No. 4**  
 Cimarex Energy Co. of Colorado  
 2040' FSL & 330' FEL  
 Sec. 26-17S-29E  
 Eddy County, NM



**DRILLING OPERATIONS  
CHOKE MANIFOLD  
5M SERVICE**

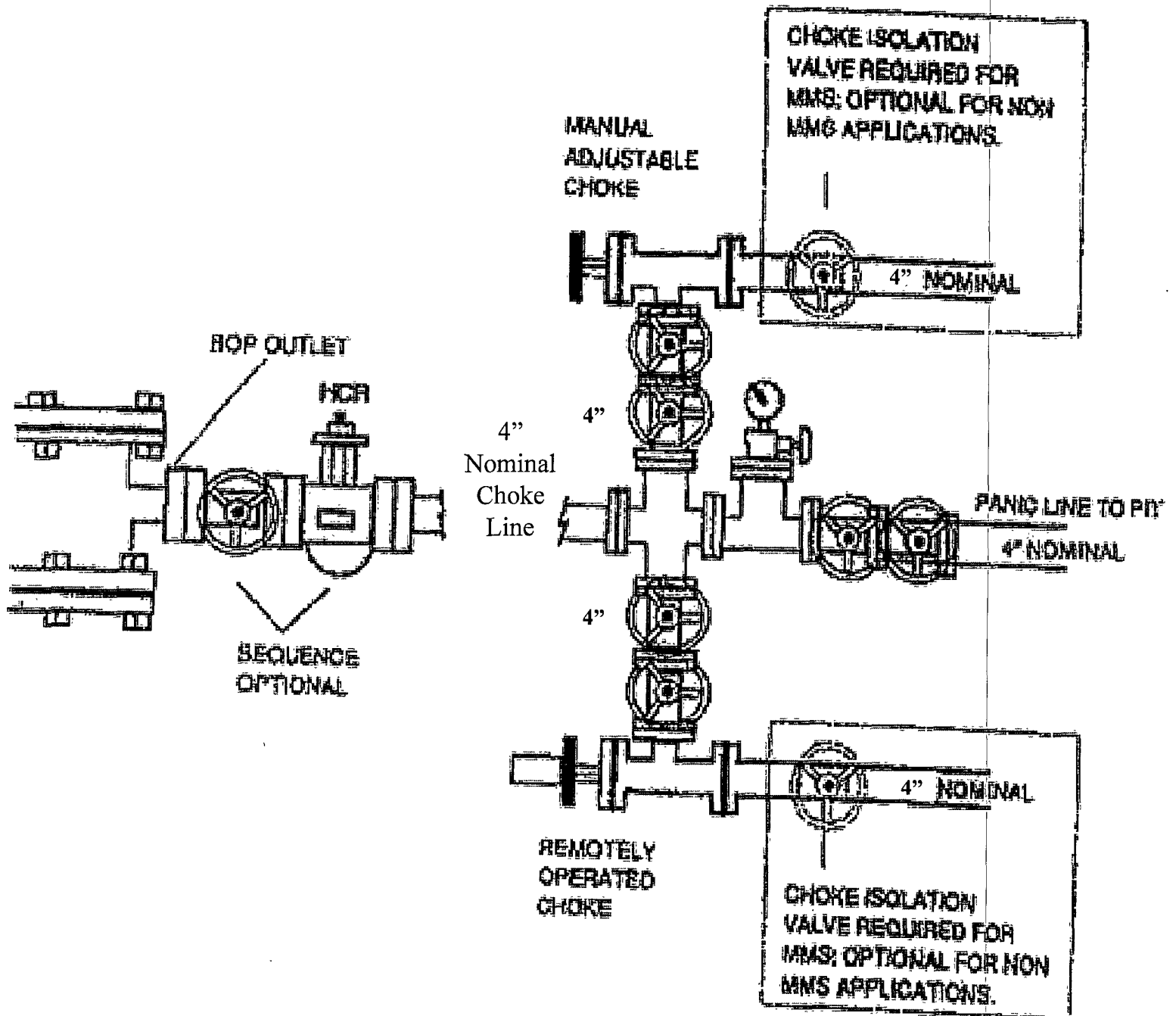


Exhibit E-1 – Choke Manifold Diagram  
**Keely 26 Federal No. 4**  
 Cimarex Energy Co. of Colorado  
 2040' FSL & 330' FEL  
 Sec. 26-17S-29E  
 Eddy County, NM

**Hydrogen Sulfide Drilling Operations Plan**  
**Cimarex Energy Co. of Colorado**  
**Keely 26 Federal No. 4**  
Unit I      Section 26  
T17S R29E      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 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**  
**Keely 26 Federal No. 4**  
Unit I      Section 26  
T17S R29E      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 "A" shows the proposed well site as staked.
  - B. From mile marker 129 on US Hwy 82, go West 0.3 miles to lease road. On lease road, go South 0.8 miles to lease road. On lease road, go East 0.3 miles to lease road. On lease road, go South 0.1 miles to proposed location.
- 2 Planned Access Roads: No new access roads will be constructed.
- 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"

Surface Use Plan  
Cimarex Energy Co. of Colorado  
Keely 26 Federal No. 4  
Unit I      Section 26  
T17S R29E      Eddy County, NM

- 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".

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.

**Surface Use Plan**  
**Cimarex Energy Co. of Colorado**  
**Keely 26 Federal No. 4**  
Unit I      Section 26  
T17S R29E      Eddy County, NM

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 facilities.
- 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.

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.

**Surface Use Plan**  
**Cimarex Energy Co. of Colorado**  
**Keely 26 Federal No. 4**  
Unit I      Section 26  
T17S R29E      Eddy County, NM

**11 Other Information**

- A. Topography consists of a sloping plane with loose tan sands. Vegetation is mainly yucca, mesquite and shin oak.
- B. The wellsite is on surface owned by Department of the Interior, Bureau of Land Management. The land is used mainly for farming, cattle ranching, recreational use, and oil and gas production.
- C. An Archaeological survey will be conducted on the location and proposed roads, and this 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  
Keely 26 Federal No. 4  
Unit I      Section 26  
T17S R29E      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: Natalie Krueger  
Natalie Krueger  
DATE: October 8, 2007  
TITLE: Regulatory Analyst

## VII. DRILLING

### A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified a minimum of 2 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 **Queen** formation. **Hydrogen Sulfide has been measured at a tank battery in this township with 12,000 ppm in the gas stream and 7000 ppm in STVs.**
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 **a minimum of 25 feet into the Rustler Anhydrite and above the salt at approximately 375** feet and cemented to the surface.
  - 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).



- 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 high pressure gas bursts from the Wolfcamp and over pressure in the Pennsylvanian Section.**

- 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.

**Formation below the 8-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i.**

- 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.

- 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. The appropriate BLM office shall be notified a minimum of 2 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. A variance to test only the surface casing to the reduced pressure of **1000** psi with the rig pumps is approved. **The BOP will be tested to 5000 psi by an independent service company.**

#### **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.

**Engineer on call phone (after hours):      Carlsbad: (505) 706-2779**

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