

Form 3160-3
(April 2004)

OCD Artesia

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

1a. Type of Work. <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NMNM 007752	
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 TOS 8/17/2012	
2. Name of Operator Cimarex Energy Co. of Colorado		7. If Unit or CA Agreement, Name and No.	
3a. Address 600 N. Marienfeld St., Ste. 600; Midland, TX 79701		8. Lease Name and Well No. Merak 7 Federal #2 <39404>	
3b. Phone No (include area code) 432-571-7800		9. API Well No. 30-015-40608	
4. Location of Well (Report location clearly and in accordance with any State requirements. *) At Surface 2310 FSL & 330 FEL At proposed prod Zone 2310 FSL & 330 FEL		10. Field and Pool, or Exploratory Loco Hills; Glorieta-Yeso <96718>	
14. Distance in miles and direction from nearest town or post office*		11. Sec., T R M or Blk. and Survey or Area 7-17S-30E	
## Distance from proposed* location to nearest property or lease line, ft (Also to nearest drig unit line if any) 330'		12. County or Parish Eddy	
## Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft 933'		13. State NM	
16. No of acres in lease 1154.53		17. Spacing Unit dedicated to this well NESE 40.00	
19. Proposed Depth MD 5000, TVD 5000		20. BLM/BIA Bond No on File NM-2575	
21. Elevations (Show whether DF, KDB, RT, GL, etc) 3661' GR		22. Approximate date work will start* 07.21.12	
		23. Estimated duration 10-15 days	

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) Tracie J Cherry	Date 06.28.12
Title Sr. Regulatory Analyst		
Approved By (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date AUG 11 2012
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

* (Instructions on page 2)

Roswell Controlled Water Basin

CONDITIONS OF APPROVAL

Approval Subject to General Requirements
& Special Stipulations Attached

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone (575) 393-6161 Fax: (575) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone (575) 748-1283 Fax: (575) 748-9720

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised August 1, 2011

Submit one copy to appropriate
District Office

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015- 40608	Pool Code 96718	Pool Name Loco Hills; Glorieta-Yeso
Property Code 39404	Property Name MERAK 7 FEDERAL	Well Number 2
GRID No. 162683	Operator Name CIMAREX ENERGY CO. OF COLORADO	Elevation 3661'

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	7	17 S	30 E		2310	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

LOT 1			
LOT 2			
LOT 3			
LOT 4			

SURFACE LOCATION
Lot - N 32°50'53.34"
Long - W 104°00'13.78"
NMSPCE - N 672447.8
E 642528.8
(NAD-83)

3666.3' 3663.5'
330'
3662.8' 3661.3'
2310'
NM-001752

OPERATOR CERTIFICATION
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 or has a right to drill this well at this 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.

Tracie J Cherry 6/28/2012
Signature Date
Tracie J Cherry
Printed Name
tcherry@cimarex.com
Email Address

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.

Date Surveyed
Signature & Seal of Professional Surveyor
Certificate No. Gary L. Jones 7977
BASIN SURVEYS 26535

Application to Drill
Merak 7 Federal 2
Cimarex Energy Co. of Colorado
Unit I, Section 7
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: SHL 2310 FSL & 330 FEL
BHL 2310 FSL & 330 FEL

- 2 Elevation above sea level: 3661' 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: MD 5000, TVD 5000

- 6 Estimated tops of geological markers:

Rustler	260'
Top of Salt	500'
Base of Salt	1000'
Tansill	1075'
Yates	1160'
Seven Rivers	1470'
San Andres	2770'
Queen	2080'
Grayburg	2500'
Glorieta	4210'
Paddock	4290'
Blaine	4820'
Tubb	5225'

- 7 Possible mineral bearing formation:

Paddock	Oil
Blaine	Oil


8 Proposed Mud Circulating System:

Depth	Mud Wt	Visc	Fluid Loss	Type Mud
0' to 300'	8.4 - 8.8	40-45	NC	FW
300' to 5000'	9.9 - 10.1	28-32	NC	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
Merak 7 Federal 2
Cimarex Energy Co. of Colorado
Unit I, Section 7
T17S R30E, Eddy County, NM

9 Casing Plan:



String	Hole Size	Depth	Casing OD	Weight	Thread	Collar	Grade
Surface	12¼"	0' to 300'	New 9⅝"	36#	8-R	STC	J55
Production	8¾"	0' to 5000'	New 5½"	17#	8-R	LTC	N80

Drilling Plan

Drill 8¾" hole to TVD 5000. Set and cement 5½" production casing from 0-5000.

10 Cementing:

Surface

Lead: 200 sx Class "C" + 4% D020 (Extender) + 2% S001 (CaCl2) + 0.2% D046 (Defoamer) , Mixed at 12.9 ppg, 1.97 ft3/sx

Tail: 300 sx Class C + 1% S001 (CaCl2), Mixed at 14.8 ppg, 1.34 ft3/sx

100% Excess

TOC Surface Centralizers per Onshorder 2.III.B.1.f

Production

Lead: 800 sacks 35/65 Poz/ C + 5% Salt (D044) + 10% Extender Gel (D020) + 0.02% Anti Foam (D046) + 1% Fluid Loss (D112) + 3 lbs/sx Extender (D042) + 0.125 lbs/sx Lost Circ Flakes, wt 12.4 ppg, yld 2.19 ft3/sx

Tail: 350 sx PVL+ 0.2% D167 + .2% D65 + .1% D13 + 1.3% NaCl, wt 13.0 ppg, yld 1.4 ft3/sk

25% Excess

TOC Surface

According to the State Engineer, average depth to ground water is 225'. Fresh water zones will be protected by setting 9⅝" casing at 300' and cementing to surface. Hydrocarbon zones will be protected by setting 5½" casing at 5000 and cementing to surface.

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

Application to Drill
Merak 7 Federal 2
Cimarex Energy Co. of Colorado
Unit I, Section 7
T17S R30E, Eddy County, NM

11 Pressure control Equipment:

Exhibit "E-1" - An 11" 3000 PSI working pressure B.O.P. consisting of a one set of blind rams and one set of pipe rams and a 3000 psi annular-type preventor. 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. Mud gas separator will be utilized if drilling in H2S areas.

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 3000 psi BOP system.

Test BOP equipment and choke manifold to 250 psi low and 3000 psi high and annular BOP to 250 psi low and 1500 psi high by an independent service company.

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

- A. Mud logging No mud logging program.
- B. Electric logging program: CNL / LDT / CAL / GR, DLL / CAL / GR Surface to TD
- 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 10-15 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.**

SR & A

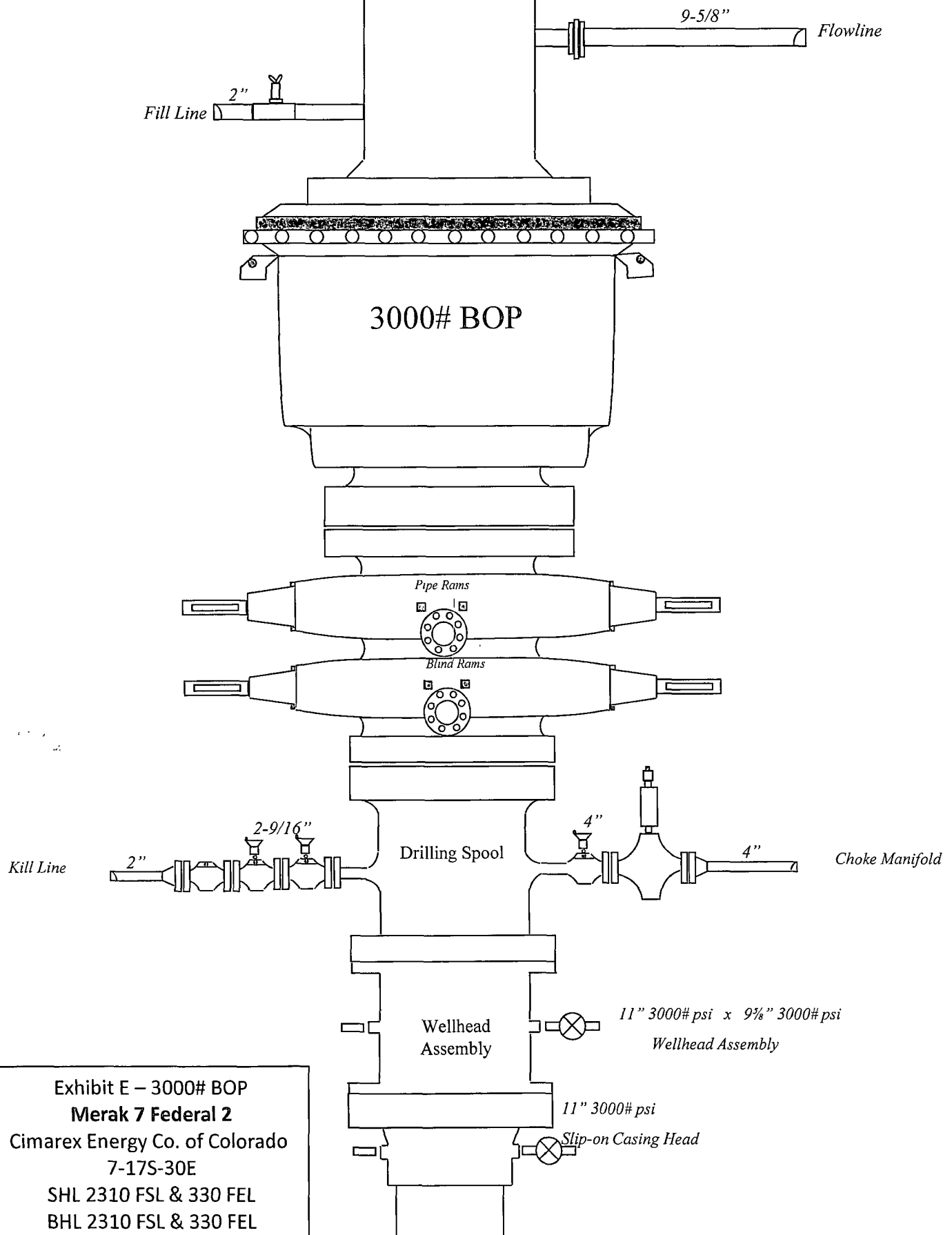
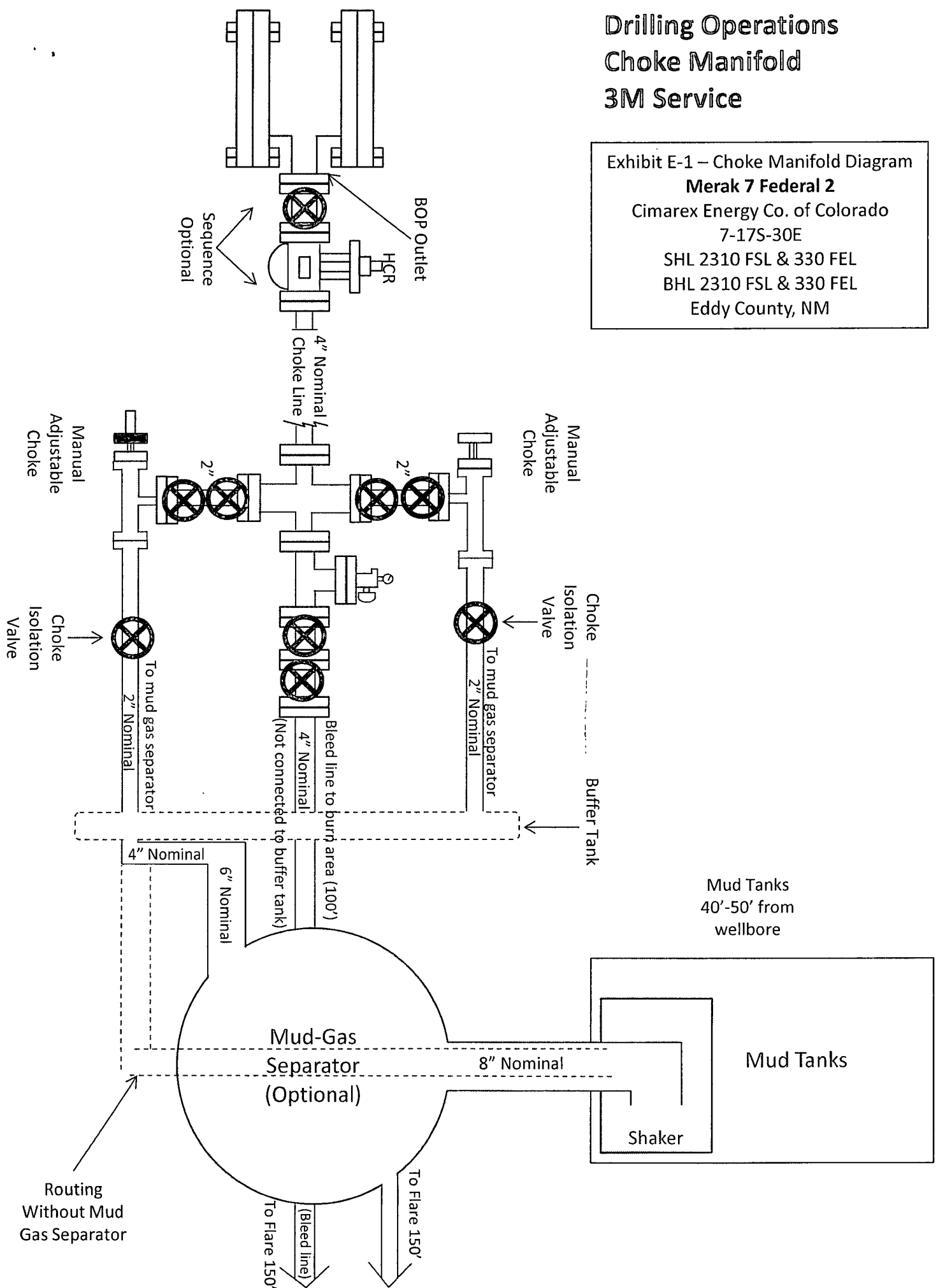
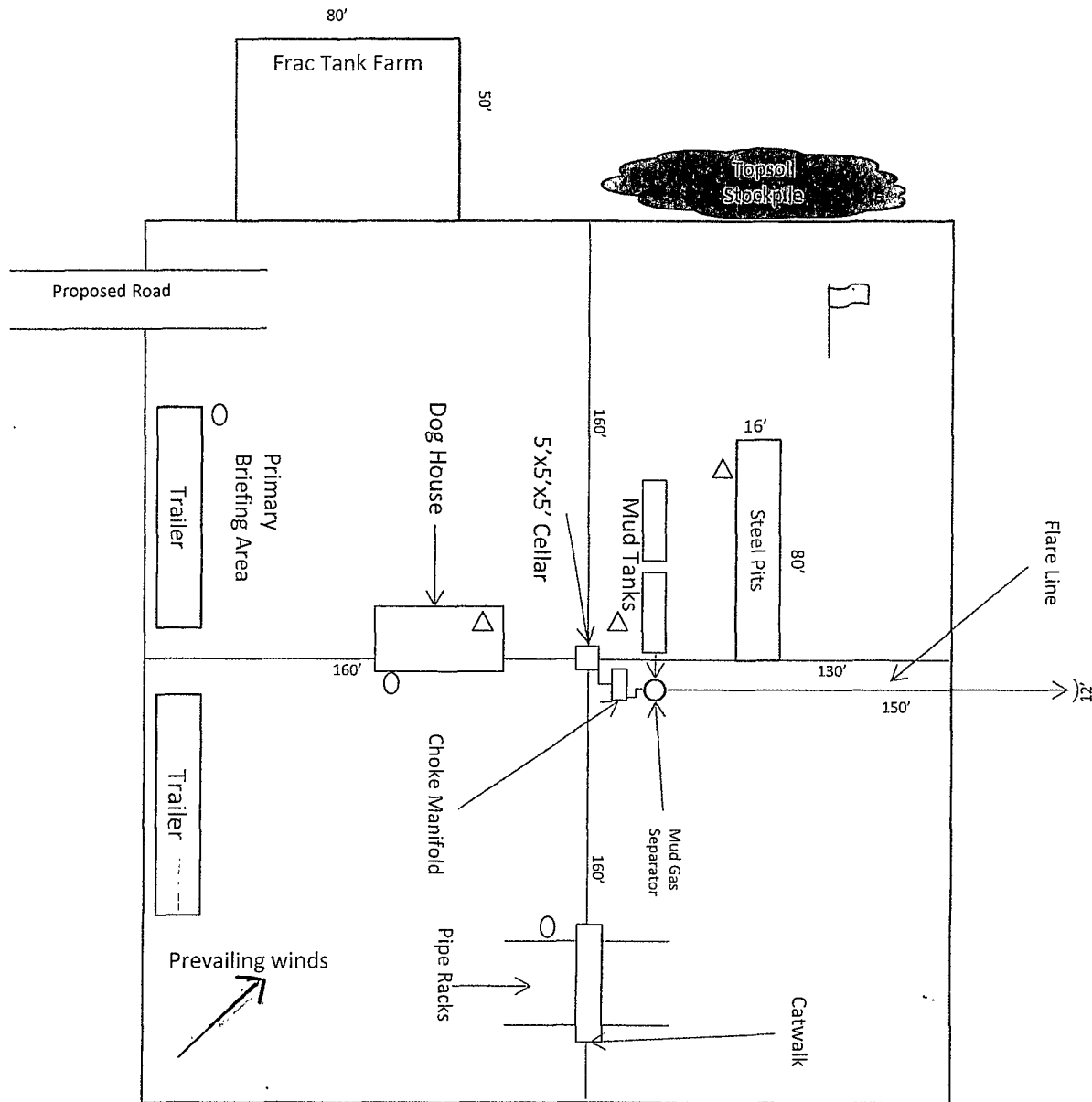


Exhibit E – 3000# BOP
Merak 7 Federal 2
Cimarex Energy Co. of Colorado
7-17S-30E
SHL 2310 FSL & 330 FEL
BHL 2310 FSL & 330 FEL
Eddy County, NM

Exhibit E-1 – Choke Manifold Diagram
Merak 7 Federal 2
Cimarex Energy Co. of Colorado
7-17S-30E
SHL 2310 FSL & 330 FEL
BHL 2310 FSL & 330 FEL
Eddy County, NM



Silver Oak #3



N



Wind Direction Indicators
(wind sock or streamers)



• H2S Monitors
(alarms at bell nipple and shale shaker)



Briefing Areas

Exhibit D – Rig Diagram
Merak 7 Federal 2
Cimarex Energy Co. of Colorado
7-17S-30E
SHL 2310 FSL & 330 FEL
BHL 2310 FSL & 330 FEL
Eddy County, NM

Hydrogen Sulfide Drilling Operations Plan
Merak 7 Federal 2
Cimarex Energy Co. of Colorado
Unit I, Section 7
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.

H₂S Contingency Plan
Merak 7 Federal 2
Cimarex Energy Co. of Colorado
Unit I, Section 7
T17S R30E, Eddy County, NM

Emergency Procedures

In the event of a release of gas containing H₂S, the first responder(s) must:

- ★ Isolate the area and prevent entry by other persons into the 100 ppm ROE.
- ★ Evacuate any public places encompassed by the 100 ppm ROE.
- ★ Be equipped with H₂S monitors and air packs in order to control the release.
- ★ Use the "buddy system" to ensure no injuries occur during the response.
- ★ Take precautions to avoid personal injury during this operation.
- ★ Contact operator and/or local officials to aid in operation. See list of phone numbers attached.
- ★ Have received training in the:
 - ◆ Detection of H₂S, and
 - ◆ Measures for protection against the gas,
 - ◆ Equipment used for protection and emergency response.

Ignition of Gas Source

Should control of the well be considered lost and ignition considered, take care to protect against exposure to Sulfur Dioxide (SO₂). Intentional ignition must be coordinated with the NMOCD and local officials. Additionally, the NM State Police may become involved. NM State Police shall be the Incident Command on scene of any major release. Take care to protect downwind whenever there is an ignition of the gas.

Characteristics of H₂S and SO₂

Common Name	Chemical Formula	Specific Gravity	Threshold Limit	Hazardous Limit	Lethal Concentration
Hydrogen Sulfide	H ₂ S	1.189 Air=1	10 ppm	100 ppm/hr	600 ppm
Sulfur Dioxide	SO ₂	2.21 Air=1	2 ppm	N/A	1000 ppm

Contacting Authorities

Cimarex Energy Co. of Colorado's personnel must liaise with local and state agencies to ensure a proper response to a major release. Additionally, the OCD must be notified of the release as soon as possible but no later than 4 hours. Agencies will ask for information such as type and volume of release, wind direction, location of release, etc. Be prepared with all information available including directions to site. The following call list of essential and potential responders has been prepared for use during a release. Cimarex Energy Co. of Colorado's response must be in coordination with the State of New Mexico's "Hazardous Materials Emergency Response Plan" (HMER).

H₂S Contingency Plan Emergency Contacts

Merak 7 Federal 2

Cimarex Energy Co. of Colorado

Unit I, Section 7

T17S R30E, Eddy County, NM

Company Office

Cimarex Energy Co. of Colorado
Co. Office and After-Hours Menu

800-969-4789

Key Personnel

Name	Title	Office	Mobile
Larry Seigrist	Drilling Manager	432-620-1934	972-333-1407
Scott Lucas	Field Drilling Super		432-894-5572
Jeff Lajoie	Field Drilling Super		432-257-9889
Tommy Herring	Field Drilling Super		432-238-2450

Artesia

Ambulance	911
State Police	575-746-2703
City Police	575-746-2703
Sheriff's Office	575-746-9888
Fire Department	575-746-2701
Local Emergency Planning Committee	575-746-2122
New Mexico Oil Conservation Division	575-748-1283

Carlsbad

Ambulance	911
State Police	575-885-3137
City Police	575-885-2111
Sheriff's Office	575-887-7551
Fire Department	575-887-3798
Local Emergency Planning Committee	575-887-6544
US Bureau of Land Management	575-887-6544

Santa Fe

New Mexico Emergency Response Commission (Santa Fe)	505-476-9600
New Mexico Emergency Response Commission (Santa Fe) 24 Hrs	505-827-9126
New Mexico State Emergency Operations Center	505-476-9635

National

National Emergency Response Center (Washington, D.C.)	800-424-8802
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Medical

Flight for Life - 4000 24th St.; Lubbock, TX	806-743-9911
Aerocare - R3, Box 49F; Lubbock, TX	806-747-8923
Med Flight Air Amb - 2301 Yale Blvd S.E., #D3; Albuquerque, NM	505-842-4433
SB Air Med Service - 2505 Clark Carr Loop S.E.; Albuquerque, NM	505-842-4949

Other

Boots & Coots IWC	800-256-9688	or	281-931-8884
Cudd Pressure Control	432-699-0139	or	432-563-3356
Halliburton	575-746-2757		
B.J. Services	575-746-3569		

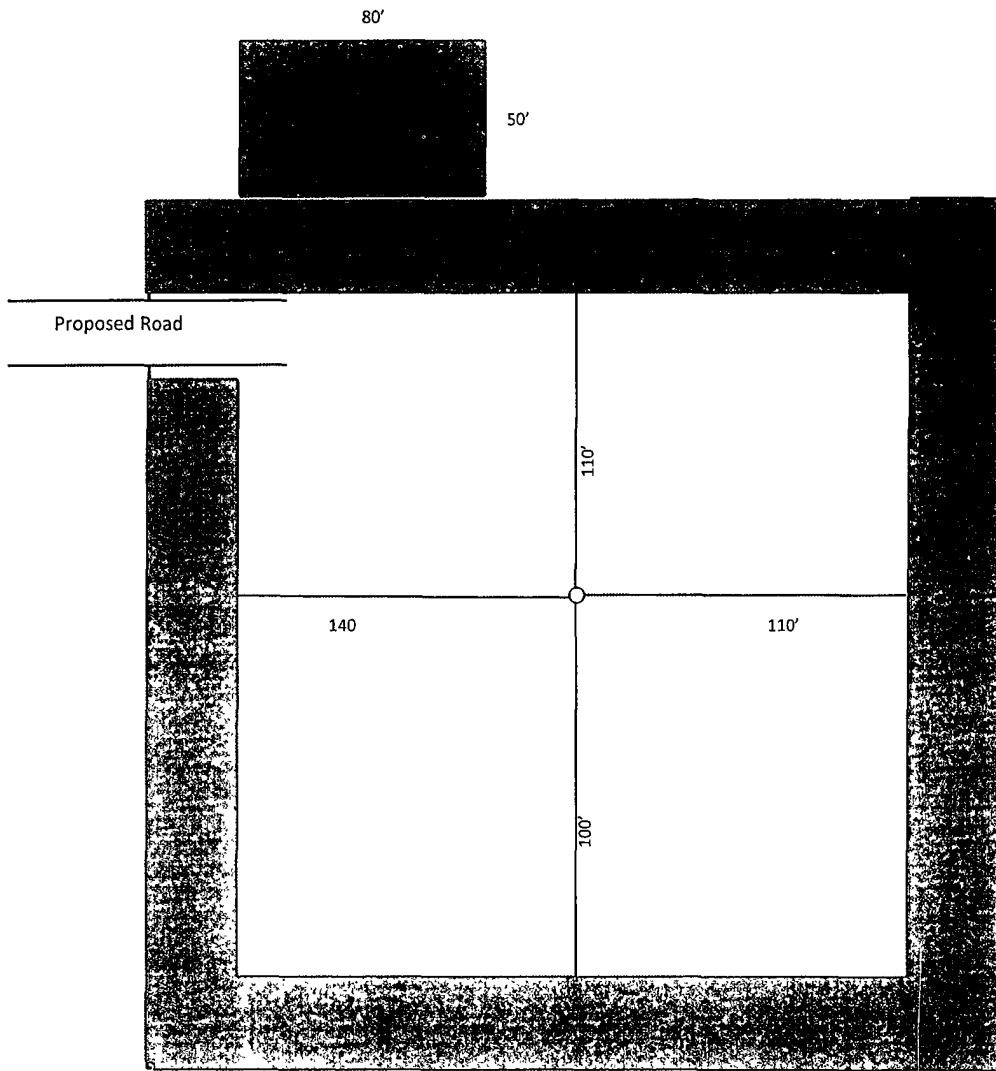
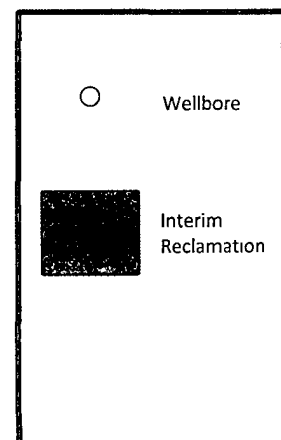


Exhibit D-1
Interim Reclamation Diagram
Merak 7 Federal 2
Cimarex Energy Co. of Colorado
7-17S-30E
SHL 2310 FSL & 330 FEL
BHL 2310 FSL & 330 FEL
Eddy County, NM



PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	Cimarex Energy Co of Colorado
LEASE NO.:	NM7752
WELL NAME & NO.:	2 Merak 7 Federal
SURFACE HOLE FOOTAGE:	2310' FSL & 330' FEL
BOTTOM HOLE FOOTAGE	
LOCATION:	Section 7, 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**
 - Lesser Prairie-Chicken Timing Stipulations
 - Ground-level Abandoned Well Marker
- ☐ **Construction**
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 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - H2S Requirements per Onshore Order #6
 - Logging Requirements
 - Waste Material and Fluids
- ☐ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
 - Electric Lines
- ☐ **Interim Reclamation**
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