Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010

SUNDRY NOTICES AND REPORTS ON WELLS

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

SUBMIT IN TRIPLICATE - Other instructions on reverse side.

5. Lease Serial No.
NMNM17103

6. If Indian, Allottee or Tribe Name

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

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

8. Well Name and No.
LEE FEDERAL 20H

2. Name of Operator
CIMAREX ENERGY COMPANY OF CO
Contact: DEYSI FAVELA
E-Mail: dfavela@cimarex.com

9. API Well No.
30-015-39917-00-X1

3a. Address
600 NORTH MARIENFELD STREET SUITE 600
MIDLAND, TX 79701

3b. Phone No. (include area code)
Ph: 432-620-1964

10. Field and Pool, or Exploratory
AVALON

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 25 T20S R28E SESE 660FSL 330FEL

11. County or Parish, and State
EDDY COUNTY, NM

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

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

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

Cimarex Energy respectfully requests changes to the APD:

New Casing design, & DV Tool

Approved:
See attached PDF file

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Accepted for record
NMOCD 5-27-14

RECEIVED
MAY 27 2014
NMOCD ARTESIA

Proposed:

Add DV Tool and External Casing Packer on 9-5/8" 2nd intermediate casing, between 50'-150' below the 13-3/8" casing shoe.

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #246346 verified by the BLM Well Information System
For CIMAREX ENERGY COMPANY OF CO, sent to the Carlsbad
Committed to AFMSS for processing by CHRISTOPHER WALLS on 05/22/2014 (14CRW0277SE)

Name *(Printed/Typed)* DEYSI FAVELA — Title DRILLING TECH

Signature (Electronic Submission) — Date 05/20/2014

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By CHRISTOPHER WALLS — Title PETROLEUM ENGINEER — Date 05/22/2014

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office Carlsbad

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Additional data for EC transaction #246346 that would not fit on the form

32. Additional remarks, continued

NEW Casing
Surface @ 250'
OH Size: 26"
Casing: 20" 94# H-40 BT&C

Intermediate 1 @ 1400'
OH Size: 17-1/2"
Casing: 13-3/8" 54.5" J-55 ST&C

Intermediate 2 @ 3000'
OH Size: 12-1/4"
Casing: 9-5/8" 36# J-55 LT&C

Production hole will be 8.75" or 8.5". Cement volumes will be adjusted for hole size.

NEW Cement
Surface
Lead: None
Tail: 500 sx Class C @ 14.8 ppg, 1.33 yield

Intermediate 1
Lead: 700 sx 65:35 C:Poz @ 12.9 ppg, 1.9 yield
Tail: 250 sx Class C @ 14.8 ppg

Intermediate 2
Stage 1 Lead: 200 sx 65:35 C:Poz @ 12.9 ppg, 1.9 yield
Stage 1 Tail: 250 sx Class C @ 14.8 ppg, 1.33 yield
Stage 2 Lead: 350 sx 65:35 C:Poz @ 12.9 ppg, 1.9 yield
Stage 2 Tail: 50 sx Class C @ 14.8 ppg, 1.33 yield

Production Cement
Lead: 810 sx 50:50 Poz:H @ 11.9 ppg, 2.44 yield
Tail: 1325 sx 50:50 Poz:H @ 14.5 ppg, 1.24 yield
No centralizers in lateral, centralizers every other joint in curve or across legal hardline, every 4 joints in vertical open hole.

ıg & Cementing Program:

g	Hole Size	Depth			Casing OD		Weight	Collar	Grade
e 1	18 1/2"	0'	to	250'	New	16"	84#	STC	J-55
e 2	14 3/4"	0'	to	1400'	New	11 3/4"	54#	STC	J-55
liate	10 5/8"	0'	to	3000'	New	8 5/8"	32#	LTC	J-55
ion	7 7/8"	0'	to	12214'	New	5 1/2"	17#	LTC	P-110

enting:

face Lead:350SKS Halcem C + 2% CaCl 13.5ppg 1.75yield 100% Excess
Tail:150SKS Class C + 4% D20, 1% S001, 0.2% D46, 0.125 lb/sk D130 14.2ppg 1.34 yield 25% Excess
TOC Surface Centralizers per Onshorder 2.III.B.1.f

ace 2 Lead:1354SKS Econocem + 5% Salt + 5# Gilsonite 13.5ppg 1.75yield 75% Excess
Tail:610SKS Halcem + 2% CaCl 14.2ppg 1.34 yield 25% Excess
TOC Surface

nediate Lead:708SKS Econocem + 5% Salt + 5# Gilsonite 14.6ppg 1.54yield 70% Excess
Tail:210SKS Halcem + 1% CaCl 14.8ppg 1.34 yield 25% Excess
TOC Surface

uction Lead:750SKS Econocem H + 0.5% CFR-3 + 0.1% HR-601 11.9ppg 2.44 yield 50% Excess
Tail:750SKS Versacem H + 0.5% Halad-344 + 0.4% CFR-3 + 1# Salt + 0.1% HR-601 14.5ppg 1.22 yield 25
Excess
**TOC 1000' Centralizers every 3rd joint in lateral to provide adequate cement coverage every 10
unless lateral doglegs require greater spacing between centralizers.**

CONDITIONS OF APPROVAL

OPERATOR'S NAME:	CIMAREX ENERGY
LEASE NO.:	NMNM17103
WELL NAME & NO.:	Lee Federal 20H
SURFACE HOLE FOOTAGE:	660' FSL & 330' FEL
BOTTOM HOLE FOOTAGE	660' FSL & 330' FWL
LOCATION:	Section 25, T. 20 S., R. 28 E., NMPM
COUNTY:	Eddy County, New Mexico

I. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

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

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

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 is located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

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

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. IF OPERATOR DOES NOT HAVE THE WELL SPECIFIC CEMENT DETAILS ONSITE PRIOR TO PUMPING THE CEMENT FOR EACH CASING STRING, THE WOC WILL BE 30 HOURS. See individual casing strings for details regarding lead cement slurry requirements.

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

High cave/karst
Possible lost circulation - Artesia Group, Delaware, Capitan Reef, & Bone Spring.

1. The **20** inch surface casing shall be set at **250** feet (**or a minimum of 25 feet into the Rustler Anhydrite and above the salt**) 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 surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**

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.

2. The minimum required fill of cement behind the **13-3/8** inch first intermediate casing is:

☒ Cement to surface. . If cement does not circulate, contact the appropriate BLM office. **Wait on Cement (WOC) time for a primary cement job is to include the lead cement slurry due to high cave/karst and Capitan Reef.**

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

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

☒ Cement to surface. . If cement does not circulate, contact the appropriate BLM office. **Wait on Cement (WOC) time for a primary cement job is to include the lead cement slurry due to high cave/karst and Capitan Reef.**

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

☒ Cement to tie back at least **50' above the Capitan Reef.** Operator shall provide method of verification.

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

C. PRESSURE CONTROL

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

2. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

3. **A variance is granted for the use of a diverter on the 16" surface casing.**

4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **11-3/4"** first intermediate casing shoe shall be **3000 (3M)** psi (**Installing 5M testing to 3,000 psi**).

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

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.

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

e. 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.**

f. 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. This test shall be performed prior to the test at full stack pressure.

D. DRILL STEM TEST

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

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

CRW 052214