

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

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.*

5. Lease Serial No.  
NMNM14124

6. If Indian, Allottee or Tribe Name

**SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

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

1. Type of Well  
 Oil Well  Gas Well  Other

8. Well Name and No.  
MARQUARDT FEDERAL 12H

2. Name of Operator Contact: TERRI STATHEM  
CIMAREX ENERGY COMPANY OF CO-Mail: tstathem@cimarex.com

9. API Well No.  
30-015-41850-00-X1

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

3b. Phone No. (include area code)  
Ph: 432-620-1936.

10. Field and Pool, or Exploratory  
COTTONWOOD DRAW

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)  
Sec 12 T25S R26E SESE 330FSL 400FEL  
32.081715 N Lat, 104.142129 W Lon

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			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other Change to Original A PD
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> 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 Co. respectfully requests approval to change the casing design, mud and cement program for the Marquardt Federal #12H well as indicated below:

**Surface Casing:**

Approved: 17-1/2" hole, 13-3/8", 48#, H-40, STC set @ 400'. Cmt w/ Lead: 79 sx, 13.5 ppg Class C; Tail w/ 195 sx 14.8 ppg Class C cmt.

Proposed/Completed: 13-3/8", 48#, J-55 STC csg set @ 250'. Cmt w/ 290 sx, 14.8 ppg, Class C cmt. Circ 79 sx cmt to surface. WOC 8+ hrs. Test csg to 1500#- OK for 30 mins.

**Intermediate Casing:**

Approved: 12-1/4" hole, 9-5/8", 36#, J-55, LTC set @ 1920'. Cmt w/ Lead: 446 sx 12.9 ppg, Class

Accepted for record  
795  
4-3-14  
NMCCD

RECEIVED FOR APPROVAL  
APR 03 2014  
NMCCD ARTES

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

**Electronic Submission #240458 verified by the BLM Well Information System  
For CIMAREX ENERGY COMPANY OF CO, sent to the Carlsbad  
Committed to AFMSS for processing by WESLEY INGRAM on 03/31/2014 (14WWI0273SE)**

Name (Printed/Typed) TERRI STATHEM	Title COORDINATOR REGULATORY COMPLIA
Signature (Electronic Submission)	Date 03/31/2014

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

Approved By WESLEY INGRAM Title PETROLEUM ENGINEER Date 03/31/2014

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.

**Additional data for EC transaction #240458 that would not fit on the form**

**32. Additional remarks, continued**

C; Tail w/ 112 sx 14.8 ppg Class C cmt.  
Proposed/Completed: 9-5/8", 36#, J-55, LTC csg set @ 404'. Cmt w/ 200 sx 14.8 ppg, Class C cmt.  
Circ 126 sx cmt to surface. WOC 18+ hrs.

**Production Casing:**

Approved: 8-3/4" hole with 9.0 ppg cut brine, 5-1/2", 17#, L80, LTC/BTC csg set @ 11594'. Cmt w/  
Lead: 583 sx, 11.9 ppg, Class H; Tail w/ 1378 sx, 14.5 ppg, Class H cmt. TOC 1720'.  
Proposed: Drill from 404' to TD with 10 ppg brine. 5-1/2", 17#, L80, LTC/BTC csg set @ 11594'. Cmt  
w/ Cmt w/ Lead: 710 sx, 10.8 ppg, Class C; Tail w/ 1315 sx, 14.3 ppg, Class H cmt. Circ cmt to  
surface - TOC @ 0'.

**Well History Information:**

3/27/2014 Spud well. @ 10:30 PM.  
3/28/2014 Ran 250' of 13-3/8" 48# J-55 ST&C casing. Cement with 290 sks Cemex Premium Plus C + 2%  
CaCl<sub>2</sub> mixed @ 14.8 ppg Yield 1.63 cuft/sk Water 6.57 gps. Had 100% returns with 19 bbls (79 sks)  
of cement to surface. WOC 8+ hrs. Test csg to 1500# for 30 mins. OK.  
3/30/2014 Ran 404' of 9-5/8" 36# J-55 LT&C casing. Cement with 200 sks Cemex Premium Plus C + 2%  
CaCl<sub>2</sub> @ 14.8 ppg Yield 1.63 cuft/sk Water 6.57 gps Circulated 30 bbls (126 sks) to surface. BOP's  
are tested to the Onshore order 2 requirements. WOC 18+ hrs. Test csg this am.

Justification information attached.

**Marquardt Federal 12H**

**3160-5 – Change to original APD attachment**

**Casing change justification:**

Cimarex Energy Co. request to drill the well to 11594' MD (7193' TVD) with 10 ppg. Run 5-1/2", 17#, L-80, LT&C/BT&C to TD. Cement with: Lead: Pump 710 sks 60:40 (Poz:C) + 15 lbs/sk BA-90 + 0.005 lbs/sk Static Free + 8 lbs/sk LCM-1 + 0.2% bwoc FL-52 + 0.5% bwoc A-10 + 3% bwoc BA-10A + 4% bwoc MPA-5 + 2% bwoc R-21 @ 10.8 ppg Yield = 3.69 cuft/sk Water = 21.5 gps (40% excess) TOC = Surface

Tail: Pump 1315 sks 50:50 (Poz:H) + 0.005 lbs/sk Static Free + 5% bwoc Sodium Chloride + 0.3% bwoc CD-32 + 0.3% bwoc CD-32 + 0.3% bwoc FL-25 + 0.15% bwoc ASA-301 + 2% Bentonite + 0.4% bwoc Sodium Metasilicate + 0.4% bwoc FL-52A @ 14.20 ppg Yield = 1.30 cuft/sk Water = 5.89 gps (25% excess) TOT = 6,732'

Overall Excess = 33%

Original APD proposes the 9-5/8" set at 1,920' to seal off the salt zones and any possible cave/ karst's. Section planned to be drilled with a 10 ppg brine. The nearest offset that Cimarex has drilled the DaVinci 7 Fed Com 5H had no problems with circulation in this interval.

After setting this string we had planned to drill with a 9.0 ppg cut brine. The new plan would have an extra 1 ppg of hydrostatic over the planned MW.

Da Vinci 7 Fed Com 5H the highest MW seen was a 9.1 ppg with no indications of losses. Cement @ 12.9 ppg and 14.8 ppg was circulated to surface on the 9-5/8" intermediate casing set @ 1,929'. Cement @ 10.8 ppg was circulated to surface on the longstring.

Da Vinci 7 Fed Com 4H at TD we needed to weight up to 10 ppg. Cement @ 12.9 ppg and 14.8 ppg was circulated to surface on the 9-5/8" intermediate casing set @ 1,980'. This was done with no indications of any losses. Cement @ 10.8 ppg was circulated to surface on the longstring.

Da Vinci 7 Fed 3H the highest MW seen was 9.8 ppg without any losses. Cement @ 12.9 ppg and 14.8 ppg was circulated to surface on the 9-5/8" intermediate casing set @ 1,895'. Cement @ 10.8 ppg was circulated to surface.

Da Vinci 7 Fed Com 2H the highest MW seen was 9.2 ppg. Cement @ 12.9 ppg and 14.8 ppg was circulated to surface on the 9-5/8" intermediate casing set @ 2,015'. Cement @ 10.8 ppg was circulated to surface on the longstring.

Marquardt 1 Fed 13H the highest MW seen was 8.8 ppg. Cement @ 12.9 ppg and 14.8 ppg circulated to surface on the 9-5/8" intermediate string @ 1,970'. Cement @ 10.8 ppg was circulated to surface on the longstring.

On the Gadwall 18 Fed Com 2H the highest MW seen was 9.6 ppg. Cement @ 12.6 ppg and 14.8 ppg circulated to surface on the 9-5/8" intermediate string set @ 1,896'. Cement @ 11.8 ppg was not circulated to surface.

On the Gadwall 18 Fed Com 3H the highest MW seen was 9.1 ppg. Cement @ 12.8 ppg and 14.8 ppg circulated to surface on the 9-5/8" intermediate string set @ 1891'. Cement @ 11.8 ppg was circulated to surface.

Based on all the offset the maximum MW seen has been a 10 ppg. Since this MW is already needed to drill the salt zone we should not have an issue controlling any gas that is seen. The cement job on the intermediate shows that this interval has a higher MW/ECD that can be placed on the formation.

With having cement circulating on the 9-5/8" and 5-1/2" being able to raise cement to surface should also happen.

Marquardt.1.Fed  
13H

Marquardt.Fed  
12H

DaVinci.7.Fed.C  
5H

DaVinci.7.Fed  
3H

DaVinci.7.Fed.C  
x

740  
Gadwell.18.Fed  
2H

DaVinci.7.Fed.C  
4H

Gadwell.18.Fed  
3H

**Marquardt Federal 12H**  
**30-015-41850**  
**Cimarex Energy Co. of Colorado**  
**March 31, 2014**

**NOTES:**

1. Operator was approved for 13-3/8" H-40 48#. Sundry indicates that operator installed 13-3/8" J-55 48#, which is non-API. Operator did not have approval for this casing and this does not fall within the COA since it is non-API.
2. The Conditions of Approval required the operator to wait eighteen hours. According to the sundry, the operator only waited 8+ hours on the surface casing.
3. As previously discussed, the operator assumed that they had verbal approval for the 9-5/8" casing.
4. Cement slurries in the proposed/completed section of the sundry do not agree with the information from the actual days. BLM does not consider a yield of 1.63 cu ft. /sack to be adequate strength cement for a shoe joint.

**CONDITIONS OF APPROVAL**

1. Operator shall submit all morning reports from the spud and until the well reaches TD and the casing is installed and cemented. These shall be sent in an e-mail to [wingram@blm.gov](mailto:wingram@blm.gov).
2. If lost circulation is encountered while drilling to 1900', the operator shall contact the BLM to discuss installing another casing string.
3. Operator shall drill with a minimum mud weight of 10 ppg to reduce the potential of dissolving the salt formation.
4. Operator shall drill below 1900' using both visual and electronic mud monitoring systems.
5. Operator shall install a gas monitor on the mud pits to provide early detection of gas vapors.
6. The operator is to monitor the mud system for possible gas kicks until such time that the production casing is cemented. The proposed casing program will not permit shutting in the BOP without creating the possibility of an underground blowout, which could damage cave/karst features and fresh water.
7. If cement does not circulate to surface on the 5-1/2" casing, operator shall contact the BLM and propose remediation as the current configuration does not adequately protect the cave/karst and fresh water formations. Operator would have had two casings and two cement sheaths across this if well had been cased as proposed.

**WWI 033114**