

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

State of New Mexico

Form C-101  
Revised July 18, 2013

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

**NM OIL CONSERVATION** Energy Minerals and Natural Resources

**District III**  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170

ARTESIA DISTRICT

Oil Conservation Division

AMENDED REPORT

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

NOV 03 2015

1220 South St. Francis Dr.

Santa Fe, NM 87505

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**APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE**

|   |  |   |
|---|--|---|
| Operator Name and Address<br>Cimarex Energy Co. of Colorado<br>202 S. Cheyenne Ave<br>Tulsa, OK 74103 |  | GRID Number<br>162683                     |
| Property Code<br>29000  |  | API Number<br>30015-32286<br><b>32286</b> |
| Property Name<br>Echols Com   |  | Well No.<br>2                             |

**7. Surface Location**

| UL - Lot | Section | Township | Range | Lot Idn | Feet from | N/S Line | Feet From | E/W Line | County |
|----------|---------|----------|-------|---------|-----------|----------|-----------|----------|--------|
| M        | 12      | 23S      | 26E   |         | 1110      | South    | 990       | West     | Eddy   |

**8. Proposed Bottom Hole Location**

| UL - Lot | Section | Township | Range | Lot Idn | Feet from | N/S Line | Feet From | E/W Line | County |
|----------|---------|----------|-------|---------|-----------|----------|-----------|----------|--------|
|          |         |          |       |         |           |          |           |          |        |

**9. Pool Information**

| Pool Name | Pool Code |
|-----------|-----------|
| Atoka     |           |

**Additional Well Information**

|                        |                             |  |                       |                                    |
|------------------------|-----------------------------|--|-----------------------|------------------------------------|
| 11. Work Type<br>P     | 12. Well Type<br>Gas        | 13. Cable/Rotary                       | 14. Lease Type<br>Fee | 15. Ground Level Elevation<br>3258 |
| 16. Multiple           | 17. Proposed Depth<br>12050 | 18. Formation<br>Atoka                 | 19. Contractor        | 20. Spud Date                      |
| Depth to Ground water: |                             | Distance from nearest fresh water well |                       | Distance to nearest surface water  |

We will be using a closed-loop system in lieu of lined pits

**21. Proposed Casing and Cement Program**

| Type | Hole Size | Casing Size | Casing Weigh/ft | Setting Depth | Sacks of Cement | Estimated TOC |
|------|-----------|-------------|-----------------|---------------|-----------------|---------------|
| Surf | 17.5      | 13-3/8"     | 48#             | 487           | 490             | surf          |
| Int  | 12.25     | 9-5/8"      | 40              | 3188          | 1300            | surf          |
| Prod | 8.75      | 5-1/2"      | 17              | 12045         | 1800            | 202           |

**Casing/Cement Program: Additional Comments**

|  |
|--|
|  |
|--|

**22. Proposed Blowout Prevention Program**

| Type | Working Pressure | Test Pressure | Manufacturer |
|------|------------------|---------------|--------------|
|      |                  |               |              |

|   |   |                  |
|---|---|------------------|
| <p>23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.<br/>I further certify that I have complied with 19.15.14.9(A) NMAC <input checked="" type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input type="checkbox"/> if applicable.<br/>Signature: <i>Terry Stathem</i></p> <p>Printed name: Terry Stathem<br/>Title: Manager, Regulatory Compliance<br/>E-mail Address: tstathem@cimarex.com<br/>Date: 11-2-15 Phone: 432-620-1936</p> | OIL CONSERVATION DIVISION                     |                  |
|   | Approved By: <b>Accepted for record NMCCD</b> |                  |
|   | Title:  |                  |
|   | Approved Date: <i>XXX</i>                     | Expiration Date: |
|   | Conditions of Approval Attached               |                  |

*Need Signed C-102 Plat for approval*

# NM OIL CONSERVATION

ARTESIA DISTRICT

State of New Mexico

Form C-102

**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
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Phone: (505) 476-3460 Fax: (505) 476-3462

NOV 02 2015  
Energy Minerals & Natural Resources Department

## OIL CONSERVATION DIVISION

Revised August 1, 2011  
Submit one copy to appropriate  
District Office

RECEIVED 1220 South St. Francis Dr.  
Santa Fe, NM 87505

AMENDED REPORT

### WELL LOCATION AND ACREAGE DEDICATION PLAT

|   |   |  |
|---|---|--|
| <sup>1</sup> API Number<br><b>30015-32286</b> | <sup>2</sup> Pool Code<br><b>Atoka</b>                          | <sup>3</sup> Pool Name<br><b>Atoka</b> |
| <sup>4</sup> Property Code<br><b>29000</b>    | <sup>5</sup> Property Name<br><b>Echols Com</b>                 | <sup>2</sup> Well Number<br><b>2</b>   |
| <sup>7</sup> OGRID No.<br><b>162683</b>       | <sup>6</sup> Operator Name<br><b>Cimarex Energy of Colorado</b> | <sup>8</sup> Elevation<br><b>3258'</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 |
|---------------|---------|----------|-------|----------|---------------|------------------|---------------|----------------|--------|
| M             | 12      | 23S      | 26E   |          | 1110          | South            | 990           | West           | 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 |
|---------------|---------|----------|-------|----------|---------------|------------------|---------------|----------------|--------|
|               |         |          |       |          |               |                  |               |                |        |

|   |                               |                                  |                         |
|---|-------------------------------|----------------------------------|-------------------------|
| <sup>12</sup> Dedicated Acres<br><b>320</b> | <sup>13</sup> Joint or Infill | <sup>14</sup> Consolidation Code | <sup>15</sup> 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.

|                      |   |  |  |
|----------------------|---|--|--|
| <p><sup>16</sup></p> | <p><b>" OPERATOR CERTIFICATION</b><br/>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.</p> <p>Signature: <i>Terri Stathem</i> Date: <b>11-2-2015</b></p> <p>Printed Name: <b>Terri Stathem</b></p> <p>E-mail Address: <b>tstathem@cimarex.com</b></p> |  |  |
|                      | <p><b>" SURVEYOR CERTIFICATION</b><br/>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>Date of Survey: _____<br/>Signature and Seal of Professional Surveyor: _____</p> <p>Certificate Number: _____</p>   |  |  |

**NM OIL CONSERVATION**  
ARTESIA DISTRICT  
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**Echols Com 2**  
**Atoka Recompletion Procedure**  
**Michael Karner 9/10/15**

**Well Data**

KB 16'  
TD 12,050'  
PBSD 11,023'

Casing 13-3/8" 48# H-40 @ 487'. Cmt'd w/ 490 sx, cmt circ  
9-5/8" 40# J-55 @ 3,188'. Cmt'd w/ 1,300 sx, cmt circ  
5-1/2" 17# N-80 & P-110 @ 12,045'. Cmt'd w/ 1,800 sx. DV @ 7,011'. TOC @ 2,020' by TS

Tubing 2-3/8" 4.7# L-80 8rd, EOT @ 11,393' (345 joints)

Packer 5-1/2" x 2-3/8" Arrowset 1X packer @ 11,409'

Current Prod. Perfs Morrow (11,474' – 11,909')

Proposed RC Perfs Atoka (11,026' – 11,038'), (11,080' – 11,127'), (11,155' – 11,166'), (11,172' – 11,182'), (11,206' – 11,217'), and (11,231' – 11,238')

**Contacts**

| Name         | Company or Position if XEC  | Email or Alternate Phone        | Phone        |
|--------------|-----------------------------|---------------------------------|--------------|
| Shane Hines  | Flowco Production Solutions | shane.hines@flowcosolutions.com | 830-832-8910 |
| Aldo Mendoza | Basic Energy Services       | 432-557-2370                    | 432-687-1994 |
| Kim Barton   | Production Superintendent   | kbarton@cimarex.com             | 432-620-1952 |
| Paul Stock   | Workover Superintendent     | pstock@cimarex.com              | 432-620-1955 |
| Mike Karner  | Production Engineer         | mkarner@cimarex.com             | 432-571-7895 |
| Matt         | Apollo Wireline             |                                 | 432-563-0891 |
|              | Basin Testers LP            |                                 | 432-362-5072 |
|              | BLM                         | 575-361-2822                    | 575-234-5972 |
| Mark Dennis  | Cameron                     | 575-441-7709                    | 575-397-1325 |

**Procedure**

Notify NMOCD 24 – 48 hours prior to starting operations. Contact Cameron company representative 1-2 days prior to starting operations to set up having the wellhead and tubing hanger picked up so that they can be inspected and returned within a few days.

1. Test anchors prior to moving in rig.
2. Move in rig up pulling unit.
3. Kill well as necessary with 4% KCl.
4. Nipple down wellhead, nipple up 5,000 psi blow out preventer stack. Send wellhead with Cameron company representative for inspection and to replace seals in tubing hanger. Call Cameron company representative 1-2 days prior to starting operations to arrange having equipment picked up so that it can be returned within a few days.
5. Release AS-1X pkr @ 11,409' & TOO# w/ 2-3/8" 4.7# L-80 tbg & packer. Stand back tbg. Note: If unable to release packer, plan to set a blanking plug in packer, release from on/off tool, and leave packer in the well rather than fish for the packer. Packer is 65' from top of Morrow perms so it should be left behind, and the CIBP should be set as close to this as possible (CIBP must be set within 100' of top Morrow perforations at 11,474', so must be set below 11,374' but above the packer left in the hole if we are unable to release packer).
6. MIRU wireline and 5k short lubricator
7. RIH with 4.6" gauge ring and junk basket down to +/- 11,500' (OD of CIBP = 4.24").
8. RIH w/ CIBP and set @ +/- 11,424'
9. RIH w/ bailer and bail 35' of cement on top of CIBP – abandoning Morrow perms.
10. WOC 6-8 hours
11. RU pump truck and test casing to 500 psi for 30 minutes with no more than 10% leakoff. Record this test on a circular test chart.
12. TIH w/ 2-3/8" 4.7# L-80 tbg to tag TOC @ +/- 11,389'
13. Circulate one bottoms up of 4%
14. TOO# w/ 2-3/8" 4.7# L-80 tbg to surface and stand back tubing.
15. RIH w/ 4.6" gauge ring and junk basket to tag TOC at +/- 11,389'  
Note: Expected reservoir pressure is 4,124 psi. 4% KCl is 8.56 ppg, so a hydrostatic column of 7% KCl will be 9,265', or 1,973' from surface. Make sure that top of fluid tagged is at least this depth so that guns are not shot to surface causing a fishing job.
16. RIH w/ 3-1/8" casing guns and perforate Atoka with 1 SPF and 0° phasing at the following depths: 11,026' – 11,238'
17. Pin 2-3/8" pump out plug for 1,500 – 2,000 psi differential pressure
18. RIH w/ AS-1X packer w/ 1.81" X nipple, 1 10' pup joint 2-3/8" 4.7# L-80 tubing, 1.81" XN nipple and pump, out plug set at +/- 10,976' From downhole up:
  - a. 2-3/8" Pump out plug
  - b. 1.81" XN nipple
  - c. 10' 2-3/8" 4.7# L-80 pup joint
  - d. AS-1X packer w/ 1.81" X nipple
19. RDMO wireline and 5k short lubricator
20. TIH w/ T-2 on-off tool on 2-3/8" 4.7 L-80 tbg and latch into Arrowset packer hydrotest while TIH.
21. Set tubing into tubing hanger and RU tree. Space out tubing with 2-3/8" 4.7# tubing subs to hang tubing with 10klbs compression on packer.
22. MIRU Guardian Tree Saver and Stroke to isolate tree.
23. MIRU Baker Hughes acid

24. Pump out plug
25. Pump staged acid job including 10,000 total gallons of 15% HCl with gel retarder and ball sealers followed by 2121 gallon (50.5 bbl) overflush down 2-3/8" tubing as per design below:

**PROCEDURE**

| Stage | Fluid               |              | Diverting Agents |                     |                |           |            |
|-------|---------------------|--------------|------------------|---------------------|----------------|-----------|------------|
|       | Type                | Volume (gal) | Conc. (pda)      | Type                | Stage (volume) | Cum (lbs) | Cum (b.s.) |
| 1     | 2% KCl Water        | 500          |                  |                     |                |           |            |
| 2     | 15% Gelled HCl Acid | 10000        |                  | BS, 7/8 in, 1.3 sg, | 150            |           | 150        |
| 3     | 2% KCl Water        | 2121         |                  |                     |                |           |            |
| Total |                     | 12621        |                  |                     |                |           | 150        |

**TREATMENT SCHEDULE**

| Stage            | Surface Treating Pressure (psi) | Rates        |                   |                        | Volume        |              |               |              | Stage Pump Time<br>hh:mm:ss |
|------------------|---------------------------------|--------------|-------------------|------------------------|---------------|--------------|---------------|--------------|-----------------------------|
|                  |                                 | Slurry (bpm) | Clean Fluid (bpm) | Divertor Rate (lb/min) | Slurry        |              | Fluid         |              |                             |
|                  |                                 |              |                   |                        | Stage (bbbls) | Cum. (bbbls) | Stage (bbbls) | Cum. (bbbls) |                             |
| 1                | 6069                            | 5.0          | 5.0               |                        | 11.9          | 11.9         | 11.9          | 11.9         | 00:02:22                    |
| 2                | 5832                            | 5.0          | 5.0               |                        | 238.1         | 250.0        | 238.1         | 250.0        | 00:47:37                    |
| 3                | 6069                            | 5.0          | 5.0               |                        | 50.5          | 300.5        | 50.5          | 300.5        | 00:10:06                    |
| Total Pump Time: |                                 |              |                   |                        |               |              |               |              | 01:00:05                    |

26. RU well to production



Current WBD  
KB - 18' above GL

Cimarex Energy Co. of Colorado

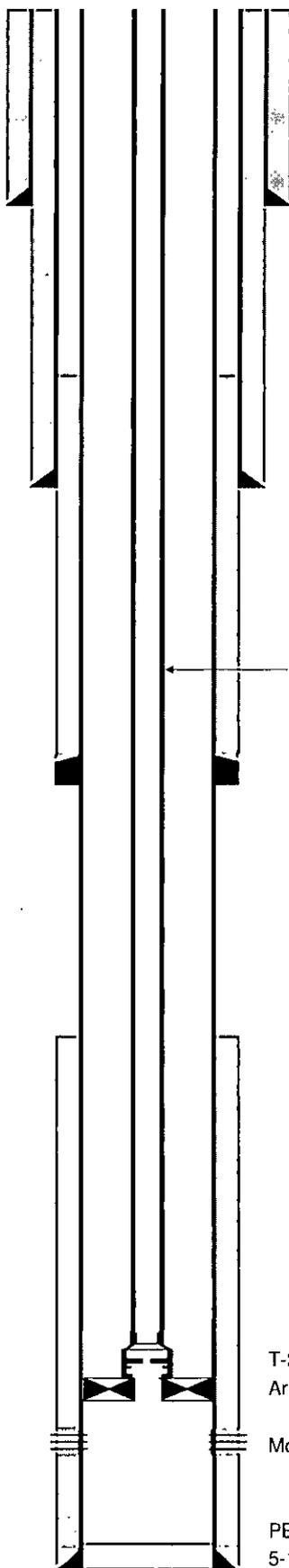
Echols #2

1110' FSL & 990' FWL

Sec. 12, T-23-S, R-26-E, Eddy Co., NM

S. Gengler

05/11/2009



13-3/8", 48# H-40 csg @ 487'  
cmtd w/ 490 sx, cmt circ

TOC @ 2020' by TS

9-5/8", 40# J-55 csg @ 3188'  
cmtd w/ 1300 sx, cmt circ

345 jts 2 3/8" 4.7# L-80 Tbg

DV Tool @ 7011'  
cmtd w/ 800 sx

TOC @ 9200' by CBL

T-2 On-off Tool w/ 1.81" F Profile nipple @ 11402'  
Arrowset 1X pkr @ 11409'

Morrow perms (11474' - 11909')

PBTD @ 12023'  
5-1/2" 17# N-80 & P-110 @ 12045' cmtd w/ 1000 sx  
TD @ 12050'



Proposed WBD  
KB - 18' above GL

Cimarex Energy Co. of Colorado

Echols #2

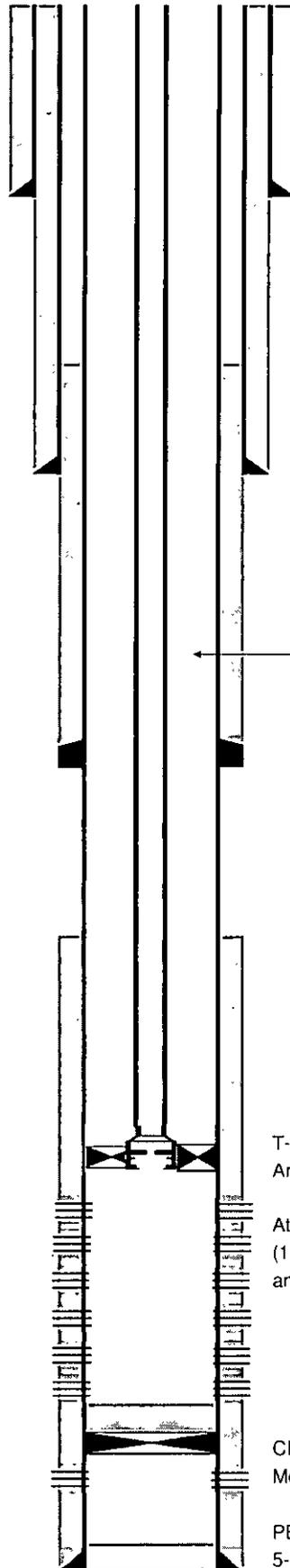
1110' FSL & 990' FWL

Sec. 12, T-23-S, R-26-E, Eddy Co., NM

M. Karner

09/9/2015

NM OIL CONSERVATION  
ARTESIA DISTRICT  
NOV 03 2015  
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13-3/8", 48# H-40 csg @ 487'  
cmtd w/ 490 sx, cmt circ

TOC @ 2020' by TS

9-5/8", 40# J-55 csg @ 3188'  
cmtd w/ 1300 sx, cmt circ

← 345 jts 2 3/8" 4.7# L-80 Tbg

DV Tool @ 7011'  
cmtd w/ 800 sx

TOC @ 9200' by CBL

T-2 On-off Tool w/ 1.81" F Profile nipple @ 10919'  
Arrowset 1X pkr @ 10926'

Atoka Perfs (11,026' - 11,038'), (11,080' - 11,127'),  
(11,155' - 11,166'), (11,172' - 11,182'), (11,206' - 11,217'),  
and (11,231' - 11,238')

CIBP at 11,424' w/ 35' cmt bailed on top  
Morrow perfs (11474' - 11909')

PBTD @ 12023'  
5-1/2" 17# N-80 & P-110 @ 12045' cmtd w/ 1000 sx  
TD @ 12050'