OCD Artesia

Form 3160-3
(August 2007)

FORM APPROVED
OMB No. 1004-0137
Expires July 31, 2010.

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
NM014768

6. If Indian, Allotee or Tribe Name

JCS 2/6/2013

1a. Type of work: ☑ DRILL ☐ REENTER

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

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
Cerf 10 Federal 3H <39694>

2. Name of Operator
Devon Energy Production, Company L. P. <6137>

9. API Well No.
30-015-41058

3a. Address
333 W. Sheridan
Oklahoma City, OK 73102

3b. Phone No. *(include area code)*
405-235-3611 Avalon

10. Field and Pool, or Exploratory
~~Cedar Hills;~~ Bone Spring <37137>

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface A ~~1270~~ 1275' FNL & 300 FEL
At proposed prod. zone A 660 FNL & 330 FEL SEC 10

11. Sec., T. R. M. or Blk. and Survey or Area
SEC 9 T21S R27E

14. Distance in miles and direction from nearest town or post office*
4 Miles north of Carlsbad, NM

12. County or Parish
Eddy

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drlg. unit line, if any)
330'

16. No. of acres in lease
280 ac

17. Spacing Unit dedicated to this well
160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
See attached map

19. Proposed Depth
6567' TVD 11,777' MD
PH: 6697'

20. BLM/BIA Bond No. on file
CO-1104; NMB-000801

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
3211' GL

22. Approximate date work will start*

23. Estimated duration
45 days

## 24. Attachments

Pad drilled w/ the Cerf 10 Fed Com 4H

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, must be attached to this form:

1. Well plat certified by a registered surveyor.
2. A Drilling Plan.
3. A Surface Use Plan (if the location is on National Forest System Lands, the SUPO must be filed with the appropriate Forest Service Office).
4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above).
5. Operator certification.
6. Such other site specific information and/or plans as may be required by the BLM.

25. Signature
Judy Barnett

Name *(Printed/Typed)*
Judy A. Barnett

Date
07/20/2012

Title
Regulatory Specialist

Approved by *(Signature)* /s/ Don Peterson

Name *(Printed/Typed)* /s/ Don Peterson

Date FEB - 1 2013

Title 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.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.

(Continued on page 2)

*(Instructions on page 2)

Capitan Controlled Water Basin

RECEIVED
FEB 05 2013
NMOCD ARTESIA

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

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 Road, 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 & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

# WELL LOCATION AND ACREAGE DEDICATION PLAT

| 1 API Number | 2 Pool Code | 3 Pool Name |
|---|---|---|
| 30-015-41058 | 3713 | ~~Cedar Hills~~; Bone Spring, EAST |

| 4 Property Code | 5 Property Name | 6 Well Number |
|---|---|---|
| 39694 | CERF 10 FEDERAL (Avalon;) | 3H |

| 7 OGRID No. | 8 Operator Name | 9 Elevation |
|---|---|---|
| 6137 | DEVON ENERGY PRODUCTION COMPANY, L.P. | 3211.8 |

## 10 Surface Location

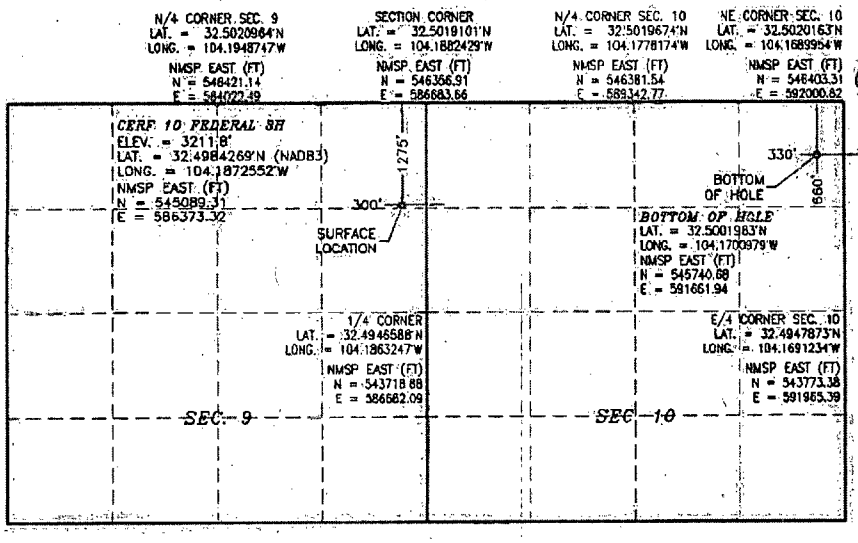
| UL or lot no. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---|---|---|---|---|---|---|---|---|---|
| A | 9 | 21 S | 27 E | | 1275 | NORTH | 300 | EAST | EDDY |

## 11 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 |
|---|---|---|---|---|---|---|---|---|---|
| A | 10 | 21 S | 27 E | | 660 | NORTH | 330 | EAST | EDDY |

| 12 Dedicated Acres | 13 Joint or Infill | 14 Consolidation Code | 15 Order No. |
|---|---|---|---|
| 160 | | | |

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.




## 17 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.*

Signature Date 10-22-12

Judy A. Barnett, Regulatory Specialist
Printed Name

Judith.Barnett@dvn.com
E-mail Address

## 18 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.*

OCTOBER 12, 2012
Date of Survey

Signature and Seal of Professional Surveyor

Certificate Number: 12797 JARAMILLO, PLS 12797

SURVEY NO. 1061A

Certification

I hereby certify that I, or persons under my direct supervision, have inspected the proposed drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or Devon Energy Production Company, L.P. am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements.

I hereby also certify that I, or Devon Energy Production Company, L.P. have made a good faith effort to provide the surface owner with a copy of the Surface Use Plan of Operations and any Conditions of Approval that are attached to the APD.

Executed this _19th__ day of __July, 2012.
Printed Name: Judy A. Barnett
Signed Name:
Position Title: Regulatory Specialist
Address: 333 W. Sheridan, OKC OK 73102
Telephone: (405)-228-8699
Field Representative (if not above signatory):
Address (if different from above):
Telephone (if different from above):

**DRILLING PROGRAM**

Devon Energy Production Company, LP

**Cerf 10 Federal 3H**

Surface Location: ~~1270'~~ 1275' FNL & 300' FEL, Unit A, Sec 9 T21S R27E, Eddy, NM

Bottom Hole Location: 1980' FNL & 340' FEL, Unit A, Sec 10 T21S R27E, Eddy, NM

**Geologic Name of Surface Formation**

a. Quaternary Alluvium

**2. Estimated Tops of Geological Markers & Depths of Anticipated Fresh Water, Oil or Gas:**

| | | | |
|---|---|---|---|
| a. | Rustler | 30' | FW |
| b. | Salado | 197' | Barren |
| c. | Base Salado | 317' | Barren |
| d. | Capitan | 797' | Barren |
| e. | Capitan Base | 2452' | Barren |
| f. | Delaware | 2727' | Oil |
| g. | Bone Spring Lm | 5112' | Oil |
| h. | 1st Bone Spring Ss | 6327' | Oil |
| i. | 1st Bone Spring Ss Upper | 6327' | Oil |
| j. | 1st Bone Spring Ss Mid | 6392' | Oil |
| k. | 1st Bone Spring Ss Mid B | 6427' | Oil |
| l. | 2nd Bone Spring Lime | 6547' | Oil |
| Total Depth | | 11,493' | |

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 20" casing at 175' and circulating cement back to surface. Fresh water sands will be protected by setting 13 3/8" casing at 750' and 9 5/8" at ~~2900'~~ 2825'. The Bone Spring intervals will be isolated by setting the 5 ½" casing to total depth. All casing is new and API approved.

**Casing Program:** **(all cement volumes based on at least 25% excess)**

| Hole Size | Hole Interval | OD Csg | Casing Interval | Weight | Collar | Grade |
|---|---|---|---|---|---|---|
| 26" | 0 – 175' | 20" | 0'-175' | 94# | BT&C | J/K-55 |
| 17 ½" | 175 - 750' | 13 3/8" | 0'-750' | 68# | BT&C | J/K-55 |
| 12 ¼" | 750-~~2900'~~ 2825' | 9 5/8" | 0'-2900' | 40# | LT&C | J-55 |
| 8 ¾" | ~~2900'~~-5700' | 5 ½" | 0'-5700' | 17# | LT&C | HCP110 |
| 8 ¾" | 5700-11,493 | 5 ½" | 5700-11,493' | 17# | BT&C | HCP110 |

See COA

MAX TVD in lateral 6567'

**Design Parameter Factors:**

| Casing Size | Collapse Design Factor | Burst Design Factor | Tension Design Factor |
|---|---|---|---|
| 20" | 6.36 | 25.79 | 47.66 |
| 13 3/8" | 1.98 | 4.44 | 8.94 |
| 9 5/8" | 1.34 | 2.34 | 3.77 |
| 5 ½" | 3.22 | 3.99 | 4.59 |
| 5 ½" | 2.79 | 3.47 | 2.91 |

The maximum possible collapse load that the intermediate casing will experience will result from evacuated casing with the pore pressure exerting a collapse load at TD. The pore pressure is estimated to be **10.0 ppg** for this calculation. This results in a collapse design factor of **1.34** for **9.625" 36#** J-55 ST&C casing at a depth of **2,900'**. While running the intermediate casing, the casing will never be completely evacuated. There is no potential for the intermediate casing to be used as a production string.

**Cement Program: (volumes** based **on at least 25% excess)**

20" Surface

**Lead:** 400 sx Cl C+ 2% bwoc Calcium Chloride + 0.125#/sx CF + 56.3% FW, 14.8 ppg, Yld: 1.35 cf/sx. **TOC @ surface.**

13 3/8"Intermediate

**Lead**: 388 sx Cl C + 2% bwoc Calcium Chloride + 0.125#/sx CF + 4% bwoc Bentonite + 81.4%FW, 13.5 ppg, Yld: 1.75 cf/sk . **TOC @ surface. Tail:** 250 sx Cl C + 2% bwoc Calcium Chloride + 0.125#/sx CF + 56.3%FW, 14.8 ppg Yld: 1.35 cf/sx

9 5/8" Intermediate

**Lead:** 825 sx (60:40) Poz (Fly Ash):Cl C + 5% bwow Sodium Chloride + 0.125#/sx CF + 3#/sx LCM-1 + 1% bwoc Sodium Metasilicate + 0.4% bwoc R-3 + 0.25% bwoc FL-52 + 89.5% FW, 12.6 ppg Yield: 1.74 cf/sk **Tail:** 300 sx (60:40) Poz (Fly Ash):Cl C + 5% bwow Sodium Chloride + 0.125#/sx CF + 0.5% bwoc Sodium Metasilicate + 4% bwoc MPA-5 + 0.5% bwoc BA-10A + 65.3% FW, 13.8 ppg Yld: 1.38 cf/sx. **TOC @ surface**

5 ½" Production

**Lead:** 1080 sz (35:65) Poz (Fly Ash):Cl C + 5% bwow Sodium Chloride + 0.125#/sx CF + 0.4% bwoc FL-52 + 6% bwoc Bentonite + 107.7% FW, 12.5 ppg Yld: 2.04 cf/sx **Tail:** 1550 sx (50:50) Poz (Fly Ash):Cl C + 5% bwow Sodium Chloride + 0.4% bwoc CD-32 + 0.4% bwoc FL-25 + 0.4% bwoc FL-52 + 0.4% bwoc Sodium Metasilicate + 57.2% FW, 14.2 ppg Yld: 1.28 cf/sx. **TOC @ Surface**

**PH @ 6697'**:

Cement w/ 380 sx Class H, FW 15.6 ppg, Yld 1.18cf/sx.

## Pressure Control Equipment

The BOP system used to drill the **17-1/2"** hole will consist of a **20" 2M Annular preventer**. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a **2M system** prior to drilling out the casing shoe.

The BOP system used to drill the **12-1/4" and 8-3/4"** holes will consist of a **13-5/8" 3M Triple Ram and Annular preventer**. The BOP system will be tested as per BLM Onshore Oil and Gas Order No. 2 as a **3M system** prior to drilling out the casing shoe.

The pipe rams will be operated and checked as per Onshore Order No 2. A 2" kill line and 3" choke line will be incorporated into the drilling spool below the ram BOP. In addition to the rams and annular preventer, additional BOP accessories include a kelly cock, floor safety valve, choke lines, and choke manifold rated at **3,000 psi WP**.

Devon requests a variance to use a flexible line with flanged ends between the BOP and the choke manifold (choke line). The line will be kept as straight as possible with minimal turns.

## Proposed Mud Circulation System

| Depth | Mud Wt. | Visc | Fluid Loss | Type System |
|---|---|---|---|---|
| 0 - 175' | 8.4-9.4 | 32-34 | NC | FW |
| 175 – 750' | 9.8-10.0 | 28 | NC | Brine |
| 750 – ~~2900'~~ 2825 | 8.3-8.4 | 28-29 | NC | FW |
| ~~2900~~ – 11,493' | 8.3-8.6 | 28-29 | NC | FW |

The necessary mud products for weight addition and fluid loss control will be on location at all times.

3. **Auxiliary Well Control and Monitoring Equipment**:
   a. A Kelly cock will be in the drill string at all times.
   b. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor at all times.
   c. Hydrogen Sulfide detection equipment will be in operation after drilling out the 20" casing shoe until the 5 1/2" casing is cemented. Breathing equipment will be on location upon drilling the 13 3/8" shoe until total depth is reached.

4. **Logging, Coring, and Testing Program:** See COA

a. Drill stem tests will be based on geological sample shows.
b. If a drill stem test is anticipated; a procedure, equipment to be used and safety measures will be provided via sundry notice to the BLM.
c. The open hole electrical logging program will be:
   i. Total Depth to Intermediate Casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
   ii. Total Depth to Surface Compensated Neutron with Gamma Ray
   iii. No coring program is planned
   iv. Additional testing will be initiated subsequent to setting the 5 ½" production casing. Specific intervals will be targeted based on log evaluation, geological sample shows and drill stem tests.

5. **Potential Hazards:**

a. No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6 No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP 3800 psi and Estimated BHT 140°. No H2S is anticipated to be encountered.

6. **Anticipated Starting Date and Duration of Operations:**

a. Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after BLM approval and as soon as a rig will be available. Move in operations and drilling is expected to take 32 days. If production casing is run then an additional 30 days will be needed to complete well and construct surface facilities and/or lay flow lines in order to place well on production.

devon

# Devon Energy, Inc.

**Eddy County (NAD83)**
**Cerf 10 Federal**
**#3H**
**OH**

**Plan: Plan #3**

# PathfinderX & Y Report

**28 August, 2012**

PATHFINDER®
A Schlumberger Company

| | | | |
|---|---|---|---|
| **Company:** | Devon Energy, Inc. | **Local Co-ordinate Reference:** | Well #3H |
| **Project:** | Eddy County (NAD83) | **TVD Reference:** | WELL @ 3237.3usft (H&P 300) |
| **Site:** | Cerf 10 Federal | **MD Reference:** | WELL @ 3237.3usft (H&P 300) |
| **Well:** | #3H | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #3 | **Database:** | EDM 5000.1 Single User Db |

**Project** Eddy County (NAD83)

| | | | |
|---|---|---|---|
| **Map System:** | US State Plane 1983 | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | North American Datum 1983 | | |
| **Map Zone:** | New Mexico Eastern Zone | | |

**Site** Cerf 10 Federal

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 545,094.310 usft | **Latitude:** | 32.498441 |
| **From:** | Map | **Easting:** | 586,373.400 usft | **Longitude:** | -104.187255 |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.08 ° |

**Well** #3H

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 usft | **Northing:** | 545,094.310 usft | **Latitude:** | 32.498441 |
| | **+E/-W** | 0.0 usft | **Easting:** | 586,373.400 usft | **Longitude:** | -104.187255 |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | usft | **Ground Level:** | 3,211.1 usft |

**Wellbore** OH

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF200510 | 7/12/2012 | 7.75 | 60.33 | 48,649 |

**Design** Plan #3

**Audit Notes:**

| | | | | | |
|---|---|---|---|---|---|
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0.0 |

| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) |
|---|---|---|---|---|
| | 0.0 | 0.0 | 0.0 | 83.03 |

**Survey Tool Program** **Date** 8/28/2012

| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.0 | 11,776.1 | Plan #3 (OH) | Pathfinder | Pathfinder MWD |

| | | | |
|---|---|---|---|
| **Company:** | Devon Energy, Inc. | **Local Co-ordinate Reference:** | Well #3H |
| **Project:** | Eddy County (NAD83) | **TVD Reference:** | WELL @ 3237.3usft (H&P 300) |
| **Site:** | Cerf 10 Federal | **MD Reference:** | WELL @ 3237.3usft (H&P 300) |
| **Well:** | #3H | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #3 | **Database:** | EDM 5000.1 Single User Db |

**Planned Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | TVDSS (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) | Northing (usft) | Easting (usft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | -3,237.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 100.0 | 0.00 | 0.00 | 100.0 | -3,137.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 197.0 | 0.00 | 0.00 | 197.0 | -3,040.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| **Salado** | | | | | | | | | | |
| 200.0 | 0.00 | 0.00 | 200.0 | -3,037.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 300.0 | 0.00 | 0.00 | 300.0 | -2,937.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 317.0 | 0.00 | 0.00 | 317.0 | -2,920.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| **Base Salado** | | | | | | | | | | |
| 400.0 | 0.00 | 0.00 | 400.0 | -2,837.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 500.0 | 0.00 | 0.00 | 500.0 | -2,737.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 600.0 | 0.00 | 0.00 | 600.0 | -2,637.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 700.0 | 0.00 | 0.00 | 700.0 | -2,537.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 797.0 | 0.00 | 0.00 | 797.0 | -2,440.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| **Capitan** | | | | | | | | | | |
| 800.0 | 0.00 | 0.00 | 800.0 | -2,437.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 900.0 | 0.00 | 0.00 | 900.0 | -2,337.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 1,000.0 | 0.00 | 0.00 | 1,000.0 | -2,237.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 1,100.0 | 0.00 | 0.00 | 1,100.0 | -2,137.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 1,200.0 | 0.00 | 0.00 | 1,200.0 | -2,037.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 1,300.0 | 0.00 | 0.00 | 1,300.0 | -1,937.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 1,400.0 | 0.00 | 0.00 | 1,400.0 | -1,837.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 1,500.0 | 0.00 | 0.00 | 1,500.0 | -1,737.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 1,600.0 | 0.00 | 0.00 | 1,600.0 | -1,637.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 1,700.0 | 0.00 | 0.00 | 1,700.0 | -1,537.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 1,800.0 | 0.00 | 0.00 | 1,800.0 | -1,437.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 1,900.0 | 0.00 | 0.00 | 1,900.0 | -1,337.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 2,000.0 | 0.00 | 0.00 | 2,000.0 | -1,237.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 2,100.0 | 0.00 | 0.00 | 2,100.0 | -1,137.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |

| | | | |
|---|---|---|---|
| **Company:** | Devon Energy Inc | **Local Co-ordinate Reference:** | Well #3H |
| **Project:** | Eddy County (NAD83) | **TVD Reference:** | WELL @ 3237.3usft (H&P 300) |
| **Site:** | Cerf 10 Federal | **MD Reference:** | WELL @ 3237.3usft (H&P 300) |
| **Well:** | #3H | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #3 | **Database:** | EDM 5000.1 Single User Db |

**Planned Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | TVDSS (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) | Northing (usft) | Easting (usft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,200.0 | 0.00 | 0.00 | 2,200.0 | -1,037.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 2,300.0 | 0.00 | 0.00 | 2,300.0 | -937.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 2,400.0 | 0.00 | 0.00 | 2,400.0 | -837.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 2,452.0 | 0.00 | 0.00 | 2,452.0 | -785.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| **Capitan Base** | | | | | | | | | | |
| 2,500.0 | 0.00 | 0.00 | 2,500.0 | -737.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 2,600.0 | 0.00 | 0.00 | 2,600.0 | -637.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 2,700.0 | 0.00 | 0.00 | 2,700.0 | -537.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 2,727.0 | 0.00 | 0.00 | 2,727.0 | -510.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| **Delaware** | | | | | | | | | | |
| 2,800.0 | 0.00 | 0.00 | 2,800.0 | -437.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 2,900.0 | 0.00 | 0.00 | 2,900.0 | -337.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 3,000.0 | 0.00 | 0.00 | 3,000.0 | -237.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 3,100.0 | 0.00 | 0.00 | 3,100.0 | -137.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 3,200.0 | 0.00 | 0.00 | 3,200.0 | -37.3 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 3,300.0 | 0.00 | 0.00 | 3,300.0 | 62.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 3,400.0 | 0.00 | 0.00 | 3,400.0 | 162.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 3,500.0 | 0.00 | 0.00 | 3,500.0 | 262.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 3,600.0 | 0.00 | 0.00 | 3,600.0 | 362.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 3,700.0 | 0.00 | 0.00 | 3,700.0 | 462.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 3,800.0 | 0.00 | 0.00 | 3,800.0 | 562.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 3,900.0 | 0.00 | 0.00 | 3,900.0 | 662.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 4,000.0 | 0.00 | 0.00 | 4,000.0 | 762.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 4,100.0 | 0.00 | 0.00 | 4,100.0 | 862.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 4,200.0 | 0.00 | 0.00 | 4,200.0 | 962.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 4,300.0 | 0.00 | 0.00 | 4,300.0 | 1,062.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 4,400.0 | 0.00 | 0.00 | 4,400.0 | 1,162.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |

| | | | |
|---|---|---|---|
| **Company:** | Devon Energy Inc. | **Local Co-ordinate Reference:** | Well #3H |
| **Project:** | Eddy County (NAD83) | **TVD Reference:** | WELL @ 3237.3usft (H&P 300) |
| **Site:** | Cert 10 Federal | **MD Reference:** | WELL @ 3237.3usft (H&P 300) |
| **Well:** | #3H | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #3 | **Database:** | EDM 5000.1 Single User Db |

**Planned Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | TVDSS (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) | Northing (usft) | Easting (usft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 4,500.0 | 0.00 | 0.00 | 4,500.0 | 1,262.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 4,600.0 | 0.00 | 0.00 | 4,600.0 | 1,362.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 4,700.0 | 0.00 | 0.00 | 4,700.0 | 1,462.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 4,800.0 | 0.00 | 0.00 | 4,800.0 | 1,562.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 4,900.0 | 0.00 | 0.00 | 4,900.0 | 1,662.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 5,000.0 | 0.00 | 0.00 | 5,000.0 | 1,762.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 5,100.0 | 0.00 | 0.00 | 5,100.0 | 1,862.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 5,112.0 | 0.00 | 0.00 | 5,112.0 | 1,874.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| **Bone Spring Lm** | | | | | | | | | | |
| 5,200.0 | 0.00 | 0.00 | 5,200.0 | 1,962.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 5,300.0 | 0.00 | 0.00 | 5,300.0 | 2,062.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 5,400.0 | 0.00 | 0.00 | 5,400.0 | 2,162.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 5,500.0 | 0.00 | 0.00 | 5,500.0 | 2,262.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 5,600.0 | 0.00 | 0.00 | 5,600.0 | 2,362.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 5,700.0 | 0.00 | 0.00 | 5,700.0 | 2,462.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 5,800.0 | 0.00 | 0.00 | 5,800.0 | 2,562.7 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 5,834.1 | 0.00 | 0.00 | 5,834.1 | 2,596.8 | 0.0 | 0.0 | 0.0 | 0.00 | 545,094.31 | 586,373.40 |
| 5,850.0 | 1.59 | 42.51 | 5,850.0 | 2,612.7 | 0.2 | 0.1 | 0.2 | 10.00 | 545,094.47 | 586,373.55 |
| 5,900.0 | 6.59 | 42.51 | 5,899.9 | 2,662.6 | 2.8 | 2.6 | 2.9 | 10.00 | 545,097.10 | 586,375.96 |
| 5,950.0 | 11.59 | 42.51 | 5,949.2 | 2,711.9 | 8.6 | 7.9 | 8.9 | 10.00 | 545,102.92 | 586,381.29 |
| 6,000.0 | 16.59 | 42.51 | 5,997.7 | 2,760.4 | 17.6 | 16.1 | 18.1 | 10.00 | 545,111.89 | 586,389.52 |
| 6,050.0 | 21.59 | 42.51 | 6,044.9 | 2,807.6 | 29.6 | 27.2 | 30.6 | 10.00 | 545,123.94 | 586,400.56 |
| 6,100.0 | 26.59 | 42.51 | 6,090.6 | 2,853.3 | 44.7 | 40.9 | 46.1 | 10.00 | 545,138.98 | 586,414.35 |
| 6,150.0 | 31.59 | 42.51 | 6,134.2 | 2,896.9 | 62.6 | 57.4 | 64.5 | 10.00 | 545,156.90 | 586,430.77 |
| 6,200.0 | 36.59 | 42.51 | 6,175.6 | 2,938.3 | 83.2 | 76.3 | 85.8 | 10.00 | 545,177.55 | 586,449.70 |
| 6,250.0 | 41.59 | 42.51 | 6,214.4 | 2,977.1 | 106.5 | 97.6 | 109.8 | 10.00 | 545,200.78 | 586,471.00 |
| 6,300.0 | 46.59 | 42.51 | 6,250.3 | 3,013.0 | 132.1 | 121.1 | 136.2 | 10.00 | 545,226.42 | 586,494.50 |

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|---|---|---|---|
| Company: | Devon Energy, Inc. | Local Co-ordinate Reference: | Well #3H |
| Project: | Eddy County (NAD83) | TVD Reference: | WELL @ 3237.3usft (H&P 300) |
| Site: | Cerf 10 Federal | MD Reference: | WELL @ 3237.3usft (H&P 300) |
| Well: | #3H | North Reference: | Grid |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | Plan #3 | Database: | EDM 5000.1 Single User Db |

Planned Survey

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | TVDSS (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) | Northing (usft) | Easting (usft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 6,350.0 | 51.59 | 42.51 | 6,283.1 | 3,045.8 | 160.0 | 146.6 | 164.9 | 10.00 | 545,254.26 | 586,520.02 |
| 6,400.0 | 56.59 | 42.51 | 6,312.4 | 3,075.1 | 189.8 | 174.0 | 195.7 | 10.00 | 545,284.11 | 586,547.38 |
| 6,427.6 | 59.35 | 42.51 | 6,327.0 | 3,089.7 | 207.0 | 189.8 | 213.5 | 10.00 | 545,301.34 | 586,563.17 |
| 1st Bone Spring Ss - 1st Bone Spring Ss Upper | | | | | | | | | | |
| 6,450.0 | 61.59 | 42.51 | 6,338.1 | 3,100.8 | 221.4 | 203.0 | 228.3 | 10.00 | 545,315.72 | 586,576.36 |
| 6,500.0 | 66.59 | 42.51 | 6,359.9 | 3,122.6 | 254.6 | 233.3 | 262.5 | 10.00 | 545,348.86 | 586,606.74 |
| 6,550.0 | 71.59 | 42.51 | 6,377.7 | 3,140.4 | 289.0 | 264.9 | 298.0 | 10.00 | 545,383.28 | 586,638.29 |
| 6,600.0 | 76.59 | 42.51 | 6,391.4 | 3,154.1 | 324.4 | 297.4 | 334.5 | 10.00 | 545,418.72 | 586,670.77 |
| 6,602.5 | 76.84 | 42.51 | 6,392.0 | 3,154.7 | 326.2 | 299.0 | 336.3 | 10.00 | 545,420.48 | 586,672.38 |
| 1st Bone Spring Ss Mid | | | | | | | | | | |
| 6,650.0 | 81.59 | 42.51 | 6,400.9 | 3,163.6 | 360.6 | 330.5 | 371.8 | 10.00 | 545,454.90 | 586,703.93 |
| 6,700.0 | 86.59 | 42.51 | 6,406.0 | 3,168.7 | 397.2 | 364.1 | 409.6 | 10.00 | 545,491.55 | 586,737.53 |
| 6,730.1 | 89.60 | 42.51 | 6,407.0 | 3,169.7 | 419.4 | 384.5 | 432.5 | 10.00 | 545,513.72 | 586,757.86 |
| 6,800.0 | 89.59 | 45.31 | 6,407.5 | 3,170.2 | 469.8 | 432.9 | 486.7 | 4.00 | 545,564.08 | 586,806.33 |
| 6,900.0 | 89.58 | 49.31 | 6,408.3 | 3,171.0 | 537.6 | 506.4 | 567.9 | 4.00 | 545,631.87 | 586,879.81 |
| 7,000.0 | 89.57 | 53.31 | 6,409.0 | 3,171.7 | 600.1 | 584.4 | 652.9 | 4.00 | 545,694.37 | 586,957.84 |
| 7,100.0 | 89.56 | 57.31 | 6,409.8 | 3,172.5 | 657.0 | 666.6 | 741.4 | 4.00 | 545,751.28 | 587,040.04 |
| 7,200.0 | 89.56 | 61.31 | 6,410.5 | 3,173.2 | 708.0 | 752.6 | 832.9 | 4.00 | 545,802.31 | 587,126.01 |
| 7,300.0 | 89.55 | 65.31 | 6,411.3 | 3,174.0 | 752.9 | 841.9 | 927.1 | 4.00 | 545,847.22 | 587,215.33 |
| 7,400.0 | 89.55 | 69.31 | 6,412.1 | 3,174.8 | 791.5 | 934.2 | 1,023.3 | 4.00 | 545,885.79 | 587,307.57 |
| 7,500.0 | 89.56 | 73.31 | 6,412.9 | 3,175.6 | 823.5 | 1,028.9 | 1,121.2 | 4.00 | 545,917.83 | 587,402.27 |
| 7,600.0 | 89.56 | 77.31 | 6,413.6 | 3,176.3 | 848.9 | 1,125.6 | 1,220.3 | 4.00 | 545,943.19 | 587,498.98 |
| 7,700.0 | 89.56 | 81.31 | 6,414.4 | 3,177.1 | 867.4 | 1,223.8 | 1,320.0 | 4.00 | 545,961.74 | 587,597.22 |
| 7,800.0 | 89.57 | 85.31 | 6,415.1 | 3,177.8 | 879.1 | 1,323.1 | 1,420.0 | 4.00 | 545,973.39 | 587,696.52 |
| 7,900.0 | 89.58 | 89.31 | 6,415.9 | 3,178.6 | 883.8 | 1,423.0 | 1,519.7 | 4.00 | 545,978.09 | 587,796.38 |
| 8,006.8 | 89.60 | 93.58 | 6,416.7 | 3,179.4 | 881.1 | 1,529.7 | 1,625.3 | 4.00 | 545,975.40 | 587,903.11 |
| 8,100.0 | 89.60 | 93.58 | 6,417.3 | 3,180.0 | 875.3 | 1,622.7 | 1,716.9 | 0.00 | 545,969.58 | 587,996.14 |

| | | | |
|---|---|---|---|
| Company: | Devon Energy, Inc. | Local Co-ordinate Reference: | Well #3H |
| Project: | Eddy County (NAD83) | TVD Reference: | WELL @ 3237.3usft (H&P 300) |
| Site: | Cerf 10 Federal | MD Reference: | WELL @ 3237.3usft (H&P 300) |
| Well: | #3H | North Reference: | Grid |
| Wellbore: | OH | Survey Calculation Method: | Minimum Curvature |
| Design: | Plan #3 | Database: | EDM 5000.1 Single User Db |

**Planned Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | TVDSS (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) | Northing (usft) | Easting (usft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 8,200.0 | 89.60 | 93.58 | 6,418.0 | 3,180.7 | 869.0 | 1,722.5 | 1,815.2 | 0.00 | 545,963.34 | 588,095.94 |
| 8,300.0 | 89.60 | 93.58 | 6,418.7 | 3,181.4 | 862.8 | 1,822.3 | 1,913.6 | 0.00 | 545,957.10 | 588,195.74 |
| 8,400.0 | 89.60 | 93.58 | 6,419.4 | 3,182.1 | 856.5 | 1,922.1 | 2,011.9 | 0.00 | 545,950.86 | 588,295.54 |
| 8,500.0 | 89.60 | 93.58 | 6,420.1 | 3,182.8 | 850.3 | 2,021.9 | 2,110.2 | 0.00 | 545,944.62 | 588,395.35 |
| 8,600.0 | 89.60 | 93.58 | 6,420.8 | 3,183.5 | 844.1 | 2,121.7 | 2,208.5 | 0.00 | 545,938.37 | 588,495.15 |
| 8,700.0 | 89.60 | 93.58 | 6,421.5 | 3,184.2 | 837.8 | 2,221.6 | 2,306.8 | 0.00 | 545,932.13 | 588,594.95 |
| 8,763.9 | 89.60 | 93.58 | 6,422.0 | 3,184.7 | 833.8 | 2,285.3 | 2,369.6 | 0.00 | 545,928.15 | 588,658.70 |
| **Mid Lateral PT(Cerf 10 Federal #3H)** | | | | | | | | | | |
| 8,800.0 | 88.87 | 93.58 | 6,422.5 | 3,185.2 | 831.6 | 2,321.4 | 2,405.1 | 2.00 | 545,925.89 | 588,694.75 |
| 8,884.0 | 87.19 | 93.57 | 6,425.4 | 3,188.1 | 826.3 | 2,405.1 | 2,487.6 | 2.00 | 545,920.66 | 588,778.51 |
| 8,900.0 | 87.19 | 93.57 | 6,426.1 | 3,188.8 | 825.4 | 2,421.1 | 2,503.3 | 0.00 | 545,919.66 | 588,794.49 |
| 8,917.4 | 87.19 | 93.57 | 6,427.0 | 3,189.7 | 824.3 | 2,438.4 | 2,520.4 | 0.00 | 545,918.58 | 588,811.80 |
| **1st Bone Spring Ss Mid B** | | | | | | | | | | |
| 9,000.0 | 87.19 | 93.57 | 6,431.0 | 3,193.7 | 819.1 | 2,520.8 | 2,601.5 | 0.00 | 545,913.44 | 588,894.17 |
| 9,100.0 | 87.19 | 93.57 | 6,435.9 | 3,198.6 | 812.9 | 2,620.5 | 2,699.7 | 0.00 | 545,907.22 | 588,993.86 |
| 9,200.0 | 87.19 | 93.57 | 6,440.8 | 3,203.5 | 806.7 | 2,720.1 | 2,797.9 | 0.00 | 545,901.00 | 589,093.54 |
| 9,300.0 | 87.19 | 93.57 | 6,445.7 | 3,208.4 | 800.5 | 2,819.8 | 2,896.1 | 0.00 | 545,894.77 | 589,193.23 |
| 9,400.0 | 87.19 | 93.57 | 6,450.6 | 3,213.3 | 794.2 | 2,919.5 | 2,994.3 | 0.00 | 545,888.55 | 589,292.92 |
| 9,500.0 | 87.19 | 93.57 | 6,455.5 | 3,218.2 | 788.0 | 3,019.2 | 3,092.5 | 0.00 | 545,882.33 | 589,392.60 |
| 9,600.0 | 87.19 | 93.57 | 6,460.4 | 3,223.1 | 781.8 | 3,118.9 | 3,190.7 | 0.00 | 545,876.11 | 589,492.29 |
| 9,700.0 | 87.19 | 93.57 | 6,465.3 | 3,228.0 | 775.6 | 3,218.6 | 3,288.9 | 0.00 | 545,869.88 | 589,591.97 |
| 9,800.0 | 87.19 | 93.57 | 6,470.2 | 3,232.9 | 769.4 | 3,318.3 | 3,387.1 | 0.00 | 545,863.66 | 589,691.66 |
| 9,900.0 | 87.19 | 93.57 | 6,475.1 | 3,237.8 | 763.1 | 3,417.9 | 3,485.3 | 0.00 | 545,857.44 | 589,791.35 |
| 10,000.0 | 87.19 | 93.57 | 6,480.0 | 3,242.7 | 756.9 | 3,517.6 | 3,583.5 | 0.00 | 545,851.22 | 589,891.03 |
| 10,100.0 | 87.19 | 93.57 | 6,484.9 | 3,247.6 | 750.7 | 3,617.3 | 3,681.7 | 0.00 | 545,845.00 | 589,990.72 |
| 10,200.0 | 87.19 | 93.57 | 6,489.8 | 3,252.5 | 744.5 | 3,717.0 | 3,779.9 | 0.00 | 545,838.77 | 590,090.40 |
| 10,300.0 | 87.19 | 93.57 | 6,494.7 | 3,257.4 | 738.2 | 3,816.7 | 3,878.1 | 0.00 | 545,832.55 | 590,190.09 |

| | | | |
|---|---|---|---|
| **Company:** | Devon Energy Inc. | **Local Co-ordinate Reference:** | Well #3H |
| **Project:** | Eddy County (NAD83) | **TVD Reference:** | WELL @ 3237.3usft (H&P 300) |
| **Site:** | Cerf 10 Federal | **MD Reference:** | WELL @ 3237.3usft (H&P 300) |
| **Well:** | #3H | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #3 | **Database:** | EDM 5000.1 Single User Db |

**Planned Survey**

| MD (usft) | Inc (°) | Azi (azimuth) (°) | TVD (usft) | TVDSS (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) | Northing (usft) | Easting (usft) |
|---|---|---|---|---|---|---|---|---|---|---|
| 10,400.0 | 87.19 | 93.57 | 6,499.6 | 3,262.3 | 732.0 | 3,916.4 | 3,976.3 | 0.00 | 545,826.33 | 590,289.78 |
| 10,500.0 | 87.19 | 93.57 | 6,504.5 | 3,267.2 | 725.8 | 4,016.1 | 4,074.5 | 0.00 | 545,820.11 | 590,389.46 |
| 10,600.0 | 87.19 | 93.57 | 6,509.4 | 3,272.1 | 719.6 | 4,115.7 | 4,172.6 | 0.00 | 545,813.88 | 590,489.15 |
| 10,700.0 | 87.19 | 93.57 | 6,514.3 | 3,277.0 | 713.4 | 4,215.4 | 4,270.8 | 0.00 | 545,807.66 | 590,588.83 |
| 10,800.0 | 87.19 | 93.57 | 6,519.2 | 3,281.9 | 707.1 | 4,315.1 | 4,369.0 | 0.00 | 545,801.44 | 590,688.52 |
| 10,900.0 | 87.19 | 93.57 | 6,524.1 | 3,286.8 | 700.9 | 4,414.8 | 4,467.2 | 0.00 | 545,795.22 | 590,788.21 |
| 11,000.0 | 87.19 | 93.57 | 6,529.0 | 3,291.7 | 694.7 | 4,514.5 | 4,565.4 | 0.00 | 545,788.99 | 590,887.89 |
| 11,100.0 | 87.19 | 93.57 | 6,533.9 | 3,296.6 | 688.5 | 4,614.2 | 4,663.6 | 0.00 | 545,782.77 | 590,987.58 |
| 11,200.0 | 87.19 | 93.57 | 6,538.8 | 3,301.5 | 682.2 | 4,713.9 | 4,761.8 | 0.00 | 545,776.55 | 591,087.26 |
| 11,300.0 | 87.19 | 93.57 | 6,543.7 | 3,306.4 | 676.0 | 4,813.6 | 4,860.0 | 0.00 | 545,770.33 | 591,186.95 |
| 11,368.0 | 87.19 | 93.57 | 6,547.0 | 3,309.7 | 671.8 | 4,881.4 | 4,926.8 | 0.00 | 545,766.09 | 591,254.78 |
| **2nd Bone Spring Lime** | | | | | | | | | | |
| 11,400.0 | 87.19 | 93.57 | 6,548.6 | 3,311.3 | 669.8 | 4,913.2 | 4,958.2 | 0.00 | 545,764.11 | 591,286.64 |
| 11,500.0 | 87.19 | 93.57 | 6,553.5 | 3,316.2 | 663.6 | 5,012.9 | 5,056.4 | 0.00 | 545,757.88 | 591,386.32 |
| 11,600.0 | 87.19 | 93.57 | 6,558.4 | 3,321.1 | 657.4 | 5,112.6 | 5,154.6 | 0.00 | 545,751.66 | 591,486.01 |
| 11,700.0 | 87.19 | 93.57 | 6,563.3 | 3,326.0 | 651.1 | 5,212.3 | 5,252.8 | 0.00 | 545,745.44 | 591,585.70 |
| 11,776.5 | 87.19 | 93.57 | 6,567.0 | 3,329.7 | 646.4 | 5,288.5 | 5,327.9 | 0.00 | 545,740.68 | 591,661.94 |
| **PBHL(Cerf 10 Federal #3H)** | | | | | | | | | | |

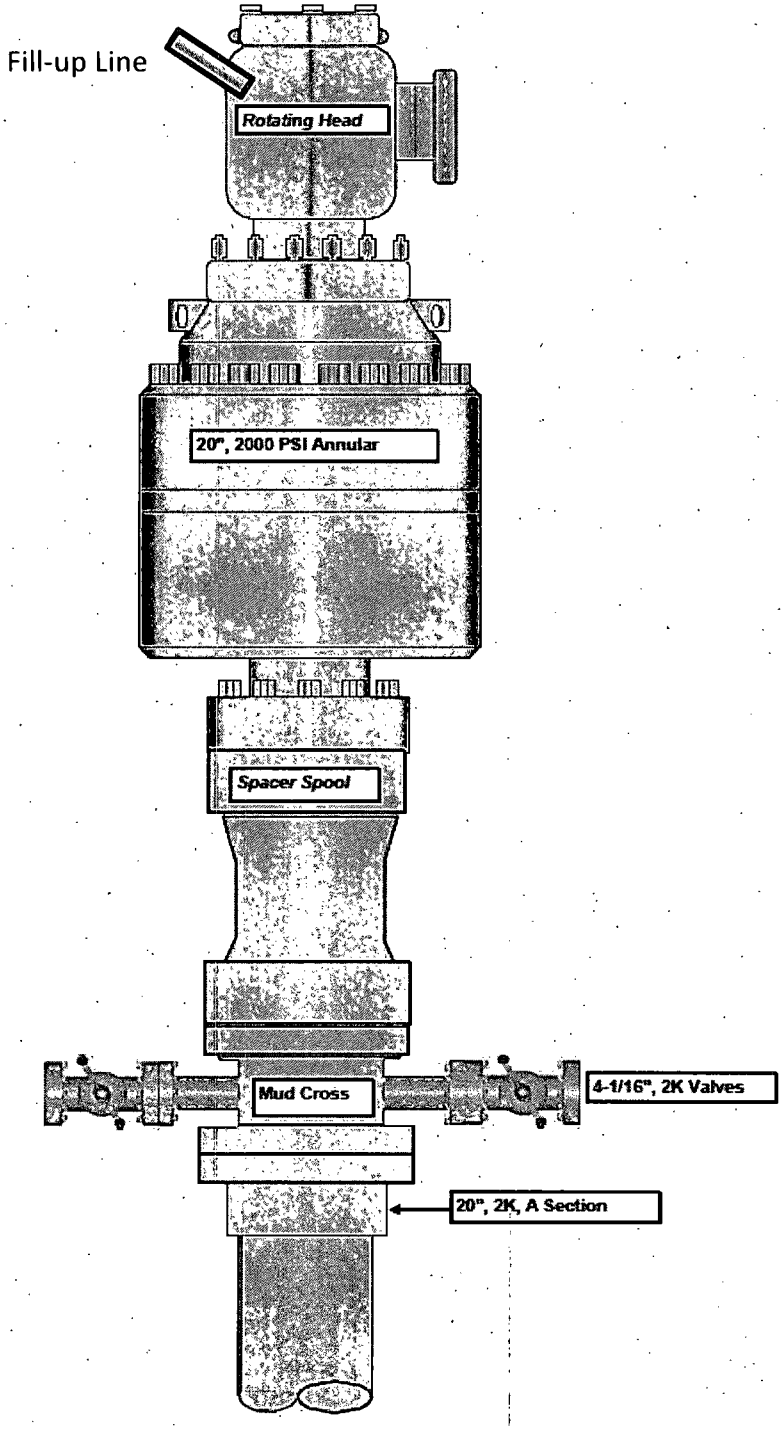
| | | | |
|---|---|---|---|
| **Company:** | Devon Energy, Inc. | **Local Co-ordinate Reference:** | Well #3H |
| **Project:** | Eddy County (NAD83) | **TVD Reference:** | WELL @ 3237.3usft (H&P 300) |
| **Site:** | Cerf 10 Federal | **MD Reference:** | WELL @ 3237.3usft (H&P 300) |
| **Well:** | #3H | **North Reference:** | Grid |
| **Wellbore:** | OH | **Survey Calculation Method:** | Minimum Curvature |
| **Design:** | Plan #3 | **Database:** | EDM 5000.1 Single User Db |

**Formations**

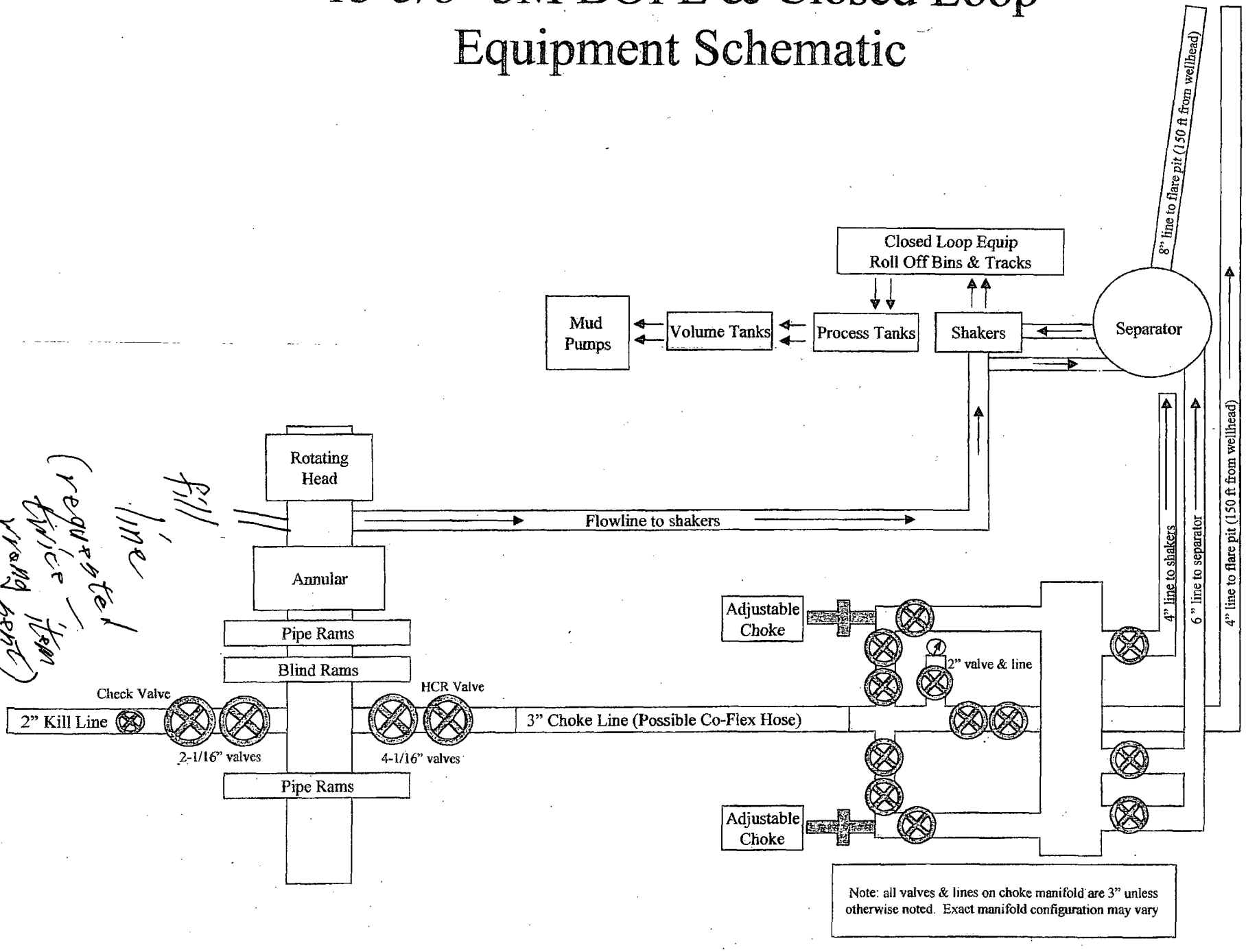
| Measured Depth (usft) | Vertical Depth (usft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 6,427.6 | 6,327.0 | 1st Bone Spring Ss Upper | | | |
| 8,917.4 | 6,427.0 | 1st Bone Spring Ss Mid B | | | |
| 197.0 | 197.0 | Salado | | | |
| 5,112.0 | 5,112.0 | Bone Spring Lm | | | |
| 6,427.6 | 6,327.0 | 1st Bone Spring Ss | | | |
| 11,368.0 | 6,547.0 | 2nd Bone Spring Lime | | | |
| 2,727.0 | 2,727.0 | Delaware | | | |
| 2,452.0 | 2,452.0 | Capitan Base | | | |
| 797.0 | 797.0 | Capitan | | | |
| 317.0 | 317.0 | Base Salado | | | |
| 6,602.5 | 6,392.0 | 1st Bone Spring Ss Mid | | | |

Checked By: _____ Approved By: _____ Date: _____

# 20" 2K Annular



# 13-5/8" 3M BOPE & Closed Loop Equipment Schematic



NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
**Cerf 10 Fed 3H**
Surface Location: 1270' FNL & 300' FEL, Unit A, Sec 9 T21S R27E, Eddy, NM
Bottom Hole Location: 1980' FNL & 340' FEL, Unit A, Sec 10 T21S R27E, Eddy, NM

1. Drilling nipple will be constructed so it can be removed mechanically without the aid of a welder. The minimum internal diameter will equal BOP bore.

2. Wear ring will be properly installed in head.

3. Blowout preventer and all associated fittings will be in operable condition to withstand a minimum 3000 psi working pressure.

4. All fittings will be flanged.

5. A full bore safety valve tested to a minimum 3000 psi WP with proper thread connections will be available on the rotary rig floor at all times.

6. All choke lines will be anchored to prevent movement.

7. All BOP equipment will be equal to or larger in bore than the internal diameter of the last casing string.

8. Will maintain a kelly cock attached to the kelly.

9. Hand wheels and wrenches will be properly installed and tested for safe operation.

10. Hydraulic floor control for blowout preventer will be located as near in proximity to driller's controls as possible.

11. All BOP equipment will meet API standards and include a minimum 40 gallon accumulator having two independent means of power to initiate closing operation.

# Hydrostatic Test Certificate

Continental

| Certificate Number: 4520 | PBC No: 10321 | Customer Name & Address |
|---|---|---|
| | | HELMERICH & PAYNE INT'L DRILLING CO |
| Customer Purchase Order No: | RIG 300 | 1437 SOUTH BOULDER |
| | | TULSA, OK 74119 |
| Project: | | |

| Test Centre Address | Accepted by ContiTech Beattie Inspection | | Accepted by Client Inspection |
|---|---|---|---|
| ContiTech Beattie Corp.<br>11535 Brittmoore Park Drive<br>Houston, TX 77041<br>USA | Signed: | Josh Sims | |
| | Date: | 10/27/10 | |

We certify that the goods detailed hereon have been inspected by our Quality Management System, and to the best of our knowledge are found to conform to relevant industrial standards within the requirements of the purchase order as issued to ContiTech Beattie Corporation.

These goods were made in the United States of America.

| Item | Part No | Description | Qnty | Serial Number | As-Built Length (m) | Work Press | Test Press | Test Time (minutes) |
|---|---|---|---|---|---|---|---|---|
| 1 | | 3" ID 10K Choke & Kill Hose x 35ft OAL<br>End A: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange<br>End B: 4.1/16" 10Kpsi API Spec 6A Type 6BX Flange<br>Working Pressure: 10,000psi<br>Test Pressure: 15,000psi<br>Serial#: 49106 | 1 | 49106 | | 10 kpsi | 15 kpsi | 60 |

360 deg = 96 min
METER RL# 4486
SN/34403
LOCATION IX Recertification Hose
REMARKS LJB TK 10/22/10
Certified True Copy
18000
16000
14000
12000
10000
8000
6000
4000
2000

devon

Devon Energy Corporation
20 North Broadway
Oklahoma City, Oklahoma 73102-8260

# Hydrogen Sulfide ($H_2S$) Contingency Plan

## For

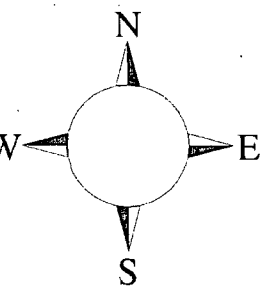
## CERF 10 FEDERAL 3H

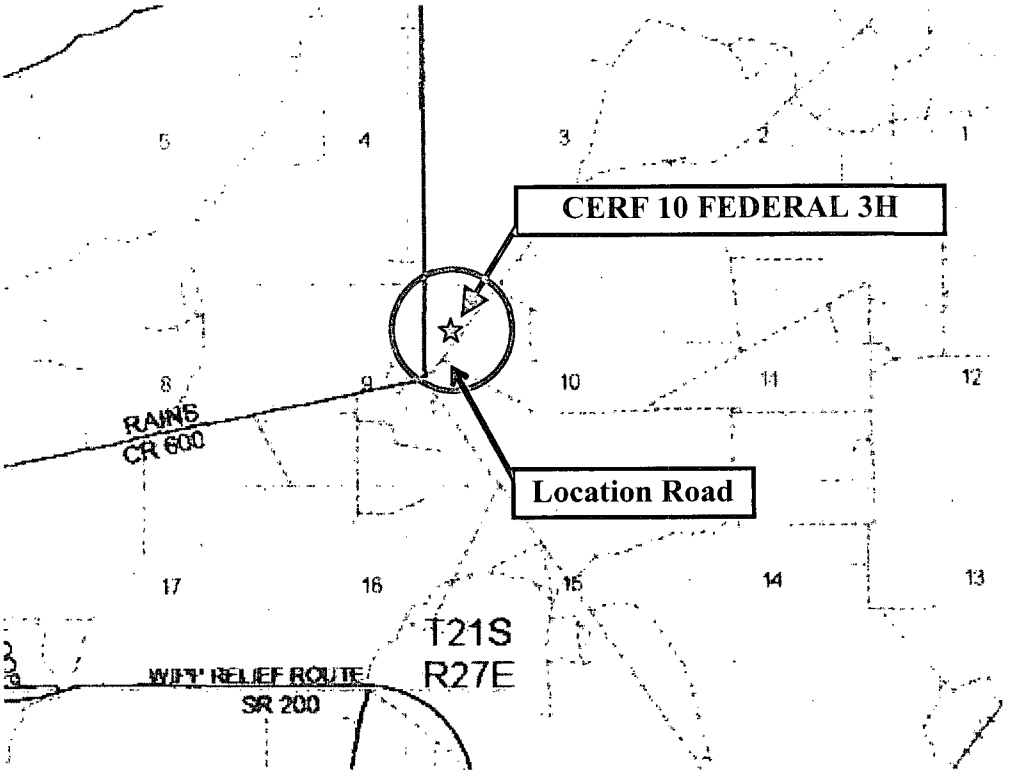
**Sec-9, T-21S R-27E**
**1270' FNL & 300' FEL,**
**LAT. = 32.4984406'N (NAD83)**
**LONG = 104.1872549'W**

**Eddy County NM**

# CERF 10 FEDERAL 3H

This is an open drilling site. $H_2S$ monitoring equipment and emergency response equipment will be used within 500' of zones known to contain $H_2S$, including warning signs, wind indicators and $H_2S$ monitor.




**Assumed 100 ppm [illegible] 3000' ( )**
**100 ppm H2S concentration shall trigger activation of this plan.**

**Escape**

Crews shall escape upwind of escaping gas in the event of an emergency release of gas. Escape can be facilitated from the location entrance road, Northeast or Southwest on lease road to CR600. Crews should then block both directions of the public road so as not to allow anyone traversing into a hazardous area. The blockade should be at a safe distance outside of the ROE. There are no homes or buildings in or near the ROE.

**Assumed 100 ppm ROE = 3000'**

**100 ppm $H_2S$ concentration shall trigger activation of this plan.**

## Emergency Procedures

**In the event of a release of gas containing $H_2S$, 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 $H_2S$ 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 $H_2S$, 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 ($SO_2$). 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 $H_2S$ and $SO_2$

| Common Name | Chemical Formula | Specific Gravity | Threshold Limit | Hazardous Limit | Lethal Concentration |
|---|---|---|---|---|---|
| Hydrogen Sulfide | $H_2S$ | 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

Devon Energy Corp. personnel must liaison 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. The following call list of essential and potential responders has been prepared for use during a release. Devon Energy Corp. Company response must be in coordination with the State of New Mexico's 'Hazardous Materials Emergency Response Plan' (HMER)

## Hydrogen Sulfide Drilling Operation Plan

## I. HYDROGEN SULFIDE ($H_2S$) TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide ($H_2S$)

2. The proper use and maintenance of personal protective equipment and life support systems.

3. The proper use of $H_2S$ detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.

4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of $H_2S$ metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.

2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.

3. The contents and requirements of the $H_2S$ Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable $H_2S$ zone (within 3 days or 500 feet) and weekly $H_2S$ and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific $H_2S$ Drilling Operations Plan and the Public Protection Plan.

## II. HYDROGEN SULFIDE TRAINING

Note: All $H_2S$ safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain $H_2S$.

1. **Well Control Equipment**

   A. Flare line

   B. Choke manifold

   C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit

   D. Auxiliary equipment may include if applicable: annular preventer and rotating head.

2. **Protective equipment for essential personnel:**

   A. 30-minute SCBA units located in the doghouse and at briefing areas, as indicated on well site diagram. As it may be difficult to communicate audibly while wearing these units, hand signals shall be utilized.

3. **$H_2S$ detection and monitoring equipment:**

   A. Portable $H_2S$ monitors positioned on location for best coverage and response. These unites have warning lights and audible sirens when $H_2S$ levels of 20 PPM are reached. These units are usually capable of detecting $SO_2$, which is a byproduct of burning $H_2S$.

4. **Visual warning systems:**

   A. Wind direction indicators as shown on well site diagram

   B. Caution/ Danger signs shall be posted on roads providing direct access to locations. Signs will be painted a high visibility yellow with black lettering of sufficient size to be reasonable distance from the immediate location. Bilingual signs will be used when appropriate..

5. **Mud program:**

   A. The mud program has been designed to minimize the volume of $H_2S$ circulated to surface. Proper mud weight, safe drilling practices and the use of $H_2S$ scavengers will minimize hazards when penetrating $H_2S$ bearing zones.

6. **Metallurgy:**

   A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold lines, and valves shall be $H_2S$ trim.

   B. All elastomers used for packing and seals shall be $H_2S$ trim.

7. **Communication:**

   A. Radio communications in company vehicles including cellular telephones and 2-way radio

   B. Land line (telephone) communications at Office

8. **Well testing:**

   A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safety and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an $H_2S$ environment will use the closed chamber method of testing.

   B. There will be no drill stem testing.

## Devon Energy Corp. Company Call List

| Artesia (575) | Cellular | Office | Home |
|---|---|---|---|
| Foreman – Robert Bell | 748-7448 | 748-0178 | 746-2991 |
| Asst. Foreman –Tommy Polly | 748-5290 | 748-0165 | 748-2846 |
| Don Mayberry | 748-5235 | 748-0164 | 746-4945 |
| Montral Walker | 390-5182 | 748-0193 | 936-414-6246 |
| Engineer – Marcos Ortiz | (405) 317-0666 | (405) 552-8152 | (405) 381-4350 |

## Agency Call List

**Lea County (575)**

**Hobbs**

| | |
|---|---|
| State Police | 392-5588 |
| City Police | 397-9265 |
| Sheriff's Office | 393-2515 |
| Ambulance | 911 |
| Fire Department | 397-9308 |
| LEPC (Local Emergency Planning Committee) | 393-2870 |
| NMOCD | 393-6161 |
| US Bureau of Land Management | 393-3612 |

**Eddy County (575)**

**Carlsbad**

| | |
|---|---|
| State Police | 885-3137 |
| City Police | 885-2111 |
| Sheriff's Office | 887-7551 |
| Ambulance | 911 |
| Fire Department | 885-2111 |
| LEPC (Local Emergency Planning Committee) | 887-3798 |
| US Bureau of Land Management | 887-6544 |
| New Mexico Emergency Response Commission (Santa Fe) | (505)476-9600 |
| 24 HR | (505) 827-9126 |
| National Emergency Response Center (Washington, DC) | (800) 424-8802 |

**Emergency Services**

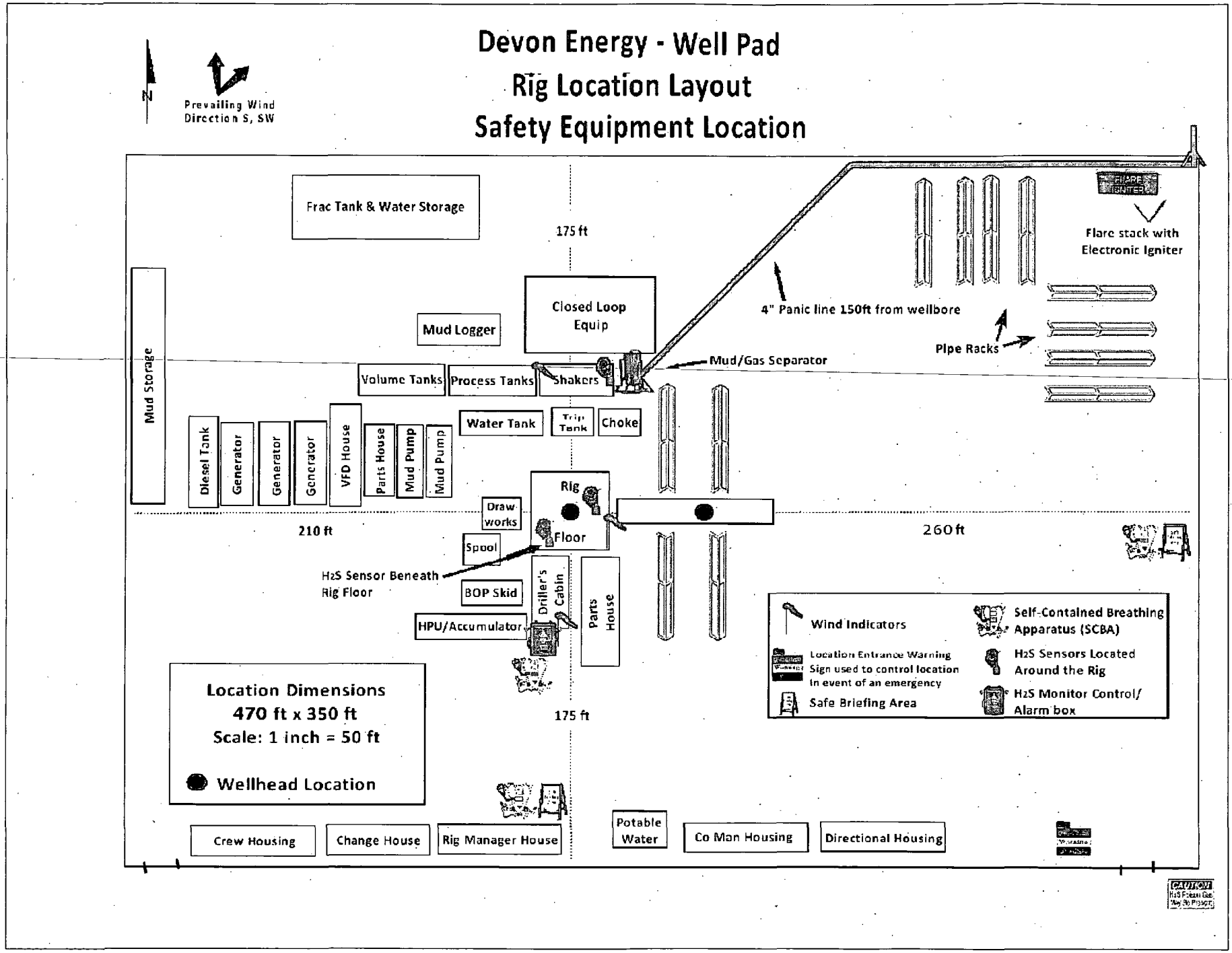
| | |
|---|---|
| Boots & Coots IWC | 1-800-256-9688 or (281) 931-8884 |
| Cudd Pressure Control | (915) 699-0139 or (915) 563-3356 |
| Halliburton | (575) 746-2757 |
| B. J. Services | (575) 746-3569 |

*Give GPS position:*

| | |
|---|---|
| Flight For Life - Lubbock, TX | (806) 743-9911 |
| Aerocare - Lubbock, TX | (806) 747-8923 |
| Med Flight Air Amb - Albuquerque, NM | (575) 842-4433 |
| Lifeguard Air Med Svc. Albuquerque, NM | (575) 272-3115 |

Prepared in conjunction with
Wade Rohloff

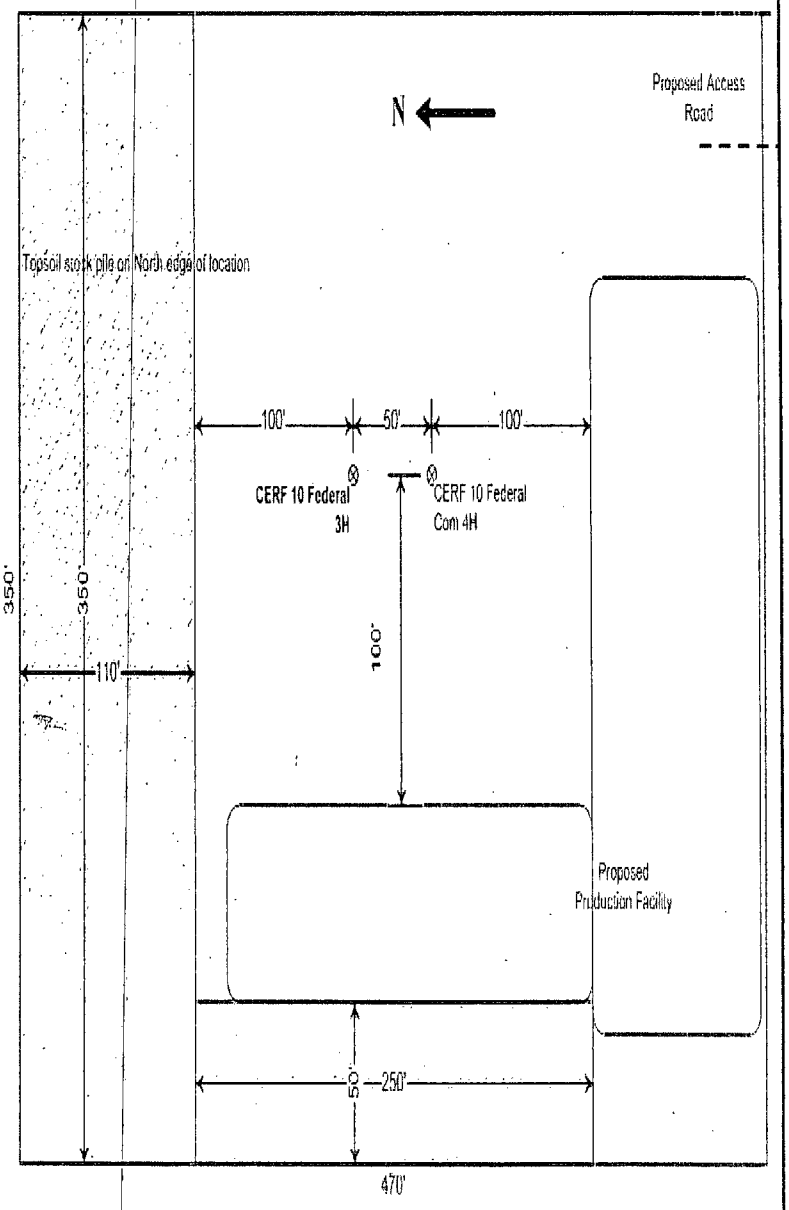
Graphic Safety LLC
GraphicSafety.com
Safety is an Art
PO Box 2734 • Hobbs NM 88240
575.631.9561 • Fax 866.352.2183


Devon Energy - Well Pad
Rig Location Layout
Safety Equipment Location
N
Prevailing Wind
Direction S, SW
Frac Tank & Water Storage
175 ft
Flare stack with
Electronic Igniter
4" Panic line 150ft from wellbore
Pipe Racks
Closed Loop
Equip
Mud Logger
Mud/Gas Separator
Mud Storage
Volume Tanks
Process Tanks
Shakers
Diesel Tank
Generator
Generator
Generator
VFD House
Parts House
Mud Pump
Mud Pump
Water Tank
Trip Tank
Choke
Rig
Floor
Draw works
Spool
210 ft
260 ft
H2S Sensor Beneath
Rig Floor
BOP Skid
Driller's Cabin
Parts House
HPU/Accumulator
Location Dimensions
470 ft x 350 ft
Scale: 1 inch = 50 ft
Wellhead Location
175 ft
Wind Indicators
Location Entrance Warning
Sign used to control location
in event of an emergency
Safe Briefing Area
Self-Contained Breathing
Apparatus (SCBA)
H2S Sensors Located
Around the Rig
H2S Monitor Control/
Alarm box
Crew Housing
Change House
Rig Manager House
Potable
Water
Co Man Housing
Directional Housing

devon

# Proposed Interim Site Reclamation

Devon Energy Production Co.
CERF 10 Federal 3H
1270' FNL & 300' FEL
Sec. 9-T21S-R27E
Eddy County, NM




Proposed Reclamation Area

Scale: 1in = 60ft.

# PECOS DISTRICT
# CONDITIONS OF APPROVAL

| | |
|---|---|
| OPERATOR'S NAME: | DEVON ENERGY PRODUCTION COMPANY L.P. |
| LEASE NO.: | NM14768 |
| WELL NAME & NO.: | CERF 10 FEDERAL -3H |
| SURFACE HOLE FOOTAGE: | 1270'/N & 300'/E |
| BOTTOM HOLE FOOTAGE | 660'/N & 330'/E ( SEC. 10) |
| LOCATION: | SEC.9-T21S-R27E |
| 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.