HOBBS OCD

OCT 06 2014

ATS-12-1041

Form 3160-3
(March 2012)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Hobbs RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires October 31, 2014

# APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
BHL-NM-96782, SHL-NM-96781

6. If Indian, Allotee or Tribe Name

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. (39874)
REDSTART 28 FED COM 1H

2. Name of Operator DEVON ENERGY PRODUCTION COMPANY, L.P. (6137)

9. API Well No.
30-025-42171

3a. Address
333 W. SHERIDAN
OKLAHOMA CITY, OK. 73102

3b. Phone No. *(include area code)*
(405) 552-4524

10. Field and Pool, or Exploratory (13160)
CORBIN; BONE SPRING, SOUTH

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 1470 FSL & 2050 FWL, SECTION 28 Unit K
At proposed prod. zone 1815 FSL & 2310 FWL, SECTION 27 Unit K

11. Sec., T. R. M. or Blk. and Survey or Area
SHL: SECTION 28, T. 18 S., R. 33 E.
BHL: SECTION 27, T. 18 S., R. 33 E.

14. Distance in miles and direction from nearest town or post office*
10.5 MILES SOUTHEAST OF MALJAMAR, NM

12. County or Parish
LEA

13. State
NM

| 15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) | 16. No. of acres in lease | 17. Spacing Unit dedicated to this well |
|---|---|---|
| 825' (BHL)<br>730' (SHL) | 320 (BHL) | 160 |
| **18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.** | **19. Proposed Depth** | **20. BLM/BIA Bond No. on file** |
| SHL-50' north of 2H<br>BHL-1160' north of 2H | MD: 15005'<br>TVD: 9707' | NMB-000801 CO-1104 |
| **21. Elevations (Show whether DF, KDB, RT, GL, etc.)** | **22. Approximate date work will start*** | **23. Estimated duration** |
| 3781.2' GL | | 30 Days |

## 24. Attachments

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 | Name *(Printed/Typed)* | Date |
|---|---|---|
| Barry W. Hunt | BARRY W. HUNT | 8/2/12 |

Title
PERMIT AGENT FOR DEVON ENERGY PRODUCTION COMPANY, L.P.

| Approved by *(Signature)* | Name *(Printed/Typed)* | Date |
|---|---|---|
| Steve Caffey | | OCT 1 - 2014 |
| **Title** | **Office** | |
| FIELD MANAGER | 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)

Capitan Controlled Water Basin

KZ 10/08/14

E-PERMITTING - - New Well PM
Comp_____ P&A_____ TA_____
CSNG_____ Loc Chng_____
ReComp_____ Add New Well_____
Cancl Well_____ Create Pool_____

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Approval Subject to General Requirements & Special Stipulations Attached

OCT 09 2014

DEVON ENERGY PRODUCTION, L. P.
DRILLING PLAN

REDSTART 28 FED COM 1H
SHL: 1470 FSL & 2050 FWL
Section 28, T. 18 S., R. 33 E.
BHL: 1815 FSL & 2310 FWL
Section 27, T. 18 S., R. 33 E.
LEA County, NM



The elevation of the unprepared ground is 3781.2' feet above sea level.

The geologic name of the surface formation is Quaternary - Alluvium.

A rotary rig will be utilized to drill the well.

Proposed total depth is: MD: 15077'. TVD: 9707'.

Estimated tops of important geologic markers:

| | |
|---|---|
| Quaternary – Alluvium | Surface* |
| Rustler | 1405' |
| Salado/ Top of Salt | 1618' |
| Base of Salt | 2761' |
| Yates | 2981' |
| Queen | 4180' |
| Grayburg | 4830' |
| Delaware | 5560' |
| Bone Spring | 8767' |
| 2nd Bone Spring | 9020' |
| TVD | 9707' (145 degree F) |

*Water anticipated at 200 feet.

Estimated depths at which anticipated water, oil, gas or other mineral bearing formations are expected to be encountered:

| | |
|---|---|
| Yates | Oil (1312 psi) |
| Queen | Oil (1839 psi) |
| Grayburg | Oil (2125 psi) |
| Delaware | Oil (2446 psi) |
| Bone Spring | Oil (3857 psi) |
| 2nd Bone Spring | Oil (3969 psi) |
| TVD | Oil BHP 4271 psi |

Drilling Program / Surface Use Plan
Discipline-Specific Input Form

1. **Pressure Control Equipment**

BOP DESIGN: The BOP system used to drill the intermediate and production 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 prior casing shoe.

The pipe rams will be operated and checked each 24 hour period and each time the drill pipe is out of the hole. These tests will be logged in the daily driller's log. 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.

2. **Casing and Cementing Plan Summary**

The surface fresh water sands will be protected by setting 13-3/8" casing at 1,425' and circulating cement back to surface. The fresh water sands will be protected by setting 9-5/8" casing at 2,800' and circulating cement to surface. The Bone Spring intervals will be isolated by setting 5-1/2" casing to total depth and circulating cement above the base of the 9-5/8" casing. All casing is new and API approved.

This is soft 20m

3. **Casing Program:**

See COA

| Hole Size | Hole Interval | Casing OD | Casing Interval | Weight | Collar | Grade |
|---|---|---|---|---|---|---|
| 17-1/2" | 0 – ~~1,425'~~ 1480' 2935' | 13-3/8" | 0 – ~~1,425'~~ 1480' 2935' | 54.5# | STC | J-55 |
| 12-1/4" | ~~1,425' – 2,800'~~ | 9-5/8" | 0 - ~~2,800'~~ | 40# | LTC | J-55 |
| 8-3/4" | ~~2,800'~~ - 9,000' | 5-1/2" | 0 - 9,000' | 17# | LTC | HCP-110 |
| 8-3/4" | 9,000' - ~~15,077'~~ | 5-1/2" | 9,000' - ~~15,077'~~ | 17# | BTC | HCP-110 |

14,628.01 per new directional plan.

4. **Design Factors:**

| Casing Size | Collapse Design Factor | Burst Design Factor | Tension Design Factor |
|---|---|---|---|
| 13-3/8" | 1.53 | 2.34 | 4.15 |
| 9-5/8" | 1.77 | 2.72 | 4.64 |
| 5-1/2" LTC | 1.89 | 2.34 | 2.70 |
| 5-1/2" BTC | 1.64 | 2.34 | 2.23 |

5. **Cement Program:**

13-3/8" Surface

**Lead**: 895 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 4% bwoc Bentonite + 70.1% Fresh Water, 13.5 ppg

**Yield:** 1.75 cf/sk

**TOC @ surface**

**Tail**: 335 sacks Class C Cement + 2% bwoc Calcium Chloride + 0.125 lbs/sack Poly-E-Flake + 63.1% Fresh Water, 14.8 ppg

**Yield:** 1.35 cf/sk

9-5/8" Intermediate

**Lead**: 535 sacks (65:35) Class C Cement:Poz (Fly Ash): + 5% bwow Sodium Chloride + 0.125 lbs/sack Poly-E-Flake + 6% bwoc Bentonite + 70.9% Fresh Water, 12.9 ppg

**Yield**: 1.85 cf/sk

**TOC @ surface**

**Tail**: 245 sacks Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Water, 14.8 ppg

**Yield**: 1.33 cf/sk

5-1/2" Production

**1st Stage**

**Lead:** 390 sacks (65:35) Class H Cement:Poz (Fly Ash) + 6% bwoc Bentonite + 0.2% bwoc HR-601 + 74.1% Fresh Water, 12.5 ppg

**Yield**: 1.95 cf/sk

**Tail**: 1690 sacks (50:50) Class H Cement:Poz (Fly Ash) + 1 lb/sk Sodium Chloride + 0.5% bwoc HALAD-344 + 0.4% bwoc CFR-3 + 0.1% bwoc HR-601 + 2% bwoc Bentonite + 58.8% Fresh Water, 14.5 ppg

**Yield**: 1.22 cf/sk

See COA **DV TOOL at 6500 ft**

**2nd Stage**

**Lead**: 405 sacks Class C Cement + 3% bwoc Econolite + 0.125 lbs/sack Poly-E-Flake + 82.4% Fresh Water, 11.4 ppg

**Yield**: 2.87 cf/sk

**Tail**: 285 sacks Class C Cement + 0.125 lbs/sack Poly-E-Flake + 63.5% Fresh Water, 14.8 ppg

**Yield**: 1.33cf/sk

**TOC @ ~~2300~~ ft** See COA 500' tie back

| String | TOC |
|---|---|
| Surface | Surface |
| Intermediate | Surface |
| Production | 2,300' |

The above cement volumes are based on 25% excess. Actual cement volumes could be adjusted based on fluid caliper and caliper log data.

6. **Proposed Mud Circulation System:**

See COA

| Depth Range | Mud Weight | Viscosity | Fluid Loss | Type System |
|---|---|---|---|---|
| 0 – ~~1,425'~~ 1480' | 8.4-8.6 | 28-32 | NC | Fresh Water |
| ~~1,425' - 2,800'~~ 2925' | 9.9-10.1 | 28-29 | NC | Brine |
| ~~2,800'~~ - 15,077' | 8.7-9.2 | 28-29 | NC | Fresh Water |

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

**7. LOGGING, CORING, AND TESTING PROGRAM:**

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:
   1. Total depth to intermediate casing Dual Laterolog-Micro Laterolog with SP and Gamma Ray. Compensated Neutron – Z Density log with Gamma Ray and Caliper.
   2. Total Depth to Surface Compensated Neutron with Gamma Ray.
   3. No coring program is planned.
   4. 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.

**8. 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 13-3/8" 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.

**9. Potential Hazards:**

See COA

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. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP of 4,271 psi and estimated BHT 145°. No H2S is anticipated to be encountered.

**10. 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 as a rig becomes available following BLM approval. 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 the well and construct surface facilities and/or lay flow lines in order to place well on production.

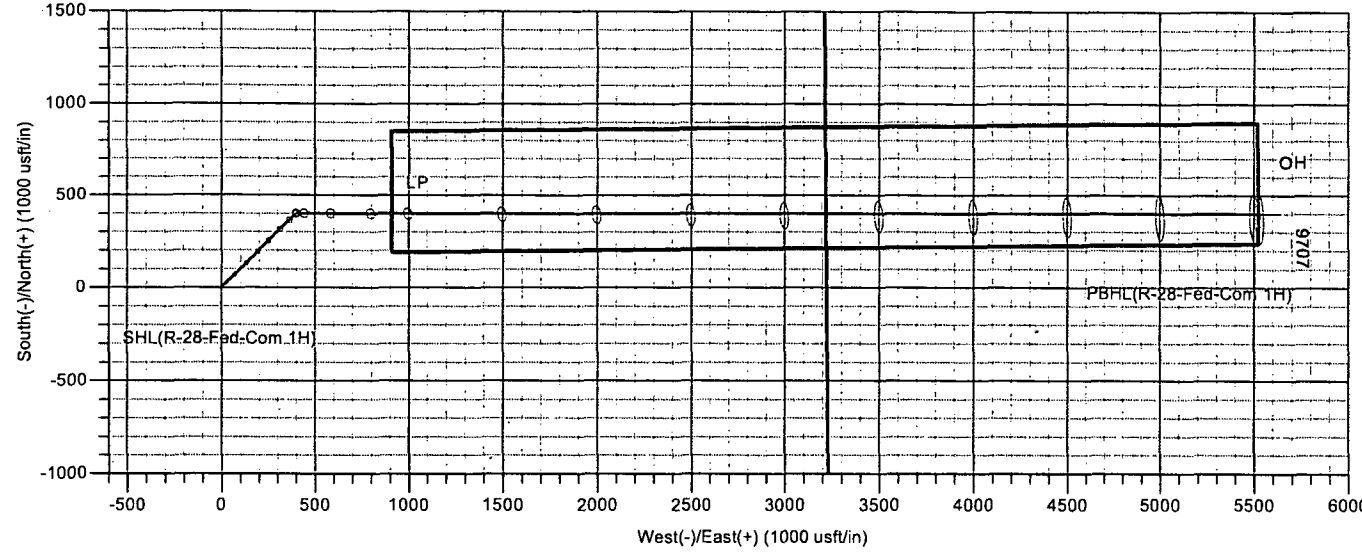
# DEVON ENERGY

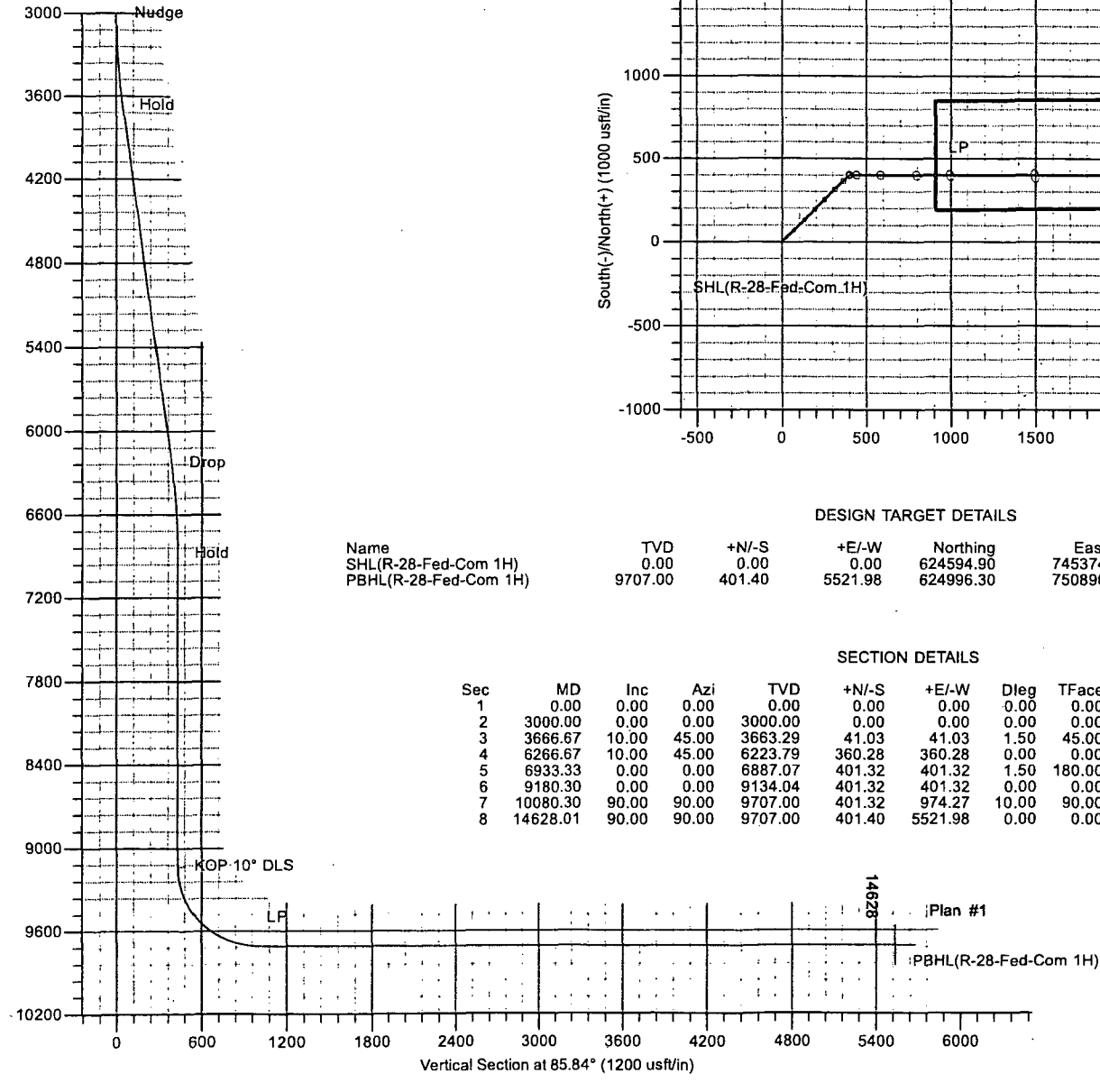
Project: Lea County, NM (NAD-83)
Site: Redstart 28 Fed Com
Well: 1H
Wellbore: OH
Design: Plan #1


Azimuths to Grid North
True North: -0.36°
Magnetic North: 7.12°

Magnetic Field
Strength: 48741.3snT
Dip Angle: 60.58°
Date: 1/10/2013
Model: IGRF2010

devon




DESIGN TARGET DETAILS

| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---|---|---|---|---|---|---|---|
| SHL(R-28-Fed-Com 1H) | 0.00 | 0.00 | 0.00 | 624594.90 | 745374.60 | 32° 42' 55.069 N | 103° 40' 11.741 W |
| PBHL(R-28-Fed-Com 1H) | 9707.00 | 401.40 | 5521.98 | 624996.30 | 750896.58 | 32° 42' 58.694 N | 103° 39' 7.080 W |

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Annotation |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 3000.00 | 0.00 | 0.00 | 3000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | Nudge |
| 3 | 3666.67 | 10.00 | 45.00 | 3663.29 | 41.03 | 41.03 | 1.50 | 45.00 | 43.90 | Hold |
| 4 | 6266.67 | 10.00 | 45.00 | 6223.79 | 360.28 | 360.28 | 0.00 | 0.00 | 385.45 | Drop |
| 5 | 6933.33 | 0.00 | 0.00 | 6887.07 | 401.32 | 401.32 | 1.50 | 180.00 | 429.35 | Hold |
| 6 | 9180.30 | 0.00 | 0.00 | 9134.04 | 401.32 | 401.32 | 0.00 | 0.00 | 429.35 | KOP 10° DLS |
| 7 | 10080.30 | 90.00 | 90.00 | 9707.00 | 401.32 | 974.27 | 10.00 | 90.00 | 1000.81 | LP |
| 8 | 14628.01 | 90.00 | 90.00 | 9707.00 | 401.40 | 5521.98 | 0.00 | 0.00 | 5536.55 | TD |


LEAM Drilling Systems, Inc.

**LEAM DRILLING SYSTEMS LLC**
**2010 East Davis, Conroe, Texas 77301**
**Phone: 936/756-7577, Fax 936/756-7595**


Plan: Plan #1 (1H/OH)
Redstart 28 Fed Com
Created By: Brady Deaver Date: 10:00, September 30 2014
Date: _____
Approved: _____ Date: _____

# DEVON ENERGY

**Lea County, NM (NAD-83)**
**Redstart 28 Fed Com**
**1H**

**OH**

**Plan: Plan #1**

# Standard Planning Report

**30 September, 2014**

# LEAM Drilling Systems LLC

Planning Report

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well 1H |
| **Company:** | DEVON ENERGY | **TVD Reference:** | GE 3781' + KB 18 @ 3799.00usft (Permitting) |
| **Project:** | Lea County, NM (NAD-83) | **MD Reference:** | GE 3781' + KB 18 @ 3799.00usft (Permitting) |
| **Site:** | Redstart 28 Fed Com | **North Reference:** | Grid |
| **Well:** | 1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #1 | | |

| **Project** | Lea County, NM (NAD-83) | | |
|---|---|---|---|
| **Map System:** | US State Plane 1983 | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | North American Datum 1983 | | |
| **Map Zone:** | New Mexico Eastern Zone | | |

| **Site** | Redstart 28 Fed Com | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 624,594.90 usft | **Latitude:** | 32° 42' 55.069 N |
| **From:** | Map | **Easting:** | 745,374.60 usft | **Longitude:** | 103° 40' 11.741 W |
| **Position Uncertainty:** | 0.00 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.36 ° |

| **Well** | 1H | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.00 usft | **Northing:** | 624,594.90 usft | **Latitude:** | 32° 42' 55.069 N |
| | **+E/-W** | 0.00 usft | **Easting:** | 745,374.60 usft | **Longitude:** | 103° 40' 11.741 W |
| **Position Uncertainty** | | 0.00 usft | **Wellhead Elevation:** | | **Ground Level:** | 3,781.00 usft |

| **Wellbore** | OH |
|---|---|

| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
|---|---|---|---|---|---|
| | IGRF2010 | 1/10/2013 | 7.47 | 60.58 | 48,741 |

| **Design** | Plan #1 | | | | |
|---|---|---|---|---|---|
| **Audit Notes:** | | | | | |
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0.00 |

| **Vertical Section:** | **Depth From (TVD) (usft)** | **+N/-S (usft)** | **+E/-W (usft)** | **Direction (°)** |
|---|---|---|---|---|
| | 0.00 | 0.00 | 0.00 | 85.84 |

**Plan Sections**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3,000.00 | 0.00 | 0.00 | 3,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3,666.67 | 10.00 | 45.00 | 3,663.29 | 41.03 | 41.03 | 1.50 | 1.50 | 0.00 | 45.00 | |
| 6,266.67 | 10.00 | 45.00 | 6,223.79 | 360.28 | 360.28 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 6,933.33 | 0.00 | 0.00 | 6,887.07 | 401.32 | 401.32 | 1.50 | -1.50 | 0.00 | 180.00 | |
| 9,180.30 | 0.00 | 0.00 | 9,134.04 | 401.32 | 401.32 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 10,080.30 | 90.00 | 90.00 | 9,707.00 | 401.32 | 974.27 | 10.00 | 10.00 | 10.00 | 90.00 | |
| 14,628.02 | 90.00 | 90.00 | 9,707.00 | 401.40 | 5,521.98 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL(R-28-Fed-Com |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well 1H |
| **Company:** | DEVON ENERGY | **TVD Reference:** | GE 3781' + KB 18 @ 3799.00usft (Permitting) |
| **Project:** | Lea County, NM (NAD-83) | **MD Reference:** | GE 3781' + KB 18 @ 3799.00usft (Permitting) |
| **Site:** | Redstart 28 Fed Com | **North Reference:** | Grid |
| **Well:** | 1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **SHL(R-28-Fed-Com 1H)** | | | | | | | | | |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 500.00 | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 600.00 | 0.00 | 0.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 700.00 | 0.00 | 0.00 | 700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 800.00 | 0.00 | 0.00 | 800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 900.00 | 0.00 | 0.00 | 900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,000.00 | 0.00 | 0.00 | 1,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,100.00 | 0.00 | 0.00 | 1,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,200.00 | 0.00 | 0.00 | 1,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,300.00 | 0.00 | 0.00 | 1,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,400.00 | 0.00 | 0.00 | 1,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,500.00 | 0.00 | 0.00 | 1,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,600.00 | 0.00 | 0.00 | 1,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 0.00 | 0.00 | 1,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 0.00 | 0.00 | 1,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 0.00 | 0.00 | 1,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 0.00 | 0.00 | 2,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 0.00 | 0.00 | 2,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 0.00 | 0.00 | 2,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 0.00 | 0.00 | 2,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 0.00 | 0.00 | 2,400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 0.00 | 0.00 | 2,500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 0.00 | 0.00 | 2,600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 0.00 | 0.00 | 2,700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 0.00 | 0.00 | 2,800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 0.00 | 0.00 | 2,900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 0.00 | 0.00 | 3,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| **Nudge** | | | | | | | | | |
| 3,100.00 | 1.50 | 45.00 | 3,099.99 | 0.93 | 0.93 | 0.99 | 1.50 | 1.50 | 0.00 |
| 3,200.00 | 3.00 | 45.00 | 3,199.91 | 3.70 | 3.70 | 3.96 | 1.50 | 1.50 | 0.00 |
| 3,300.00 | 4.50 | 45.00 | 3,299.69 | 8.33 | 8.33 | 8.91 | 1.50 | 1.50 | 0.00 |
| 3,400.00 | 6.00 | 45.00 | 3,399.27 | 14.80 | 14.80 | 15.83 | 1.50 | 1.50 | 0.00 |
| 3,500.00 | 7.50 | 45.00 | 3,498.57 | 23.11 | 23.11 | 24.72 | 1.50 | 1.50 | 0.00 |
| 3,600.00 | 9.00 | 45.00 | 3,597.54 | 33.25 | 33.25 | 35.58 | 1.50 | 1.50 | 0.00 |
| 3,666.67 | 10.00 | 45.00 | 3,663.29 | 41.03 | 41.03 | 43.90 | 1.50 | 1.50 | 0.00 |
| **Hold** | | | | | | | | | |
| 3,700.00 | 10.00 | 45.00 | 3,696.11 | 45.13 | 45.13 | 48.28 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 10.00 | 45.00 | 3,794.59 | 57.41 | 57.41 | 61.42 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 10.00 | 45.00 | 3,893.08 | 69.68 | 69.68 | 74.55 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 10.00 | 45.00 | 3,991.56 | 81.96 | 81.96 | 87.69 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 10.00 | 45.00 | 4,090.04 | 94.24 | 94.24 | 100.83 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 10.00 | 45.00 | 4,188.52 | 106.52 | 106.52 | 113.96 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 10.00 | 45.00 | 4,287.00 | 118.80 | 118.80 | 127.10 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 10.00 | 45.00 | 4,385.48 | 131.08 | 131.08 | 140.24 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 10.00 | 45.00 | 4,483.96 | 143.36 | 143.36 | 153.37 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 10.00 | 45.00 | 4,582.44 | 155.64 | 155.64 | 166.51 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 10.00 | 45.00 | 4,680.92 | 167.91 | 167.91 | 179.65 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 10.00 | 45.00 | 4,779.40 | 180.19 | 180.19 | 192.78 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well 1H |
| **Company:** | DEVON ENERGY | **TVD Reference:** | GE 3781' + KB 18 @ 3799.00usft (Permitting) |
| **Project:** | Lea County, NM (NAD-83) | **MD Reference:** | GE 3781' + KB 18 @ 3799.00usft (Permitting) |
| **Site:** | Redstart 28 Fed Com | **North Reference:** | Grid |
| **Well:** | 1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 4,900.00 | 10.00 | 45.00 | 4,877.88 | 192.47 | 192.47 | 205.92 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 10.00 | 45.00 | 4,976.36 | 204.75 | 204.75 | 219.06 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 10.00 | 45.00 | 5,074.85 | 217.03 | 217.03 | 232.19 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 10.00 | 45.00 | 5,173.33 | 229.31 | 229.31 | 245.33 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 10.00 | 45.00 | 5,271.81 | 241.59 | 241.59 | 258.47 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 10.00 | 45.00 | 5,370.29 | 253.87 | 253.87 | 271.60 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 10.00 | 45.00 | 5,468.77 | 266.14 | 266.14 | 284.74 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 10.00 | 45.00 | 5,567.25 | 278.42 | 278.42 | 297.88 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 10.00 | 45.00 | 5,665.73 | 290.70 | 290.70 | 311.01 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 10.00 | 45.00 | 5,764.21 | 302.98 | 302.98 | 324.15 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 10.00 | 45.00 | 5,862.69 | 315.26 | 315.26 | 337.29 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 10.00 | 45.00 | 5,961.17 | 327.54 | 327.54 | 350.42 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 10.00 | 45.00 | 6,059.65 | 339.82 | 339.82 | 363.56 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 10.00 | 45.00 | 6,158.13 | 352.10 | 352.10 | 376.70 | 0.00 | 0.00 | 0.00 |
| 6,266.67 | 10.00 | 45.00 | 6,223.79 | 360.28 | 360.28 | 385.45 | 0.00 | 0.00 | 0.00 |
| **Drop** | | | | | | | | | |
| 6,300.00 | 9.50 | 45.00 | 6,256.64 | 364.27 | 364.27 | 389.72 | 1.50 | -1.50 | 0.00 |
| 6,400.00 | 8.00 | 45.00 | 6,355.47 | 375.03 | 375.03 | 401.23 | 1.50 | -1.50 | 0.00 |
| 6,500.00 | 6.50 | 45.00 | 6,454.67 | 383.95 | 383.95 | 410.78 | 1.50 | -1.50 | 0.00 |
| 6,600.00 | 5.00 | 45.00 | 6,554.16 | 391.04 | 391.04 | 418.36 | 1.50 | -1.50 | 0.00 |
| 6,700.00 | 3.50 | 45.00 | 6,653.89 | 396.28 | 396.28 | 423.96 | 1.50 | -1.50 | 0.00 |
| 6,800.00 | 2.00 | 45.00 | 6,753.77 | 399.67 | 399.67 | 427.59 | 1.50 | -1.50 | 0.00 |
| 6,900.00 | 0.50 | 45.00 | 6,853.74 | 401.21 | 401.21 | 429.24 | 1.50 | -1.50 | 0.00 |
| 6,933.33 | 0.00 | 0.00 | 6,887.07 | 401.32 | 401.32 | 429.35 | 1.50 | -1.50 | 0.00 |
| **Hold** | | | | | | | | | |
| 7,000.00 | 0.00 | 0.00 | 6,953.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 7,100.00 | 0.00 | 0.00 | 7,053.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 7,200.00 | 0.00 | 0.00 | 7,153.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 7,300.00 | 0.00 | 0.00 | 7,253.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 7,400.00 | 0.00 | 0.00 | 7,353.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 7,500.00 | 0.00 | 0.00 | 7,453.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 7,600.00 | 0.00 | 0.00 | 7,553.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 0.00 | 0.00 | 7,653.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 0.00 | 0.00 | 7,753.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 0.00 | 0.00 | 7,853.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 0.00 | 0.00 | 7,953.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 0.00 | 0.00 | 8,053.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 0.00 | 0.00 | 8,153.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 0.00 | 0.00 | 8,253.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 0.00 | 0.00 | 8,353.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 8,500.00 | 0.00 | 0.00 | 8,453.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 8,600.00 | 0.00 | 0.00 | 8,553.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 0.00 | 0.00 | 8,653.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 8,800.00 | 0.00 | 0.00 | 8,753.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 8,900.00 | 0.00 | 0.00 | 8,853.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 9,000.00 | 0.00 | 0.00 | 8,953.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 9,100.00 | 0.00 | 0.00 | 9,053.74 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| 9,180.30 | 0.00 | 0.00 | 9,134.04 | 401.32 | 401.32 | 429.35 | 0.00 | 0.00 | 0.00 |
| **KOP 10° DLS** | | | | | | | | | |
| 9,200.00 | 1.97 | 90.00 | 9,153.74 | 401.32 | 401.65 | 429.69 | 10.00 | 10.00 | 0.00 |
| 9,250.00 | 6.97 | 90.00 | 9,203.57 | 401.32 | 405.55 | 433.58 | 10.00 | 10.00 | 0.00 |
| 9,300.00 | 11.97 | 90.00 | 9,252.87 | 401.32 | 413.77 | 441.78 | 10.00 | 10.00 | 0.00 |
| 9,350.00 | 16.97 | 90.00 | 9,301.27 | 401.32 | 426.26 | 454.24 | 10.00 | 10.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well 1H |
| **Company:** | DEVON ENERGY | **TVD Reference:** | GE 3781' + KB 18 @ 3799.00usft (Permitting) |
| **Project:** | Lea County, NM (NAD-83) | **MD Reference:** | GE 3781' + KB 18 @ 3799.00usft (Permitting) |
| **Site:** | Redstart 28 Fed Com | **North Reference:** | Grid |
| **Well:** | 1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 9,400.00 | 21.97 | 90.00 | 9,348.40 | 401.32 | 442.92 | 470.85 | 10.00 | 10.00 | 0.00 |
| 9,450.00 | 26.97 | 90.00 | 9,393.89 | 401.32 | 463.63 | 491.50 | 10.00 | 10.00 | 0.00 |
| 9,500.00 | 31.97 | 90.00 | 9,437.41 | 401.32 | 488.22 | 516.03 | 10.00 | 10.00 | 0.00 |
| 9,550.00 | 36.97 | 90.00 | 9,478.62 | 401.32 | 516.51 | 544.24 | 10.00 | 10.00 | 0.00 |
| 9,600.00 | 41.97 | 90.00 | 9,517.20 | 401.32 | 548.28 | 575.93 | 10.00 | 10.00 | 0.00 |
| 9,650.00 | 46.97 | 90.00 | 9,552.87 | 401.32 | 583.29 | 610.86 | 10.00 | 10.00 | 0.00 |
| 9,700.00 | 51.97 | 90.00 | 9,585.35 | 401.32 | 621.29 | 648.75 | 10.00 | 10.00 | 0.00 |
| 9,750.00 | 56.97 | 90.00 | 9,614.40 | 401.32 | 661.96 | 689.32 | 10.00 | 10.00 | 0.00 |
| 9,800.00 | 61.97 | 90.00 | 9,639.79 | 401.32 | 705.02 | 732.26 | 10.00 | 10.00 | 0.00 |
| 9,850.00 | 66.97 | 90.00 | 9,661.34 | 401.32 | 750.12 | 777.24 | 10.00 | 10.00 | 0.00 |
| 9,900.00 | 71.97 | 90.00 | 9,678.87 | 401.32 | 796.93 | 823.93 | 10.00 | 10.00 | 0.00 |
| 9,950.00 | 76.97 | 90.00 | 9,692.25 | 401.32 | 845.09 | 871.96 | 10.00 | 10.00 | 0.00 |
| 10,000.00 | 81.97 | 90.00 | 9,701.38 | 401.32 | 894.23 | 920.97 | 10.00 | 10.00 | 0.00 |
| 10,050.00 | 86.97 | 90.00 | 9,706.20 | 401.32 | 943.98 | 970.60 | 10.00 | 10.00 | 0.00 |
| 10,080.30 | 90.00 | 90.00 | 9,707.00 | 401.32 | 974.27 | 1,000.81 | 10.00 | 10.00 | 0.00 |
| LP | | | | | | | | | |
| 10,100.00 | 90.00 | 90.00 | 9,707.00 | 401.32 | 993.97 | 1,020.45 | 0.00 | 0.00 | 0.00 |
| 10,200.00 | 90.00 | 90.00 | 9,707.00 | 401.33 | 1,093.97 | 1,120.19 | 0.00 | 0.00 | 0.00 |
| 10,300.00 | 90.00 | 90.00 | 9,707.00 | 401.33 | 1,193.97 | 1,219.92 | 0.00 | 0.00 | 0.00 |
| 10,400.00 | 90.00 | 90.00 | 9,707.00 | 401.33 | 1,293.97 | 1,319.66 | 0.00 | 0.00 | 0.00 |
| 10,500.00 | 90.00 | 90.00 | 9,707.00 | 401.33 | 1,393.97 | 1,419.40 | 0.00 | 0.00 | 0.00 |
| 10,600.00 | 90.00 | 90.00 | 9,707.00 | 401.33 | 1,493.97 | 1,519.13 | 0.00 | 0.00 | 0.00 |
| 10,700.00 | 90.00 | 90.00 | 9,707.00 | 401.33 | 1,593.97 | 1,618.87 | 0.00 | 0.00 | 0.00 |
| 10,800.00 | 90.00 | 90.00 | 9,707.00 | 401.34 | 1,693.97 | 1,718.61 | 0.00 | 0.00 | 0.00 |
| 10,900.00 | 90.00 | 90.00 | 9,707.00 | 401.34 | 1,793.97 | 1,818.35 | 0.00 | 0.00 | 0.00 |
| 11,000.00 | 90.00 | 90.00 | 9,707.00 | 401.34 | 1,893.97 | 1,918.08 | 0.00 | 0.00 | 0.00 |
| 11,100.00 | 90.00 | 90.00 | 9,707.00 | 401.34 | 1,993.97 | 2,017.82 | 0.00 | 0.00 | 0.00 |
| 11,200.00 | 90.00 | 90.00 | 9,707.00 | 401.34 | 2,093.97 | 2,117.56 | 0.00 | 0.00 | 0.00 |
| 11,300.00 | 90.00 | 90.00 | 9,707.00 | 401.34 | 2,193.97 | 2,217.29 | 0.00 | 0.00 | 0.00 |
| 11,400.00 | 90.00 | 90.00 | 9,707.00 | 401.35 | 2,293.97 | 2,317.03 | 0.00 | 0.00 | 0.00 |
| 11,500.00 | 90.00 | 90.00 | 9,707.00 | 401.35 | 2,393.97 | 2,416.77 | 0.00 | 0.00 | 0.00 |
| 11,600.00 | 90.00 | 90.00 | 9,707.00 | 401.35 | 2,493.97 | 2,516.50 | 0.00 | 0.00 | 0.00 |
| 11,700.00 | 90.00 | 90.00 | 9,707.00 | 401.35 | 2,593.97 | 2,616.24 | 0.00 | 0.00 | 0.00 |
| 11,800.00 | 90.00 | 90.00 | 9,707.00 | 401.35 | 2,693.97 | 2,715.98 | 0.00 | 0.00 | 0.00 |
| 11,900.00 | 90.00 | 90.00 | 9,707.00 | 401.35 | 2,793.97 | 2,815.72 | 0.00 | 0.00 | 0.00 |
| 12,000.00 | 90.00 | 90.00 | 9,707.00 | 401.36 | 2,893.97 | 2,915.45 | 0.00 | 0.00 | 0.00 |
| 12,100.00 | 90.00 | 90.00 | 9,707.00 | 401.36 | 2,993.97 | 3,015.19 | 0.00 | 0.00 | 0.00 |
| 12,200.00 | 90.00 | 90.00 | 9,707.00 | 401.36 | 3,093.97 | 3,114.93 | 0.00 | 0.00 | 0.00 |
| 12,300.00 | 90.00 | 90.00 | 9,707.00 | 401.36 | 3,193.97 | 3,214.66 | 0.00 | 0.00 | 0.00 |
| 12,400.00 | 90.00 | 90.00 | 9,707.00 | 401.36 | 3,293.97 | 3,314.40 | 0.00 | 0.00 | 0.00 |
| 12,500.00 | 90.00 | 90.00 | 9,707.00 | 401.36 | 3,393.97 | 3,414.14 | 0.00 | 0.00 | 0.00 |
| 12,600.00 | 90.00 | 90.00 | 9,707.00 | 401.36 | 3,493.97 | 3,513.87 | 0.00 | 0.00 | 0.00 |
| 12,700.00 | 90.00 | 90.00 | 9,707.00 | 401.37 | 3,593.97 | 3,613.61 | 0.00 | 0.00 | 0.00 |
| 12,800.00 | 90.00 | 90.00 | 9,707.00 | 401.37 | 3,693.97 | 3,713.35 | 0.00 | 0.00 | 0.00 |
| 12,900.00 | 90.00 | 90.00 | 9,707.00 | 401.37 | 3,793.97 | 3,813.08 | 0.00 | 0.00 | 0.00 |
| 13,000.00 | 90.00 | 90.00 | 9,707.00 | 401.37 | 3,893.97 | 3,912.82 | 0.00 | 0.00 | 0.00 |
| 13,100.00 | 90.00 | 90.00 | 9,707.00 | 401.37 | 3,993.97 | 4,012.56 | 0.00 | 0.00 | 0.00 |
| 13,200.00 | 90.00 | 90.00 | 9,707.00 | 401.37 | 4,093.97 | 4,112.30 | 0.00 | 0.00 | 0.00 |
| 13,300.00 | 90.00 | 90.00 | 9,707.00 | 401.38 | 4,193.97 | 4,212.03 | 0.00 | 0.00 | 0.00 |
| 13,400.00 | 90.00 | 90.00 | 9,707.00 | 401.38 | 4,293.97 | 4,311.77 | 0.00 | 0.00 | 0.00 |
| 13,500.00 | 90.00 | 90.00 | 9,707.00 | 401.38 | 4,393.97 | 4,411.51 | 0.00 | 0.00 | 0.00 |
| 13,600.00 | 90.00 | 90.00 | 9,707.00 | 401.38 | 4,493.97 | 4,511.24 | 0.00 | 0.00 | 0.00 |
| 13,700.00 | 90.00 | 90.00 | 9,707.00 | 401.38 | 4,593.97 | 4,610.98 | 0.00 | 0.00 | 0.00 |
| 13,800.00 | 90.00 | 90.00 | 9,707.00 | 401.38 | 4,693.97 | 4,710.72 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well 1H |
| **Company:** | DEVON ENERGY | **TVD Reference:** | GE 3781' + KB 18 @ 3799.00usft (Permitting) |
| **Project:** | Lea County, NM (NAD-83) | **MD Reference:** | GE 3781' + KB 18 @ 3799.00usft (Permitting) |
| **Site:** | Redstart 28 Fed Com | **North Reference:** | Grid |
| **Well:** | 1H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #1 | | |

**Planned Survey**

| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|---|---|---|---|---|---|---|---|---|---|
| 13,900.00 | 90.00 | 90.00 | 9,707.00 | 401.39 | 4,793.97 | 4,810.45 | 0.00 | 0.00 | 0.00 |
| 14,000.00 | 90.00 | 90.00 | 9,707.00 | 401.39 | 4,893.97 | 4,910.19 | 0.00 | 0.00 | 0.00 |
| 14,100.00 | 90.00 | 90.00 | 9,707.00 | 401.39 | 4,993.97 | 5,009.93 | 0.00 | 0.00 | 0.00 |
| 14,200.00 | 90.00 | 90.00 | 9,707.00 | 401.39 | 5,093.97 | 5,109.67 | 0.00 | 0.00 | 0.00 |
| 14,300.00 | 90.00 | 90.00 | 9,707.00 | 401.39 | 5,193.97 | 5,209.40 | 0.00 | 0.00 | 0.00 |
| 14,400.00 | 90.00 | 90.00 | 9,707.00 | 401.39 | 5,293.97 | 5,309.14 | 0.00 | 0.00 | 0.00 |
| 14,500.00 | 90.00 | 90.00 | 9,707.00 | 401.40 | 5,393.97 | 5,408.88 | 0.00 | 0.00 | 0.00 |
| 14,600.00 | 90.00 | 90.00 | 9,707.00 | 401.40 | 5,493.97 | 5,508.61 | 0.00 | 0.00 | 0.00 |
| 14,628.02 | 90.00 | 90.00 | 9,707.00 | 401.40 | 5,521.98 | 5,536.55 | 0.00 | 0.00 | 0.00 |
| TD - PBHL(R-28-Fed-Com 1H) | | | | | | | | | |

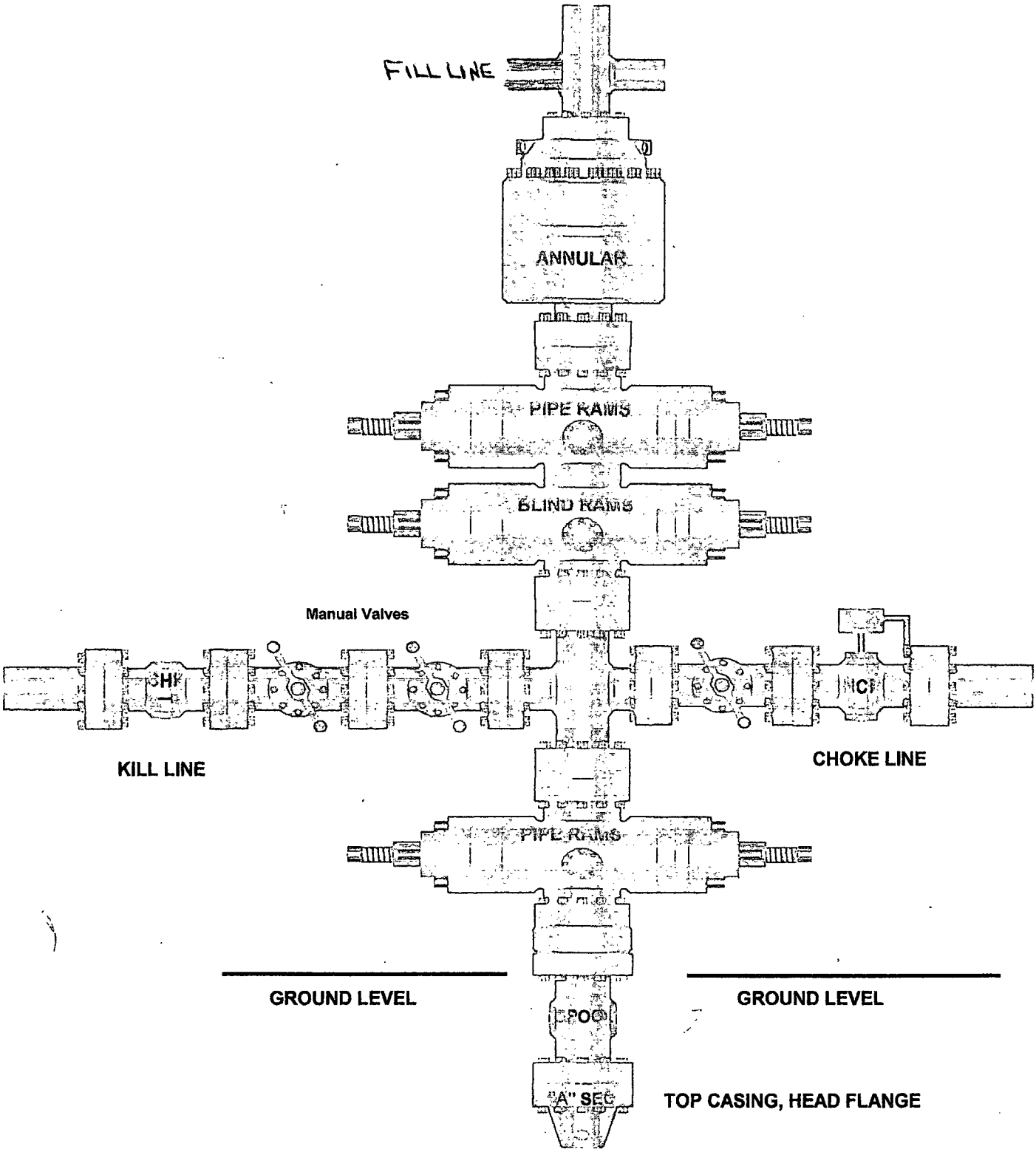
**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| SHL(R-28-Fed-Com 1H) - plan hits target center - Point | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 624,594.90 | 745,374.60 | 32° 42' 55.069 N | 103° 40' 11.741 W |
| PBHL(R-28-Fed-Com 1H - plan hits target center - Point | 0.00 | 0.00 | 9,707.00 | 401.40 | 5,521.98 | 624,996.30 | 750,896.58 | 32° 42' 58.694 N | 103° 39' 7.080 W |

**Plan Annotations**

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates +N/-S (usft) | Local Coordinates +E/-W (usft) | Comment |
|---|---|---|---|---|
| 3,000.00 | 3,000.00 | 0.00 | 0.00 | Nudge |
| 3,666.67 | 3,663.29 | 41.03 | 41.03 | Hold |
| 6,266.67 | 6,223.79 | 360.28 | 360.28 | Drop |
| 6,933.33 | 6,887.07 | 401.32 | 401.32 | Hold |
| 9,180.30 | 9,134.04 | 401.32 | 401.32 | KOP 10° DLS |
| 10,080.30 | 9,707.00 | 401.32 | 974.27 | LP |
| 14,628.02 | 9,707.00 | 401.40 | 5,521.98 | TD |

# 13-5/8" x 3,000 psi BOP Stack

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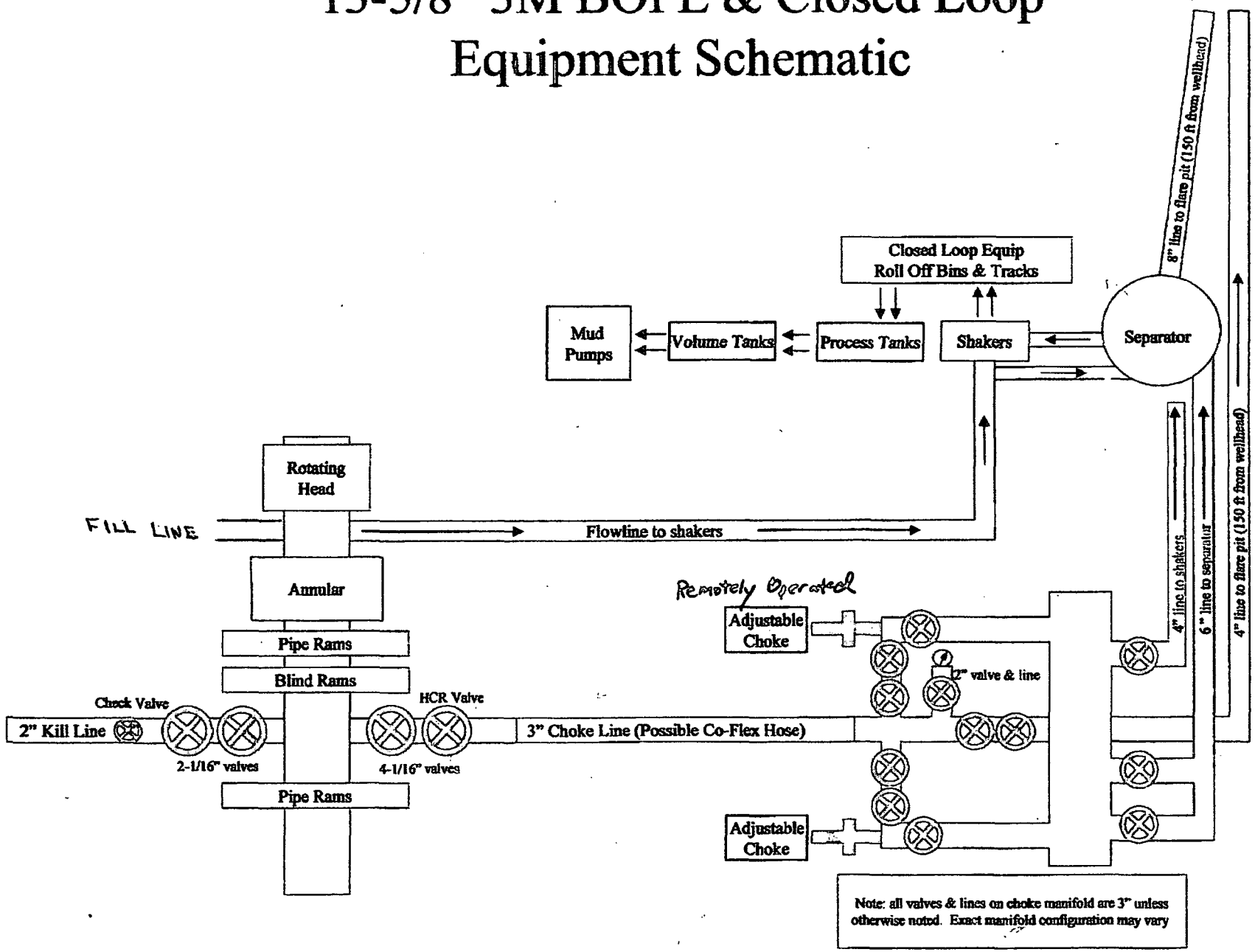
# 13-5/8" 3M BOPE & Closed Loop Equipment Schematic



Attachment to Exhibit #1
NOTES REGARDING BLOWOUT PREVENTERS
Devon Energy Production Company, LP
**Redstart 28 Fed Com 1H**
Surface Location: 1470' FSL & 2050' FWL, Unit K, Sec 28 T18S R33E, Lea, NM
Bottom Hole Location: 1815' FSL & 2310' FWL, Unit K, Sec 27 T18S R33E, Lea, 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 5000 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

| | | |
|---|---|---|
| **Certificate Number:** 4520 | **PBC No:** 10321 | **Customer Name & Address** |
| **Customer Purchase Order No:** | RIG 300 | HELMERICH & PAYNE INT'L DRILLING CO<br>1437 SOUTH BOULDER<br>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:<br>Date: | Josh Sims<br>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.

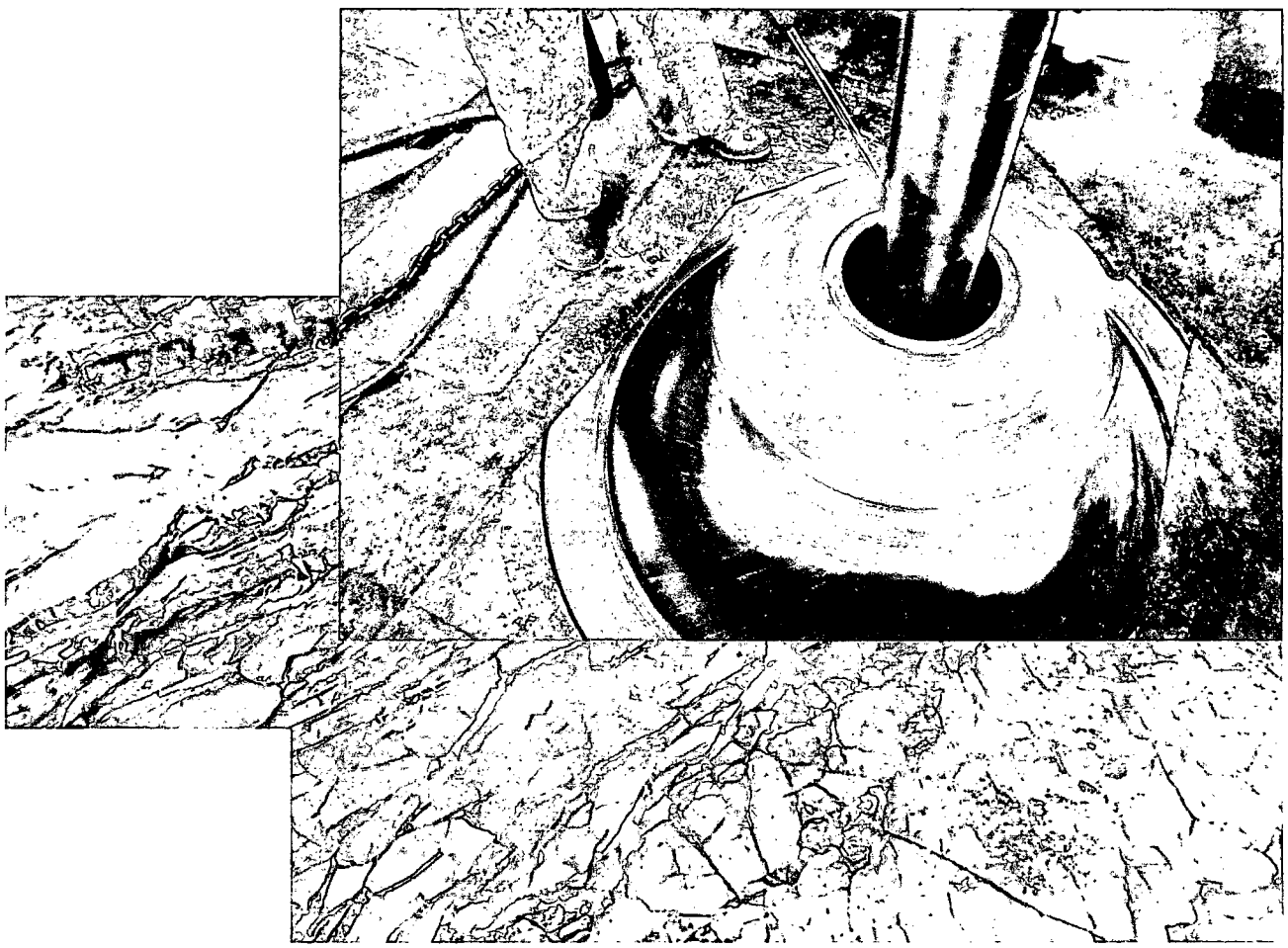
These goods were made in the United States of America.

| 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
CHART NO. MC MP-20000-1H
METER RC# 4486
CHART PUT ON
SN/34403
LOCATION IX Recertification hose
REMARKS LJB TK 10/22/10
TAKEN OFF
Certified True Copy
55
5
10
15
20
25
30
35
40
45
50
18000
16000
14000
12000
10000
8000
6000
5000
4000
2000

devon

Commitment Runs Deep



# Design Plan
# Operation and Maintenance Plan
# Closure Plan

SENM - Closed Loop Systems
June 2012

## I. Design Plan

Devon uses various high efficient closed loop systems (CLS). The CLS shown is designed to maintain drill solids at or below 5%. The equipment is arranged to progressively remove solids from the largest to the smallest size. Drilling fluids can thus be reused and savings is realized on mud and disposal costs. Dewatering may be required with the centrifuges to insure removal of ultra fine solids.

The drilling location is constructed to allow storm water to flow to a central sump normally the cellar. This insures no contamination leaves the drilling pad in the event of a spill. Storm water is reused in the mud system or stored in a reserve fluid tank farm until it can be reused. All lubricants, oils, or chemicals are removed immediately from the ground to prevent the contamination of storm water. An oil trap is normally installed on the sump if an oil spill occurs during a storm.

A tank farm is utilized to store drilling fluids including fresh water and brine fluids. The tank farm is constructed on a 20 ml plastic lined, bermed pad to prevent the contamination of the drilling site during a spill. Fluids from other sites may be stored in these tanks for processing by the solids control equipment and reused in the mud system. At the end of the well the fluids are transported from the tank farm to an adjoining well or to the next well for the rig.

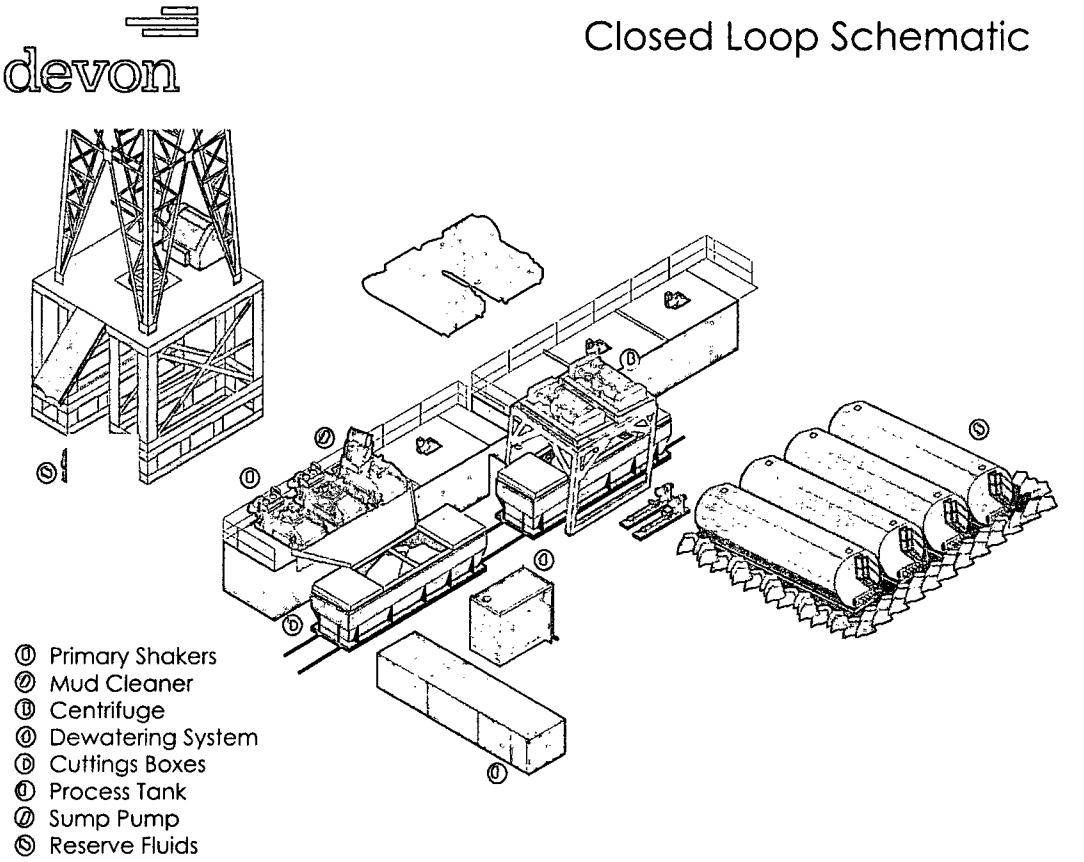
Prior to installing a closed-loop system on site, the topsoil, if present, will be stripped and stockpiled for use as the final cover or fill at the time of closure.

Signs will be posted on the fence surrounding the closed-loop system unless the closed-loop system is located on a site where there is an existing well, that is operated by Devon.

## II. Operations and Maintenance Plan

*Primary Shakers:* The primary shakers make the first removal of drill solids from the drilling mud as it leaves the well bore. The shakers are sized to handle maximum drilling rate at optimal screen size. The shakers normally remove solids down to 74 microns.

*Mud Cleaner:* The Mud Cleaner cleans the fluid after it leaves the shakers. A set of hydrocyclones are sized to handle 1.25 to 1.5 times the maximum circulating rate. This ensures all the fluid is being processed to an average cut point of 25 microns. The wet discharged is dewatered on a shaker equipped with ultra fine mesh screens and generally cut at 40 microns.




*Centrifuges:* The centrifuges can be utilized depending on the well's anticipated solids volume. One or two centrifuges can be used depending on the well geometry or depth of well. The centrifuges are sized to maintain low gravity solids at 5% or below. They may or may not need a dewatering system to enhance the removal rates. The centrifuges can make a cut point of 8-10 microns depending on bowl speed, feed rate, solids loading and other factors.

The centrifuge system is designed to work on the active system and be flexible to process incoming fluids from other locations. This set-up is also dependant on well factors.

*Dewatering System:* The dewatering system is a chemical mixing and dosing system designed to enhance the solids removal of the centrifuge. Not commonly used in shallow wells. It may contain pH adjustment, coagulant mixing and dosing, and polymer mixing and dosing. Chemical flocculation binds

ultra fine solids into a mass that is within the centrifuge operating design. The dewatering system improves the centrifuge cut point to infinity or allows for the return of clear water or brine fluid. This ability allows for the ultimate control of low gravity solids.

*Cuttings Boxes:* Cuttings boxes are utilized to capture drill solids that are discarded from the solids control equipment. These boxes are set upon a rail system that allows for the removal and replacement of a full box of cuttings with an empty one. They are equipped with a cover that insures no product is spilled into the environment during the transportation phase.

*Process Tank:* (Optional) The process tank allows for the holding and process of fluids that are being transferred into the mud system. Additionally, during times of lost circulation the process tank may hold active fluids that are removed for additional treatment. It can further be used as a mixing tank during well control conditions.

*Sump and Sump Pump:* The sump is used to collect storm water and the pump is used to transfer this fluid to the active system or to the tank for to hold in reserve. It can also be used to collect fluids that may escape during spills. The location contains drainage ditches that allow the location fluids to drain to the sump.

*Reserve Fluids (Tank Farm):* A series of frac tanks are used to replace the reserve pit. These are steel tanks that are equipped with a manifold system and a transfer pump. These tanks can contain any number of fluids used during the drilling process. These can include fresh water, cut brine, and saturated salt fluid. The fluid can be from the active well or reclaimed fluid from other locations. A 20 ml liner and berm system is employed to ensure the fluids do not migrate to the environment during a spill.

If a leak develops, the appropriate division district office will be notified within 48 hours of the discovery and the leak will be addressed. Spill prevention is accomplished by maintaining pump packing, hoses, and pipe fittings to insure no leaks are occurring. During an upset condition the source of the spill is isolated and repaired as soon as it is discovered. Free liquid is removed by a diaphragm pump and returned to the mud system. Loose topsoil may be used to stabilize the spill and the contaminated soil is excavated and placed in the cuttings boxes. After the well is finished and the rig has moved, the entire location is scrapped and testing will be performed to determine if a release has occurred.

All trash is kept in a wire mesh enclosure and removed to an approved landfill when full. All spent motor oils are kept in separate containers and they are removed and sent to an approved recycling center. Any spilled lubricants, pipe

dope, or regulated chemicals are removed from soil and sent to landfills approved for these products.

These operations are monitored by Solids Control service technicians. Daily logs are maintained to ensure optimal equipment operation and maintenance. Screen and chemical use is logged to maintain inventory control. Fluid properties are monitored and recorded and drilling mud volumes are accounted for in the mud storage farm. This data is kept for end of well review to insure performance goals are met. Lessons learned are logged and used to help with continuous improvement.

## III. Closure Plan

A maximum 170' X 170' caliche pad is built per well. All of the trucks and steel tanks fit on this pad. All fluid cuttings go to the steel tanks to be hauled by various trucking companies to an agency approved disposal.

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-144 CLEZ
July 21, 2008

**For closed-loop systems *that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure*,** submit to the appropriate NMOCD District Office.

# Closed-Loop System Permit or Closure Plan Application

*(that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)*

Type of action: [X] Permit [ ] Closure

***Instructions: Please submit one application (Form C-144 CLEZ) per individual closed-loop system request. For any application request other than for a closed-loop system that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, please submit a Form C-144.***

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.

Operator: Devon Energy Production Company, L.P. OGRID #: 6137

Address: 333 W. Sheridan, Oklahoma City, OK 73102

Facility or well name: Redstart 28 Fed Com 1H

API Number: _____ OCD Permit Number: _____

U/L or Qtr/Qtr: K Section: 28 Township: 18S Range: 33E County: Lea

Center of Proposed Design: Latitude 32°42'55.07"N Longitude 103°40'11.74"W NAD: [ ] 1927 [X] 1983

Surface Owner: [X] Federal : [ ] State [ ] Private [ ] Tribal Trust or Indian Allotment

2.

[X] **Closed-loop System:** Subsection H of 19.15.17.11 NMAC

Operation: [X] Drilling a new well [ ] Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent) [ ] P&A
[ ] Above Ground Steel Tanks or [X] Haul-off Bins

3.

**Signs:** Subsection C of 19.15.17.11 NMAC

[ ] 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers
[X] Signed in compliance with 19.15.3.103 NMAC

4.

**Closed-loop Systems Permit Application Attachment Checklist:** Subsection B of 19.15.17.9 NMAC

***Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.***

[X] Design Plan - based upon the appropriate requirements of 19.15.17.11 NMAC
[X] Operating and Maintenance Plan - based upon the appropriate requirements of 19.15.17.12 NMAC
[X] Closure Plan (Please complete Box 5) - based upon the appropriate requirements of Subsection C of 19.15.17.9 NMAC and 19.15.17.13 NMAC

[ ] Previously Approved Design (attach copy of design) API Number: _____
[ ] Previously Approved Operating and Maintenance Plan API Number: _____

5.

**Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:** (19.15.17.13.D NMAC)

***Instructions: Please indentify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.***

Disposal Facility Name: Controlled Recovery Incorporated (CRI) Disposal Facility Permit Number: R-9166

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Will any of the proposed closed-loop system operations and associated activities occur on or in areas that *will not* be used for future service and operations?
[ ] Yes (If yes, please provide the information below) [X] No

*Required for impacted areas which will not be used for future service and operations:*
[ ] Soil Backfill and Cover Design Specifications - - based upon the appropriate requirements of Subsection H of 19.15.17.13 NMAC
[ ] Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19.15.17.13 NMAC
[ ] Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17.13 NMAC

6.

**Operator Application Certification:**

I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief.

Name (Print): Barry W. Hunt Title: Permit Agent for Devon Energy Production Co., L.P.

Signature: Barry W. Hunt Date: 8/2/12

e-mail address: specialtpermitting@gmail.com Telephone: 575-361-4078

7.
**OCD Approval:** ☐ Permit Application (including closure plan) ☐ Closure Plan (only)

**OCD Representative Signature:** _____ **Approval Date:** _____

**Title:** _____ **OCD Permit Number:** _____

8.
**Closure Report (required within 60 days of closure completion):** Subsection K of 19.15.17.13 NMAC

***Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.***

☐ **Closure Completion Date:** _____

9.
**Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:**

***Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.***

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Disposal Facility Name: _____ Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

*Required for impacted areas which will not be used for future service and operations:*

☐ Site Reclamation (Photo Documentation)
☐ Soil Backfilling and Cover Installation
☐ Re-vegetation Application Rates and Seeding Technique

10.
**Operator Closure Certification:**

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

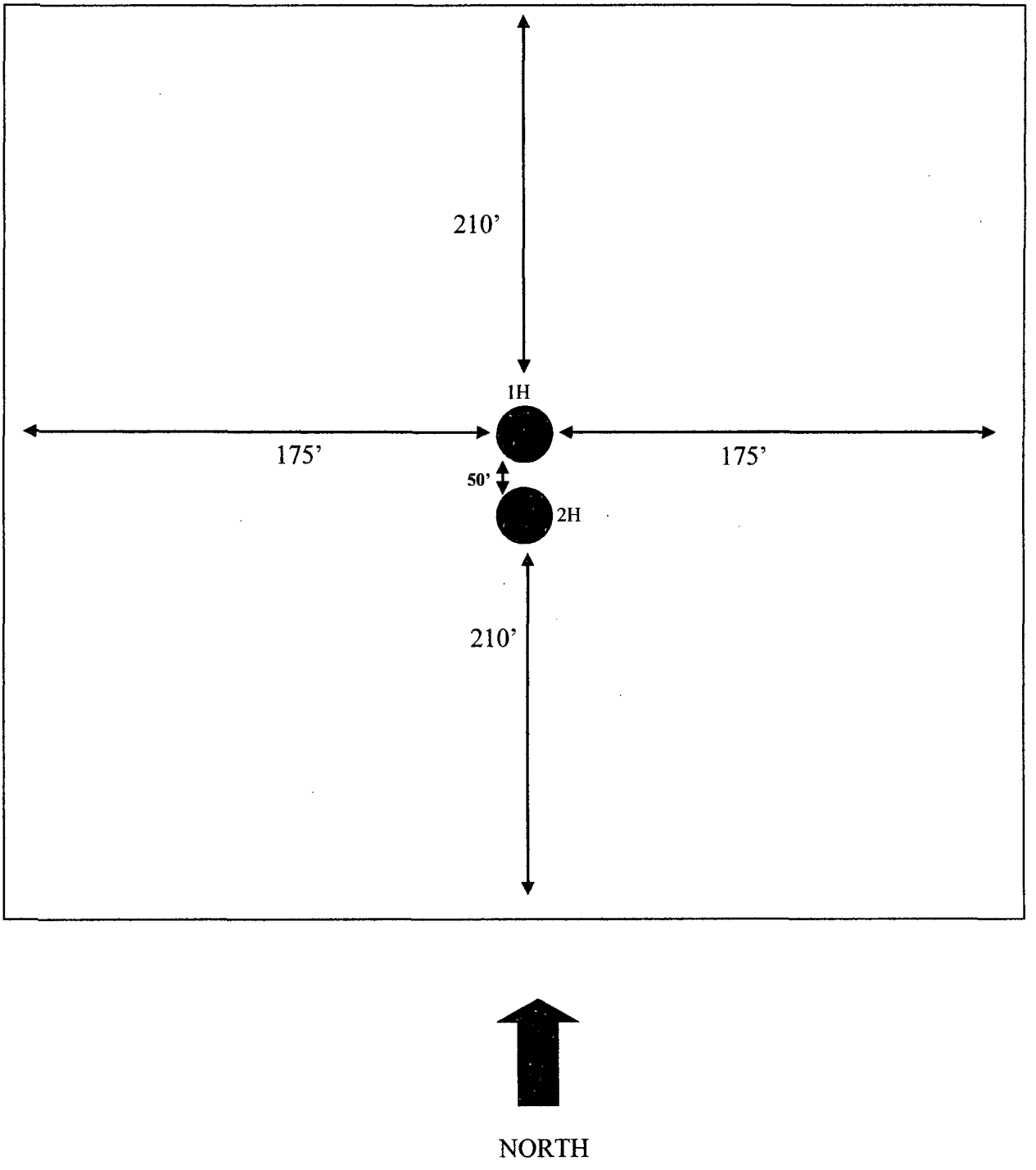
Name (Print): _____ Title: _____

Signature: _____ Date: _____

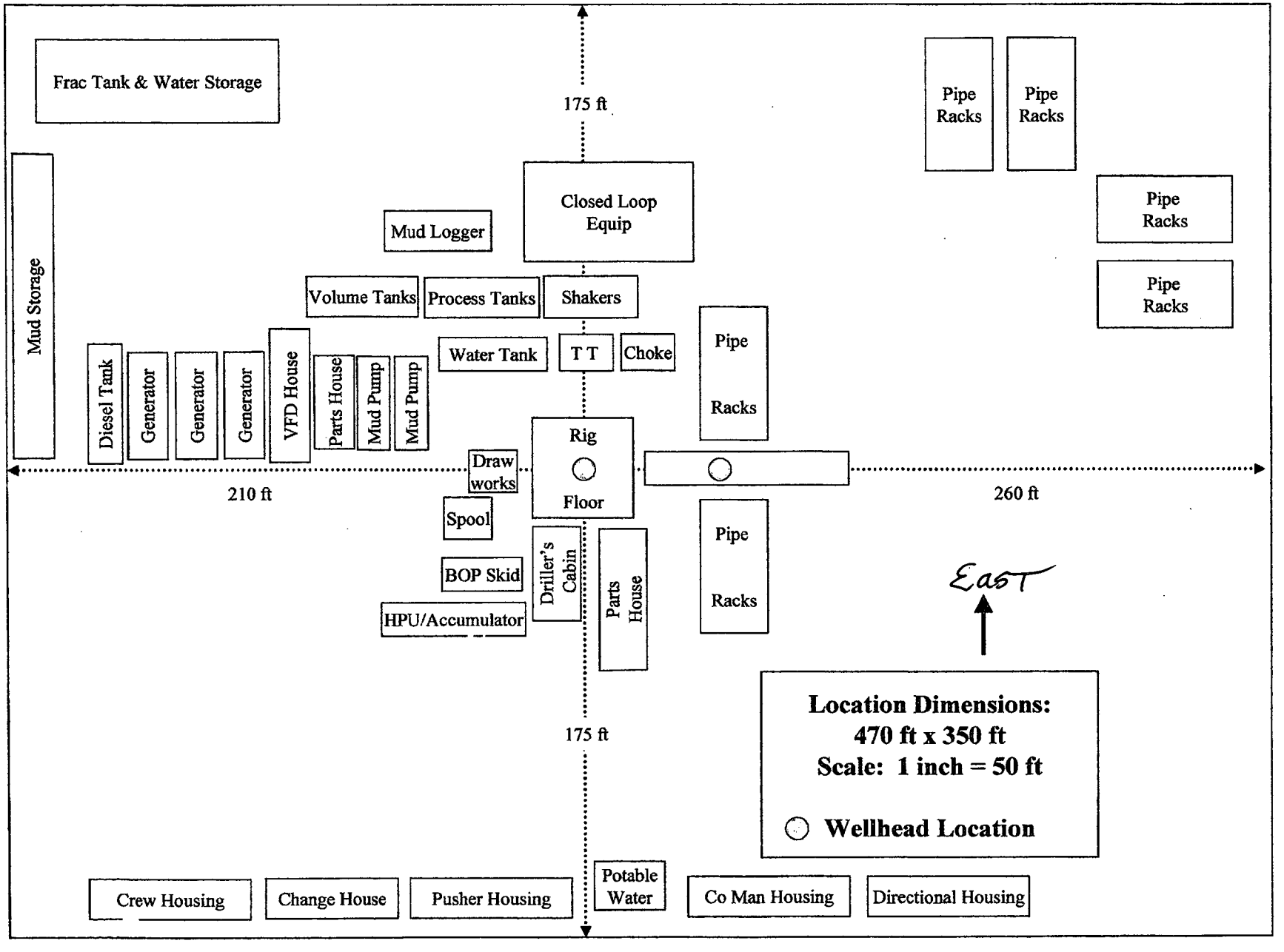
e-mail address: _____ Telephone: _____

**EXHIBIT D**

# Pad Size Only
# REDSTART 28 FED COM 1H & 2H
# V-DOOR SOUTH



# H&P Flex Rig Location Layout
# 2 Well Pad



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, 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. Executed this 2nd day of August 2012.

Signed: Barry W. Hunt



Printed Name: Barry Hunt
Position: Agent for Devon Energy Production, LLC.
Address: 1403 Springs Farm Place, Carlsbad, NM 88220
Telephone: (575) 361-4078
E-mail: specialtpermitting@gmail.com
Field Representative: Don Mayberry
Address: P. O. Box 250, Artesia, NM 88211-0250
Telephone: Office: (575) 748-0164, Cell: (575) 748-5235