



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**

Governor

**Joanna Prukop**

Cabinet Secretary

**Mark E. Fesmire, P.E.**

Director

**Oil Conservation Division**

30-015-35443

February 13, 2007

Southwestern Energy Company  
Attn: J. Alan Grimsley  
2350 N. Sam Houston Pkwy East  
Suite 300  
Houston, TX 77032

**Administrative Order NSL-5567**

**Re: Pickett Draw State 16 Well No. 1H  
H-16-25S-29E  
Eddy County**

Dear Mr. Grimsley:

Reference is made to the following:

(a) your application (**administrative application reference No. pTDS07-01647645**) submitted to the New Mexico Oil Conservation Division (the Division) in Santa Fe, New Mexico on January 16, 2007, and

(b) the Division's records pertinent to this request.

Southwestern Energy Company (Southwestern) has requested to drill its Pickett Draw State 16 Well No. 1H as a horizontal well, at an unorthodox surface location, 2600 feet from the North line and 530 feet from the East line (Unit H) of Section 16, Township 25 South, Range 29 East, N.M.P.M., in County, New Mexico, to an unorthodox bottom hole location, or terminus, 200 feet from the North line and 530 feet from the East line (Unit A) of Section 16. The NE/4 NE/4 and the SE/4 NE/4 of Section 16 will be dedicated to this well in order to form an 80-acre project area, pursuant to Division Rule 111, consisting of two adjacent standard 40-acre spacing units in the undesignated West Corral Canyon Delaware Pool (13365). This pool is governed by statewide Rule 104.B, which provides for 40-acres units with wells located at least 330 feet from a unit outer boundary. This location is unorthodox under Rule 111 because the "producing interval," as defined in that rule, will not be entirely located 330 feet or more from the outer boundaries of the project area.

Your application has been duly filed under the provisions of Division Rules 104.F and 1210.A(2).

It is our understanding Southwestern is seeking this well configuration in order to penetrate as much of the formation within the project area as feasible, but that all perforations will be located within the producing area.

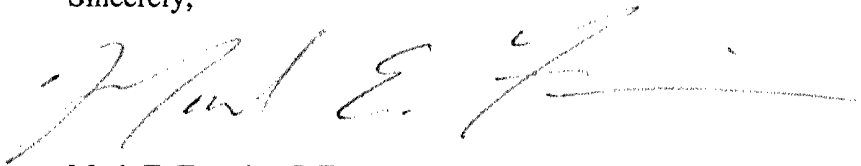
It is also understood that notice of this application has been given to offsetting operators as required by Rule 1210.A(2).

Pursuant to the authority granted me under the provisions of Division Rule 104.F(2), the above-described unorthodox location is hereby approved.

This approval is **CONDITIONED HOWEVER** upon this well being completed as a cased hole with all perforations in the lateral shaft of this horizontal well being within the producing area.

Jurisdiction of this case is retained for the entry of such further orders as the Division may deem necessary.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Mark E. Fesmire', with a long horizontal flourish extending to the right.

Mark E. Fesmire, P.E.  
Director

MEF/db

cc: New Mexico Oil Conservation Division - Artesia  
New Mexico State Land Office - Santa Fe

**Martha Howard**



**From:** Alan Grimsley  
**Sent:** Friday, February 09, 2007 9:04 AM  
**To:** Martha Howard  
**Subject:** FW: Pickett Draw 16 #1-H Well  
**Attachments:** Pickett Draw State 16 #1H DIRECTIONAL - PLAN 2.pdf; Pickett Draw 16 #1-H C-102 Survey Plat Signed.pdf

Martha,

Please mail these to Bryan

Thanks,  
Alan

Alan Grimsley  
Drilling Engineer  
Permian Basin/Gulf Coast Team  
Office: (281) 618-4068  
Fax: (281) 618-4758  
Mobile: (713) 492-1657  
email: alan\_grimsley@swn.com

*Bryan,  
See attached.  
Martha*

---

**From:** Arrant, Bryan, EMNRD [mailto:bryan.arrant@state.nm.us]  
**Sent:** Friday, February 09, 2007 8:30 AM  
**To:** Alan Grimsley  
**Subject:** RE: Pickett Draw 16 #1-H Well

Hi Alan,  
Please mail the directional survey for this NSL well.  
I could not get it to come up.

Bryan

---

**From:** Alan Grimsley [mailto:Alan\_Grimsley@SWN.COM]  
**Sent:** Friday, February 09, 2007 6:36 AM  
**To:** Arrant, Bryan, EMNRD  
**Cc:** Martha Howard  
**Subject:** Pickett Draw 16 #1-H Well

Bryan,

Attached are the directional program and Form C-102 well for the above referenced well. I was unable to upload thru the internet.

Thanks in advance  
Alan

2/12/2007

Alan Grimsley  
Drilling Engineer  
Permian Basin/Gulf Coast Team  
Office: (281) 618-4068  
Fax: (281) 618-4758  
Mobile: (713) 492-1657  
email: alan\_grimsley@swn.com

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2/12/2007

## DISTRICT I

1626 N. FRANCE DR., HORRIS, NM 88240

## DISTRICT II

1301 W. GRAND AVENUE, ARTERIA, NM 88210

## DISTRICT III

1000 Rio Brazos Rd., 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, New Mexico 87505

Form C-102

Revised October 12, 2005

Submit to Appropriate District Office

State Lease - 4 Copies

Fee Lease - 3 Copies

## WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

|                                   |                                                                |                                                   |
|-----------------------------------|----------------------------------------------------------------|---------------------------------------------------|
| API Number<br><b>30-015-35443</b> | Pool Code<br><b>13365</b>                                      | Pool Name<br><b>Corral Canyon; Delaware, West</b> |
| Property Code<br><b>36338</b>     | Property Name<br><b>PICKETT DRAW STATE 16</b>                  | Well Number<br><b>1H</b>                          |
| OGRID No.<br><b>148111</b>        | Operator Name<br><b>SOUTHWESTERN ENERGY PRODUCTION COMPANY</b> | Elevation<br><b>3005'</b>                         |

## Surface Location

| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| H             | 16      | 25-S     | 29-E  |         | 2600          | NORTH            | 530           | EAST           | EDDY   |

## Bottom Hole Location If Different From Surface

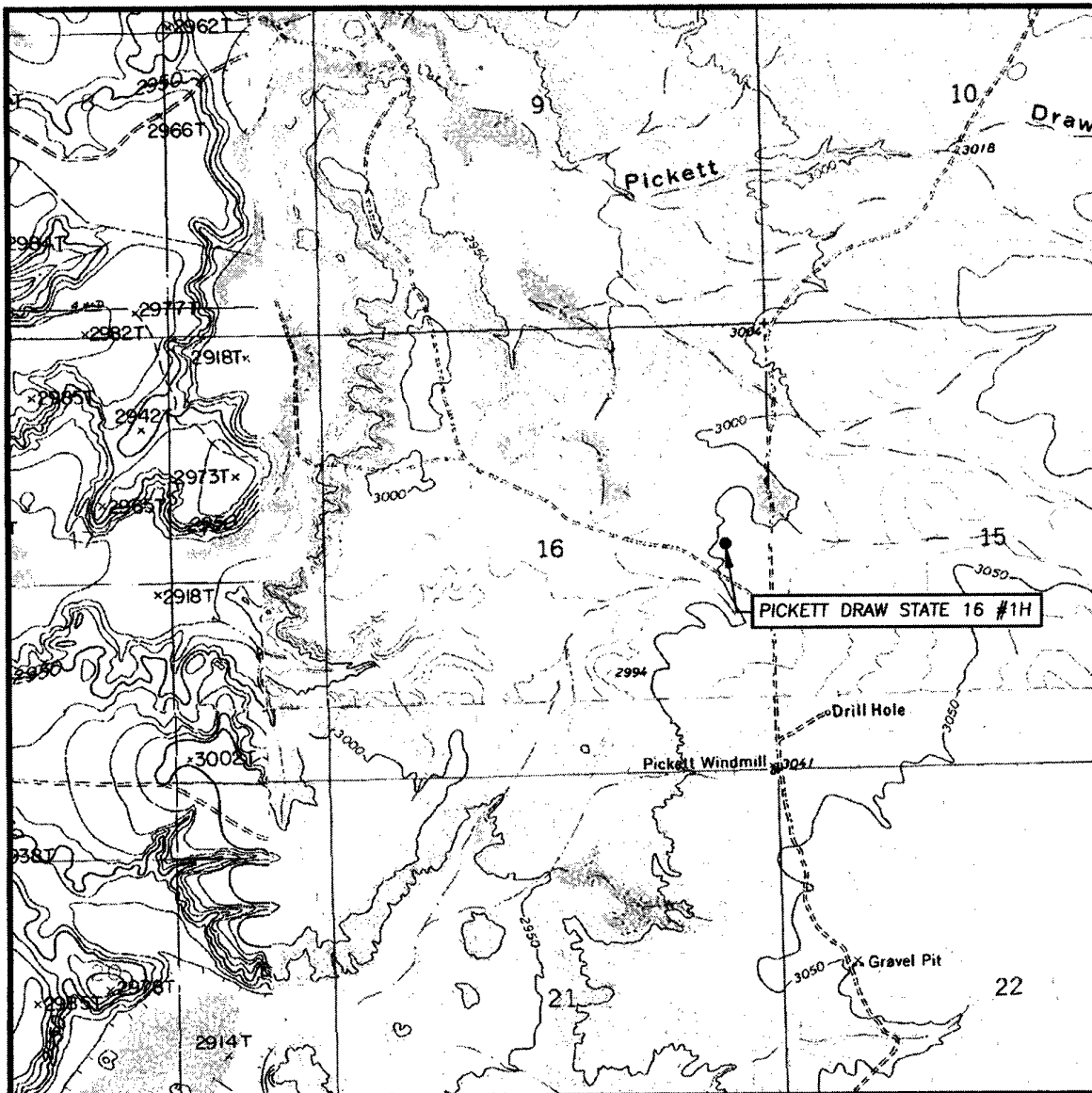
| UL or lot No. | Section | Township | Range | Lot Idn | Feet from the | North/South line | Feet from the | East/West line | County |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| A             | 16      | 25-S     | 29-E  |         | 200           | NORTH            | 530           | EAST           | EDDY   |

| Dedicated Acres | Joint or Infill | Consolidation Code | Order No. |
|-----------------|-----------------|--------------------|-----------|
| 80              |                 |                    |           |

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

|                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>BOTTOM HOLE<br/>Y=413615.6 N<br/>X=608707.7 E</p> <p>GR. AZ.=359°38'05"<br/>H. DIST.=2400.0'</p> <p>Project Area</p> <p>Producing Area</p> <p>GEODETIC COORDINATES<br/>NAD 27 NME<br/>SURFACE LOCATION<br/>Y=411216.3 N<br/>X=608723.0 E</p> <p>LAT.=32.130063° N<br/>LONG.=103.982112° W</p> | <p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information 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 mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>James Alan Grimsley</i> 1/10/07<br/>Signature Date<br/><b>JAMES ALAN GRIMSLEY</b><br/>Printed Name</p> |
|                                                                                                                                                                                                                                                                                                  | <p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>DECEMBER 18, 2006</p> <p>Date Surveyed JR</p> <p>Signature &amp; Seal of Professional Surveyor</p> <p><i>Gary A. Edson</i> 1/2/07<br/>06.11.1997</p>                                                                                                                                                                                                                                    |
|                                                                                                                                                                                                                                                                                                  | <p>Certificate No. GARY EIDSON 12841<br/>CHAD HARCROW 17777</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

SEC. 16 TWP. 25-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 2600' FNL & 530' FEL

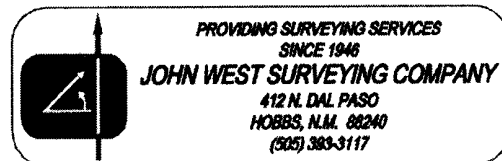
ELEVATION 3005'

OPERATOR SOUTHWESTERN ENERGY PRODUCTION COMPANY

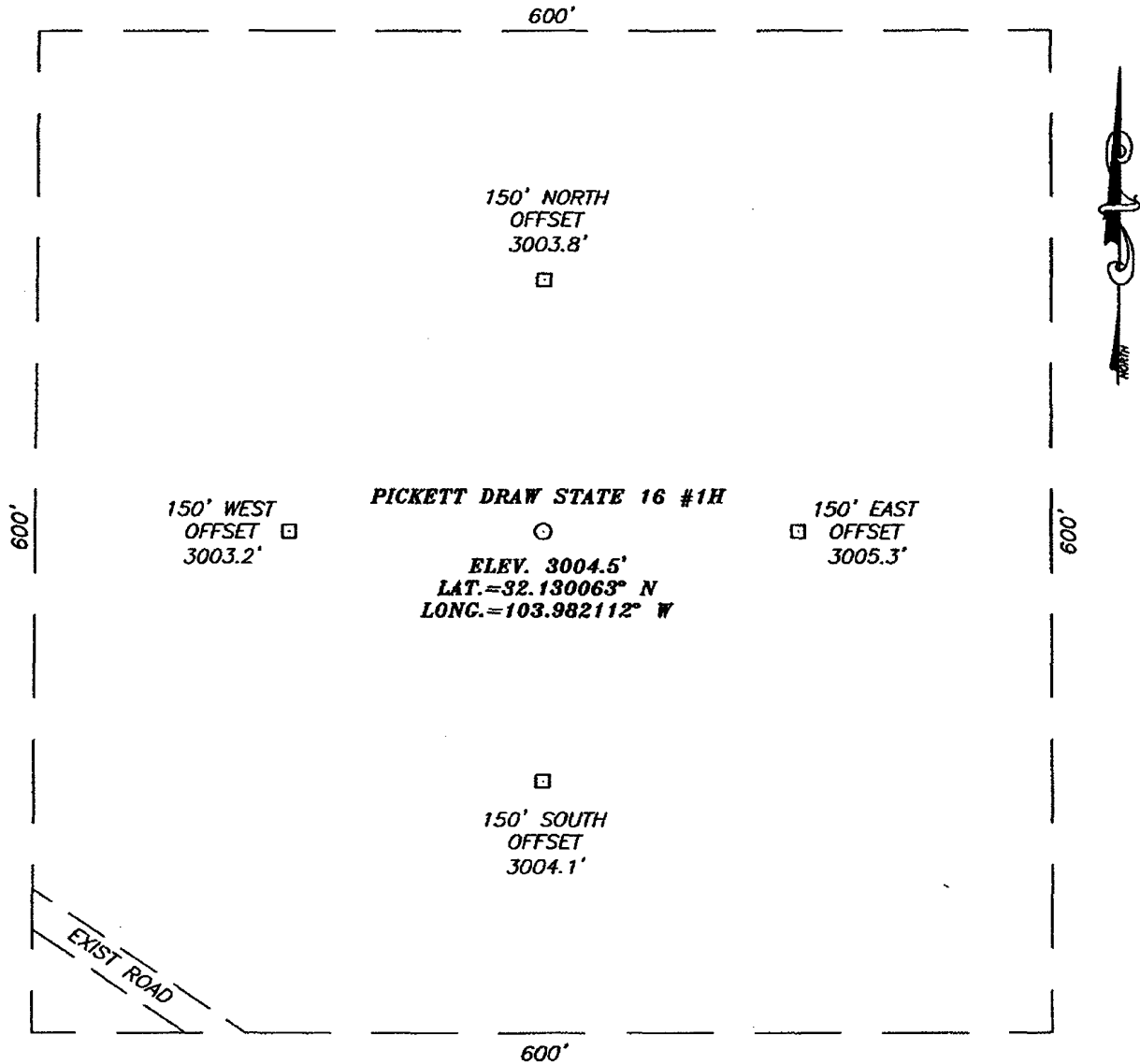
LEASE PICKET DRAW STATE 16

U.S.G.S. TOPOGRAPHIC MAP  
PIERCE CANYON, N.M.

CONTOUR INTERVAL:  
PIERCE CANYON, N.M. - 10'  
ROSS RANCH, N.M. - 10'  
RED BLUFF, N.M. - 10'  
MALAGA, N.M. - 10'

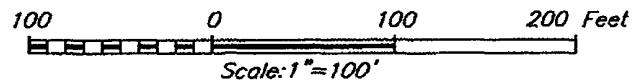


**SECTION 16, TOWNSHIP 25 SOUTH, RANGE 29 EAST, N.M.P.M.,**  
**EDDY COUNTY, NEW MEXICO**



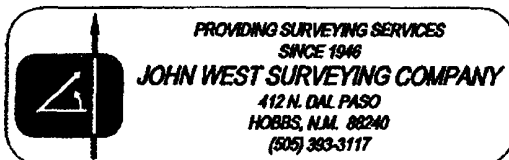
**DIRECTIONS TO LOCATION**

FROM THE INTERSECTION OF U.S. HWY. #285 AND CO. RD. #725 (WHITEHORN RD.), GO NORTHEAST ON CO. RD. #725 APPROX. 5.5 MILES. TURN LEFT AND GO NORTH APPROX. 3.5 MILES. TURN LEFT AND GO NORTHWEST APPROX. 0.1 MILE. THIS LOCATION IS APPROX. 300 FEET NORTH.



**SOUTHWESTERN ENERGY PRODUCTION COMPANY**

PICKETT DRAW STATE 16 #1H  
 LOCATED 2600 FEET FROM THE NORTH LINE  
 AND 530 FEET FROM THE EAST LINE OF SECTION 16,  
 TOWNSHIP 25 SOUTH, RANGE 29 EAST, N.M.P.M.,  
 EDDY COUNTY, NEW MEXICO.



|                         |                                    |
|-------------------------|------------------------------------|
| Survey Date: 12/18/06   | Sheet 1 of 1 Sheets                |
| W.O. Number: 06.11.1997 | Dr By: J.R. Rev 1:N/A              |
| Date: 12/28/06          | Disk: CD#6 06111997 Scale: 1"=100' |



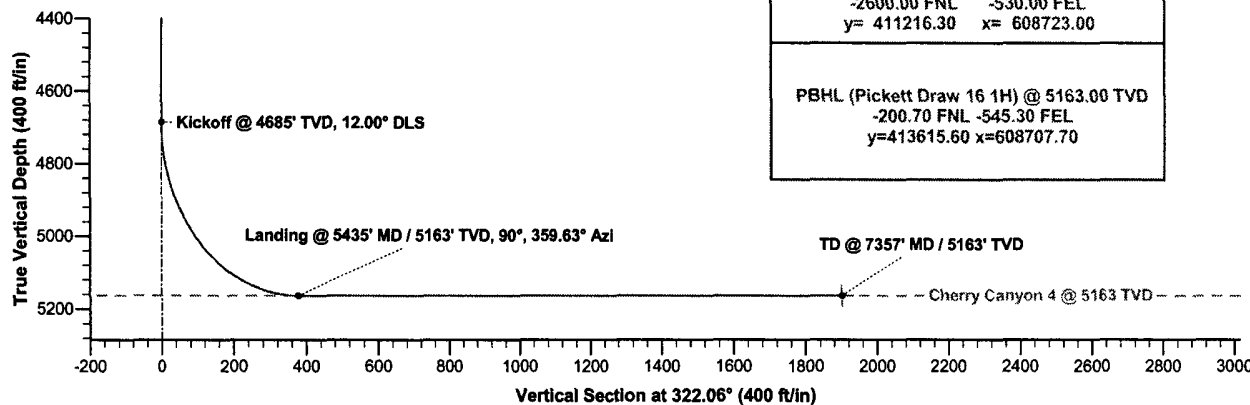
Southwestern Energy Production Co.  
Pickett Draw State 16 #1H  
Pickett Draw Section 16 - T25S R29E  
Eddy County New Mexico  
Plan #2



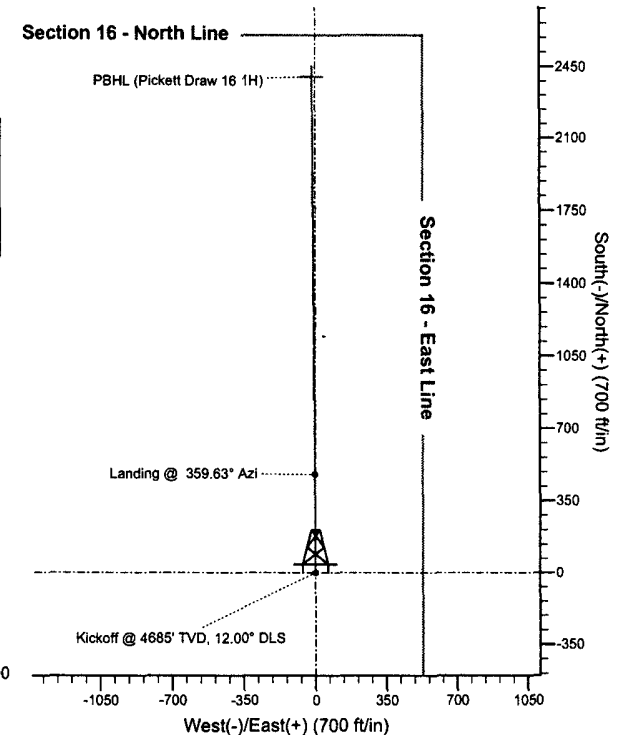
Southwestern Energy  
Company

|                  |                                                                         |           |           |              |                |      |
|------------------|-------------------------------------------------------------------------|-----------|-----------|--------------|----------------|------|
| Surface Location | Ground Elevation: 6300.01 estimated rkb @ 6325.00ft (rig not specified) |           |           |              |                |      |
| +N/-S            | +E/-W                                                                   | Northing  | Easting   | Latitude     | Longitude      | Slot |
| 0.00             | 0.00                                                                    | 411216.30 | 608723.00 | 32°7'48.218N | 103°58'55.618W |      |

| TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG) |         |         |          |           |           |              |                |                             |  |
|------------------------------------------------|---------|---------|----------|-----------|-----------|--------------|----------------|-----------------------------|--|
| Name                                           | TVD     | +N/-S   | +E/-W    | Northing  | Easting   | Latitude     | Longitude      | Shape                       |  |
| Section 16 (Eddy Co NM)                        | 0.00    | -40.00  | -2110.00 | 411176.30 | 608613.00 | 32°7'47.89N  | 103°59'20.158W | Rectangle (5280.00x5280.00) |  |
| PBHL (Pickett Draw 16 1H)                      | 5163.00 | 2399.30 | -15.30   | 413615.60 | 608707.70 | 32°8'11.963N | 103°58'55.705W | Point                       |  |



|                                         |              |              |
|-----------------------------------------|--------------|--------------|
| Surface Location:                       | -2600.00 FNL | -530.00 FEL  |
|                                         | y= 411216.30 | x= 608723.00 |
| PBHL (Pickett Draw 16 1H) @ 5163.00 TVD | -200.70 FNL  | -545.30 FEL  |
|                                         | y=413615.60  | x=608707.70  |



| SECTION DETAILS |         |       |        |         |         |        |       |        |         |
|-----------------|---------|-------|--------|---------|---------|--------|-------|--------|---------|
| Sec             | MD      | Inc   | Azi    | TVD     | +N/-S   | +E/-W  | DLeg  | TFace  | VSec    |
| 1               | 0.00    | 0.00  | 359.63 | 0.00    | 0.00    | 0.00   | 0.00  | 0.00   | 0.00    |
| 2               | 4685.54 | 0.00  | 359.63 | 4685.54 | 0.00    | 0.00   | 0.00  | 0.00   | 0.00    |
| 3               | 5435.54 | 90.00 | 359.63 | 5163.00 | 477.46  | -3.04  | 12.00 | 359.63 | 378.43  |
| 4               | 7357.42 | 90.00 | 359.63 | 5163.00 | 2399.30 | -15.30 | 0.00  | 0.00   | 1901.67 |

| FORMATION TOP DETAILS |         |         |                            |
|-----------------------|---------|---------|----------------------------|
| No.                   | TVDPath | MDPath  | Formation                  |
| 1                     | 5163.00 | 5435.53 | Cherry Canyon 4 @ 5163 TVD |

Phil Lyons 1/12/2007

# **Southwestern Energy Production Co.**

**Eddy County New Mexico  
Pickett Draw Section 16 - T25S R29E  
Pickett Draw State 16 #1H  
Wellbore #1**

**Plan: Plan #2**

## **Standard Planning Report**

**11 January, 2007**

# Crescent Directional Drilling

## Planning Report

|           |                                     |                              |                                               |
|-----------|-------------------------------------|------------------------------|-----------------------------------------------|
| Database: | COMPASS_2003.11_CDDSVR              | Local Co-ordinate Reference: | Well Pickett Draw State 16 #1H                |
| Company:  | Southwestern Energy Production Co.  | TVD Reference:               | estimated rkb @ 6325.00ft (rig not specified) |
| Project:  | Eddy County New Mexico              | MD Reference:                | estimated rkb @ 6325.00ft (rig not specified) |
| Site:     | Pickett Draw Section 16 - T25S R29E | North Reference:             | Grid                                          |
| Well:     | Pickett Draw State 16 #1H           | Survey Calculation Method:   | Minimum Curvature                             |
| Wellbore: | Wellbore #1                         |                              |                                               |
| Design:   | Plan #2                             |                              |                                               |

|             |                                      |               |                |
|-------------|--------------------------------------|---------------|----------------|
| Project     | Eddy County New Mexico               |               |                |
| Map System: | US State Plane 1927 (Exact solution) | System Datum: | Mean Sea Level |
| Geo Datum:  | NAD 1927 (NADCON CONUS)              |               |                |
| Map Zone:   | New Mexico East 3001                 |               |                |

|                       |                                     |                   |                    |
|-----------------------|-------------------------------------|-------------------|--------------------|
| Site                  | Pickett Draw Section 16 - T25S R29E |                   |                    |
| Site Position:        |                                     | Northing:         | 411,216.30 ft      |
| From:                 | Map                                 | Easting:          | 608,723.00 ft      |
| Position Uncertainty: | 0.00 ft                             | Slot Radius:      | in                 |
|                       |                                     | Latitude:         | 32° 07' 48.218" N  |
|                       |                                     | Longitude:        | 103° 58' 55.618" W |
|                       |                                     | Grid Convergence: | 0.19 °             |

|                      |                           |                     |                    |
|----------------------|---------------------------|---------------------|--------------------|
| Well                 | Pickett Draw State 16 #1H |                     |                    |
| Well Position        | +N-S                      | 0.00 ft             | Northing:          |
|                      | +E-W                      | 0.00 ft             | Easting:           |
| Position Uncertainty | 0.00 ft                   | Wellhead Elevation: | ft                 |
|                      |                           | Latitude:           | 32° 07' 48.218" N  |
|                      |                           | Longitude:          | 103° 58' 55.618" W |
|                      |                           | Ground Level:       | 6,300.01 ft        |

|           |              |             |                |
|-----------|--------------|-------------|----------------|
| Wellbore  | Wellbore #1  |             |                |
| Magnetics | Model Name   | Sample Date | Declination    |
|           | User Defined | 12/13/2006  | 0.00           |
|           |              |             | Dip Angle      |
|           |              |             | 0.00           |
|           |              |             | Field Strength |
|           |              |             | 0              |

|                   |                  |           |               |
|-------------------|------------------|-----------|---------------|
| Design            | Plan #2          |           |               |
| Audit Notes:      |                  |           |               |
| Version:          | Phase:           | PROTOTYPE | Tie On Depth: |
|                   |                  |           | 0.00          |
| Vertical Section: | Depth From (TYD) | +N-S      | +E-W          |
|                   | (ft)             | (ft)      | (ft)          |
|                   | 0.00             | 0.00      | 0.00          |
|                   |                  |           | Direction     |
|                   |                  |           | 322.06        |

| Plan Sections       |                 |             |                     |           |           |                       |                      |                     |         |                      |
|---------------------|-----------------|-------------|---------------------|-----------|-----------|-----------------------|----------------------|---------------------|---------|----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | →N-S (ft) | →E-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target               |
| 0.00                | 0.00            | 359.63      | 0.00                | 0.00      | 0.00      | 0.00                  | 0.00                 | 0.00                | 0.00    |                      |
| 4,685.54            | 0.00            | 359.63      | 4,685.54            | 0.00      | 0.00      | 0.00                  | 0.00                 | 0.00                | 0.00    |                      |
| 5,435.54            | 90.00           | 359.63      | 5,163.00            | 477.46    | -3.04     | 12.00                 | 12.00                | 0.00                | 359.63  |                      |
| 7,357.42            | 90.00           | 359.63      | 5,163.00            | 2,399.30  | -15.30    | 0.00                  | 0.00                 | 0.00                | 0.00    | PBHL (Pickett Draw 1 |

# Crescent Directional Drilling

## Planning Report

|           |                                     |                              |                                               |
|-----------|-------------------------------------|------------------------------|-----------------------------------------------|
| Database: | COMPASS_2003.11_CDDSVR              | Local Co-ordinate Reference: | Well Pickett Draw State 16 #1H                |
| Company:  | Southwestern Energy Production Co.  | TVD Reference:               | estimated rkb @ 6325.00ft (rig not specified) |
| Project:  | Eddy County New Mexico              | MD Reference:                | estimated rkb @ 6325.00ft (rig not specified) |
| Site:     | Pickett Draw Section 16 - T25S R29E | North Reference:             | Grid                                          |
| Well:     | Pickett Draw State 16 #1H           | Survey Calculation Method:   | Minimum Curvature                             |
| Wellbore: | Wellbore #1                         |                              |                                               |
| Design:   | Plan #2                             |                              |                                               |

### Planned Survey

| Measured Depth (ft)             | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | N/S (ft) | E/W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---------------------------------|-----------------|-------------|---------------------|----------|----------|-----------------------|-----------------------|----------------------|---------------------|
| 0.00                            | 0.00            | 359.63      | 0.00                | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 100.00                          | 0.00            | 359.63      | 100.00              | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 200.00                          | 0.00            | 359.63      | 200.00              | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 300.00                          | 0.00            | 359.63      | 300.00              | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 400.00                          | 0.00            | 359.63      | 400.00              | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 500.00                          | 0.00            | 359.63      | 500.00              | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 600.00                          | 0.00            | 359.63      | 600.00              | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 700.00                          | 0.00            | 359.63      | 700.00              | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 800.00                          | 0.00            | 359.63      | 800.00              | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 900.00                          | 0.00            | 359.63      | 900.00              | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 1,000.00                        | 0.00            | 359.63      | 1,000.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 1,100.00                        | 0.00            | 359.63      | 1,100.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 1,200.00                        | 0.00            | 359.63      | 1,200.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 1,300.00                        | 0.00            | 359.63      | 1,300.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 1,400.00                        | 0.00            | 359.63      | 1,400.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 1,500.00                        | 0.00            | 359.63      | 1,500.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 1,600.00                        | 0.00            | 359.63      | 1,600.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 1,700.00                        | 0.00            | 359.63      | 1,700.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 1,800.00                        | 0.00            | 359.63      | 1,800.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 1,900.00                        | 0.00            | 359.63      | 1,900.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 2,000.00                        | 0.00            | 359.63      | 2,000.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 2,100.00                        | 0.00            | 359.63      | 2,100.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 2,200.00                        | 0.00            | 359.63      | 2,200.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 2,300.00                        | 0.00            | 359.63      | 2,300.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 2,400.00                        | 0.00            | 359.63      | 2,400.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 2,500.00                        | 0.00            | 359.63      | 2,500.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 2,600.00                        | 0.00            | 359.63      | 2,600.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 2,700.00                        | 0.00            | 359.63      | 2,700.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 2,800.00                        | 0.00            | 359.63      | 2,800.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 2,900.00                        | 0.00            | 359.63      | 2,900.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 3,000.00                        | 0.00            | 359.63      | 3,000.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 3,100.00                        | 0.00            | 359.63      | 3,100.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 3,200.00                        | 0.00            | 359.63      | 3,200.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 3,300.00                        | 0.00            | 359.63      | 3,300.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 3,400.00                        | 0.00            | 359.63      | 3,400.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 3,500.00                        | 0.00            | 359.63      | 3,500.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 3,600.00                        | 0.00            | 359.63      | 3,600.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 3,700.00                        | 0.00            | 359.63      | 3,700.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 3,800.00                        | 0.00            | 359.63      | 3,800.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 3,900.00                        | 0.00            | 359.63      | 3,900.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 4,000.00                        | 0.00            | 359.63      | 4,000.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 4,100.00                        | 0.00            | 359.63      | 4,100.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 4,200.00                        | 0.00            | 359.63      | 4,200.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 4,300.00                        | 0.00            | 359.63      | 4,300.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 4,400.00                        | 0.00            | 359.63      | 4,400.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 4,500.00                        | 0.00            | 359.63      | 4,500.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 4,600.00                        | 0.00            | 359.63      | 4,600.00            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 4,685.54                        | 0.00            | 359.63      | 4,685.54            | 0.00     | 0.00     | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| Kickoff @ 4685' TVD, 12.00° DLS |                 |             |                     |          |          |                       |                       |                      |                     |
| 4,700.00                        | 1.74            | 359.63      | 4,700.00            | 0.22     | 0.00     | 0.17                  | 12.00                 | 12.00                | 0.00                |
| 4,800.00                        | 13.74           | 359.63      | 4,798.91            | 13.65    | -0.09    | 10.82                 | 12.00                 | 12.00                | 0.00                |
| 4,900.00                        | 25.74           | 359.63      | 4,892.86            | 47.36    | -0.30    | 37.54                 | 12.00                 | 12.00                | 0.00                |

# Crescent Directional Drilling

## Planning Report

|           |                                     |                              |                                               |
|-----------|-------------------------------------|------------------------------|-----------------------------------------------|
| Database: | COMPASS_2003.11_CDDSVR              | Local Co-ordinate Reference: | Well Pickett Draw State 16 #1H                |
| Company:  | Southwestern Energy Production Co.  | TVD Reference:               | estimated rkb @ 6325.00ft (rig not specified) |
| Project:  | Eddy County New Mexico              | MD Reference:                | estimated rkb @ 6325.00ft (rig not specified) |
| Site:     | Pickett Draw Section 16 - T25S R29E | North Reference:             | Grid                                          |
| Well:     | Pickett Draw State 16 #1H           | Survey Calculation Method:   | Minimum Curvature                             |
| Wellbore: | Wellbore #1                         |                              |                                               |
| Design:   | Plan #2                             |                              |                                               |

|                                                       |       |        |          |          |        |          |       |       |      |
|-------------------------------------------------------|-------|--------|----------|----------|--------|----------|-------|-------|------|
| 5,000.00                                              | 37.74 | 359.63 | 4,977.75 | 99.86    | -0.64  | 79.15    | 12.00 | 12.00 | 0.00 |
| 5,100.00                                              | 49.74 | 359.63 | 5,049.88 | 168.87   | -1.08  | 133.85   | 12.00 | 12.00 | 0.00 |
| 5,200.00                                              | 61.74 | 359.63 | 5,106.07 | 251.36   | -1.60  | 199.23   | 12.00 | 12.00 | 0.00 |
| 5,300.00                                              | 73.74 | 359.63 | 5,143.89 | 343.74   | -2.19  | 272.44   | 12.00 | 12.00 | 0.00 |
| 5,400.00                                              | 85.74 | 359.63 | 5,161.68 | 441.95   | -2.82  | 350.29   | 12.00 | 12.00 | 0.00 |
| 5,435.54                                              | 90.00 | 359.63 | 5,163.00 | 477.46   | -3.04  | 378.43   | 12.00 | 12.00 | 0.00 |
| Landing @ 5435' MD / 5163' TVD, 90°, 359.63° Azi      |       |        |          |          |        |          |       |       |      |
| 5,500.00                                              | 90.00 | 359.63 | 5,163.00 | 541.92   | -3.46  | 429.52   | 0.00  | 0.00  | 0.00 |
| 5,600.00                                              | 90.00 | 359.63 | 5,163.00 | 641.92   | -4.09  | 508.78   | 0.00  | 0.00  | 0.00 |
| 5,700.00                                              | 90.00 | 359.63 | 5,163.00 | 741.91   | -4.73  | 588.04   | 0.00  | 0.00  | 0.00 |
| 5,800.00                                              | 90.00 | 359.63 | 5,163.00 | 841.91   | -5.37  | 667.30   | 0.00  | 0.00  | 0.00 |
| 5,900.00                                              | 90.00 | 359.63 | 5,163.00 | 941.91   | -6.01  | 746.55   | 0.00  | 0.00  | 0.00 |
| 6,000.00                                              | 90.00 | 359.63 | 5,163.00 | 1,041.91 | -6.64  | 825.81   | 0.00  | 0.00  | 0.00 |
| 6,100.00                                              | 90.00 | 359.63 | 5,163.00 | 1,141.91 | -7.28  | 905.07   | 0.00  | 0.00  | 0.00 |
| 6,200.00                                              | 90.00 | 359.63 | 5,163.00 | 1,241.90 | -7.92  | 984.33   | 0.00  | 0.00  | 0.00 |
| 6,300.00                                              | 90.00 | 359.63 | 5,163.00 | 1,341.90 | -8.56  | 1,063.58 | 0.00  | 0.00  | 0.00 |
| 6,400.00                                              | 90.00 | 359.63 | 5,163.00 | 1,441.90 | -9.19  | 1,142.84 | 0.00  | 0.00  | 0.00 |
| 6,500.00                                              | 90.00 | 359.63 | 5,163.00 | 1,541.90 | -9.83  | 1,222.10 | 0.00  | 0.00  | 0.00 |
| 6,600.00                                              | 90.00 | 359.63 | 5,163.00 | 1,641.90 | -10.47 | 1,301.36 | 0.00  | 0.00  | 0.00 |
| 6,700.00                                              | 90.00 | 359.63 | 5,163.00 | 1,741.89 | -11.11 | 1,380.62 | 0.00  | 0.00  | 0.00 |
| 6,800.00                                              | 90.00 | 359.63 | 5,163.00 | 1,841.89 | -11.75 | 1,459.87 | 0.00  | 0.00  | 0.00 |
| 6,900.00                                              | 90.00 | 359.63 | 5,163.00 | 1,941.89 | -12.38 | 1,539.13 | 0.00  | 0.00  | 0.00 |
| 7,000.00                                              | 90.00 | 359.63 | 5,163.00 | 2,041.89 | -13.02 | 1,618.39 | 0.00  | 0.00  | 0.00 |
| 7,100.00                                              | 90.00 | 359.63 | 5,163.00 | 2,141.89 | -13.66 | 1,697.65 | 0.00  | 0.00  | 0.00 |
| 7,200.00                                              | 90.00 | 359.63 | 5,163.00 | 2,241.88 | -14.30 | 1,776.91 | 0.00  | 0.00  | 0.00 |
| 7,300.00                                              | 90.00 | 359.63 | 5,163.00 | 2,341.88 | -14.93 | 1,856.16 | 0.00  | 0.00  | 0.00 |
| 7,357.42                                              | 90.00 | 359.63 | 5,163.00 | 2,399.30 | -15.30 | 1,901.67 | 0.00  | 0.00  | 0.00 |
| TD @ 7357' MD / 5163' TVD - PBHL (Pickett Draw 16 1H) |       |        |          |          |        |          |       |       |      |

| Targets                                                                     |           |          |          |          |           |            |            |                   |                    |
|-----------------------------------------------------------------------------|-----------|----------|----------|----------|-----------|------------|------------|-------------------|--------------------|
| Target Name                                                                 | Dip Angle | Dip Dir. | TVD      | +N-S     | +E-W      | Northing   | Easting    | Latitude          | Longitude          |
| Section 16 (Eddy Co N)                                                      | 0.00      | 0.00     | 0.00     | -40.00   | -2,110.00 | 411,176.30 | 606,613.00 | 32° 07' 47.890° N | 103° 59' 20.158° W |
| - plan misses by 2110.38ft at 0.00ft MD (0.00 TVD, 0.00 N, 0.00 E)          |           |          |          |          |           |            |            |                   |                    |
| - Rectangle (sides W5,280.00 H5,280.00 D0.00)                               |           |          |          |          |           |            |            |                   |                    |
| PBHL (Pickett Draw 16)                                                      | 0.00      | 0.00     | 5,163.00 | 2,399.30 | -15.30    | 413,615.60 | 608,707.70 | 32° 08' 11.963° N | 103° 58' 55.705° W |
| - plan misses by 1921.89ft at 5435.53ft MD (5163.00 TVD, 477.45 N, -3.04 E) |           |          |          |          |           |            |            |                   |                    |
| - Point                                                                     |           |          |          |          |           |            |            |                   |                    |

| Plan Annotations    |                     |                             |           |                                                  |
|---------------------|---------------------|-----------------------------|-----------|--------------------------------------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N-S (ft) | +E-W (ft) | Comment                                          |
| 4,685.54            | 4,685.54            | 0.00                        | 0.00      | Kickoff @ 4685' TVD, 12.00° DLS                  |
| 5,435.54            | 5,163.00            | 477.46                      | -3.04     | Landing @ 5435' MD / 5163' TVD, 90°, 359.63° Azi |
| 7,357.42            | 5,163.00            | 2,399.30                    | -15.30    | TD @ 7357' MD / 5163' TVD                        |