

DISTRICT I  
1026 N. French Dr., Hobbs, NM 88240  
Phone (505) 823-8181 Fax: (505) 823-0720

DISTRICT II  
811 S. First St., Artesia, NM 88210  
Phone (505) 748-1253 Fax: (505) 748-0720

DISTRICT III  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone (505) 334-0170 Fax: (505) 334-0170

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone (505) 478-5440 Fax: (505) 478-3440

State of New Mexico  
Energy, Minerals and Natural Resources Department

Form C-102  
Revised August 1, 2011

Submit one copy to appropriate  
District Office

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

|                                   |                                            |                                                         |
|-----------------------------------|--------------------------------------------|---------------------------------------------------------|
| API Number<br><b>30-025-41111</b> | Pool Code<br><b>23000</b>                  | Pool Name<br><b>Eunice Monument: Grayburg Sandstone</b> |
| Property Code<br><b>302708</b>    | Property Name<br><b>NMGSAU</b>             | Well Number<br><b>1H</b>                                |
| OGRIID No.<br><b>873</b>          | Operator Name<br><b>APACHE CORPORATION</b> | Elevation<br><b>3680'</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 |
|---------------|---------|----------|-------|---------|---------------|------------------|---------------|----------------|--------|
| P             | 18      | 19 S     | 37 E  |         | 805           | SOUTH            | 10            | EAST           | LEA    |

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 |
|-------------------------------|-----------------|--------------------|-----------|---------|---------------|------------------|---------------|----------------|--------|
| I                             | 7               | 19 S               | 37 E      |         | 2310          | SOUTH            | 10            | EAST           | LEA    |
| Dedicated Acres<br><b>240</b> | Joint or Infill | Consolidation Code | Order No. |         |               |                  |               |                |        |

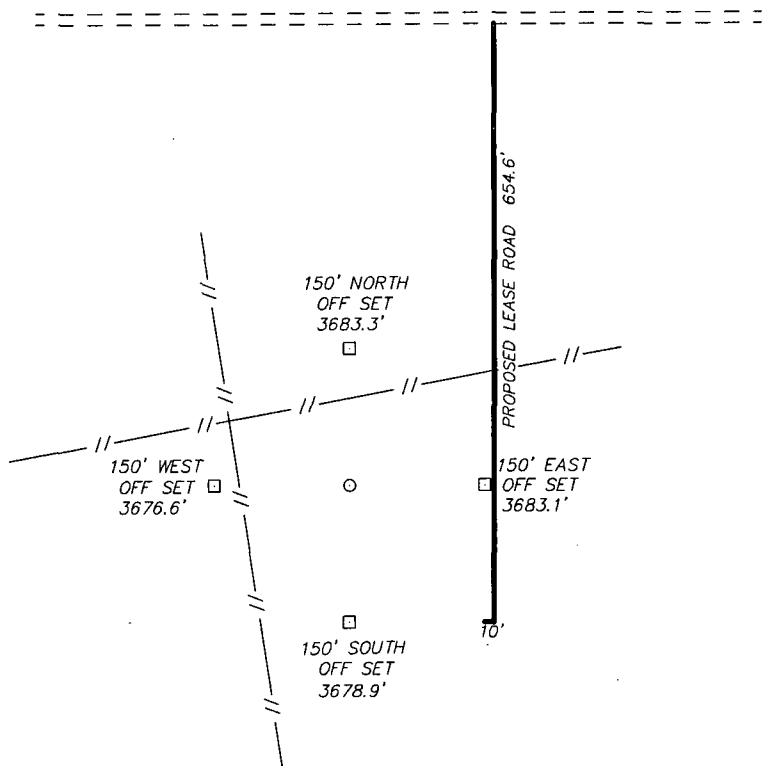
NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED  
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>PROPOSED BOTTOM HOLE LOCATION</b><br/>Lot - N 32°40'26.13"<br/>Long - W 103°16'55.88"<br/>NMSPCE- N 610507.3<br/>E 864781.8<br/>(NAD-83)<br/><br/>Lot - N 32°40'25.70"<br/>Long - W 103°16'54.13"<br/>NMSPCE- N 610445.2<br/>E 823600.7<br/>(NAD-27)</p> <p><b>SURFACE LOCATION</b><br/>Lot - N 32°39'19.04"<br/>Long - W 103°16'55.89"<br/>NMSPCE- N 603726.8<br/>E 864847.6<br/>(NAD-83)<br/><br/>Lot - N 32°39'18.61"<br/>Long - W 103°16'54.15"<br/>NMSPCE- N 603664.7<br/>E 823666.2<br/>(NAD-27)</p> | <p>LOT 1<br/>N: 613461.2<br/>E: 816339.9<br/>NAD 27</p> <p>LOT 2<br/>N: 610816.7<br/>E: 818388.9<br/>NAD 27</p> <p>LOT 3<br/>N: 608187.1<br/>E: 815401.3<br/>NAD 27</p> <p>LOT 4<br/>N: 606181.4<br/>E: 620987.7<br/>NAD 27</p> <p>LOT 1<br/>N: 606135.8<br/>E: 823634.1<br/>NAD 27</p> <p>LOT 2<br/>N: 605408.8<br/>E: 823661.8<br/>NAD 27</p> <p>LOT 3<br/>N: 602859.8<br/>E: 823682.9<br/>NAD 27</p> <p>LOT 4<br/>N: 602873.0<br/>E: 818455.1<br/>NAD 27</p> <p>LOT 1<br/>N: 602858.8<br/>E: 821047.0<br/>NAD 27</p> <p>LOT 2<br/>N: 602859.8<br/>E: 823682.9<br/>NAD 27</p> <p>LOT 3<br/>N: 602859.8<br/>E: 823682.9<br/>NAD 27</p> <p>LOT 4<br/>N: 602859.8<br/>E: 823682.9<br/>NAD 27</p> | <p><b>OPERATOR CERTIFICATION</b><br/>I hereby certify that the information contained herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or is a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p><i>Vicki Brown</i> 2/26/13<br/>Signature Date<br/>Vicki Brown<br/>Printed Name<br/>vicki.brown@apachecorp.com<br/>Email Address</p> <p><b>SURVEYOR CERTIFICATION</b><br/>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision and that the same is true and correct to the best of my belief.</p> <p>JANUARY 31 2013<br/>Date Surveyed<br/>Signature of Professional Surveyor<br/>Professional Surveyor<br/>7977<br/>Certificate No. Gary L. Jones 7977<br/>BASIN SURVEYS 27985</p> |
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AUG 28 2013

SECTION 18, TOWNSHIP 19 SOUTH, RANGE 37 EAST, N.M.P.M.,  
LEA COUNTY, NEW MEXICO.

APACHE CORPORATION  
NMGSAU #1H  
ELEV. - 3680'  
Lat - N 32°39'19.04"  
Long - W 103°16'55.89"  
NMSPCE- N 603726.8  
E 864847.6  
(NAD-83)  
Lat - N 32°39'18.61"  
Long - W 103°16'54.15"  
NMSPCE- N 603664.7  
E 823666.2  
(NAD-27)



WELL IS LOCATED ±10 MILES SOUTHWEST OF HOBBS, NEW MEXICO.

200 0 200 400 FEET  
SCALE: 1" = 200'

Directions to Location:

FROM THE JUNCTION OF HWY 62-180 AND MADDOX,  
GO SOUTH 3.8 MILES TURNING EAST 0.5 MILES  
TURNING SOUTH AGAIN 1.8 MILES AND EAST 1.0  
MILES TO PROPOSED LEASE ROAD.

**APACHE CORPORATION**

REF: NMGSAU #1H / WELL PAD TOPO

THE NMGSAU #1H LOCATED 805'  
FROM THE SOUTH LINE AND 10' FROM THE EAST LINE OF  
SECTION 18, TOWNSHIP 19 SOUTH, RANGE 37 EAST,  
N.M.P.M., LEA COUNTY, NEW MEXICO.

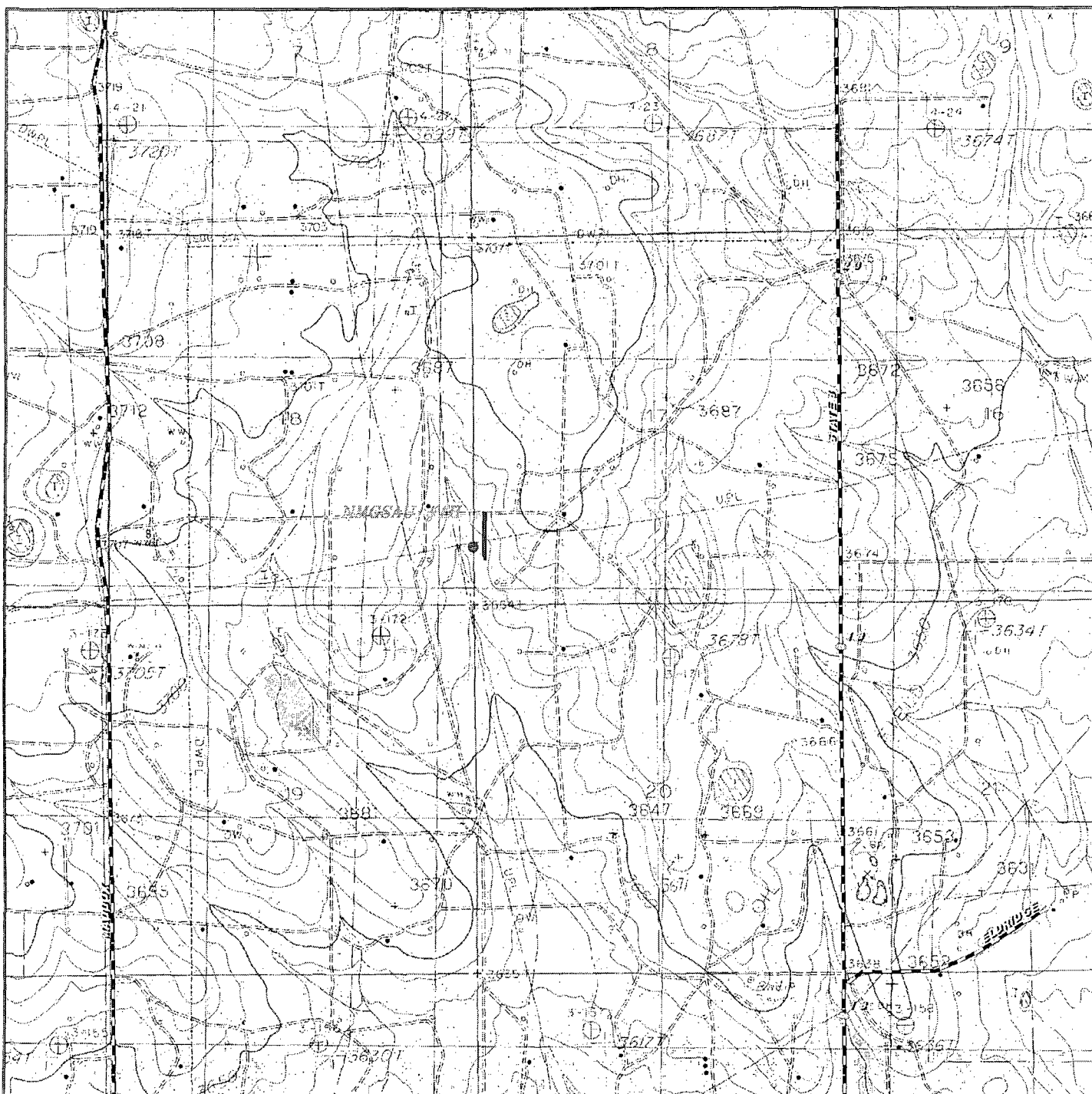
**BASIN SURVEYS** P.O. BOX 1786 -HOBBS, NEW MEXICO

W.O. Number: 27985 Drawn By: J. SMALL

Date: 02-11-2013 Disk: JMS 27985

Survey Date: 01-31-2013

Sheet 1 of 1 Sheets



NMGSAU #1H  
 Located 805' FSL and 10' FEL  
 Section 18, Township 19 South, Range 37 East,  
 N.M.P.M., Lea County, New Mexico.



P.O. Box 1786  
 1120 N. West County Rd.  
 Hobbs, New Mexico 88241  
 (575) 393-7316 - Office  
 (575) 392-2206 - Fax  
 basinsurveys.com

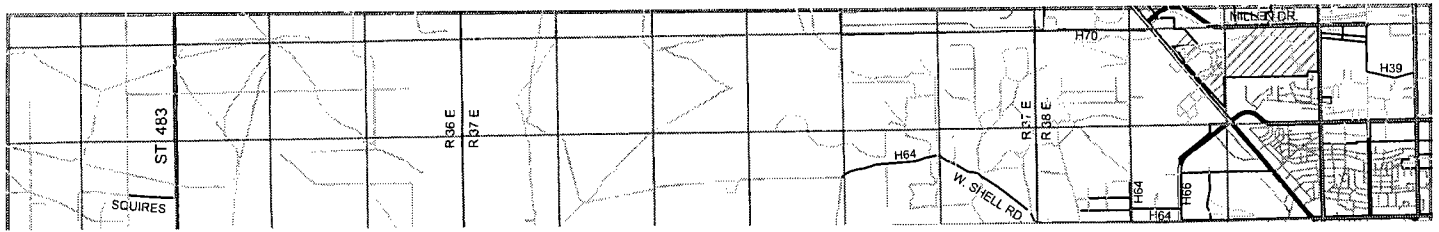
W.O. Number: JMS 27985

Survey Date: 01-31-2013

Scale: 1" = 2000'

Date: 02-11-2013

APACHE  
 CORPORATION



AUG 27 2013

# Phoenix Technology Services SURVEY DATA CERTIFICATION

RECEIVED


**PHOENIX**  
TECHNOLOGY SERVICES

PHOENIX JOB NUMBER

1310433

OPERATOR

Apache

WELL NAME

NMGSAU #1H

COUNTY &amp; STATE

Lea, New Mexico

API WELL NUMBER

30-025-41111

PROPOSED DIRECTION

359.44

| TIE-IN DATA |             |        |          |          |       |        |
|-------------|-------------|--------|----------|----------|-------|--------|
| MEASURED    | VERTICAL    |        |          | N-S      | E-W   | DATA   |
| DEPTH       | DEPTH       | INCLIN | AZIMUTH  | COORD    | COORD | SOURCE |
| 3,400 ft    | 3,399.74 ft | 7 ft   | 333.6 ft | 29.85 ft | 20 ft | Gyro   |

| FIRST<br>SURVEY<br>DATE | FIRST<br>SURVEY<br>DEPTH | INCLIN | AZIMUTH |
|-------------------------|--------------------------|--------|---------|
| 28-Jul-13               | 3,494 ft                 | 3.0    | 347.4   |

SURVEY INSTRUMENT

TYPE

Phoenix MWD

| LAST<br>SURVEY<br>DATE | LAST<br>SURVEY<br>DEPTH | INCLIN | AZIMUTH |
|------------------------|-------------------------|--------|---------|
| 19-Aug-13              | 10,469 ft               | 91.1   | 349.5   |

TO THE BEST OF MY KNOWLEDGE I  
CERTIFY THIS SURVEY DATA TO BE  
TRUE AND CORRECT.

| PROJECTED<br>TD SURVEY<br>DATE | PROJECTED<br>TD SURVEY<br>DEPTH | INCLIN | AZIMUTH |
|--------------------------------|---------------------------------|--------|---------|
| 19-Aug-13                      | 10,522 ft                       | 91.1   | 349.5   |

Matt Shaw

PRINT YOUR NAME ABOVE

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

| TOTAL CORRECTION USED |      |
|-----------------------|------|
|                       | 6.64 |
| DECLINATION OR GRID   | GRID |

8/21/2013

TODAY'S DATE

MWD SUPERVISOR 1

Matt Shaw

DIRECTIONAL DRILLER 1

Sid Richardson

MWD SUPERVISOR 2

0

DIRECTIONAL DRILLER 2

Travis Gibson

1805 Brittmore Road

Houston, Texas 77043

(713)3370609 (Voice), (713)337-0599 (Fax)



# **Apache Corporation**

Lea County, NM (NAD83 NME)

NMGSAU

#1H

WB1/Job#1310433

HOBBS OCD

AUG 27 2013

RECEIVED

Survey: Phoenix MWD Survey

## **Phoenix Final Survey Report**

20 August, 2013



**PHOENIX**  
TECHNOLOGY SERVICES

# Phoenix Technology Services

## Phoenix Final Survey Report



|           |                            |                              |                                |
|-----------|----------------------------|------------------------------|--------------------------------|
| Company:  | Apache Corporation         | Local Co-ordinate Reference: | Well #1H                       |
| Project:  | Lea County, NM (NAD83 NME) | TVD Reference:               | KB @ 3691.00usft (Capstar 120) |
| Site:     | NMGSAU                     | MD Reference:                | KB @ 3691.00usft (Capstar 120) |
| Well:     | #1H                        | North Reference:             | Grid                           |
| Wellbore: | WB1/Job#1310433            | Survey Calculation Method:   | Minimum Curvature              |
| Design:   | Surveys (Capstar 120)      | Database:                    | GCR DB                         |

|             |                            |               |                |
|-------------|----------------------------|---------------|----------------|
| Project     | Lea County, NM (NAD83 NME) |               |                |
| Map System: | US State Plane 1983        | System Datum: | Mean Sea Level |
| Geo Datum:  | North American Datum 1983  |               |                |
| Map Zone:   | New Mexico Eastern Zone    |               |                |

|                       |           |              |                 |                                |
|-----------------------|-----------|--------------|-----------------|--------------------------------|
| Site                  | NMGSAU    |              |                 |                                |
| Site Position:        |           | Northing:    | 582,973.08 usft | Latitude: 32° 35' 53.14439 N   |
| From:                 | Map       | Easting:     | 870,597.88 usft | Longitude: 103° 15' 51.08348 W |
| Position Uncertainty: | 0.00 usft | Slot Radius: | 13-3/16"        | Grid Convergence: 0.58 °       |

|                      |           |                     |           |                             |
|----------------------|-----------|---------------------|-----------|-----------------------------|
| Well                 | #1H       |                     |           |                             |
| Well Position        | +N-S      | 0.00 usft           | Northing: | 603,726.80 usft             |
|                      | +E-W      | 0.00 usft           | Easting:  | 864,847.60 usft             |
| Position Uncertainty | 0.00 usft | Wellhead Elevation: | usft      | Ground Level: 3,680.00 usft |

| Wellbore  | WB1/Job#1310433 |             |                 |               |                     |
|-----------|-----------------|-------------|-----------------|---------------|---------------------|
| Magnetics | Model Name      | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|           | IGRF2010_14     | 07/18/13    | 7.22            | 60.58         | 48,696              |

|                   |                       |        |        |               |      |
|-------------------|-----------------------|--------|--------|---------------|------|
| Design            | Surveys (Capstar 120) |        |        |               |      |
| Audit Notes:      |                       |        |        |               |      |
| Version:          | 1.0                   | Phase: | ACTUAL | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD)      | +N-S   | +E-W   | Direction     |      |
|                   | (usft)                | (usft) | (usft) | (°)           |      |
|                   | 0.00                  | 0.00   | 0.00   | 359.44        |      |

| Survey Program | Date: 08/20/13 |                                      |           |                           |  |
|----------------|----------------|--------------------------------------|-----------|---------------------------|--|
| From (usft)    | To (usft)      | Survey (Wellbore)                    | Tool Name | Description               |  |
| 100.00         | 3,400.00       | SDI Gyro (WB1/Job#1310433)           | Keeper    | Keeper Standard Rate Gyro |  |
| 3,494.00       | 10,522.00      | Phoenix MWD Survey (WB1/Job#1310433) | MWD       | MWD - Standard            |  |

| MD (usft)                | Inc (°) | Azi (azimuth) (°) | TVD (usft) | N/S (usft) | E/W (usft) | V. Sec (usft) | DLeg (°/100usft) |
|--------------------------|---------|-------------------|------------|------------|------------|---------------|------------------|
| 3,400.00                 | 0.65    | 333.55            | 3,399.74   | 29.85      | 0.20       | 29.84         | 0.00             |
| Tie-on to SDI Gyro       |         |                   |            |            |            |               |                  |
| 3,494.00                 | 3.00    | 347.40            | 3,493.69   | 32.72      | -0.57      | 32.73         | 2.53             |
| First Phoenix MWD Survey |         |                   |            |            |            |               |                  |
| 3,537.00                 | 6.30    | 2.70              | 3,536.54   | 36.18      | -0.71      | 36.18         | 8.13             |
| 3,580.00                 | 10.40   | 4.10              | 3,579.07   | 42.41      | -0.32      | 42.41         | 9.55             |
| 3,622.00                 | 15.30   | 1.90              | 3,620.01   | 51.74      | 0.14       | 51.73         | 11.72            |
| 3,665.00                 | 20.30   | 359.80            | 3,660.94   | 64.87      | 0.30       | 64.87         | 11.72            |
| 3,707.00                 | 24.20   | 359.40            | 3,699.80   | 80.77      | 0.18       | 80.77         | 9.29             |
| 3,750.00                 | 29.00   | 0.20              | 3,738.24   | 100.02     | 0.13       | 100.01        | 11.19            |
| 3,792.00                 | 33.80   | 0.80              | 3,774.08   | 121.90     | 0.33       | 121.89        | 11.45            |

# Phoenix Technology Services

## Phoenix Final Survey Report



**Company:** Apache Corporation  
**Project:** Lea County, NM (NAD83 NME)  
**Site:** NMGSAU  
**Well:** #1H  
**Wellbore:** WB1/Job#1310433  
**Design:** Surveys (Capstar.120)

**Local Co-ordinate Reference:** Well #1H  
**TVD Reference:** KB @ 3691.00usft (Capstar 120)  
**MD Reference:** KB @ 3691.00usft (Capstar 120)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** GCR DB

| Survey       |            |                      |               |               |               |                  |                     |  |
|--------------|------------|----------------------|---------------|---------------|---------------|------------------|---------------------|--|
| MD<br>(usft) | Inc<br>(°) | Azi (azimuth)<br>(°) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | V. Sec<br>(usft) | DLeg<br>(°/100usft) |  |
| 3,835.00     | 38.90      | 2.10                 | 3,808.70      | 147.36        | 0.99          | 147.35           | 11.99               |  |
| 3,877.00     | 43.80      | 2.90                 | 3,840.22      | 175.08        | 2.21          | 175.05           | 11.73               |  |
| 3,919.00     | 49.30      | 2.70                 | 3,869.10      | 205.52        | 3.69          | 205.47           | 13.10               |  |
| 3,962.00     | 55.30      | 2.00                 | 3,895.38      | 239.50        | 5.08          | 239.44           | 14.01               |  |
| 4,005.00     | 59.70      | 1.40                 | 3,918.48      | 275.74        | 6.15          | 275.66           | 10.30               |  |
| 4,047.00     | 64.80      | 0.40                 | 3,938.03      | 312.89        | 6.73          | 312.81           | 12.32               |  |
| 4,090.00     | 70.50      | 359.30               | 3,954.37      | 352.64        | 6.62          | 352.56           | 13.47               |  |
| 4,133.00     | 74.70      | 358.70               | 3,967.23      | 393.66        | 5.90          | 393.58           | 9.86                |  |
| 4,176.00     | 78.30      | 359.50               | 3,977.26      | 435.46        | 5.24          | 435.39           | 8.57                |  |
| 4,209.00     | 81.80      | 359.60               | 3,982.97      | 467.96        | 4.99          | 467.88           | 10.61               |  |
| 4,277.00     | 91.30      | 359.40               | 3,987.05      | 535.75        | 4.40          | 535.68           | 13.97               |  |
| 4,372.00     | 91.80      | 357.50               | 3,984.48      | 630.68        | 1.83          | 630.63           | 2.07                |  |
| 4,467.00     | 87.30      | 356.40               | 3,985.23      | 725.51        | -3.23         | 725.51           | 4.88                |  |
| 4,562.00     | 90.60      | 359.50               | 3,986.97      | 820.41        | -6.62         | 820.44           | 4.77                |  |
| 4,657.00     | 85.40      | 357.80               | 3,990.29      | 915.29        | -8.85         | 915.34           | 5.76                |  |
| 4,752.00     | 90.80      | 359.30               | 3,993.43      | 1,010.17      | -11.25        | 1,010.23         | 5.90                |  |
| 4,847.00     | 88.40      | 0.40                 | 3,994.10      | 1,105.16      | -11.50        | 1,105.22         | 2.78                |  |
| 4,942.00     | 89.40      | 358.80               | 3,995.92      | 1,200.14      | -12.17        | 1,200.20         | 1.99                |  |
| 5,037.00     | 91.40      | 358.10               | 3,995.26      | 1,295.10      | -14.74        | 1,295.18         | 2.23                |  |
| 5,132.00     | 89.00      | 355.60               | 3,994.93      | 1,389.94      | -19.96        | 1,390.07         | 3.65                |  |
| 5,227.00     | 86.60      | 358.60               | 3,998.57      | 1,484.73      | -24.76        | 1,484.90         | 4.04                |  |
| 5,322.00     | 89.40      | 359.10               | 4,001.89      | 1,579.64      | -26.66        | 1,579.83         | 2.99                |  |
| 5,417.00     | 88.70      | 0.50                 | 4,003.46      | 1,674.62      | -27.00        | 1,674.81         | 1.65                |  |
| 5,512.00     | 90.20      | 0.80                 | 4,004.38      | 1,769.61      | -25.92        | 1,769.78         | 1.61                |  |
| 5,608.00     | 91.70      | 0.20                 | 4,002.78      | 1,865.59      | -25.08        | 1,865.75         | 1.68                |  |
| 5,703.00     | 91.50      | 0.80                 | 4,000.13      | 1,960.55      | -24.25        | 1,960.69         | 0.67                |  |
| 5,798.00     | 91.20      | 0.60                 | 3,997.89      | 2,055.52      | -23.09        | 2,055.64         | 0.38                |  |
| 5,893.01     | 92.10      | 359.00               | 3,995.16      | 2,150.48      | -23.42        | 2,150.61         | 1.93                |  |
| 5,988.01     | 90.90      | 358.80               | 3,992.67      | 2,245.43      | -25.25        | 2,245.57         | 1.28                |  |
| 6,083.01     | 89.80      | 358.80               | 3,992.09      | 2,340.41      | -27.24        | 2,340.56         | 1.16                |  |
| 6,170.01     | 89.70      | 358.10               | 3,992.47      | 2,427.37      | -29.59        | 2,427.55         | 0.81                |  |
| 6,265.01     | 90.80      | 359.50               | 3,992.06      | 2,522.35      | -31.58        | 2,522.54         | 1.87                |  |
| 6,360.01     | 91.00      | 0.00                 | 3,990.56      | 2,617.33      | -31.99        | 2,617.52         | 0.57                |  |
| 6,455.01     | 90.80      | 359.50               | 3,989.07      | 2,712.32      | -32.41        | 2,712.51         | 0.57                |  |
| 6,550.01     | 90.80      | 359.40               | 3,987.74      | 2,807.31      | -33.32        | 2,807.50         | 0.11                |  |
| 6,645.01     | 91.50      | 359.40               | 3,985.84      | 2,902.28      | -34.31        | 2,902.48         | 0.74                |  |
| 6,740.01     | 91.20      | 359.90               | 3,983.60      | 2,997.25      | -34.89        | 2,997.45         | 0.61                |  |
| 6,835.00     | 91.00      | 0.10                 | 3,981.78      | 3,092.23      | -34.89        | 3,092.42         | 0.30                |  |
| 6,930.00     | 90.20      | 359.40               | 3,980.78      | 3,187.22      | -35.31        | 3,187.41         | 1.12                |  |
| 7,025.00     | 90.20      | 359.10               | 3,980.45      | 3,282.21      | -36.55        | 3,282.41         | 0.32                |  |
| 7,121.00     | 89.40      | 358.40               | 3,980.78      | 3,378.19      | -38.65        | 3,378.40         | 1.11                |  |
| 7,216.00     | 89.00      | 358.80               | 3,982.11      | 3,473.15      | -40.97        | 3,473.38         | 0.60                |  |
| 7,311.00     | 90.50      | 359.40               | 3,982.53      | 3,568.13      | -42.46        | 3,568.38         | 1.70                |  |
| 7,406.00     | 90.90      | 358.90               | 3,981.37      | 3,663.11      | -43.87        | 3,663.37         | 0.67                |  |

# Phoenix Technology Services

## Phoenix Final Survey Report



CORPORATION

Company: Apache Corporation  
 Project: Lea County, NM (NAD83 NME)  
 Site: NMGSAU  
 Well: #1H  
 Wellbore: WB1/Job#1310433  
 Design: Surveys (Capstar 120)

Local Co-ordinate Reference: Well #1H  
 TVD Reference: KB @ 3691.00usft (Capstar 120)  
 MD Reference: KB @ 3691.00usft (Capstar 120)  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature  
 Database: GCR DB

### Survey

| MD<br>(usft)            | Inc<br>(°) | Azi (azimuth)<br>(°) | TVD<br>(usft) | N/S<br>(usft) | E/W<br>(usft) | V. Sec<br>(usft) | DLeg<br>(°/100usft) |
|-------------------------|------------|----------------------|---------------|---------------|---------------|------------------|---------------------|
| 7,525.00                | 92.30      | 358.00               | 3,978.04      | 3,782.02      | -47.09        | 3,782.30         | 1.40                |
| 7,620.00                | 89.90      | 356.00               | 3,976.22      | 3,876.86      | -52.06        | 3,877.18         | 3.29                |
| 7,715.00                | 88.30      | 355.60               | 3,977.71      | 3,971.59      | -59.01        | 3,971.98         | 1.74                |
| 7,808.00                | 89.90      | 357.30               | 3,979.17      | 4,064.39      | -64.77        | 4,064.83         | 2.51                |
| 7,904.00                | 89.80      | 359.30               | 3,979.42      | 4,160.35      | -67.62        | 4,160.81         | 2.09                |
| 7,999.00                | 90.00      | 0.60                 | 3,979.59      | 4,255.34      | -67.70        | 4,255.80         | 1.38                |
| 8,093.00                | 89.40      | 2.10                 | 3,980.08      | 4,349.31      | -65.49        | 4,349.75         | 1.72                |
| 8,189.00                | 89.10      | 2.50                 | 3,981.34      | 4,445.23      | -61.63        | 4,445.62         | 0.52                |
| 8,284.00                | 87.30      | 1.00                 | 3,984.32      | 4,540.13      | -58.73        | 4,540.49         | 2.47                |
| 8,379.00                | 87.80      | 0.10                 | 3,988.38      | 4,635.04      | -57.82        | 4,635.38         | 1.08                |
| 8,474.00                | 89.30      | 359.40               | 3,990.79      | 4,730.00      | -58.24        | 4,730.35         | 1.74                |
| 8,569.00                | 89.60      | 359.70               | 3,991.70      | 4,825.00      | -58.98        | 4,825.34         | 0.45                |
| 8,664.00                | 90.90      | 2.60                 | 3,991.28      | 4,919.96      | -57.08        | 4,920.29         | 3.35                |
| 8,759.00                | 89.70      | 1.30                 | 3,990.79      | 5,014.90      | -53.84        | 5,015.19         | 1.86                |
| 8,853.00                | 89.80      | 1.70                 | 3,991.20      | 5,108.87      | -51.38        | 5,109.13         | 0.44                |
| 8,948.00                | 90.20      | 2.30                 | 3,991.20      | 5,203.81      | -48.07        | 5,204.03         | 0.76                |
| 9,043.00                | 90.10      | 1.50                 | 3,990.95      | 5,298.76      | -44.92        | 5,298.94         | 0.85                |
| 9,138.00                | 89.60      | 1.40                 | 3,991.20      | 5,393.73      | -42.52        | 5,393.88         | 0.54                |
| 9,233.00                | 90.60      | 2.00                 | 3,991.03      | 5,488.68      | -39.70        | 5,488.81         | 1.23                |
| 9,328.00                | 91.20      | 3.70                 | 3,989.54      | 5,583.55      | -34.97        | 5,583.62         | 1.90                |
| 9,423.00                | 90.30      | 1.90                 | 3,988.29      | 5,678.42      | -30.33        | 5,678.45         | 2.12                |
| 9,518.00                | 90.20      | 0.80                 | 3,987.88      | 5,773.39      | -28.10        | 5,773.39         | 1.16                |
| 9,613.00                | 89.10      | 0.00                 | 3,988.46      | 5,868.39      | -27.43        | 5,868.38         | 1.43                |
| 9,708.00                | 90.00      | 2.50                 | 3,989.21      | 5,963.35      | -25.36        | 5,963.32         | 2.80                |
| 9,803.00                | 89.40      | 2.80                 | 3,989.70      | 6,058.25      | -20.97        | 6,058.17         | 0.71                |
| 9,898.00                | 87.90      | 359.30               | 3,991.94      | 6,153.19      | -19.23        | 6,153.09         | 4.01                |
| 9,993.00                | 90.90      | 355.00               | 3,992.94      | 6,248.04      | -23.95        | 6,247.97         | 5.52                |
| 10,088.00               | 90.00      | 354.40               | 3,992.19      | 6,342.62      | -32.73        | 6,342.64         | 1.14                |
| 10,183.00               | 87.80      | 352.00               | 3,994.02      | 6,436.93      | -43.97        | 6,437.05         | 3.43                |
| 10,278.00               | 89.70      | 349.10               | 3,996.09      | 6,530.60      | -59.56        | 6,530.87         | 3.65                |
| 10,373.00               | 90.80      | 349.90               | 3,995.67      | 6,624.01      | -76.87        | 6,624.44         | 1.43                |
| 10,469.00               | 91.10      | 349.50               | 3,994.08      | 6,718.45      | -94.04        | 6,719.04         | 0.52                |
| Last Phoenix MWD Survey |            |                      |               |               |               |                  |                     |
| 10,522.00               | 91.10      | 349.50               | 3,993.07      | 6,770.55      | -103.69       | 6,771.24         | 0.00                |
| Projection to TD        |            |                      |               |               |               |                  |                     |

# Phoenix Technology Services

## Phoenix Final Survey Report



**Company:** Apache Corporation  
**Project:** Lea County, NM (NAD83 NME)  
**Site:** NMGSAU  
**Well:** #1H  
**Wellbore:** WB1/Job#1310433  
**Design:** Surveys (Capstar 120)

**Local Co-ordinate Reference:** Well #1H  
**TVD Reference:** KB @ 3691.00usft (Capstar 120)  
**MD Reference:** KB @ 3691.00usft (Capstar 120)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** GCR DB

### Survey Annotations

| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 | Comment                  |
|-----------------------------|-----------------------------|-------------------|-----------------|--------------------------|
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) |                          |
| 3,400.00                    | 3,399.74                    | 29.85             | 0.20            | Tie-on to SDI Gyo        |
| 3,494.00                    | 3,493.69                    | 32.72             | -0.57           | First Pheonix MWD Survey |
| 10,469.00                   | 3,994.08                    | 6,718.45          | -94.04          | Last Pheonix MWD Survey  |
| 10,522.00                   | 3,993.07                    | 6,770.55          | -103.69         | Projection to TD         |

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_



**PHOENIX**  
**TECHNOLOGY SERVICES**

August 22, 2013

Oil Conservation Division  
State of New Mexico  
1625 N. French Drive  
District 1 - Hobbs  
Hobbs, New Mexico 88240

**HOBBS OCD**

**AUG 27 2013**

**RECEIVED**

Attention: Regulatory Department

Re: Apache Corporation  
NMGSAU #1H  
Lea County, NM  
API #30-025-41111  
Job No. 1310433

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced Well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

| Name & Title of Surveyor | Drainhole Number | Surveyed Depths |        | Dates Performed |          | Type of Survey |
|--------------------------|------------------|-----------------|--------|-----------------|----------|----------------|
|                          |                  | From            | To     | Start           | End      |                |
| Matt Shaw                | 1H               | 3,494           | 10,469 | 07/28/13        | 08/19/13 | MWD            |

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

*Dolly Bush*

Dolly Bush  
Operations Administrator

Certified mail receipt number: 7011 1570 0001 4364 8622