



**PHOENIX**  
**TECHNOLOGY SERVICES**

July 8, 2014

HOBBS OCD

JUL 11 2014

RECEIVED

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

Attention: Regulatory Department

Re: Apache Corporation  
McDonald State A/C #38  
Lea County, NM  
API #30-025-41812  
Job No. 1410989

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 | Drain Hole Number | Surveyed Depths |       | Dates Performed |          | Type of Survey |
|--------------------------|-------------------|-----------------|-------|-----------------|----------|----------------|
|                          |                   | From            | To    | Start           | End      |                |
| Patrick Wilhoit          | 38                | 1,248           | 7,468 | 06/11/14        | 06/16/14 | 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,

*Dana Robinson*

Dana Robinson  
Operations Administrator

Certified mail receipt number: 7011 1570 0001 4365 2209

# Phoenix Technology Services SURVEY DATA CERTIFICATION

JUL 11 2014


**PHOENIX**  
TECHNOLOGY SERVICES

RECEIVED

PHOENIX JOB NUMBER

1410989

OPERATOR

Apache

WELL NAME

McDonald State A/C 2 #38

COUNTY &amp; STATE

Lea Co, NM

API WELL NUMBER

30-025-41812

PROPOSED DIRECTION

19.55

| TIE-IN DATA |             |        |         |         |        |         |
|-------------|-------------|--------|---------|---------|--------|---------|
| MEASURED    | VERTICAL    |        |         | N-S     | E-W    | DATA    |
| DEPTH       | DEPTH       | INCLIN | AZIMUTH | COORD   | COORD  | SOURCE  |
| 1,195 ft    | 1,195.00 ft | 1.0 ft | .0 ft   | 5.90 ft | .00 ft | Surface |

| FIRST     | FIRST    |        |         |
|-----------|----------|--------|---------|
| SURVEY    | SURVEY   |        |         |
| DATE      | DEPTH    | INCLIN | AZIMUTH |
| 11-Jun-14 | 1,248 ft | 1.2    | 17.1    |

 SURVEY INSTRUMENT  
TYPE

Phoenix MWD

| LAST      | LAST     |        |         |
|-----------|----------|--------|---------|
| SURVEY    | SURVEY   |        |         |
| DATE      | DEPTH    | INCLIN | AZIMUTH |
| 16-Jun-14 | 7,468 ft | 1.7    | 13.1    |

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

| PROJECTED | PROJECTED |        |         |
|-----------|-----------|--------|---------|
| TD SURVEY | TD SURVEY |        |         |
| DATE      | DEPTH     | INCLIN | AZIMUTH |
| 16-Jun-14 | 7,518 ft  | 1.7    | 13.1    |

Patrick Wilhoit

PRINT YOUR NAME ABOVE

Patrick Wilhoit

SIGN YOUR NAME ABOVE

16-Jun-14

TODAY'S DATE

## MAGNETIC DECLINATION OR TOTAL GRID

| TOTAL CORRECTION USED |      |
|-----------------------|------|
|                       | 7.17 |
| DECLINATION OR GRID   | GRID |
|                       |      |

MWD SUPERVISOR 1

Patrick Wilhoit

DIRECTIONAL DRILLER 1

Randy Brimmer

MWD SUPERVISOR 2

Dion McGuffee

DIRECTIONAL DRILLER 2

0

1805 Brittmore Road

Houston, Texas 77043

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

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

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

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

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

State of New Mexico  
Energy, Minerals & Natural Resources Department  
**OIL CONSERVATION DIVISION**  
1220 South St. Francis Dr.  
Santa Fe, New Mexico 87505

Form C-102  
Revised August 1, 2011  
HOBBS OCD Submit one copy to appropriate District Office  
JUL 11 2014 ☐ AMENDED REPORT

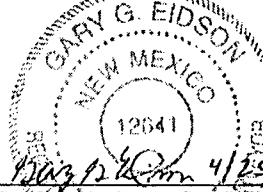
WELL LOCATION AND ACREAGE DEDICATION RECEIVED

|               |                                              |           |                           |
|---------------|----------------------------------------------|-----------|---------------------------|
| API Number    |                                              | Pool Code | Pool Name                 |
| Property Code | Property Name<br><b>McDONALD STATE A/C 2</b> |           | Well Number<br><b>38</b>  |
| GRID No.      | Operator Name<br><b>APACHE CORPORATION</b>   |           | Elevation<br><b>3465'</b> |

| Surface Location           |                      |                         |                      |         |                              |                                  |                              |                               |                      |
|----------------------------|----------------------|-------------------------|----------------------|---------|------------------------------|----------------------------------|------------------------------|-------------------------------|----------------------|
| Ul. or lot No.<br><b>H</b> | Section<br><b>13</b> | Township<br><b>22-S</b> | Range<br><b>36-E</b> | Lot Idn | Feet from the<br><b>2525</b> | North/South line<br><b>NORTH</b> | Feet from the<br><b>1070</b> | East/West line<br><b>EAST</b> | County<br><b>LEA</b> |

| Bottom Hole Location If Different From Surface |                      |                         |                      |         |                              |                                  |                             |                               |                      |
|------------------------------------------------|----------------------|-------------------------|----------------------|---------|------------------------------|----------------------------------|-----------------------------|-------------------------------|----------------------|
| Ul. or lot No.<br><b>H</b>                     | Section<br><b>13</b> | Township<br><b>22-S</b> | Range<br><b>36-E</b> | Lot Idn | Feet from the<br><b>2310</b> | North/South line<br><b>NORTH</b> | Feet from the<br><b>990</b> | East/West line<br><b>EAST</b> | County<br><b>LEA</b> |
| Dedicated Acres                                |                      | 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>GEODETIC COORDINATES</b><br/>NAD 27 NME</p> <p><b>BOTTOM HOLE LOCATION</b><br/>Y=508368.2 N<br/>X=845768.8 E</p> <p>LAT.=32.392640° N<br/>LONG.=103.213162° W</p> <p>LAT.=32° 23' 31" N<br/>LONG.=103° 12' 48" W</p> <p><b>GEODETIC COORDINATES</b><br/>NAD 27 NME</p> <p><b>SURFACE LOCATION</b><br/>Y=508152.5 N<br/>X=845692.2 E</p> <p>LAT.=32.392050° N<br/>LONG.=103.213417° W</p> <p>LAT.=32° 23' 31" N<br/>LONG.=103° 12' 48" W</p> |  | <p>GRID AZ.=19°33'14"</p> <p>HORIZ. DIST.=228.9'</p> <p>B.H.</p> <p>S.L.</p> <p>990'</p> <p>1070'</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>Signature _____ Date _____</p> <p>Printed Name _____</p> <p>E-mail Address _____</p> |
| <p><b>CORNER COORDINATES TABLE</b></p> <p>A - Y=509359.0 N, X=845422.3 E</p> <p>B - Y=509375.1 N, X=846743.4 E</p> <p>C - Y=508061.4 N, X=846763.6 E</p> <p>D - Y=508043.8 N, X=845438.4 E</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><b>MARCH 19, 2014</b></p> <p>Date of Survey</p> <p>Signature &amp; Seal of Professional Surveyor:</p> <p></p> <p>Certificate Number Gary G. Eidson 12641<br/>Ronald J. Eidson 3239</p> <p>DSS Rev: 4/25/14 JWSC W.O.: 14.11.0286</p> |  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |



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TECHNOLOGY SERVICES

HOBBS OCD

JUL 11 2014

RECEIVED

# **Apache Corporation**

**Lea County, NM (NAD27 NME)**

**McDonald State A/C 2**

**#38**

**Wellbore #1 / #1410989**

**Survey: Phoenix MWD Survey**

## **Standard Survey Report**

**08 July, 2014**

**Apache**  
EXPLORING WHAT'S POSSIBLE



# Phoenix Technology Services Survey Report

JUL 11 2014



**Company:** Apache Corporation  
**Project:** Lea County, NM (NAD27 NME)  
**Site:** McDonald State A/C 2  
**Well:** #38  
**Wellbore:** Wellbore #1 / #1410989  
**Design:** Surveys (Capstar 119)

**Local Co-ordinate Reference:** Well #38  
**TVD Reference:** WELL @ 3476.00usft (Capstar 119)  
**MD Reference:** WELL @ 3476.00usft (Capstar 119)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Compass 5000 GCR DB

RECEIVED

**Project:** Lea County, NM (NAD27 NME)  
**Map System:** US State Plane 1927 (Exact solution)  
**Geo Datum:** NAD 1927 (NADCON CONUS)  
**Map Zone:** New Mexico East 3001

**System Datum:** Mean Sea Level

**Site:** McDonald State A/C 2

**Site Position:** Northing: 508,152.50 usft Latitude: 32° 23' 31.37998 N  
**From:** Map Easting: 845,692.20 usft Longitude: 103° 12' 48.30218 W  
**Position Uncertainty:** 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.60 °

**Well:** #38

**Well Position:** +N/-S 0.00 usft Northing: 508,152.50 usft Latitude: 32° 23' 31.37998 N  
 +E/-W 0.00 usft Easting: 845,692.20 usft Longitude: 103° 12' 48.30218 W  
**Position Uncertainty:** 0.00 usft Wellhead Elevation: usft Ground Level: 3,465.00 usft

**Wellbore:** Wellbore #1 / #1410989

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|-----------|------------|-------------|-----------------|---------------|---------------------|
|           | BGGM2013   | 2014/06/09  | 7.17            | 60.32         | 48,438              |

**Design:** Surveys (Capstar 119)

**Audit Notes:**

**Version:** 1.0 **Phase:** ACTUAL **Tie On Depth:** 0.00

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

0.00 0.00 0.00 19.55

**Survey Program:** Date 2014/07/08

| From (usft) | To (usft) | Survey (Wellbore)                        | Tool Name    | Description                          |
|-------------|-----------|------------------------------------------|--------------|--------------------------------------|
| 191.00      | 1,195.00  | Surface Surveys (Wellbore #1 / #1410989) | MWD          | MWD - Standard                       |
| 1,248.00    | 7,518.00  | Phoenix MWD Survey (Wellbore #1 / #141)  | PHX+MWD+BGGM | PHX+MWD+BGGM v3:standard declination |

**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) |
|---------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 1,195.00                        | 1.00            | 0.00        | 1,195.00              | 5.90         | 0.00         | 5.56                    | 0.00                    | 0.00                   | 0.00                  |
| 1,248.00                        | 1.20            | 17.10       | 1,247.99              | 6.89         | 0.16         | 6.55                    | 0.72                    | 0.38                   | 32.26                 |
| <b>First Phoenix MWD Survey</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,469.00                        | 2.00            | 39.30       | 1,468.90              | 12.09        | 3.29         | 12.49                   | 0.45                    | 0.36                   | 10.05                 |
| 1,596.00                        | 1.90            | 36.60       | 1,595.83              | 15.49        | 5.95         | 16.59                   | 0.11                    | -0.08                  | -2.13                 |
| 1,659.00                        | 1.80            | 36.50       | 1,658.80              | 17.13        | 7.16         | 18.54                   | 0.16                    | -0.16                  | -0.16                 |
| 1,754.00                        | 2.00            | 32.10       | 1,753.75              | 19.73        | 8.92         | 21.58                   | 0.26                    | 0.21                   | -4.63                 |
| 1,848.00                        | 2.00            | 27.60       | 1,847.69              | 22.57        | 10.56        | 24.81                   | 0.17                    | 0.00                   | -4.79                 |
| 1,943.00                        | 2.20            | 25.10       | 1,942.62              | 25.70        | 12.10        | 28.26                   | 0.23                    | 0.21                   | -2.63                 |
| 2,037.00                        | 2.40            | 17.40       | 2,036.55              | 29.21        | 13.45        | 32.02                   | 0.39                    | 0.21                   | -8.19                 |



# Phoenix Technology Services Survey Report



Company: Apache Corporation  
Project: Lea County, NM (NAD27 NME)  
Site: McDonald State A/C 2  
Well: #38  
Wellbore: Wellbore #1 / #1410989  
Design: Surveys (Capstar 119)

Local Co-ordinate Reference: Well #38  
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MD Reference: WELL @ 3476.00usft (Capstar 119)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Database: Compass 5000 GCR DB

## Survey

| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 2,132.00                    | 2.50               | 33.70          | 2,131.46                    | 32.83           | 15.20           | 36.02                         | 0.74                          | 0.11                         | 17.16                       |
| 2,227.00                    | 2.30               | 31.50          | 2,226.38                    | 36.18           | 17.34           | 39.90                         | 0.23                          | -0.21                        | -2.32                       |
| 2,322.00                    | 2.70               | 31.70          | 2,321.29                    | 39.71           | 19.51           | 43.95                         | 0.42                          | 0.42                         | 0.21                        |
| 2,416.00                    | 2.20               | 36.10          | 2,415.20                    | 43.05           | 21.74           | 47.84                         | 0.57                          | -0.53                        | 4.68                        |
| 2,511.00                    | 2.70               | 18.90          | 2,510.12                    | 46.64           | 23.54           | 51.83                         | 0.93                          | 0.53                         | -18.11                      |
| 2,606.00                    | 2.20               | 15.90          | 2,605.03                    | 50.51           | 24.76           | 55.88                         | 0.54                          | -0.53                        | -3.16                       |
| 2,701.00                    | 2.10               | 20.30          | 2,699.96                    | 53.90           | 25.87           | 59.44                         | 0.20                          | -0.11                        | 4.63                        |
| 2,795.00                    | 1.80               | 25.20          | 2,793.91                    | 56.85           | 27.09           | 62.64                         | 0.36                          | -0.32                        | 5.21                        |
| 2,890.00                    | 2.30               | 15.80          | 2,888.85                    | 60.03           | 28.25           | 66.02                         | 0.63                          | 0.53                         | -9.89                       |
| 2,985.00                    | 2.10               | 18.20          | 2,983.78                    | 63.52           | 29.31           | 69.67                         | 0.23                          | -0.21                        | 2.53                        |
| 3,079.00                    | 2.10               | 22.50          | 3,077.72                    | 66.75           | 30.51           | 73.11                         | 0.17                          | 0.00                         | 4.57                        |
| 3,174.00                    | 2.10               | 23.30          | 3,172.65                    | 69.95           | 31.86           | 76.58                         | 0.03                          | 0.00                         | 0.84                        |
| 3,269.00                    | 2.20               | 11.10          | 3,267.59                    | 73.34           | 32.90           | 80.12                         | 0.49                          | 0.11                         | -12.84                      |
| 3,364.00                    | 2.30               | 10.90          | 3,362.51                    | 77.00           | 33.61           | 83.81                         | 0.11                          | 0.11                         | -0.21                       |
| 3,458.00                    | 2.20               | 10.60          | 3,456.44                    | 80.63           | 34.30           | 87.46                         | 0.11                          | -0.11                        | -0.32                       |
| 3,553.00                    | 2.10               | 11.10          | 3,551.37                    | 84.13           | 34.97           | 90.98                         | 0.11                          | -0.11                        | 0.53                        |
| 3,648.00                    | 2.10               | 14.70          | 3,646.31                    | 87.52           | 35.75           | 94.44                         | 0.14                          | 0.00                         | 3.79                        |
| 3,743.00                    | 2.10               | 20.70          | 3,741.25                    | 90.83           | 36.81           | 97.91                         | 0.23                          | 0.00                         | 6.32                        |
| 3,838.00                    | 2.20               | 14.70          | 3,836.18                    | 94.22           | 37.88           | 101.47                        | 0.26                          | 0.11                         | -6.32                       |
| 3,933.00                    | 2.40               | 22.60          | 3,931.10                    | 97.82           | 39.11           | 105.27                        | 0.39                          | 0.21                         | 8.32                        |
| 4,028.00                    | 2.70               | 22.60          | 4,026.01                    | 101.73          | 40.73           | 109.49                        | 0.32                          | 0.32                         | 0.00                        |
| 4,123.00                    | 2.10               | 9.20           | 4,120.92                    | 105.51          | 41.87           | 113.44                        | 0.86                          | -0.63                        | -14.11                      |
| 4,218.00                    | 2.10               | 9.10           | 4,215.86                    | 108.95          | 42.43           | 116.86                        | 0.00                          | 0.00                         | -0.11                       |
| 4,312.00                    | 1.70               | 10.10          | 4,309.81                    | 112.02          | 42.94           | 119.93                        | 0.43                          | -0.43                        | 1.06                        |
| 4,407.00                    | 1.70               | 20.00          | 4,404.77                    | 114.73          | 43.67           | 122.73                        | 0.31                          | 0.00                         | 10.42                       |
| 4,502.00                    | 1.90               | 16.20          | 4,499.72                    | 117.57          | 44.59           | 125.71                        | 0.25                          | 0.21                         | -4.00                       |
| 4,597.00                    | 2.00               | 11.00          | 4,594.67                    | 120.71          | 45.35           | 128.92                        | 0.21                          | 0.11                         | -5.47                       |
| 4,692.00                    | 2.00               | 11.40          | 4,689.61                    | 123.96          | 45.99           | 132.20                        | 0.01                          | 0.00                         | 0.42                        |
| 4,787.00                    | 2.20               | 20.90          | 4,784.54                    | 127.29          | 46.97           | 135.67                        | 0.42                          | 0.21                         | 10.00                       |
| 4,882.00                    | 2.20               | 29.10          | 4,879.47                    | 130.58          | 48.51           | 139.29                        | 0.33                          | 0.00                         | 8.63                        |
| 4,977.00                    | 2.20               | 24.60          | 4,974.40                    | 133.84          | 50.15           | 142.90                        | 0.18                          | 0.00                         | -4.74                       |
| 5,070.00                    | 2.30               | 25.60          | 5,067.33                    | 137.14          | 51.70           | 146.54                        | 0.12                          | 0.11                         | 1.08                        |
| 5,165.00                    | 2.20               | 24.70          | 5,162.26                    | 140.52          | 53.29           | 150.25                        | 0.11                          | -0.11                        | -0.95                       |
| 5,259.00                    | 2.00               | 21.20          | 5,256.20                    | 143.69          | 54.64           | 153.69                        | 0.25                          | -0.21                        | -3.72                       |
| 5,354.00                    | 1.90               | 23.20          | 5,351.14                    | 146.68          | 55.86           | 156.91                        | 0.13                          | -0.11                        | 2.11                        |
| 5,449.00                    | 1.70               | 25.50          | 5,446.09                    | 149.40          | 57.08           | 159.89                        | 0.22                          | -0.21                        | 2.42                        |
| 5,543.00                    | 1.80               | 24.80          | 5,540.05                    | 152.00          | 58.30           | 162.74                        | 0.11                          | 0.11                         | -0.74                       |
| 5,637.00                    | 1.80               | 27.70          | 5,634.00                    | 154.64          | 59.61           | 165.68                        | 0.10                          | 0.00                         | 3.09                        |
| 5,732.00                    | 1.80               | 17.70          | 5,728.96                    | 157.39          | 60.76           | 168.64                        | 0.33                          | 0.00                         | -10.53                      |
| 5,827.00                    | 2.10               | 17.50          | 5,823.90                    | 160.47          | 61.73           | 171.87                        | 0.32                          | 0.32                         | -0.21                       |
| 5,921.00                    | 2.10               | 18.90          | 5,917.84                    | 163.74          | 62.81           | 175.32                        | 0.05                          | 0.00                         | 1.49                        |
| 6,015.00                    | 2.40               | 23.00          | 6,011.77                    | 167.18          | 64.14           | 179.01                        | 0.36                          | 0.32                         | 4.36                        |
| 6,110.00                    | 2.30               | 16.50          | 6,106.69                    | 170.84          | 65.45           | 182.89                        | 0.30                          | -0.11                        | -6.84                       |



# Phoenix Technology Services

## Survey Report



**Company:** Apache Corporation  
**Project:** Lea County, NM (NAD27 NME)  
**Site:** McDonald State A/C 2  
**Well:** #38  
**Wellbore:** Wellbore #1 / #1410989  
**Design:** Surveys (Capstar 119)

**Local Co-ordinate Reference:** Well #38  
**TVD Reference:** WELL @ 3476.00usft (Capstar 119)  
**MD Reference:** WELL @ 3476.00usft (Capstar 119)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Compass 5000 GCR DB

### 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) |
|--------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 6,205.00                 | 2.30            | 17.30       | 6,201.61              | 174.49       | 66.56        | 186.70                  | 0.03                    | 0.00                   | 0.84                  |
| 6,300.00                 | 2.40            | 22.10       | 6,296.53              | 178.15       | 67.88        | 190.59                  | 0.23                    | 0.11                   | 5.05                  |
| 6,395.00                 | 2.20            | 26.20       | 6,391.45              | 181.63       | 69.43        | 194.39                  | 0.27                    | -0.21                  | 4.32                  |
| 6,490.00                 | 2.10            | 29.50       | 6,486.39              | 184.78       | 71.09        | 197.92                  | 0.17                    | -0.11                  | 3.47                  |
| 6,585.00                 | 2.10            | 15.80       | 6,581.32              | 187.97       | 72.42        | 201.37                  | 0.53                    | 0.00                   | -14.42                |
| 6,679.00                 | 2.00            | 10.20       | 6,675.26              | 191.24       | 73.18        | 204.71                  | 0.24                    | -0.11                  | -5.96                 |
| 6,774.00                 | 2.00            | 12.50       | 6,770.21              | 194.49       | 73.84        | 207.99                  | 0.08                    | 0.00                   | 2.42                  |
| 6,868.00                 | 1.50            | 17.60       | 6,864.16              | 197.27       | 74.56        | 210.84                  | 0.56                    | -0.53                  | 5.43                  |
| 6,964.00                 | 1.90            | 12.50       | 6,960.12              | 200.02       | 75.29        | 213.68                  | 0.45                    | 0.42                   | -5.31                 |
| 7,059.00                 | 1.90            | 9.50        | 7,055.07              | 203.11       | 75.89        | 216.79                  | 0.10                    | 0.00                   | -3.16                 |
| 7,153.00                 | 1.90            | 12.30       | 7,149.02              | 206.17       | 76.48        | 219.87                  | 0.10                    | 0.00                   | 2.98                  |
| 7,248.00                 | 1.90            | 8.40        | 7,243.96              | 209.26       | 77.04        | 222.98                  | 0.14                    | 0.00                   | -4.11                 |
| 7,343.00                 | 1.90            | 10.50       | 7,338.91              | 212.37       | 77.56        | 226.08                  | 0.07                    | 0.00                   | 2.21                  |
| 7,438.00                 | 1.80            | 9.80        | 7,433.86              | 215.39       | 78.10        | 229.11                  | 0.11                    | -0.11                  | -0.74                 |
| 7,468.00                 | 1.70            | 13.10       | 7,463.85              | 216.29       | 78.28        | 230.01                  | 0.47                    | -0.33                  | 11.00                 |
| Final Phoenix MWD Survey |                 |             |                       |              |              |                         |                         |                        |                       |
| 7,518.00                 | 1.70            | 13.10       | 7,513.83              | 217.73       | 78.62        | 231.49                  | 0.00                    | 0.00                   | 0.00                  |
| Projection to TD         |                 |             |                       |              |              |                         |                         |                        |                       |

### Survey Annotations

| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates |              | Comment                  |
|-----------------------|-----------------------|-------------------|--------------|--------------------------|
|                       |                       | +N/-S (usft)      | +E/-W (usft) |                          |
| 1,248.00              | 1,247.99              | 6.89              | 0.16         | First Phoenix MWD Survey |
| 7,468.00              | 7,463.85              | 216.29            | 78.28        | Final Phoenix MWD Survey |
| 7,518.00              | 7,513.83              | 217.73            | 78.62        | Projection to TD         |

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