



**Scientific Drilling**

**Scientific Drilling International, Inc.**

2034 Trade Drive • Midland, Texas 79706

P.O. Box 9699 • Midland, Texas 79708

Tel: 432-689-5600 • Fax: 432-697-0324

State of Texas  
County of Midland

I, Brady Deaver certify that; I am employed by Scientific Drilling International; that I did on the day(s) of 09/22/2012 through 10/02/2012 conduct or supervise the taking of a MWD survey from a depth of 795 feet to a depth of 15484 feet; that the data is true, correct, complete and within the limitations of the tool as set forth by Scientific Drilling International; that I am authorized and qualified to make this report; that this survey was conducted at the request of EOG RESOURCES, INC. for the UNIVERSITY 9 #2808H, API# 42-383-37828 in Reagan County, Texas; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Scientific Drilling International.

Brady Deaver

Field Technician



## **EOG Resources**

**Reagan County, TX (NAD27 TC)**

**University 09**

**#2808H**

**OH - Job #32H09121193**

**Survey: MWD**

## **SDI Standard Survey Report**

**30 October, 2012**



|                  |                              |                                     |                                |
|------------------|------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>  | EOG Resources                | <b>Local Co-ordinate Reference:</b> | Well #2808H                    |
| <b>Project:</b>  | Reagan County, TX (NAD27 TC) | <b>TVD Reference:</b>               | RF @ 2696.00usft (Cactus #103) |
| <b>Site:</b>     | University 09                | <b>MD Reference:</b>                | RF @ 2696.00usft (Cactus #103) |
| <b>Well:</b>     | #2808H                       | <b>North Reference:</b>             | Grid                           |
| <b>Wellbore:</b> | OH - Job #32H09121193        | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Design:</b>   | OH                           | <b>Database:</b>                    | EDM-Regulatory                 |

|                    |                                      |                      |                |
|--------------------|--------------------------------------|----------------------|----------------|
| <b>Project</b>     | Reagan County, TX (NAD27 TC)         |                      |                |
| <b>Map System:</b> | US State Plane 1927 (Exact solution) | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | NAD 1927 (NADCON CONUS)              |                      |                |
| <b>Map Zone:</b>   | Texas Central 4203                   |                      |                |

|                              |               |                          |                   |
|------------------------------|---------------|--------------------------|-------------------|
| <b>Site</b>                  | University 09 |                          |                   |
| <b>Site Position:</b>        |               | <b>Northing:</b>         | 573,023.00 usft   |
| <b>From:</b>                 | Map           | <b>Easting:</b>          | 1,599,410.00 usft |
| <b>Position Uncertainty:</b> | 0.00 usft     | <b>Slot Radius:</b>      | 13-3/16"          |
|                              |               | <b>Latitude:</b>         | 31° 14' 9.313 N   |
|                              |               | <b>Longitude:</b>        | 101° 36' 54.431 W |
|                              |               | <b>Grid Convergence:</b> | -0.66 °           |

|                             |           |                            |                                   |
|-----------------------------|-----------|----------------------------|-----------------------------------|
| <b>Well</b>                 | #2808H    |                            |                                   |
| <b>Well Position</b>        | +N/-S     | 0.00 usft                  | <b>Northing:</b> 573,394.00 usft  |
|                             | +E/-W     | 0.00 usft                  | <b>Easting:</b> 1,600,695.00 usft |
| <b>Position Uncertainty</b> | 0.00 usft | <b>Wellhead Elevation:</b> | usft                              |
|                             |           | <b>Latitude:</b>           | 31° 14' 13.132 N                  |
|                             |           | <b>Longitude:</b>          | 101° 36' 39.679 W                 |
|                             |           | <b>Ground Level:</b>       | 2,669.00 usft                     |

|                  |                       |                    |                        |                      |                            |
|------------------|-----------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | OH - Job #32H09121193 |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b>     | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2010              | 09/25/12           | 6.43                   | 59.55                | 48,094                     |

|                          |                                |                     |                     |                      |      |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|------|
| <b>Design</b>            | OH                             |                     |                     |                      |      |
| <b>Audit Notes:</b>      |                                |                     |                     |                      |      |
| <b>Version:</b>          | 1.0                            | <b>Phase:</b>       | ACTUAL              | <b>Tie On Depth:</b> | 0.00 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Direction (°)</b> |      |
|                          | 0.00                           | 0.00                | 0.00                | 1.16                 |      |

|                       |                  |                             |                  |                       |  |
|-----------------------|------------------|-----------------------------|------------------|-----------------------|--|
| <b>Survey Program</b> | <b>Date</b>      | 10/30/12                    |                  |                       |  |
| <b>From (usft)</b>    | <b>To (usft)</b> | <b>Survey (Wellbore)</b>    | <b>Tool Name</b> | <b>Description</b>    |  |
| 128.00                | 15,552.00        | MWD (OH - Job #32H09121193) | MWD              | MWD - Standard ISCWSA |  |

|                              |                        |                    |                            |                           |                         |                            |                                |      |
|------------------------------|------------------------|--------------------|----------------------------|---------------------------|-------------------------|----------------------------|--------------------------------|------|
| <b>Survey</b>                |                        |                    |                            |                           |                         |                            |                                |      |
| <b>Measured Depth (usft)</b> | <b>Inclination (°)</b> | <b>Azimuth (°)</b> | <b>True Vertical Depth</b> | <b>North/South (usft)</b> | <b>East/West (usft)</b> | <b>Closure Azimuth (°)</b> | <b>Closure Distance (usft)</b> |      |
| 0.00                         | 0.00                   | 0.00               | 0.00                       | 0.00                      | 0.00                    | 0.00                       | 0.00                           | 0.00 |
| 128.00                       | 0.36                   | 354.55             | 128.00                     | 0.40                      | -0.04                   | 354.55                     | 0.40                           |      |
| 228.00                       | 0.65                   | 345.60             | 228.00                     | 1.26                      | -0.21                   | 350.60                     | 1.28                           |      |
| 328.00                       | 0.60                   | 340.71             | 327.99                     | 2.31                      | -0.52                   | 347.22                     | 2.36                           |      |
| 428.00                       | 0.62                   | 314.03             | 427.98                     | 3.18                      | -1.09                   | 341.14                     | 3.36                           |      |
| 528.00                       | 0.85                   | 322.99             | 527.98                     | 4.14                      | -1.92                   | 335.14                     | 4.57                           |      |
| 628.00                       | 0.53                   | 306.20             | 627.97                     | 5.01                      | -2.74                   | 331.32                     | 5.71                           |      |
| 651.00                       | 0.42                   | 302.49             | 650.97                     | 5.12                      | -2.90                   | 330.49                     | 5.88                           |      |
| 795.00                       | 0.62                   | 288.52             | 794.96                     | 5.65                      | -4.08                   | 324.15                     | 6.97                           |      |
| <b>First MWD Survey</b>      |                        |                    |                            |                           |                         |                            |                                |      |
| 979.00                       | 0.53                   | 279.29             | 978.95                     | 6.10                      | -5.86                   | 316.14                     | 8.46                           |      |
| 1,165.00                     | 0.62                   | 268.22             | 1,164.94                   | 6.21                      | -7.72                   | 308.82                     | 9.91                           |      |



|                  |                              |                                     |                                |
|------------------|------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>  | EOG Resources                | <b>Local Co-ordinate Reference:</b> | Well #2808H                    |
| <b>Project:</b>  | Reagan County, TX (NAD27 TC) | <b>TVD Reference:</b>               | RF @ 2696.00usft (Cactus #103) |
| <b>Site:</b>     | University 09                | <b>MD Reference:</b>                | RF @ 2696.00usft (Cactus #103) |
| <b>Well:</b>     | #2808H                       | <b>North Reference:</b>             | Grid                           |
| <b>Wellbore:</b> | OH - Job #32H09121193        | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Design:</b>   | OH                           | <b>Database:</b>                    | EDM-Regulatory                 |

| Survey                   |                    |                |                        |                       |                     |                        |                            |
|--------------------------|--------------------|----------------|------------------------|-----------------------|---------------------|------------------------|----------------------------|
| Measured Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | True Vertical<br>Depth | North/South<br>(usft) | East/West<br>(usft) | Closure Azimuth<br>(°) | Closure Distance<br>(usft) |
| 1,350.00                 | 0.88               | 282.19         | 1,349.93               | 6.48                  | -10.11              | 302.66                 | 12.01                      |
| 1,540.00                 | 0.62               | 275.69         | 1,539.91               | 6.89                  | -12.56              | 298.75                 | 14.32                      |
| 1,729.00                 | 0.62               | 278.68         | 1,728.90               | 7.14                  | -14.59              | 296.10                 | 16.24                      |
| 1,918.00                 | 0.70               | 256.44         | 1,917.89               | 7.03                  | -16.72              | 292.80                 | 18.14                      |
| 2,109.00                 | 0.88               | 250.64         | 2,108.87               | 6.27                  | -19.24              | 288.05                 | 20.23                      |
| 2,299.00                 | 0.88               | 251.17         | 2,298.85               | 5.31                  | -21.99              | 283.58                 | 22.63                      |
| 2,489.00                 | 0.97               | 251.87         | 2,488.82               | 4.34                  | -24.90              | 279.89                 | 25.28                      |
| 2,679.00                 | 1.06               | 247.39         | 2,678.79               | 3.17                  | -28.06              | 276.44                 | 28.23                      |
| 2,867.00                 | 1.23               | 256.26         | 2,866.75               | 2.02                  | -31.62              | 273.65                 | 31.68                      |
| 3,056.00                 | 1.23               | 266.28         | 3,055.71               | 1.41                  | -35.62              | 272.26                 | 35.64                      |
| 3,247.00                 | 1.23               | 263.12         | 3,246.67               | 1.03                  | -39.70              | 271.48                 | 39.71                      |
| 3,435.00                 | 1.06               | 232.45         | 3,434.63               | -0.27                 | -43.08              | 269.63                 | 43.08                      |
| 3,623.00                 | 1.76               | 249.06         | 3,622.57               | -2.37                 | -47.15              | 267.13                 | 47.21                      |
| 3,814.00                 | 1.49               | 263.03         | 3,813.50               | -3.72                 | -52.36              | 265.94                 | 52.49                      |
| 4,004.00                 | 1.41               | 272.35         | 4,003.44               | -3.92                 | -57.15              | 266.08                 | 57.28                      |
| 4,194.00                 | 1.06               | 261.80         | 4,193.39               | -4.07                 | -61.22              | 266.19                 | 61.36                      |
| 4,383.00                 | 0.97               | 259.25         | 4,382.36               | -4.62                 | -64.52              | 265.90                 | 64.69                      |
| 4,573.00                 | 0.53               | 260.75         | 4,572.35               | -5.06                 | -66.97              | 265.68                 | 67.16                      |
| 4,763.00                 | 0.18               | 224.36         | 4,762.34               | -5.42                 | -68.05              | 265.45                 | 68.26                      |
| 4,951.00                 | 0.09               | 154.05         | 4,950.34               | -5.76                 | -68.19              | 265.17                 | 68.43                      |
| 5,139.00                 | 0.09               | 81.98          | 5,138.34               | -5.87                 | -67.98              | 265.06                 | 68.23                      |
| 5,329.00                 | 0.26               | 317.17         | 5,328.34               | -5.54                 | -68.12              | 265.35                 | 68.35                      |
| 5,519.00                 | 0.62               | 245.54         | 5,518.34               | -5.65                 | -69.35              | 265.35                 | 69.58                      |
| 5,706.00                 | 0.53               | 289.49         | 5,705.33               | -5.78                 | -71.09              | 265.35                 | 71.32                      |
| 5,895.00                 | 0.48               | 45.42          | 5,894.32               | -4.93                 | -71.35              | 266.05                 | 71.52                      |
| 6,085.00                 | 0.35               | 69.59          | 6,084.32               | -4.17                 | -70.24              | 266.60                 | 70.36                      |
| 6,274.00                 | 0.53               | 59.83          | 6,273.31               | -3.53                 | -68.94              | 267.07                 | 69.03                      |
| 6,463.00                 | 0.53               | 68.53          | 6,462.31               | -2.77                 | -67.37              | 267.65                 | 67.43                      |
| 6,652.00                 | 0.39               | 60.63          | 6,651.30               | -2.13                 | -66.00              | 268.15                 | 66.03                      |
| 6,842.00                 | 0.35               | 60.03          | 6,841.30               | -1.53                 | -64.93              | 268.65                 | 64.95                      |
| 7,031.00                 | 0.26               | 58.60          | 7,030.29               | -1.01                 | -64.06              | 269.09                 | 64.07                      |
| 7,221.00                 | 0.26               | 54.82          | 7,220.29               | -0.54                 | -63.34              | 269.51                 | 63.35                      |
| 7,372.00                 | 3.43               | 1.91           | 7,371.20               | 4.17                  | -62.91              | 273.79                 | 63.05                      |
| 7,403.00                 | 7.65               | 359.62         | 7,402.04               | 7.16                  | -62.90              | 276.50                 | 63.30                      |
| 7,435.00                 | 11.96              | 4.11           | 7,433.57               | 12.60                 | -62.67              | 281.37                 | 63.93                      |
| 7,466.00                 | 15.65              | 6.74           | 7,463.67               | 19.96                 | -61.95              | 287.86                 | 65.09                      |
| 7,498.00                 | 19.35              | 8.85           | 7,494.18               | 29.49                 | -60.63              | 295.94                 | 67.42                      |
| 7,530.00                 | 22.60              | 10.96          | 7,524.06               | 40.77                 | -58.64              | 304.81                 | 71.42                      |
| 7,562.00                 | 25.06              | 9.91           | 7,553.33               | 53.48                 | -56.31              | 313.53                 | 77.66                      |
| 7,593.00                 | 27.70              | 9.38           | 7,581.10               | 67.06                 | -54.00              | 321.16                 | 86.10                      |
| 7,625.00                 | 30.69              | 11.40          | 7,609.03               | 82.41                 | -51.18              | 328.16                 | 97.01                      |
| 7,657.00                 | 33.77              | 12.02          | 7,636.10               | 99.12                 | -47.71              | 334.30                 | 110.00                     |
| 7,688.00                 | 36.58              | 11.23          | 7,661.43               | 116.61                | -44.11              | 339.28                 | 124.67                     |
| 7,720.00                 | 40.54              | 7.97           | 7,686.45               | 136.27                | -40.81              | 343.33                 | 142.25                     |

|                  |                              |                                     |                                |
|------------------|------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>  | EOG Resources                | <b>Local Co-ordinate Reference:</b> | Well #2808H                    |
| <b>Project:</b>  | Reagan County, TX (NAD27 TC) | <b>TVD Reference:</b>               | RF @ 2696.00usft (Cactus #103) |
| <b>Site:</b>     | University 09                | <b>MD Reference:</b>                | RF @ 2696.00usft (Cactus #103) |
| <b>Well:</b>     | #2808H                       | <b>North Reference:</b>             | Grid                           |
| <b>Wellbore:</b> | OH - Job #32H09121193        | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Design:</b>   | OH                           | <b>Database:</b>                    | EDM-Regulatory                 |

| Survey                   |                    |                |                        |                       |                     |                        |                            |
|--------------------------|--------------------|----------------|------------------------|-----------------------|---------------------|------------------------|----------------------------|
| Measured Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | True Vertical<br>Depth | North/South<br>(usft) | East/West<br>(usft) | Closure Azimuth<br>(°) | Closure Distance<br>(usft) |
| 7,752.00                 | 44.58              | 4.81           | 7,710.02               | 157.77                | -38.43              | 346.31                 | 162.38                     |
| 7,783.00                 | 48.54              | 2.96           | 7,731.33               | 180.22                | -36.92              | 348.42                 | 183.96                     |
| 7,815.00                 | 52.94              | 3.58           | 7,751.58               | 204.95                | -35.50              | 350.17                 | 208.00                     |
| 7,847.00                 | 57.95              | 3.75           | 7,769.73               | 231.24                | -33.81              | 351.68                 | 233.70                     |
| 7,879.00                 | 62.43              | 4.99           | 7,785.63               | 258.92                | -31.69              | 353.02                 | 260.85                     |
| 7,910.00                 | 65.25              | 5.42           | 7,799.30               | 286.63                | -29.17              | 354.19                 | 288.11                     |
| 7,942.00                 | 68.06              | 5.78           | 7,811.98               | 315.86                | -26.30              | 355.24                 | 316.96                     |
| 7,973.00                 | 70.61              | 5.78           | 7,822.91               | 344.72                | -23.38              | 356.12                 | 345.51                     |
| 8,005.00                 | 72.98              | 6.22           | 7,832.91               | 374.95                | -20.20              | 356.92                 | 375.49                     |
| 8,037.00                 | 74.66              | 6.48           | 7,841.83               | 405.49                | -16.80              | 357.63                 | 405.84                     |
| 8,068.00                 | 76.85              | 6.48           | 7,849.46               | 435.35                | -13.41              | 358.24                 | 435.55                     |
| 8,100.00                 | 80.90              | 8.24           | 7,855.63               | 466.48                | -9.39               | 358.85                 | 466.57                     |
| 8,169.00                 | 89.34              | 7.89           | 7,861.49               | 534.49                | 0.25                | 0.03                   | 534.49                     |
| 8,201.00                 | 89.90              | 7.95           | 7,861.71               | 566.18                | 4.66                | 0.47                   | 566.20                     |
| 8,295.00                 | 89.96              | 5.25           | 7,861.82               | 659.55                | 15.46               | 1.34                   | 659.73                     |
| 8,390.00                 | 89.34              | 2.26           | 7,862.40               | 754.33                | 21.68               | 1.65                   | 754.64                     |
| 8,485.00                 | 90.13              | 1.21           | 7,862.84               | 849.28                | 24.56               | 1.66                   | 849.64                     |
| 8,580.00                 | 89.78              | 359.71         | 7,862.91               | 944.28                | 25.32               | 1.54                   | 944.62                     |
| 8,675.00                 | 89.78              | 359.18         | 7,863.28               | 1,039.27              | 24.40               | 1.35                   | 1,039.56                   |
| 8,770.00                 | 89.78              | 359.45         | 7,863.64               | 1,134.26              | 23.27               | 1.18                   | 1,134.50                   |
| 8,864.00                 | 89.96              | 359.80         | 7,863.86               | 1,228.26              | 22.65               | 1.06                   | 1,228.47                   |
| 8,958.00                 | 89.69              | 358.83         | 7,864.14               | 1,322.25              | 21.53               | 0.93                   | 1,322.43                   |
| 9,003.00                 | 89.96              | 359.36         | 7,864.28               | 1,367.25              | 20.82               | 0.87                   | 1,367.41                   |
| 9,148.00                 | 89.60              | 359.54         | 7,864.84               | 1,512.24              | 19.42               | 0.74                   | 1,512.36                   |
| 9,242.00                 | 90.04              | 358.48         | 7,865.13               | 1,606.22              | 17.80               | 0.63                   | 1,606.32                   |
| 9,338.00                 | 89.52              | 358.04         | 7,865.50               | 1,702.18              | 14.88               | 0.50                   | 1,702.24                   |
| 9,432.00                 | 89.69              | 358.31         | 7,866.15               | 1,796.13              | 11.89               | 0.38                   | 1,796.17                   |
| 9,527.00                 | 89.78              | 357.43         | 7,866.59               | 1,891.06              | 8.36                | 0.25                   | 1,891.08                   |
| 9,622.00                 | 89.25              | 359.18         | 7,867.39               | 1,986.01              | 5.55                | 0.16                   | 1,986.02                   |
| 9,716.00                 | 89.87              | 359.71         | 7,868.12               | 2,080.00              | 4.64                | 0.13                   | 2,080.01                   |
| 9,811.00                 | 89.25              | 1.21           | 7,868.85               | 2,174.99              | 5.40                | 0.14                   | 2,175.00                   |
| 9,900.00                 | 89.69              | 0.33           | 7,869.67               | 2,263.98              | 6.60                | 0.17                   | 2,263.99                   |
| 9,995.00                 | 89.34              | 3.67           | 7,870.47               | 2,358.91              | 9.91                | 0.24                   | 2,358.93                   |
| 10,089.00                | 90.22              | 6.92           | 7,870.83               | 2,452.49              | 18.59               | 0.43                   | 2,452.56                   |
| 10,184.00                | 88.02              | 4.28           | 7,872.29               | 2,547.01              | 27.86               | 0.63                   | 2,547.17                   |
| 10,279.00                | 89.16              | 2.44           | 7,874.63               | 2,641.82              | 33.42               | 0.72                   | 2,642.03                   |
| 10,373.00                | 90.48              | 1.03           | 7,874.93               | 2,735.77              | 36.27               | 0.76                   | 2,736.01                   |
| 10,469.00                | 90.13              | 358.74         | 7,874.42               | 2,831.76              | 36.07               | 0.73                   | 2,831.99                   |
| 10,562.00                | 90.04              | 2.96           | 7,874.28               | 2,924.73              | 37.45               | 0.73                   | 2,924.97                   |
| 10,656.00                | 89.25              | 2.52           | 7,874.86               | 3,018.62              | 41.95               | 0.80                   | 3,018.91                   |
| 10,751.00                | 89.69              | 2.00           | 7,875.74               | 3,113.54              | 45.69               | 0.84                   | 3,113.87                   |
| 10,845.00                | 89.87              | 2.35           | 7,876.10               | 3,207.47              | 49.26               | 0.88                   | 3,207.85                   |
| 10,940.00                | 89.69              | 2.79           | 7,876.46               | 3,302.37              | 53.52               | 0.93                   | 3,302.81                   |
| 11,035.00                | 89.69              | 2.79           | 7,876.98               | 3,397.26              | 58.14               | 0.98                   | 3,397.76                   |
| 11,129.00                | 89.87              | 2.52           | 7,877.34               | 3,491.16              | 62.50               | 1.03                   | 3,491.72                   |

|                  |                              |                                     |                                |
|------------------|------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>  | EOG Resources                | <b>Local Co-ordinate Reference:</b> | Well #2808H                    |
| <b>Project:</b>  | Reagan County, TX (NAD27 TC) | <b>TVD Reference:</b>               | RF @ 2696.00usft (Cactus #103) |
| <b>Site:</b>     | University 09                | <b>MD Reference:</b>                | RF @ 2696.00usft (Cactus #103) |
| <b>Well:</b>     | #2808H                       | <b>North Reference:</b>             | Grid                           |
| <b>Wellbore:</b> | OH - Job #32H09121193        | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Design:</b>   | OH                           | <b>Database:</b>                    | EDM-Regulatory                 |

| Survey                   |                    |                |                        |                       |                     |                        |                            |
|--------------------------|--------------------|----------------|------------------------|-----------------------|---------------------|------------------------|----------------------------|
| Measured Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | True Vertical<br>Depth | North/South<br>(usft) | East/West<br>(usft) | Closure Azimuth<br>(°) | Closure Distance<br>(usft) |
| 11,224.00                | 89.87              | 2.09           | 7,877.56               | 3,586.08              | 66.32               | 1.06                   | 3,586.69                   |
| 11,318.00                | 89.25              | 0.59           | 7,878.28               | 3,680.05              | 68.52               | 1.07                   | 3,680.69                   |
| 11,412.00                | 89.78              | 359.36         | 7,879.07               | 3,774.04              | 68.48               | 1.04                   | 3,774.66                   |
| 11,602.00                | 89.87              | 358.74         | 7,879.65               | 3,964.02              | 65.33               | 0.94                   | 3,964.55                   |
| 11,696.00                | 89.60              | 358.92         | 7,880.09               | 4,058.00              | 63.41               | 0.90                   | 4,058.49                   |
| 11,791.00                | 89.69              | 0.06           | 7,880.68               | 4,152.99              | 62.56               | 0.86                   | 4,153.46                   |
| 11,886.00                | 89.60              | 0.15           | 7,881.27               | 4,247.99              | 62.74               | 0.85                   | 4,248.45                   |
| 11,981.00                | 89.69              | 359.80         | 7,881.85               | 4,342.98              | 62.69               | 0.83                   | 4,343.44                   |
| 12,075.00                | 89.69              | 359.98         | 7,882.36               | 4,436.98              | 62.51               | 0.81                   | 4,437.42                   |
| 12,171.00                | 89.69              | 1.12           | 7,882.88               | 4,532.97              | 63.43               | 0.80                   | 4,533.42                   |
| 12,265.00                | 89.96              | 1.29           | 7,883.17               | 4,626.95              | 65.41               | 0.81                   | 4,627.42                   |
| 12,360.00                | 89.52              | 0.59           | 7,883.60               | 4,721.94              | 66.97               | 0.81                   | 4,722.41                   |
| 12,504.00                | 89.96              | 0.33           | 7,884.25               | 4,865.93              | 68.13               | 0.80                   | 4,866.41                   |
| 12,549.00                | 89.52              | 0.50           | 7,884.46               | 4,910.93              | 68.45               | 0.80                   | 4,911.41                   |
| 12,644.00                | 90.04              | 0.77           | 7,884.82               | 5,005.92              | 69.50               | 0.80                   | 5,006.41                   |
| 12,739.00                | 89.60              | 0.06           | 7,885.12               | 5,100.92              | 70.19               | 0.79                   | 5,101.40                   |
| 12,834.00                | 89.96              | 0.15           | 7,885.49               | 5,195.92              | 70.37               | 0.78                   | 5,196.40                   |
| 12,928.00                | 89.52              | 0.68           | 7,885.91               | 5,289.91              | 71.05               | 0.77                   | 5,290.39                   |
| 13,023.00                | 90.22              | 0.33           | 7,886.13               | 5,384.91              | 71.89               | 0.76                   | 5,385.39                   |
| 13,118.00                | 89.43              | 359.62         | 7,886.42               | 5,479.91              | 71.84               | 0.75                   | 5,480.38                   |
| 13,213.00                | 89.96              | 359.36         | 7,886.92               | 5,574.90              | 71.00               | 0.73                   | 5,575.35                   |
| 13,307.00                | 89.26              | 1.17           | 7,887.56               | 5,668.90              | 71.43               | 0.72                   | 5,669.35                   |
| 13,402.00                | 90.75              | 3.75           | 7,887.56               | 5,763.80              | 75.51               | 0.75                   | 5,764.29                   |
| 13,496.00                | 89.08              | 358.83         | 7,887.69               | 5,857.74              | 77.63               | 0.76                   | 5,858.26                   |
| 13,591.00                | 90.31              | 358.31         | 7,888.20               | 5,952.71              | 75.25               | 0.72                   | 5,953.18                   |
| 13,685.00                | 89.25              | 356.55         | 7,888.56               | 6,046.61              | 71.04               | 0.67                   | 6,047.02                   |
| 13,779.00                | 89.69              | 358.92         | 7,889.43               | 6,140.52              | 67.33               | 0.63                   | 6,140.89                   |
| 13,874.00                | 89.52              | 359.54         | 7,890.09               | 6,235.51              | 66.05               | 0.61                   | 6,235.86                   |
| 13,969.00                | 90.13              | 1.12           | 7,890.38               | 6,330.51              | 66.60               | 0.60                   | 6,330.86                   |
| 14,063.00                | 90.04              | 2.17           | 7,890.24               | 6,424.47              | 69.29               | 0.62                   | 6,424.84                   |
| 14,158.00                | 90.13              | 1.82           | 7,890.10               | 6,519.41              | 72.60               | 0.64                   | 6,519.81                   |
| 14,253.00                | 90.04              | 0.85           | 7,889.95               | 6,614.38              | 74.82               | 0.65                   | 6,614.80                   |
| 14,347.00                | 89.60              | 0.59           | 7,890.25               | 6,708.37              | 76.00               | 0.65                   | 6,708.80                   |
| 14,442.00                | 90.04              | 359.98         | 7,890.55               | 6,803.37              | 76.47               | 0.64                   | 6,803.80                   |
| 14,537.00                | 89.60              | 2.70           | 7,890.85               | 6,898.34              | 78.69               | 0.65                   | 6,898.78                   |
| 14,631.00                | 89.69              | 2.96           | 7,891.43               | 6,992.22              | 83.33               | 0.68                   | 6,992.72                   |
| 14,727.00                | 90.31              | 2.26           | 7,891.43               | 7,088.12              | 87.70               | 0.71                   | 7,088.66                   |
| 14,821.00                | 89.52              | 1.38           | 7,891.57               | 7,182.07              | 90.69               | 0.72                   | 7,182.64                   |
| 14,916.00                | 89.78              | 2.61           | 7,892.15               | 7,277.01              | 94.00               | 0.74                   | 7,277.61                   |
| 15,010.00                | 89.78              | 2.61           | 7,892.51               | 7,370.91              | 98.28               | 0.76                   | 7,371.56                   |
| 15,105.00                | 89.87              | 2.70           | 7,892.80               | 7,465.81              | 102.68              | 0.79                   | 7,466.51                   |
| 15,200.00                | 89.87              | 2.52           | 7,893.02               | 7,560.71              | 107.00              | 0.81                   | 7,561.47                   |
| 15,294.00                | 89.69              | 2.52           | 7,893.38               | 7,654.62              | 111.14              | 0.83                   | 7,655.42                   |
| 15,389.00                | 89.87              | 1.65           | 7,893.74               | 7,749.55              | 114.59              | 0.85                   | 7,750.40                   |

|                  |                              |                                     |                                |
|------------------|------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>  | EOG Resources                | <b>Local Co-ordinate Reference:</b> | Well #2808H                    |
| <b>Project:</b>  | Reagan County, TX (NAD27 TC) | <b>TVD Reference:</b>               | RF @ 2696.00usft (Cactus #103) |
| <b>Site:</b>     | University 09                | <b>MD Reference:</b>                | RF @ 2696.00usft (Cactus #103) |
| <b>Well:</b>     | #2808H                       | <b>North Reference:</b>             | Grid                           |
| <b>Wellbore:</b> | OH - Job #32H09121193        | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Design:</b>   | OH                           | <b>Database:</b>                    | EDM-Regulatory                 |

#### Survey

| Measured Depth<br>(usft)   | Inclination<br>(°) | Azimuth<br>(°) | True Vertical<br>Depth | North/South<br>(usft) | East/West<br>(usft) | Closure Azimuth<br>(°) | Closure Distance<br>(usft) |
|--|--------------------|----------------|------------------------|-----------------------|---------------------|------------------------|----------------------------|
| 15,484.00  | 89.69              | 1.03           | 7,894.11               | 7,844.52              | 116.81              | 0.85                   | 7,845.39                   |
| <b>Last MWD Survey</b>   |                    |                |                        |                       |                     |                        |                            |
| 15,517.50  | 89.78              | 1.03           | 7,894.26               | 7,878.02              | 117.42              | 0.85                   | 7,878.89                   |
| <b>15517.50 MD Projected Intersection 100' FNL - PBHL-Univ 09 #2808H</b> |                    |                |                        |                       |                     |                        |                            |
| 15,552.00  | 89.88              | 1.03           | 7,894.36               | 7,912.51              | 118.04              | 0.85                   | 7,913.39                   |
| <b>Projection to Bit</b>   |                    |                |                        |                       |                     |                        |                            |

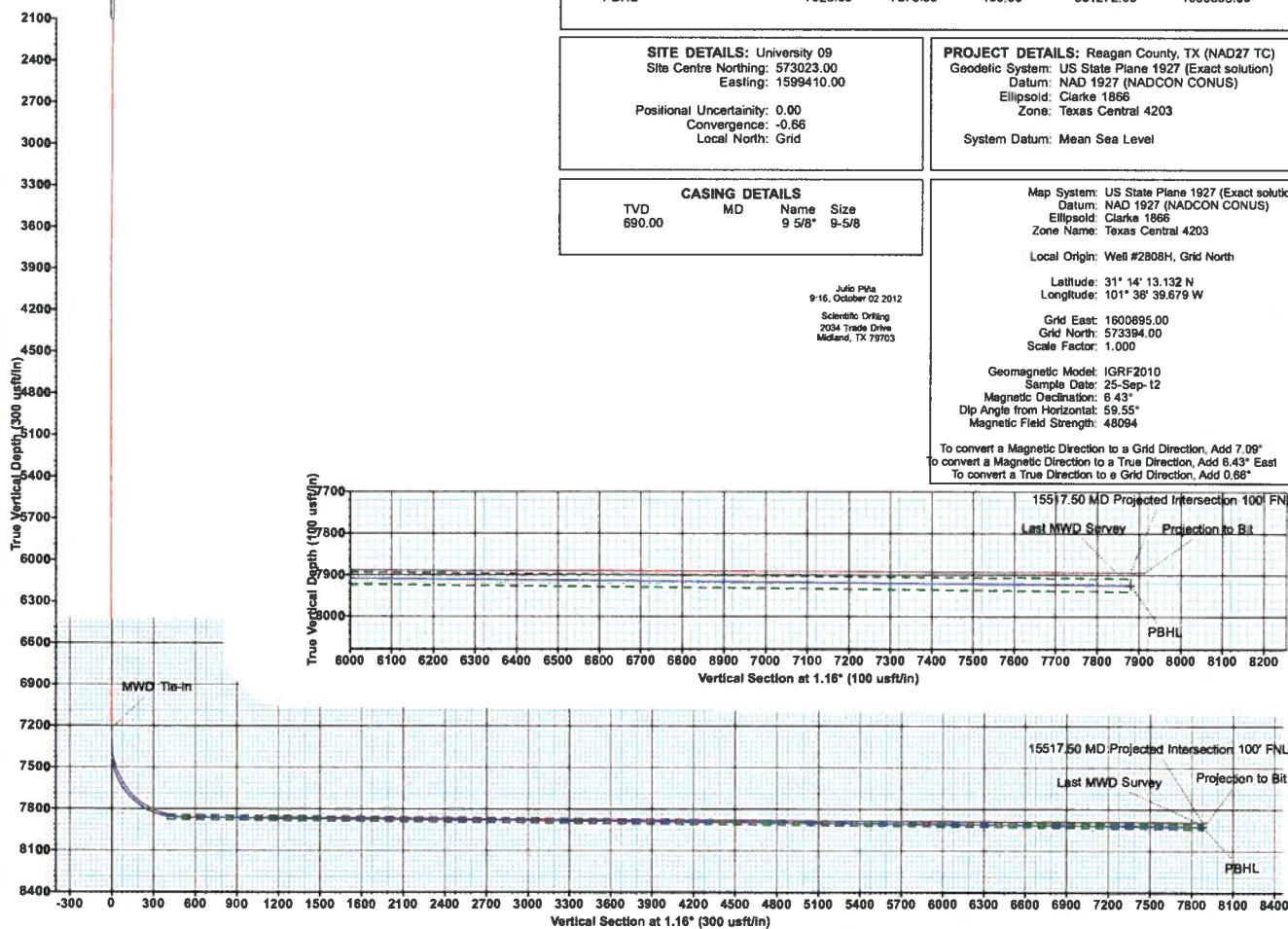
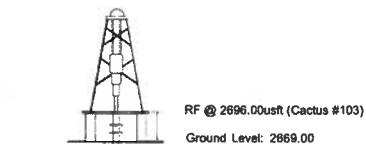
#### Survey Annotations

| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 | Comment                                     |
|-----------------------------|-----------------------------|-------------------|-----------------|---|
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) |   |
| 795.00                      | 794.96                      | 5.65              | -4.08           | First MWD Survey                            |
| 15,484.00                   | 7,894.11                    | 7,844.52          | 116.81          | Last MWD Survey                             |
| 15,517.50                   | 7,894.26                    | 7,878.02          | 117.42          | 15517.50 MD Projected Intersection 100' FNL |
| 15,552.00                   | 7,894.36                    | 7,912.51          | 118.04          | Projection to Bit                           |

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



University 09 #2808H  
Reagan County, TX (NAD27 TC)  
Northing: (Y) 573394.00  
Easting: (X) 1600695.00  
Plan #2 vs Actual - 8-3/4" Hole



| WELL DETAILS: |       |               |            |                  |                   |  |  |  |  |
|---------------|-------|---------------|------------|------------------|-------------------|--|--|--|--|
|               |       | Ground Level: |            | 2669.00          |                   |  |  |  |  |
| +N/-S         | +E/-W | Northing      | Easting    | Latitude         | Longitude         |  |  |  |  |
| 0.00          | 0.00  | 573394.00     | 1600695.00 | 31° 14' 13.132 N | 101° 36' 39.679 W |  |  |  |  |

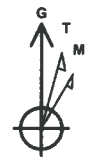
| SECTION DETAILS |       |       |         |         |        |       |        |         |        |
|-----------------|-------|-------|---------|---------|--------|-------|--------|---------|--------|
| MD              | Inc   | Azi   | TVD     | +N/-S   | +E/-W  | Dieg  | TFace  | VSect   | Target |
| 7221.00         | 0.26  | 54.82 | 7220.29 | -0.54   | -63.34 | 0.00  | 0.00   | -1.83   |        |
| 7382.00         | 0.26  | 54.82 | 7381.29 | -0.12   | -62.75 | 0.00  | 0.00   | -1.39   |        |
| 8130.64         | 89.50 | 7.30  | 7660.00 | 471.83  | -0.69  | 11.93 | -47.52 | 471.72  |        |
| 8335.36         | 89.50 | 1.16  | 7861.79 | 675.69  | 14.40  | 3.00  | -90.05 | 676.04  |        |
| 15539.22        | 89.50 | 1.16  | 7925.00 | 7878.00 | 160.00 | 0.00  | 0.00   | 7879.62 | PBHL   |

| DESIGN TARGET DETAILS |         |         |        |           |            |
|-----------------------|---------|---------|--------|-----------|------------|
| Name                  | TVD     | +N/-S   | +E/-W  | Northing  | Easting    |
| PBHL                  | 7925.00 | 7878.00 | 160.00 | 561272.00 | 1600855.00 |

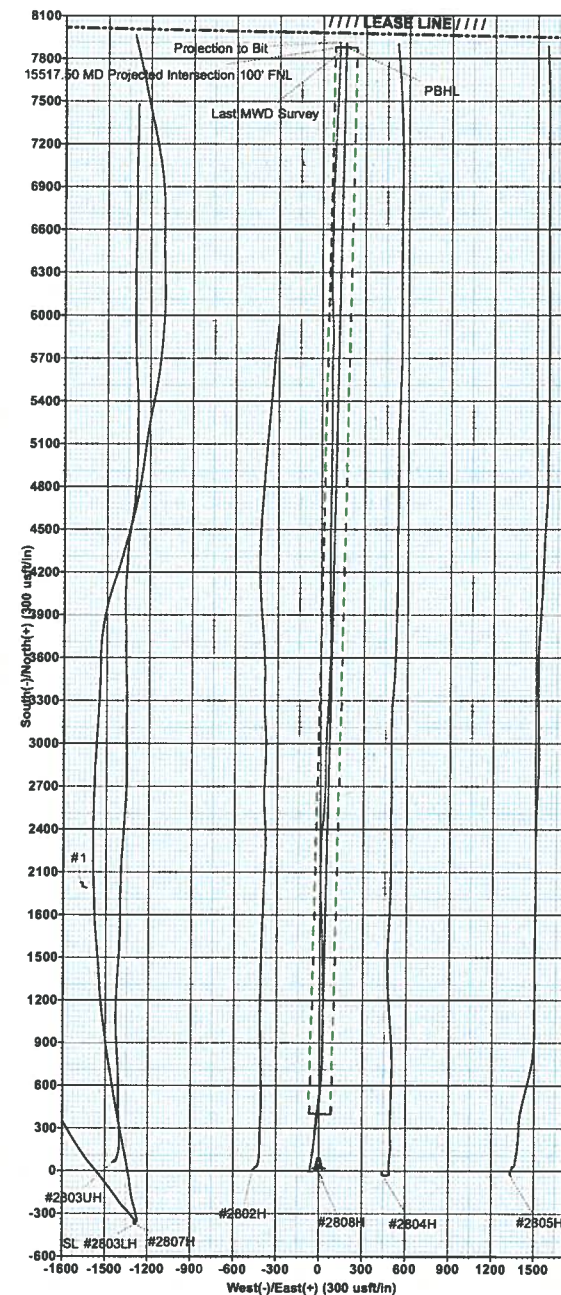
|  |  |   |  |
|--|--|---|--|
| <b>SITE DETAILS:</b> University 09<br>Site Centre Northing: 573023.00<br>Easting: 1599410.00 |  | <b>PROJECT DETAILS:</b> Reagan County, TX (NAD27 TC)<br>Geodetic System: US State Plane 1927 (Exact solution)<br>Datum: NAD 1927 (NADCON CONUS)<br>Ellipsoid: Clarke 1866<br>Zone: Texas Central 4203<br><br>System Datum: Mean Sea Level |  |
| Positional Uncertainty: 0.00<br>Convergence: -0.66<br>Local North: Grid                      |  |   |  |

| CASING DETAILS |    |        |       |
|----------------|----|--------|-------|
| TVD            | MD | Name   | Size  |
| 690.00         |    | 9 5/8" | 9-5/8 |

|  |  |  |  |
|--|--|--|--|
| Julio Pita<br>9-16, October 02 2012                          |  | Map System: US State Plane 1927 (Exact solution)<br>Datum: NAD 1927 (NADCON CONUS)<br>Ellipsoid: Clarke 1866<br>Zone Name: Texas Central 4203<br><br>Local Origin: Well #2808H, Grid North<br><br>Latitude: 31° 14' 13.132 N<br>Longitude: 101° 38' 39.679 W<br><br>Grid East: 1600695.00<br>Grid North: 573394.00<br>Scale Factor: 1.000<br><br>Geomagnetic Model: IGRF2010<br>Sample Date: 25-Sep-12<br>Magnetic Declination: 6.43°<br>Dip Angle from Horizontal: 59.55°<br>Magnetic Field Strength: 48094 |  |
| Scientific Drilling<br>2034 Trade Drive<br>Midland, TX 79703 |  | To convert a Magnetic Direction to a Grid Direction, Add 7.09°<br>To convert a Magnetic Direction to a True Direction, Add 6.43° East<br>To convert a True Direction to a Grid Direction, Add 0.68°  |  |



Azimuths to Grid North  
True North: 0.66°  
Magnetic North: 7.09°  
Magnetic Field  
Strength: 48093.8nT  
Dip Angle: 59.55°  
Date: 9/25/2012  
Model: IGRF2010  
To convert a Magnetic Direction to a Grid Direction, Add 7.09°  
To convert a True Direction to a Grid Direction, Add 0.66°







LEASE NAME & WELL NO.:  
**UNIVERSITY 09 #2808H**

TOPOGRAPHY & VEGETATION:  
**NATURAL MESQUITE PASTURE**

NEAREST TOWN IN COUNTY:  
**± 4.7 MILES NORTHEAST OF TEXON, TEXAS**

DESCRIPTION:  
**SECTION 28, BLOCK 9, UNIVERSITY LAND  
REAGAN COUNTY, TEXAS**



This location has been very carefully staked on the ground according to the best official survey records, maps, and other data available to us. This plot does not in any way represent a "Boundary Survey", and does not comply with correct T.B.P.L.S. Minimum Standards of Procedures for Boundary Surveys.

**CERTIFICATION:**



*William J. Keating*  
Texas Reg. No. 5041

I, William J. Keating, a Registered Professional Land Surveyor, and an authorized agent of Topographic Land Surveyors, do hereby certify that the above described well location was surveyed and staked on the ground as shown herein. This plot is for Texas Railroad Commission permitting only.

**TOPOGRAPHIC**  
SURVEYING • MAPPING • GIS • GPS

2903 N. BIG SPRING • MIDLAND, TEXAS 79705  
TELEPHONE: (432) 682-1653 • (800) 767-1653 • FAX: (432) 682-1743

**Surface Hole Location:**

2650' FNL & 2380' FWL  
SHL Ground Elevation: 2669'  
X = 1600695 Y = 573394  
LAT.: N 31.2369797 LONG.: W 101.6110211  
NAD 83 TX-C ZONE  
X = 1897163 Y = 10415970  
LAT.: N 31.2371317 LONG.: W 101.6114189

**Terminus Hole Location:**

100' FNL & 2380' FWL (SEC. 21)  
X = 1600855 Y = 581272  
LAT.: N 31.2586440 LONG.: W 101.6107981  
NAD 83 TX-C ZONE  
X = 1897323 Y = 10423848  
LAT.: N 31.2587952 LONG.: W 101.6111959

**LEGEND:**

—X— Fence  
—E— Powerline  
—W— Water Line  
—\— Pipeline  
=== Lease Road

ORIGINAL DOC. SIZE: 8.5"x14"

|                      |                |
|----------------------|----------------|
| SCALE:               | 1" = 2000'     |
| DATE:                | APRIL 19, 2012 |
| COGO:                | 519-89429      |
| LO_UNIVERSITY9_2808H |                |
| DRAWN BY:            | A.C.P.         |

