



## EOG Resources, INC.

Lea County, NM

Vaca 11 Fed

#2H

OH

Survey: MWD #1

## Standard Survey Report

04 May, 2014

HOBBS OGD

OCT 14 2014

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# Wellplanning Survey Report

|           |                     |                              |                                        |
|-----------|---------------------|------------------------------|----------------------------------------|
| Company:  | EOG Resources, INC. | Local Co-ordinate Reference: | Well #2H                               |
| Project:  | Lea County, NM      | TVD Reference:               | WELL @ 3393.0usft (Original Well Elev) |
| Site:     | Vaca 11 Fed         | MD Reference:                | WELL @ 3393.0usft (Original Well Elev) |
| Well:     | #2H                 | North Reference:             | Grid                                   |
| Wellbore: | OH                  | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | OH                  | Database:                    | EDM 5000.1 Single User Db              |

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

|                       |             |                        |                              |
|-----------------------|-------------|------------------------|------------------------------|
| Site                  | Vaca 11 Fed |                        |                              |
| Site Position:        | Northings:  | 414,888.00 usft        | Latitude: 32° 8' 17.322 N    |
| From: Map             | Easting:    | 746,178.00 usft        | Longitude: 103° 32' 16.849 W |
| Position Uncertainty: | 0.0 usft    | Slot Radius: 13-3/16 " | Grid Convergence: 0.42 °     |

|                      |          |                     |                            |
|----------------------|----------|---------------------|----------------------------|
| Well                 | #2H      |                     |                            |
| Well Position        | +N/-S    | 0.0 usft            | Northings: 414,888.00 usft |
|                      | +E/-W    | 0.0 usft            | Easting: 746,178.00 usft   |
| Position Uncertainty | 0.0 usft | Wellhead Elevation: | usft                       |
|                      |          |                     | Ground Level: 3,363.0 usft |

|           |            |             |                     |
|-----------|------------|-------------|---------------------|
| Wellbore  | OH         |             |                     |
| Magnetics | Model Name | Sample Date | Declination (°)     |
|           | IGRF2010   | 4/3/2014    | 7.22                |
|           |            |             | Dip Angle (°)       |
|           |            |             | 60.04               |
|           |            |             | Field Strength (nT) |
|           |            |             | 48,288              |

|                   |                         |               |               |
|-------------------|-------------------------|---------------|---------------|
| Design            | OH                      |               |               |
| Audit Notes:      |                         |               |               |
| Version:          | 1.0                     | Phase:        | ACTUAL        |
|                   |                         | Tie On Depth: | 0.0           |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft)  | +E/-W (usft)  |
|                   | 0.0                     | 0.0           | 0.0           |
|                   |                         |               | Direction (°) |
|                   |                         |               | 179.56        |

|                |               |                   |                |
|----------------|---------------|-------------------|----------------|
| Survey Program | Date 5/4/2014 |                   |                |
| From (usft)    | To (usft)     | Survey (Wellbore) | Tool Name      |
| 100.0          | 15,675.0      | MWD #1 (OH)       | MWD            |
|                |               |                   | Description    |
|                |               |                   | MWD - Standard |

|        |                       |                 |             |                       |              |              |                         |                         |                        |                       |
|--------|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Survey | Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|        | 0.0                   | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
|        | 100.0                 | 0.84            | 109.65      | 100.0                 | -0.2         | 0.7          | 0.3                     | 0.84                    | 0.84                   | 0.00                  |
|        | 200.0                 | 0.84            | 81.29       | 200.0                 | -0.4         | 2.1          | 0.4                     | 0.41                    | 0.00                   | -28.36                |
|        | 300.0                 | 0.65            | 85.43       | 300.0                 | -0.2         | 3.4          | 0.3                     | 0.20                    | -0.19                  | 4.14                  |
|        | 400.0                 | 0.69            | 65.50       | 400.0                 | 0.1          | 4.5          | 0.0                     | 0.24                    | 0.04                   | -19.93                |
|        | 500.0                 | 0.63            | 42.59       | 500.0                 | 0.7          | 5.4          | -0.7                    | 0.27                    | -0.06                  | -22.91                |
|        | 600.0                 | 0.67            | 39.86       | 600.0                 | 1.6          | 6.2          | -1.5                    | 0.05                    | 0.04                   | -2.73                 |
|        | 700.0                 | 0.75            | 33.24       | 700.0                 | 2.6          | 6.9          | -2.5                    | 0.11                    | 0.08                   | -6.62                 |
|        | 800.0                 | 0.58            | 23.71       | 799.9                 | 3.6          | 7.5          | -3.5                    | 0.20                    | -0.17                  | -9.53                 |
|        | 900.0                 | 0.61            | 40.00       | 899.9                 | 4.5          | 8.0          | -4.4                    | 0.17                    | 0.03                   | 16.29                 |



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| Site:     | Vaca 11 Fed         | MD Reference:                | WELL @ 3393.0usft (Original Well Elev) |
| Well:     | #2H                 | North Reference:             | Grid                                   |
| Wellbore: | OH                  | Survey Calculation Method:   | Minimum Curvature                      |
| Design:   | OH                  | Database:                    | EDM 5000.1 Single User 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) |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 1,000.0                     | 0.65               | 69.75          | 999.9                       | 5.1             | 8.9             | -5.0                          | 0.33                          | 0.04                         | 29.75                       |
| 1,100.0                     | 0.54               | 45.70          | 1,099.9                     | 5.6             | 9.8             | -5.5                          | 0.27                          | -0.11                        | -24.05                      |
| 1,183.0                     | 0.60               | 31.72          | 1,182.9                     | 6.2             | 10.3            | -6.1                          | 0.18                          | 0.07                         | -16.84                      |
| 1,324.0                     | 0.88               | 21.92          | 1,323.9                     | 7.9             | 11.1            | -7.8                          | 0.22                          | 0.20                         | -6.95                       |
| 1,513.0                     | 0.70               | 51.80          | 1,512.9                     | 9.9             | 12.5            | -9.8                          | 0.23                          | -0.10                        | 15.81                       |
| 1,702.0                     | 0.88               | 30.35          | 1,701.9                     | 11.9            | 14.2            | -11.8                         | 0.18                          | 0.10                         | -11.35                      |
| 1,891.0                     | 1.06               | 24.38          | 1,890.8                     | 14.7            | 15.6            | -14.6                         | 0.11                          | 0.10                         | -3.16                       |
| 2,081.0                     | 1.23               | 299.65         | 2,080.8                     | 17.3            | 14.6            | -17.2                         | 0.81                          | 0.09                         | -44.59                      |
| 2,269.0                     | 0.53               | 234.26         | 2,268.8                     | 17.8            | 12.1            | -17.7                         | 0.59                          | -0.37                        | -34.78                      |
| 2,459.0                     | 0.53               | 201.21         | 2,458.8                     | 16.5            | 11.1            | -16.4                         | 0.16                          | 0.00                         | -17.39                      |
| 2,649.0                     | 0.88               | 158.68         | 2,648.8                     | 14.3            | 11.3            | -14.2                         | 0.32                          | 0.18                         | -22.38                      |
| 2,839.0                     | 1.06               | 142.85         | 2,838.8                     | 11.6            | 12.9            | -11.5                         | 0.17                          | 0.09                         | -8.33                       |
| 3,030.0                     | 0.35               | 80.28          | 3,029.7                     | 10.3            | 14.5            | -10.1                         | 0.50                          | -0.37                        | -32.76                      |
| 3,219.0                     | 0.53               | 178.36         | 3,218.7                     | 9.5             | 15.1            | -9.4                          | 0.36                          | 0.10                         | 51.89                       |
| 3,409.0                     | 1.06               | 129.85         | 3,408.7                     | 7.5             | 16.5            | -7.3                          | 0.43                          | 0.28                         | -25.53                      |
| 3,599.0                     | 1.06               | 150.94         | 3,598.7                     | 4.8             | 18.7            | -4.7                          | 0.20                          | 0.00                         | 11.10                       |
| 3,788.0                     | 0.53               | 297.89         | 3,787.7                     | 3.7             | 18.8            | -3.5                          | 0.81                          | -0.28                        | 77.75                       |
| 3,978.0                     | 0.18               | 304.92         | 3,977.7                     | 4.3             | 17.7            | -4.1                          | 0.19                          | -0.18                        | 3.70                        |
| 4,167.0                     | 0.53               | 145.32         | 4,166.7                     | 3.7             | 18.0            | -3.6                          | 0.37                          | 0.19                         | -84.44                      |
| 4,356.0                     | 1.06               | 173.44         | 4,355.7                     | 1.3             | 18.7            | -1.1                          | 0.34                          | 0.28                         | 14.88                       |
| 4,547.0                     | 0.18               | 248.68         | 4,546.6                     | -0.6            | 18.6            | 0.7                           | 0.54                          | -0.46                        | 39.39                       |
| 4,736.0                     | 0.53               | 219.14         | 4,735.6                     | -1.4            | 17.8            | 1.5                           | 0.20                          | 0.19                         | -15.63                      |
| 4,926.0                     | 0.88               | 183.28         | 4,925.6                     | -3.5            | 17.1            | 3.7                           | 0.29                          | 0.18                         | -18.87                      |
| 5,096.0                     | 1.01               | 188.21         | 5,095.6                     | -6.3            | 16.9            | 6.4                           | 0.09                          | 0.08                         | 2.90                        |
| 5,286.0                     | 0.26               | 352.91         | 5,285.6                     | -7.5            | 16.6            | 7.7                           | 0.66                          | -0.39                        | 86.68                       |
| 5,476.0                     | 0.44               | 356.87         | 5,475.6                     | -6.4            | 16.5            | 6.5                           | 0.10                          | 0.09                         | 2.08                        |
| 5,667.0                     | 0.44               | 344.04         | 5,666.6                     | -4.9            | 16.2            | 5.1                           | 0.05                          | 0.00                         | -6.72                       |
| 5,857.0                     | 0.48               | 350.80         | 5,856.6                     | -3.5            | 15.9            | 3.6                           | 0.04                          | 0.02                         | 3.56                        |
| 6,046.0                     | 0.57               | 344.74         | 6,045.6                     | -1.8            | 15.5            | 1.9                           | 0.06                          | 0.05                         | -3.21                       |
| 6,236.0                     | 0.62               | 347.20         | 6,235.6                     | 0.1             | 15.1            | 0.0                           | 0.03                          | 0.03                         | 1.29                        |
| 6,426.0                     | 0.44               | 341.75         | 6,425.6                     | 1.8             | 14.6            | -1.7                          | 0.10                          | -0.09                        | -2.87                       |
| 6,616.0                     | 0.53               | 351.51         | 6,615.5                     | 3.4             | 14.2            | -3.3                          | 0.06                          | 0.05                         | 5.14                        |
| 6,806.0                     | 0.57               | 339.47         | 6,805.5                     | 5.2             | 13.8            | -5.1                          | 0.06                          | 0.02                         | -6.34                       |
| 6,996.0                     | 0.70               | 321.89         | 6,995.5                     | 7.0             | 12.7            | -6.9                          | 0.12                          | 0.07                         | -9.25                       |
| 7,187.0                     | 0.70               | 312.66         | 7,186.5                     | 8.7             | 11.2            | -8.6                          | 0.06                          | 0.00                         | -4.83                       |
| 7,377.0                     | 0.66               | 309.76         | 7,376.5                     | 10.1            | 9.5             | -10.1                         | 0.03                          | -0.02                        | -1.53                       |
| 7,567.0                     | 0.26               | 296.58         | 7,566.5                     | 11.0            | 8.2             | -11.0                         | 0.22                          | -0.21                        | -6.94                       |
| 7,757.0                     | 0.18               | 239.01         | 7,756.5                     | 11.1            | 7.6             | -11.0                         | 0.12                          | -0.04                        | -30.30                      |
| 7,947.0                     | 0.44               | 166.85         | 7,946.5                     | 10.2            | 7.5             | -10.2                         | 0.22                          | 0.14                         | -37.98                      |
| 8,137.0                     | 0.84               | 165.71         | 8,136.5                     | 8.2             | 8.0             | -8.1                          | 0.21                          | 0.21                         | -0.60                       |
| 8,327.0                     | 1.01               | 172.91         | 8,326.5                     | 5.1             | 8.6             | -5.1                          | 0.11                          | 0.09                         | 3.79                        |
| 8,517.0                     | 0.48               | 252.45         | 8,516.4                     | 3.2             | 8.0             | -3.2                          | 0.55                          | -0.28                        | 41.86                       |
| 8,707.0                     | 0.48               | 223.36         | 8,706.4                     | 2.4             | 6.7             | -2.4                          | 0.13                          | 0.00                         | -15.31                      |
| 8,896.0                     | 0.53               | 214.75         | 8,895.4                     | 1.1             | 5.7             | -1.1                          | 0.05                          | 0.03                         | -4.56                       |



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Company: EOG Resources, INC.  
Project: Lea County, NM  
Site: Vaca 11 Fed  
Well: #2H  
Wellbore: OH  
Design: OH

Local Co-ordinate Reference: Well #2H  
TVD Reference: WELL @ 3393.0usft (Original Well Elev)  
MD Reference: WELL @ 3393.0usft (Original Well Elev)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Database: EDM 5000.1 Single User 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) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 9,086.0               | 0.66            | 202.44      | 9,085.4               | -0.6         | 4.7          | 0.6                     | 0.10                    | 0.07                   | -6.48                 |
| 9,275.0               | 0.62            | 234.17      | 9,274.4               | -2.2         | 3.5          | 2.2                     | 0.19                    | -0.02                  | 16.79                 |
| 9,466.0               | 1.05            | 287.35      | 9,465.4               | -2.3         | 1.0          | 2.3                     | 0.44                    | 0.23                   | 27.84                 |
| 9,655.0               | 0.53            | 154.02      | 9,654.4               | -2.6         | -0.3         | 2.6                     | 0.78                    | -0.28                  | -70.54                |
| 9,845.0               | 0.62            | 240.76      | 9,844.4               | -3.9         | -0.8         | 3.8                     | 0.42                    | 0.05                   | 45.65                 |
| 10,035.0              | 0.35            | 332.61      | 10,034.4              | -3.8         | -2.0         | 3.8                     | 0.38                    | -0.14                  | 48.34                 |
| 10,066.0              | 0.44            | 297.72      | 10,065.4              | -3.7         | -2.1         | 3.7                     | 0.81                    | 0.29                   | -112.55               |
| 10,120.0              | 0.84            | 162.45      | 10,119.4              | -4.0         | -2.2         | 4.0                     | 2.21                    | 0.74                   | -250.50               |
| 10,152.0              | 3.12            | 173.97      | 10,151.3              | -5.1         | -2.0         | 5.1                     | 7.20                    | 7.13                   | 36.00                 |
| 10,182.7              | 5.53            | 174.74      | 10,182.0              | -7.4         | -1.8         | 7.4                     | 7.85                    | 7.84                   | 2.51                  |
| KOP(Vaca11Fed#2H)     |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,184.0              | 5.63            | 174.76      | 10,183.2              | -7.5         | -1.8         | 7.5                     | 7.85                    | 7.84                   | 1.40                  |
| 10,215.0              | 8.26            | 173.00      | 10,214.0              | -11.2        | -1.4         | 11.2                    | 8.51                    | 8.48                   | -5.68                 |
| 10,247.0              | 10.37           | 172.56      | 10,245.6              | -16.4        | -0.7         | 16.4                    | 6.60                    | 6.59                   | -1.38                 |
| 10,284.0              | 12.79           | 171.77      | 10,281.8              | -23.7        | 0.3          | 23.7                    | 6.55                    | 6.54                   | -2.14                 |
| 10,315.0              | 16.26           | 171.59      | 10,311.8              | -31.4        | 1.4          | 31.4                    | 11.19                   | 11.19                  | -0.58                 |
| 10,347.0              | 19.74           | 170.72      | 10,342.3              | -41.2        | 3.0          | 41.2                    | 10.91                   | 10.88                  | -2.72                 |
| 10,378.0              | 23.34           | 173.62      | 10,371.1              | -52.5        | 4.5          | 52.5                    | 12.11                   | 11.61                  | 9.35                  |
| 10,409.0              | 26.55           | 176.60      | 10,399.2              | -65.5        | 5.6          | 65.5                    | 11.12                   | 10.35                  | 9.61                  |
| 10,441.0              | 29.89           | 177.92      | 10,427.4              | -80.6        | 6.3          | 80.6                    | 10.62                   | 10.44                  | 4.13                  |
| 10,473.0              | 33.36           | 179.07      | 10,454.6              | -97.4        | 6.7          | 97.4                    | 11.01                   | 10.84                  | 3.59                  |
| 10,504.0              | 36.66           | 179.86      | 10,480.0              | -115.1       | 6.9          | 115.2                   | 10.74                   | 10.65                  | 2.55                  |
| 10,536.0              | 40.44           | 179.51      | 10,505.1              | -135.1       | 7.0          | 135.1                   | 11.83                   | 11.81                  | -1.09                 |
| 10,568.0              | 44.88           | 178.36      | 10,528.6              | -156.8       | 7.4          | 156.8                   | 14.09                   | 13.88                  | -3.59                 |
| 10,600.0              | 49.10           | 177.92      | 10,550.4              | -180.1       | 8.2          | 180.2                   | 13.23                   | 13.19                  | -1.38                 |
| 10,631.0              | 52.40           | 178.01      | 10,570.0              | -204.1       | 9.0          | 204.2                   | 10.65                   | 10.65                  | 0.29                  |
| 10,663.0              | 54.99           | 180.03      | 10,589.0              | -229.9       | 9.5          | 230.0                   | 9.56                    | 8.09                   | 6.31                  |
| 10,697.0              | 57.93           | 180.30      | 10,607.7              | -258.2       | 9.4          | 258.3                   | 8.67                    | 8.65                   | 0.79                  |
| 10,729.0              | 61.10           | 180.12      | 10,624.0              | -285.8       | 9.3          | 285.9                   | 9.92                    | 9.91                   | -0.56                 |
| 10,761.0              | 64.48           | 180.47      | 10,638.6              | -314.3       | 9.1          | 314.3                   | 10.61                   | 10.56                  | 1.09                  |
| 10,793.0              | 69.10           | 180.30      | 10,651.2              | -343.7       | 8.9          | 343.7                   | 14.45                   | 14.44                  | -0.53                 |
| 10,824.0              | 73.54           | 180.65      | 10,661.1              | -373.0       | 8.7          | 373.1                   | 14.36                   | 14.32                  | 1.13                  |
| 10,856.0              | 78.77           | 181.18      | 10,668.8              | -404.1       | 8.2          | 404.1                   | 16.42                   | 16.34                  | 1.66                  |
| 10,886.0              | 84.53           | 183.02      | 10,673.1              | -433.7       | 7.1          | 433.8                   | 20.14                   | 19.20                  | 6.13                  |
| 10,918.0              | 88.70           | 184.16      | 10,675.0              | -465.6       | 5.1          | 465.6                   | 13.51                   | 13.03                  | 3.56                  |
| 10,927.3              | 89.02           | 184.29      | 10,675.2              | -474.9       | 4.4          | 474.9                   | 3.70                    | 3.42                   | 1.42                  |
| EOC(Vaca11Fed#2H)     |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,949.0              | 89.76           | 184.60      | 10,675.5              | -496.5       | 2.7          | 496.5                   | 3.70                    | 3.42                   | 1.42                  |
| 10,952.8              | 89.90           | 184.55      | 10,675.5              | -500.3       | 2.4          | 500.3                   | 3.83                    | 3.61                   | -1.28                 |
| UMP(Vaca11Fed#2H)     |                 |             |                       |              |              |                         |                         |                        |                       |
| 11,045.0              | 93.23           | 183.37      | 10,672.9              | -592.2       | -3.9         | 592.2                   | 3.83                    | 3.61                   | -1.28                 |
| 11,140.0              | 91.74           | 181.79      | 10,668.8              | -687.0       | -8.2         | 687.0                   | 2.28                    | -1.57                  | -1.66                 |
| 11,236.0              | 90.73           | 179.77      | 10,666.8              | -783.0       | -9.5         | 782.9                   | 2.35                    | -1.05                  | -2.10                 |
| 11,330.0              | 91.03           | 179.15      | 10,665.3              | -877.0       | -8.6         | 876.9                   | 0.73                    | 0.32                   | -0.66                 |



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Well: #2H  
Wellbore: OH  
Design: OH

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TVD Reference:  
MD Reference:  
North Reference:  
Survey Calculation Method:  
Database:

Well #2H  
WELL @ 3393.0usft (Original Well Elev)  
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Grid  
Minimum Curvature  
EDM 5000.1 Single User 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) |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 11,425.0              | 89.98           | 179.15      | 10,664.5              | -972.0       | -7.2         | 971.9                   | 1.11                    | -1.11                  | 0.00                  |
| 11,520.0              | 88.44           | 179.15      | 10,665.8              | -1,066.9     | -5.8         | 1,066.9                 | 1.62                    | -1.62                  | 0.00                  |
| 11,615.0              | 88.92           | 179.59      | 10,668.0              | -1,161.9     | -4.8         | 1,161.8                 | 0.69                    | 0.51                   | 0.46                  |
| 11,711.0              | 89.93           | 180.12      | 10,668.9              | -1,257.9     | -4.5         | 1,257.8                 | 1.19                    | 1.05                   | 0.55                  |
| 11,805.0              | 90.99           | 180.91      | 10,668.2              | -1,351.9     | -5.4         | 1,351.8                 | 1.41                    | 1.13                   | 0.84                  |
| 11,900.0              | 89.76           | 179.42      | 10,667.6              | -1,446.9     | -5.6         | 1,446.8                 | 2.03                    | -1.29                  | -1.57                 |
| 11,995.0              | 88.75           | 178.27      | 10,668.8              | -1,541.9     | -3.7         | 1,541.8                 | 1.61                    | -1.06                  | -1.21                 |
| 12,089.0              | 89.41           | 178.89      | 10,670.3              | -1,635.8     | -1.4         | 1,635.8                 | 0.96                    | 0.70                   | 0.66                  |
| 12,184.0              | 91.03           | 178.45      | 10,669.9              | -1,730.8     | 0.8          | 1,730.7                 | 1.77                    | 1.71                   | -0.46                 |
| 12,278.0              | 88.40           | 178.63      | 10,670.4              | -1,824.7     | 3.2          | 1,824.7                 | 2.80                    | -2.80                  | 0.19                  |
| 12,373.0              | 89.01           | 178.71      | 10,672.6              | -1,919.7     | 5.4          | 1,919.7                 | 0.65                    | 0.64                   | 0.08                  |
| 12,468.0              | 89.93           | 179.24      | 10,673.4              | -2,014.7     | 7.1          | 2,014.7                 | 1.12                    | 0.97                   | 0.56                  |
| 12,563.0              | 89.41           | 179.33      | 10,674.0              | -2,109.7     | 8.3          | 2,109.7                 | 0.56                    | -0.55                  | 0.09                  |
| 12,658.0              | 89.76           | 179.42      | 10,674.7              | -2,204.7     | 9.3          | 2,204.7                 | 0.38                    | 0.37                   | 0.09                  |
| 12,753.0              | 90.15           | 179.86      | 10,674.7              | -2,299.7     | 9.9          | 2,299.7                 | 0.62                    | 0.41                   | 0.46                  |
| 12,847.0              | 91.78           | 180.56      | 10,673.2              | -2,393.6     | 9.6          | 2,393.6                 | 1.89                    | 1.73                   | 0.74                  |
| 12,942.0              | 89.58           | 179.59      | 10,672.0              | -2,488.6     | 9.5          | 2,488.6                 | 2.53                    | -2.32                  | -1.02                 |
| 13,037.0              | 88.48           | 179.33      | 10,673.6              | -2,583.6     | 10.4         | 2,583.6                 | 1.19                    | -1.16                  | -0.27                 |
| 13,132.0              | 89.05           | 179.68      | 10,675.7              | -2,678.6     | 11.2         | 2,678.6                 | 0.70                    | 0.60                   | 0.37                  |
| 13,227.0              | 89.93           | 179.51      | 10,676.5              | -2,773.6     | 11.8         | 2,773.6                 | 0.94                    | 0.93                   | -0.18                 |
| 13,321.0              | 89.89           | 179.33      | 10,676.7              | -2,867.6     | 12.8         | 2,867.6                 | 0.20                    | -0.04                  | -0.19                 |
| 13,416.0              | 89.19           | 179.24      | 10,677.4              | -2,962.6     | 14.0         | 2,962.6                 | 0.74                    | -0.74                  | -0.09                 |
| 13,511.0              | 89.58           | 178.89      | 10,678.5              | -3,057.5     | 15.5         | 3,057.6                 | 0.55                    | 0.41                   | -0.37                 |
| 13,606.0              | 89.85           | 178.71      | 10,678.9              | -3,152.5     | 17.5         | 3,152.6                 | 0.34                    | 0.28                   | -0.19                 |
| 13,702.0              | 89.36           | 178.36      | 10,679.6              | -3,248.5     | 20.0         | 3,248.5                 | 0.63                    | -0.51                  | -0.36                 |
| 13,797.0              | 89.85           | 178.54      | 10,680.3              | -3,343.4     | 22.5         | 3,343.5                 | 0.55                    | 0.52                   | 0.19                  |
| 13,892.0              | 88.09           | 178.27      | 10,682.0              | -3,438.4     | 25.2         | 3,438.5                 | 1.87                    | -1.85                  | -0.28                 |
| 13,987.0              | 88.26           | 178.01      | 10,685.0              | -3,533.3     | 28.3         | 3,533.4                 | 0.33                    | 0.18                   | -0.27                 |
| 14,082.0              | 88.75           | 177.75      | 10,687.5              | -3,628.2     | 31.8         | 3,628.3                 | 0.58                    | 0.52                   | -0.27                 |
| 14,176.0              | 90.11           | 178.19      | 10,688.4              | -3,722.1     | 35.1         | 3,722.3                 | 1.52                    | 1.45                   | 0.47                  |
| 14,272.0              | 86.77           | 177.66      | 10,691.0              | -3,818.0     | 38.6         | 3,818.2                 | 3.52                    | -3.48                  | -0.55                 |
| 14,367.0              | 87.87           | 178.10      | 10,695.5              | -3,912.8     | 42.1         | 3,913.1                 | 1.25                    | 1.16                   | 0.46                  |
| 14,461.0              | 88.62           | 178.10      | 10,698.3              | -4,006.7     | 45.2         | 4,007.0                 | 0.80                    | 0.80                   | 0.00                  |
| 14,556.0              | 87.43           | 178.63      | 10,701.6              | -4,101.6     | 47.9         | 4,101.9                 | 1.37                    | -1.25                  | 0.56                  |
| 14,651.0              | 88.09           | 178.54      | 10,705.3              | -4,196.5     | 50.3         | 4,196.8                 | 0.70                    | 0.69                   | -0.09                 |
| 14,745.0              | 89.19           | 178.45      | 10,707.6              | -4,290.5     | 52.7         | 4,290.8                 | 1.17                    | 1.17                   | -0.10                 |
| 14,840.0              | 87.82           | 179.77      | 10,710.0              | -4,385.4     | 54.2         | 4,385.7                 | 2.00                    | -1.44                  | 1.39                  |
| 14,934.0              | 87.82           | 179.94      | 10,713.6              | -4,479.4     | 54.4         | 4,479.7                 | 0.18                    | 0.00                   | 0.18                  |
| 15,028.0              | 88.48           | 179.77      | 10,716.6              | -4,573.3     | 54.7         | 4,573.6                 | 0.73                    | 0.70                   | -0.18                 |
| 15,123.0              | 88.97           | 179.77      | 10,718.8              | -4,668.3     | 55.1         | 4,668.6                 | 0.52                    | 0.52                   | 0.00                  |
| 15,217.0              | 89.36           | 179.94      | 10,720.1              | -4,762.3     | 55.3         | 4,762.6                 | 0.45                    | 0.41                   | 0.18                  |
| 15,311.0              | 89.54           | 180.21      | 10,721.0              | -4,856.3     | 55.2         | 4,856.6                 | 0.35                    | 0.19                   | 0.29                  |
| 15,406.0              | 91.30           | 180.30      | 10,720.3              | -4,951.3     | 54.8         | 4,951.5                 | 1.86                    | 1.85                   | 0.09                  |



# Wellplanning Survey Report

Company: EOG Resources, INC.  
Project: Lea County, NM  
Site: Vaca 11 Fed  
Well: #2H  
Wellbore: OH  
Design: OH

Local Co-ordinate Reference: Well #2H  
TVD Reference: WELL @ 3393.0usft (Original Well Elev)  
MD Reference: WELL @ 3393.0usft (Original Well Elev)  
North Reference: Grid  
Survey Calculation Method: Minimum Curvature  
Database: EDM 5000.1 Single User Db

## Survey

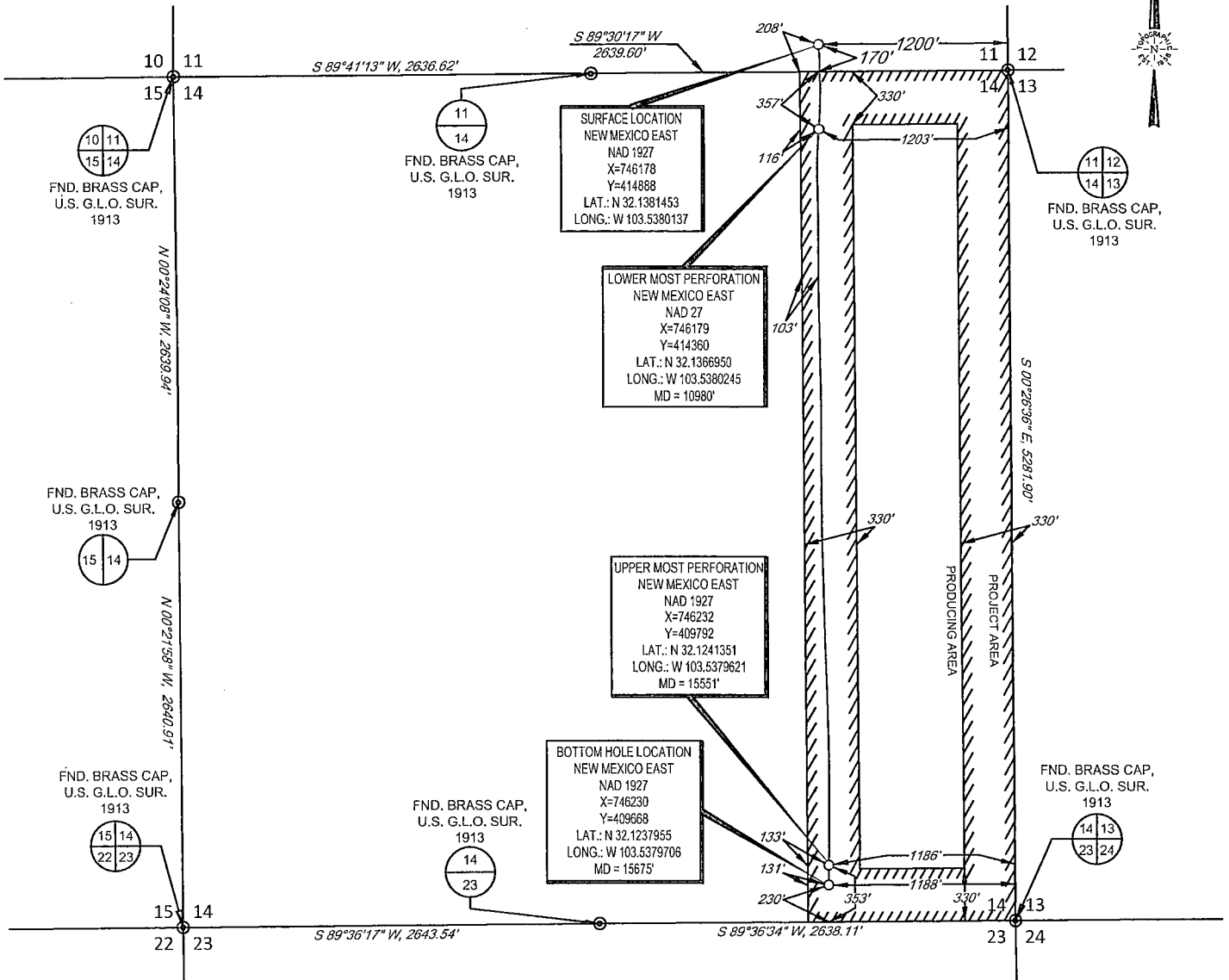
| Measured<br>Depth<br>(usft) | Inclination<br>(°) | Azimuth<br>(°) | Vertical<br>Depth<br>(usft) | +N/-S<br>(usft) | +E/-W<br>(usft) | Vertical<br>Section<br>(usft) | Dogleg<br>Rate<br>(°/100usft) | Build<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |
|-----------------------------|--------------------|----------------|-----------------------------|-----------------|-----------------|-------------------------------|-------------------------------|------------------------------|-----------------------------|
| 15,500.0                    | 91.78              | 180.47         | 10,717.8                    | -5,045.2        | 54.1            | 5,045.5                       | 0.54                          | 0.51                         | 0.18                        |
| 15,576.1                    | 92.41              | 180.61         | 10,715.0                    | -5,121.3        | 53.4            | 5,121.6                       | 0.85                          | 0.83                         | 0.19                        |
| LMP(Vaca11Fed#2H)           |                    |                |                             |                 |                 |                               |                               |                              |                             |
| 15,595.0                    | 92.57              | 180.65         | 10,714.2                    | -5,140.2        | 53.2            | 5,140.4                       | 0.85                          | 0.83                         | 0.19                        |
| 15,622.0                    | 93.05              | 181.00         | 10,712.9                    | -5,167.1        | 52.8            | 5,167.4                       | 2.20                          | 1.78                         | 1.30                        |
| 15,675.0                    | 93.05              | 181.00         | 10,710.1                    | -5,220.0        | 51.9            | 5,220.3                       | 0.00                          | 0.00                         | 0.00                        |
| PBHL(Vaca11Fed#2H)          |                    |                |                             |                 |                 |                               |                               |                              |                             |

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

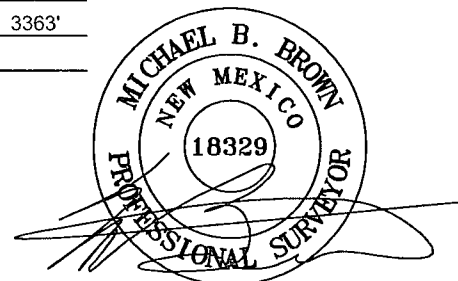
SCALE: 1" = 1000'

0' 500' 1000'

SECTION 11, TOWNSHIP 25 SOUTH, RANGE 33 EAST, N.M.P.M.  
LEA COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: VACA 11 FED #2H  
SECTION 11 TWP 25-S RGE 33-E SURVEY N.M.P.M.  
COUNTY LEA STATE NM ELEVATION 3363'  
DESCRIPTION 170' FSL & 1200' FEL



Michael Blake Brown, P.S. No. 18329  
JUNE 3, 2014



**TOPOGRAPHIC**  
LOYALTY INNOVATION LEGACY

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**eoog resources, inc.**

| VACA 11 FED #2H<br>AS-COMPLETED | REVISION: |      |
|---------------------------------|-----------|------|
|                                 | INT       | DATE |
| DATE: 06/03/14                  |           |      |
| FILE: AD_VACA11FED_2H           |           |      |
| DRAWN BY: G.O.                  |           |      |
| SHEET: 1 OF 1                   |           |      |

NOTES:

1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 19 27.
3. CERTIFICATION IS MADE ONLY TO THE LOCATION OF THIS EASEMENT, IN RELATION TO THE EVIDENCE FOUND DURING A FIELD SURVEY. MADE ON THE GROUND, UNDER MY SUPERVISION, AND USING DOCUMENTATION PROVIDED BY EOG RESOURCES, INC. ONLY UTILITIES/EASEMENTS THAT WERE VISIBLE ON THE DATE OF THIS SURVEY, WITHIN/ADJOINING THIS EASEMENT, HAVE BEEN LOCATED AS SHOWN HEREON OF WHICH I HAVE KNOWLEDGE. THIS CERTIFICATION IS LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAN AND IS NON-TRANSFERABLE, AND MADE FOR THIS TRANSACTION ONLY.
4. B.O.L./P.O.B. = BEGINNING OF LINE/POINT OF BEGINNING
5. E.O.L./P.O.E. = END OF LINE/POINT OF EXIT