

HOBBS OCD

JAN 17 2019

RECEIVED



Lea County, NM (NAD 83 NME)

Gem 36 State Com #502H

Plan #0.1



Azimuths to Grid North  
True North: -0.38°  
Magnetic North: 6.42°

Magnetic Field  
Strength: 47892.3nT  
Dip Angle: 58.91°  
Date: 1/15/2018  
Model: IGRF2015

To convert a Magnetic Direction to a Grid Direction, Add 6.42°  
To convert a Magnetic Direction to a True Direction, Add 6.80° East  
To convert a True Direction to a Grid Direction, Subtract 6.38°

PROJECT DETAILS: Lea County, NM (NAD 83 NME)

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: New Mexico Eastern Zone  
System Datum: Mean Sea Level

WELL DETAILS: #502H

KB = 25 @ 3451.0usft 3426.0  
Northing 398167.00 Easting 781060.00 Latitude 32° 5' 33.553 N Longitude 103° 37' 25.742 W

SECTION DETAILS

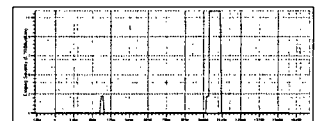
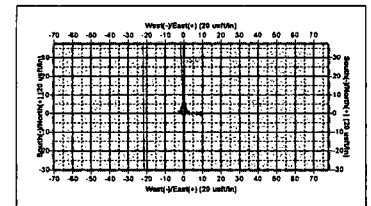
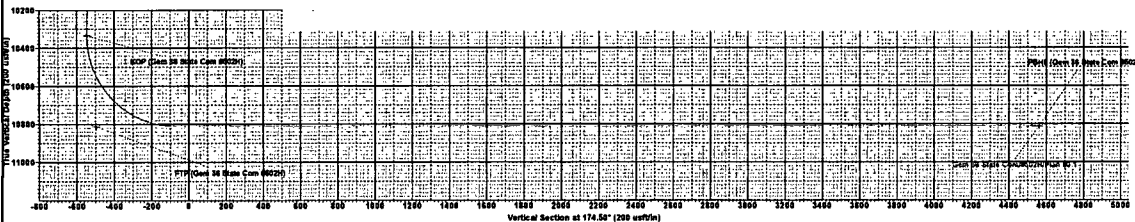
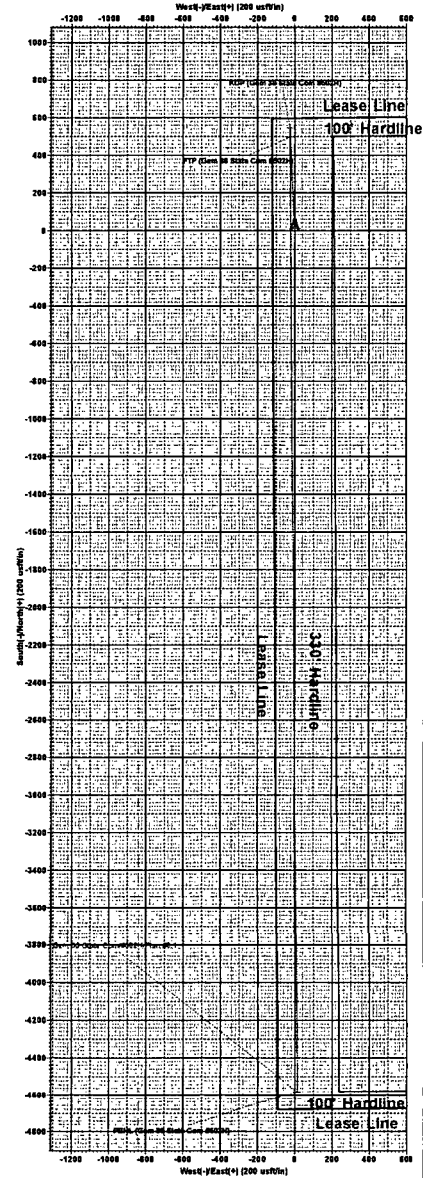
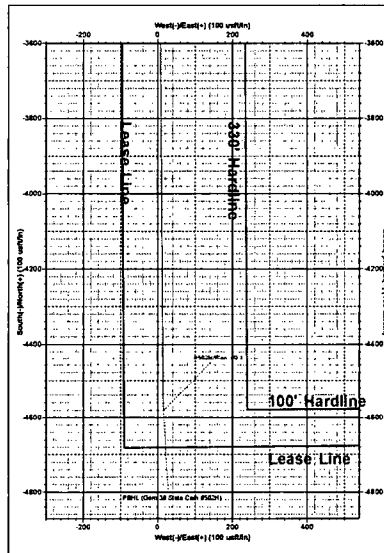
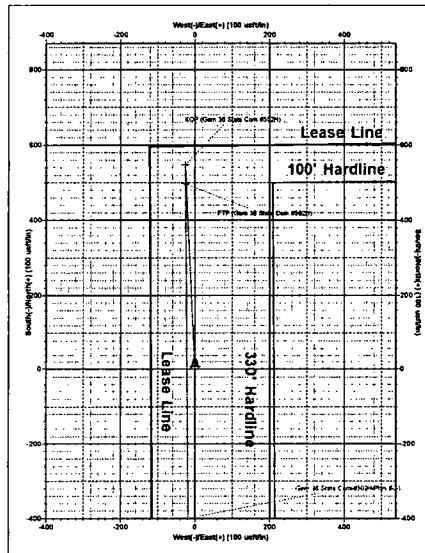
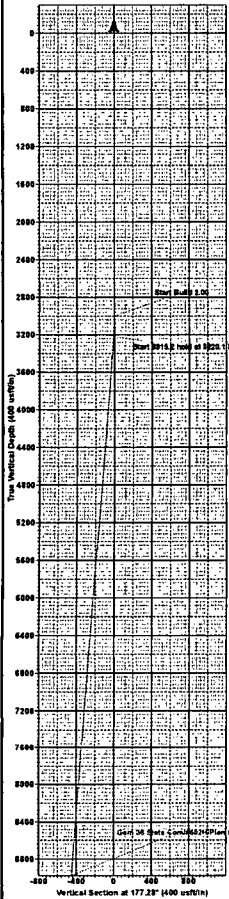
| Sec | MD      | Inc   | Azi    | TVD     | +W-S    | +E-W  | Dleg  | TFace  | Vsect  | Target | Annotation                    |
|-----|---------|-------|--------|---------|---------|-------|-------|--------|--------|--------|-------------------------------|
| 1   | 0.0     | 0.00  | 0.00   | 0.0     | 0.0     | 0.0   | 0.00  | 0.00   | 0.0    |        |                               |
| 2   | 3000.0  | 0.00  | 0.00   | 3000.0  | 0.0     | 0.0   | 0.00  | 0.00   | 0.0    |        |                               |
| 3   | 3220.1  | 4.40  | 357.28 | 3219.9  | 9.4     | -0.4  | 2.00  | 357.28 | -9.4   |        |                               |
| 4   | 10135.2 | 4.40  | 357.28 | 10114.6 | 538.6   | -26.8 | 0.00  | 0.00   | -538.6 |        |                               |
| 6   | 10355.3 | 0.00  | 0.00   | 10334.5 | 547.0   | -26.0 | 2.00  | 180.00 | -547.0 |        | KOP (Gem 36 State Com #502H)  |
| 6   | 11105.3 | 80.00 | 178.54 | 10812.0 | 59.6    | -22.2 | 12.00 | 178.54 | -71.4  |        | PBHL (Gem 36 State Com #502H) |
| 7   | 18756.0 | 80.00 | 178.54 | 10812.0 | -4581.0 | 18.0  | 0.00  | 0.00   | 4581.4 |        |                               |

CASING DETAILS

No casing data is available

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

| Name                          | TVD     | +W-S    | +E-W  | Northing  | Easting   |
|-------------------------------|---------|---------|-------|-----------|-----------|
| KOP (Gem 36 State Com #502H)  | 10334.5 | 547.0   | -26.0 | 398167.00 | 781034.00 |
| PBHL (Gem 36 State Com #502H) | 10812.0 | -4581.0 | 18.0  | 393586.00 | 781076.00 |
| FTP (Gem 36 State Com #502H)  | 10812.0 | 487.0   | -26.0 | 398664.00 | 781034.00 |



Lea County, NM (NAD 83 NME)  
Gem 36 State Com #502H  
Plan #0.1  
1/15/2018



## **EOG Resources - Midland**

**Lea County, NM (NAD 83 NME)**

**Gem 36 State Com**

**#502H**

**OH**

**Plan: Plan #0.1**

## **Standard Planning Report**

**15 January, 2019**

|           |                             |                              |                      |
|-----------|-----------------------------|------------------------------|----------------------|
| Database: | EDM 5000.14                 | Local Co-ordinate Reference: | Well #502H           |
| Company:  | EOG Resources - Midland     | TVD Reference:               | KB = 25 @ 3451.0usft |
| Project:  | Lea County, NM (NAD 83 NME) | MD Reference:                | KB = 25 @ 3451.0usft |
| Site:     | Gem 36 State Com            | North Reference:             | Grid                 |
| Well:     | #502H                       | Survey Calculation Method:   | Minimum Curvature    |
| Wellbore: | OH                          |                              |                      |
| Design:   | Plan #0.1                   |                              |                      |

|             |                             |               |                |
|-------------|-----------------------------|---------------|----------------|
| Project     | Lea County, NM (NAD 83 NME) |               |                |
| Map System: | US State Plane 1983         | System Datum: | Mean Sea Level |
| Geo Datum:  | North American Datum 1983   |               |                |
| Map Zone:   | New Mexico Eastern Zone     |               |                |

|                       |                  |              |                 |                              |
|-----------------------|------------------|--------------|-----------------|------------------------------|
| Site                  | Gem 36 State Com |              |                 |                              |
| Site Position:        |                  | Northing:    | 393,686.00 usft | Latitude: 32° 4' 49.331 N    |
| From:                 | Map              | Easting:     | 759,213.00 usft | Longitude: 103° 37' 47.552 W |
| Position Uncertainty: | 0.0 usft         | Slot Radius: | 13-3/16"        | Grid Convergence: 0.37°      |

|                      |          |                     |                            |                 |
|----------------------|----------|---------------------|----------------------------|-----------------|
| Well                 | #502H    |                     |                            |                 |
| Well Position        | +N/-S    | 4,481.0 usft        | Northing:                  | 398,167.00 usft |
|                      | +E/-W    | 1,847.0 usft        | Easting:                   | 761,060.00 usft |
| Position Uncertainty | 0.0 usft | Wellhead Elevation: | Ground Level: 3,426.0 usft |                 |

|           |            |             |                 |               |                     |
|-----------|------------|-------------|-----------------|---------------|---------------------|
| Wellbore  | OH         |             |                 |               |                     |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|           | IGRF2015   | 1/15/2019   | 6.80            | 59.91         | 47,692.29858020     |

|                   |                  |              |               |               |
|-------------------|------------------|--------------|---------------|---------------|
| Design            | Plan #0.1        |              |               |               |
| Audit Notes:      |                  |              |               |               |
| Version:          | Phase:           | PROTOTYPE    | Tie On Depth: | 0.0           |
| Vertical Section: | Depth From (TVD) | +N/-S (usft) | +E/-W (usft)  | Direction (°) |
|                   | 0.0              | 0.0          | 0.0           | 174.50        |

|                          |                 |                         |                     |         |
|--------------------------|-----------------|-------------------------|---------------------|---------|
| Plan Survey Tool Program | Date 1/15/2019  |                         |                     |         |
| Depth From (usft)        | Depth To (usft) | Survey (Wellbore)       | Tool Name           | Remarks |
| 1                        | 0.0             | 15,756.0 Plan #0.1 (OH) | MWD                 |         |
|                          |                 |                         | OWSG MWD - Standard |         |

|                       |                 |             |                       |              |              |                         |                        |                       |         |                     |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|------------------------|-----------------------|---------|---------------------|
| Plan Sections         |                 |             |                       |              |              |                         |                        |                       |         |                     |
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | TFO (°) | Target              |
| 0.0                   | 0.00            | 0.00        | 0.0                   | 0.0          | 0.0          | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 3,000.0               | 0.00            | 0.00        | 3,000.0               | 0.0          | 0.0          | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 3,220.1               | 4.40            | 357.28      | 3,219.9               | 8.4          | -0.4         | 2.00                    | 2.00                   | 0.00                  | 357.28  |                     |
| 10,135.2              | 4.40            | 357.28      | 10,114.6              | 538.6        | -25.6        | 0.00                    | 0.00                   | 0.00                  | 0.00    |                     |
| 10,355.3              | 0.00            | 0.00        | 10,334.5              | 547.0        | -26.0        | 2.00                    | -2.00                  | 0.00                  | 180.00  | KOP (Gem 36 State C |
| 11,105.3              | 90.00           | 179.54      | 10,812.0              | 69.6         | -22.2        | 12.00                   | 12.00                  | 23.94                 | 179.54  |                     |
| 15,756.0              | 90.00           | 179.54      | 10,812.0              | -4,581.0     | 15.0         | 0.00                    | 0.00                   | 0.00                  | 0.00    | PBHL (Gem 36 State  |

|                  |                             |                                     |                      |
|------------------|-----------------------------|-------------------------------------|----------------------|
| <b>Database:</b> | EDM 5000.14                 | <b>Local Co-ordinate Reference:</b> | Well #502H           |
| <b>Company:</b>  | EOG Resources - Midland     | <b>TVD Reference:</b>               | KB = 25 @ 3451.0usft |
| <b>Project:</b>  | Lea County, NM (NAD 83 NME) | <b>MD Reference:</b>                | KB = 25 @ 3451.0usft |
| <b>Site:</b>     | Gem 36 State Com            | <b>North Reference:</b>             | Grid                 |
| <b>Well:</b>     | #502H                       | <b>Survey Calculation Method:</b>   | Minimum Curvature    |
| <b>Wellbore:</b> | OH                          |                                     |                      |
| <b>Design:</b>   | Plan #0.1                   |                                     |                      |

| Planned 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                 | 0.00            | 0.00        | 100.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 200.0                 | 0.00            | 0.00        | 200.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 300.0                 | 0.00            | 0.00        | 300.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 400.0                 | 0.00            | 0.00        | 400.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 500.0                 | 0.00            | 0.00        | 500.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 600.0                 | 0.00            | 0.00        | 600.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 700.0                 | 0.00            | 0.00        | 700.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 800.0                 | 0.00            | 0.00        | 800.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 900.0                 | 0.00            | 0.00        | 900.0                 | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,000.0               | 0.00            | 0.00        | 1,000.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,100.0               | 0.00            | 0.00        | 1,100.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,200.0               | 0.00            | 0.00        | 1,200.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,300.0               | 0.00            | 0.00        | 1,300.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,400.0               | 0.00            | 0.00        | 1,400.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,500.0               | 0.00            | 0.00        | 1,500.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,600.0               | 0.00            | 0.00        | 1,600.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,700.0               | 0.00            | 0.00        | 1,700.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,800.0               | 0.00            | 0.00        | 1,800.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 1,900.0               | 0.00            | 0.00        | 1,900.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,000.0               | 0.00            | 0.00        | 2,000.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,100.0               | 0.00            | 0.00        | 2,100.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,200.0               | 0.00            | 0.00        | 2,200.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,300.0               | 0.00            | 0.00        | 2,300.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,400.0               | 0.00            | 0.00        | 2,400.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,500.0               | 0.00            | 0.00        | 2,500.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,600.0               | 0.00            | 0.00        | 2,600.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,700.0               | 0.00            | 0.00        | 2,700.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,800.0               | 0.00            | 0.00        | 2,800.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 2,900.0               | 0.00            | 0.00        | 2,900.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,000.0               | 0.00            | 0.00        | 3,000.0               | 0.0         | 0.0         | 0.0                     | 0.00                    | 0.00                   | 0.00                  |
| 3,100.0               | 2.00            | 357.28      | 3,100.0               | 1.7         | -0.1        | -1.7                    | 2.00                    | 2.00                   | 0.00                  |
| 3,200.0               | 4.00            | 357.28      | 3,199.8               | 7.0         | -0.3        | -7.0                    | 2.00                    | 2.00                   | 0.00                  |
| 3,220.1               | 4.40            | 357.28      | 3,219.9               | 8.4         | -0.4        | -8.4                    | 2.00                    | 2.00                   | 0.00                  |
| 3,300.0               | 4.40            | 357.28      | 3,299.5               | 14.6        | -0.7        | -14.6                   | 0.00                    | 0.00                   | 0.00                  |
| 3,400.0               | 4.40            | 357.28      | 3,399.3               | 22.2        | -1.1        | -22.2                   | 0.00                    | 0.00                   | 0.00                  |
| 3,500.0               | 4.40            | 357.28      | 3,499.0               | 29.9        | -1.4        | -29.9                   | 0.00                    | 0.00                   | 0.00                  |
| 3,600.0               | 4.40            | 357.28      | 3,598.7               | 37.6        | -1.8        | -37.6                   | 0.00                    | 0.00                   | 0.00                  |
| 3,700.0               | 4.40            | 357.28      | 3,698.4               | 45.2        | -2.1        | -45.2                   | 0.00                    | 0.00                   | 0.00                  |
| 3,800.0               | 4.40            | 357.28      | 3,798.1               | 52.9        | -2.5        | -52.9                   | 0.00                    | 0.00                   | 0.00                  |
| 3,900.0               | 4.40            | 357.28      | 3,897.8               | 60.6        | -2.9        | -60.6                   | 0.00                    | 0.00                   | 0.00                  |
| 4,000.0               | 4.40            | 357.28      | 3,997.5               | 68.2        | -3.2        | -68.2                   | 0.00                    | 0.00                   | 0.00                  |
| 4,100.0               | 4.40            | 357.28      | 4,097.2               | 75.9        | -3.6        | -75.9                   | 0.00                    | 0.00                   | 0.00                  |
| 4,200.0               | 4.40            | 357.28      | 4,196.9               | 83.6        | -4.0        | -83.6                   | 0.00                    | 0.00                   | 0.00                  |
| 4,300.0               | 4.40            | 357.28      | 4,296.6               | 91.2        | -4.3        | -91.2                   | 0.00                    | 0.00                   | 0.00                  |
| 4,400.0               | 4.40            | 357.28      | 4,396.3               | 98.9        | -4.7        | -98.9                   | 0.00                    | 0.00                   | 0.00                  |
| 4,500.0               | 4.40            | 357.28      | 4,496.0               | 106.6       | -5.1        | -106.6                  | 0.00                    | 0.00                   | 0.00                  |
| 4,600.0               | 4.40            | 357.28      | 4,595.7               | 114.2       | -5.4        | -114.2                  | 0.00                    | 0.00                   | 0.00                  |
| 4,700.0               | 4.40            | 357.28      | 4,695.4               | 121.9       | -5.8        | -121.9                  | 0.00                    | 0.00                   | 0.00                  |
| 4,800.0               | 4.40            | 357.28      | 4,795.1               | 129.6       | -6.2        | -129.6                  | 0.00                    | 0.00                   | 0.00                  |
| 4,900.0               | 4.40            | 357.28      | 4,894.8               | 137.2       | -6.5        | -137.2                  | 0.00                    | 0.00                   | 0.00                  |
| 5,000.0               | 4.40            | 357.28      | 4,994.5               | 144.9       | -6.9        | -144.9                  | 0.00                    | 0.00                   | 0.00                  |
| 5,100.0               | 4.40            | 357.28      | 5,094.2               | 152.6       | -7.3        | -152.5                  | 0.00                    | 0.00                   | 0.00                  |
| 5,200.0               | 4.40            | 357.28      | 5,193.9               | 160.2       | -7.6        | -160.2                  | 0.00                    | 0.00                   | 0.00                  |

|           |                             |                              |                      |
|-----------|-----------------------------|------------------------------|----------------------|
| Database: | EDM 5000.14                 | Local Co-ordinate Reference: | Well #502H           |
| Company:  | EOG Resources - Midland     | TVD Reference:               | KB = 25 @ 3451.0usft |
| Project:  | Lea County, NM (NAD 83 NME) | MD Reference:                | KB = 25 @ 3451.0usft |
| Site:     | Gem 36 State Com            | North Reference:             | Grid                 |
| Well:     | #502H                       | Survey Calculation Method:   | Minimum Curvature    |
| Wellbore: | OH                          |                              |                      |
| Design:   | Plan #0.1                   |                              |                      |

| Planned 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) |
| 5,300.0               | 4.40            | 357.28      | 5,293.6               | 167.9        | -8.0         | -167.9                  | 0.00                    | 0.00                   | 0.00                  |
| 5,400.0               | 4.40            | 357.28      | 5,393.4               | 175.6        | -8.3         | -175.5                  | 0.00                    | 0.00                   | 0.00                  |
| 5,500.0               | 4.40            | 357.28      | 5,493.1               | 183.2        | -8.7         | -183.2                  | 0.00                    | 0.00                   | 0.00                  |
| 5,600.0               | 4.40            | 357.28      | 5,592.8               | 190.9        | -9.1         | -190.9                  | 0.00                    | 0.00                   | 0.00                  |
| 5,700.0               | 4.40            | 357.28      | 5,692.5               | 198.6        | -9.4         | -198.5                  | 0.00                    | 0.00                   | 0.00                  |
| 5,800.0               | 4.40            | 357.28      | 5,792.2               | 206.2        | -9.8         | -206.2                  | 0.00                    | 0.00                   | 0.00                  |
| 5,900.0               | 4.40            | 357.28      | 5,891.9               | 213.9        | -10.2        | -213.9                  | 0.00                    | 0.00                   | 0.00                  |
| 6,000.0               | 4.40            | 357.28      | 5,991.6               | 221.5        | -10.5        | -221.5                  | 0.00                    | 0.00                   | 0.00                  |
| 6,100.0               | 4.40            | 357.28      | 6,091.3               | 229.2        | -10.9        | -229.2                  | 0.00                    | 0.00                   | 0.00                  |
| 6,200.0               | 4.40            | 357.28      | 6,191.0               | 236.9        | -11.3        | -236.9                  | 0.00                    | 0.00                   | 0.00                  |
| 6,300.0               | 4.40            | 357.28      | 6,290.7               | 244.5        | -11.6        | -244.5                  | 0.00                    | 0.00                   | 0.00                  |
| 6,400.0               | 4.40            | 357.28      | 6,390.4               | 252.2        | -12.0        | -252.2                  | 0.00                    | 0.00                   | 0.00                  |
| 6,500.0               | 4.40            | 357.28      | 6,490.1               | 259.9        | -12.4        | -259.9                  | 0.00                    | 0.00                   | 0.00                  |
| 6,600.0               | 4.40            | 357.28      | 6,589.8               | 267.5        | -12.7        | -267.5                  | 0.00                    | 0.00                   | 0.00                  |
| 6,700.0               | 4.40            | 357.28      | 6,689.5               | 275.2        | -13.1        | -275.2                  | 0.00                    | 0.00                   | 0.00                  |
| 6,800.0               | 4.40            | 357.28      | 6,789.2               | 282.9        | -13.4        | -282.9                  | 0.00                    | 0.00                   | 0.00                  |
| 6,900.0               | 4.40            | 357.28      | 6,888.9               | 290.5        | -13.8        | -290.5                  | 0.00                    | 0.00                   | 0.00                  |
| 7,000.0               | 4.40            | 357.28      | 6,988.6               | 298.2        | -14.2        | -298.2                  | 0.00                    | 0.00                   | 0.00                  |
| 7,100.0               | 4.40            | 357.28      | 7,088.3               | 305.9        | -14.5        | -305.9                  | 0.00                    | 0.00                   | 0.00                  |
| 7,200.0               | 4.40            | 357.28      | 7,188.0               | 313.5        | -14.9        | -313.5                  | 0.00                    | 0.00                   | 0.00                  |
| 7,300.0               | 4.40            | 357.28      | 7,287.8               | 321.2        | -15.3        | -321.2                  | 0.00                    | 0.00                   | 0.00                  |
| 7,400.0               | 4.40            | 357.28      | 7,387.5               | 328.9        | -15.6        | -328.9                  | 0.00                    | 0.00                   | 0.00                  |
| 7,500.0               | 4.40            | 357.28      | 7,487.2               | 336.5        | -16.0        | -336.5                  | 0.00                    | 0.00                   | 0.00                  |
| 7,600.0               | 4.40            | 357.28      | 7,586.9               | 344.2        | -16.4        | -344.2                  | 0.00                    | 0.00                   | 0.00                  |
| 7,700.0               | 4.40            | 357.28      | 7,686.6               | 351.9        | -16.7        | -351.9                  | 0.00                    | 0.00                   | 0.00                  |
| 7,800.0               | 4.40            | 357.28      | 7,786.3               | 359.5        | -17.1        | -359.5                  | 0.00                    | 0.00                   | 0.00                  |
| 7,900.0               | 4.40            | 357.28      | 7,886.0               | 367.2        | -17.5        | -367.2                  | 0.00                    | 0.00                   | 0.00                  |
| 8,000.0               | 4.40            | 357.28      | 7,985.7               | 374.9        | -17.8        | -374.9                  | 0.00                    | 0.00                   | 0.00                  |
| 8,100.0               | 4.40            | 357.28      | 8,085.4               | 382.5        | -18.2        | -382.5                  | 0.00                    | 0.00                   | 0.00                  |
| 8,200.0               | 4.40            | 357.28      | 8,185.1               | 390.2        | -18.5        | -390.2                  | 0.00                    | 0.00                   | 0.00                  |
| 8,300.0               | 4.40            | 357.28      | 8,284.8               | 397.9        | -18.9        | -397.9                  | 0.00                    | 0.00                   | 0.00                  |
| 8,400.0               | 4.40            | 357.28      | 8,384.5               | 405.5        | -19.3        | -405.5                  | 0.00                    | 0.00                   | 0.00                  |
| 8,500.0               | 4.40            | 357.28      | 8,484.2               | 413.2        | -19.6        | -413.2                  | 0.00                    | 0.00                   | 0.00                  |
| 8,600.0               | 4.40            | 357.28      | 8,583.9               | 420.9        | -20.0        | -420.8                  | 0.00                    | 0.00                   | 0.00                  |
| 8,700.0               | 4.40            | 357.28      | 8,683.6               | 428.5        | -20.4        | -428.5                  | 0.00                    | 0.00                   | 0.00                  |
| 8,800.0               | 4.40            | 357.28      | 8,783.3               | 436.2        | -20.7        | -436.2                  | 0.00                    | 0.00                   | 0.00                  |
| 8,900.0               | 4.40            | 357.28      | 8,883.0               | 443.9        | -21.1        | -443.8                  | 0.00                    | 0.00                   | 0.00                  |
| 9,000.0               | 4.40            | 357.28      | 8,982.7               | 451.5        | -21.5        | -451.5                  | 0.00                    | 0.00                   | 0.00                  |
| 9,100.0               | 4.40            | 357.28      | 9,082.4               | 459.2        | -21.8        | -459.2                  | 0.00                    | 0.00                   | 0.00                  |
| 9,200.0               | 4.40            | 357.28      | 9,182.1               | 466.9        | -22.2        | -466.8                  | 0.00                    | 0.00                   | 0.00                  |
| 9,300.0               | 4.40            | 357.28      | 9,281.9               | 474.5        | -22.6        | -474.5                  | 0.00                    | 0.00                   | 0.00                  |
| 9,400.0               | 4.40            | 357.28      | 9,381.6               | 482.2        | -22.9        | -482.2                  | 0.00                    | 0.00                   | 0.00                  |
| 9,500.0               | 4.40            | 357.28      | 9,481.3               | 489.9        | -23.3        | -489.8                  | 0.00                    | 0.00                   | 0.00                  |
| 9,600.0               | 4.40            | 357.28      | 9,581.0               | 497.5        | -23.6        | -497.5                  | 0.00                    | 0.00                   | 0.00                  |
| 9,700.0               | 4.40            | 357.28      | 9,680.7               | 505.2        | -24.0        | -505.2                  | 0.00                    | 0.00                   | 0.00                  |
| 9,800.0               | 4.40            | 357.28      | 9,780.4               | 512.9        | -24.4        | -512.8                  | 0.00                    | 0.00                   | 0.00                  |
| 9,900.0               | 4.40            | 357.28      | 9,880.1               | 520.5        | -24.7        | -520.5                  | 0.00                    | 0.00                   | 0.00                  |
| 10,000.0              | 4.40            | 357.28      | 9,979.8               | 528.2        | -25.1        | -528.2                  | 0.00                    | 0.00                   | 0.00                  |
| 10,100.0              | 4.40            | 357.28      | 10,079.5              | 535.9        | -25.5        | -535.8                  | 0.00                    | 0.00                   | 0.00                  |
| 10,135.2              | 4.40            | 357.28      | 10,114.6              | 538.6        | -25.6        | -538.5                  | 0.00                    | 0.00                   | 0.00                  |
| 10,200.0              | 3.11            | 357.28      | 10,179.2              | 542.8        | -25.8        | -542.8                  | 2.00                    | -2.00                  | 0.00                  |
| 10,300.0              | 1.11            | 357.28      | 10,279.2              | 546.5        | -26.0        | -546.4                  | 2.00                    | -2.00                  | 0.00                  |
| 10,355.3              | 0.00            | 0.00        | 10,334.5              | 547.0        | -26.0        | -547.0                  | 2.00                    | -2.00                  | 0.00                  |

|           |                             |                              |                      |
|-----------|-----------------------------|------------------------------|----------------------|
| Database: | EDM 5000.14                 | Local Co-ordinate Reference: | Well #502H           |
| Company:  | EOG Resources - Midland     | TVD Reference:               | KB = 25 @ 3451.0usft |
| Project:  | Lea County, NM (NAD 83 NME) | MD Reference:                | KB = 25 @ 3451.0usft |
| Site:     | Gem 36 State Com            | North Reference:             | Grid                 |
| Well:     | #502H                       | Survey Calculation Method:   | Minimum Curvature    |
| Wellbore: | OH                          |                              |                      |
| Design:   | Plan #0.1                   |                              |                      |

## Planned 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) |
|-------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| <b>KOP (Gem 36 State Com #502H)</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,375.0                            | 2.36            | 179.54      | 10,354.2              | 546.6        | -26.0        | -546.6                  | 12.00                   | 12.00                  | 0.00                  |
| 10,400.0                            | 5.36            | 179.54      | 10,379.1              | 544.9        | -26.0        | -544.9                  | 12.00                   | 12.00                  | 0.00                  |
| 10,425.0                            | 8.36            | 179.54      | 10,403.9              | 541.9        | -26.0        | -541.9                  | 12.00                   | 12.00                  | 0.00                  |
| 10,450.0                            | 11.36           | 179.54      | 10,428.6              | 537.6        | -25.9        | -537.7                  | 12.00                   | 12.00                  | 0.00                  |
| 10,475.0                            | 14.36           | 179.54      | 10,452.9              | 532.1        | -25.9        | -532.1                  | 12.00                   | 12.00                  | 0.00                  |
| 10,500.0                            | 17.36           | 179.54      | 10,477.0              | 525.3        | -25.8        | -525.3                  | 12.00                   | 12.00                  | 0.00                  |
| 10,525.0                            | 20.36           | 179.54      | 10,500.6              | 517.2        | -25.8        | -517.3                  | 12.00                   | 12.00                  | 0.00                  |
| 10,550.0                            | 23.36           | 179.54      | 10,523.8              | 507.9        | -25.7        | -508.0                  | 12.00                   | 12.00                  | 0.00                  |
| 10,575.0                            | 26.36           | 179.54      | 10,546.5              | 497.4        | -25.6        | -497.5                  | 12.00                   | 12.00                  | 0.00                  |
| 10,600.0                            | 29.36           | 179.54      | 10,568.6              | 485.7        | -25.5        | -485.9                  | 12.00                   | 12.00                  | 0.00                  |
| 10,625.0                            | 32.36           | 179.54      | 10,590.1              | 472.9        | -25.4        | -473.1                  | 12.00                   | 12.00                  | 0.00                  |
| 10,650.0                            | 35.36           | 179.54      | 10,610.8              | 458.9        | -25.3        | -459.2                  | 12.00                   | 12.00                  | 0.00                  |
| 10,675.0                            | 38.36           | 179.54      | 10,630.8              | 443.9        | -25.2        | -444.3                  | 12.00                   | 12.00                  | 0.00                  |
| 10,700.0                            | 41.36           | 179.54      | 10,650.0              | 427.9        | -25.0        | -428.3                  | 12.00                   | 12.00                  | 0.00                  |
| 10,725.0                            | 44.36           | 179.54      | 10,668.3              | 410.9        | -24.9        | -411.4                  | 12.00                   | 12.00                  | 0.00                  |
| 10,750.0                            | 47.36           | 179.54      | 10,685.7              | 393.0        | -24.8        | -393.5                  | 12.00                   | 12.00                  | 0.00                  |
| 10,754.7                            | 47.93           | 179.54      | 10,688.9              | 389.5        | -24.7        | -390.1                  | 12.00                   | 12.00                  | 0.00                  |
| <b>FTP (Gem 36 State Com #502H)</b> |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,775.0                            | 50.36           | 179.54      | 10,702.2              | 374.1        | -24.6        | -374.8                  | 12.00                   | 12.00                  | 0.00                  |
| 10,800.0                            | 53.36           | 179.54      | 10,717.6              | 354.5        | -24.5        | -355.2                  | 12.00                   | 12.00                  | 0.00                  |
| 10,825.0                            | 56.36           | 179.54      | 10,732.0              | 334.0        | -24.3        | -334.8                  | 12.00                   | 12.00                  | 0.00                  |
| 10,850.0                            | 59.36           | 179.54      | 10,745.3              | 312.9        | -24.1        | -313.7                  | 12.00                   | 12.00                  | 0.00                  |
| 10,875.0                            | 62.36           | 179.54      | 10,757.5              | 291.0        | -24.0        | -292.0                  | 12.00                   | 12.00                  | 0.00                  |
| 10,900.0                            | 65.36           | 179.54      | 10,768.5              | 268.6        | -23.8        | -269.6                  | 12.00                   | 12.00                  | 0.00                  |
| 10,925.0                            | 68.36           | 179.54      | 10,778.3              | 245.6        | -23.6        | -246.7                  | 12.00                   | 12.00                  | 0.00                  |
| 10,950.0                            | 71.36           | 179.54      | 10,786.9              | 222.1        | -23.4        | -223.4                  | 12.00                   | 12.00                  | 0.00                  |
| 10,975.0                            | 74.36           | 179.54      | 10,794.3              | 198.3        | -23.2        | -199.6                  | 12.00                   | 12.00                  | 0.00                  |
| 11,000.0                            | 77.36           | 179.54      | 10,800.4              | 174.0        | -23.0        | -175.4                  | 12.00                   | 12.00                  | 0.00                  |
| 11,025.0                            | 80.36           | 179.54      | 10,805.2              | 149.5        | -22.8        | -151.0                  | 12.00                   | 12.00                  | 0.00                  |
| 11,050.0                            | 83.36           | 179.54      | 10,808.8              | 124.8        | -22.6        | -126.3                  | 12.00                   | 12.00                  | 0.00                  |
| 11,075.0                            | 86.36           | 179.54      | 10,811.0              | 99.9         | -22.4        | -101.5                  | 12.00                   | 12.00                  | 0.00                  |
| 11,100.0                            | 89.36           | 179.54      | 10,811.9              | 74.9         | -22.2        | -76.7                   | 12.00                   | 12.00                  | 0.00                  |
| 11,105.3                            | 90.00           | 179.54      | 10,812.0              | 69.6         | -22.2        | -71.4                   | 12.00                   | 12.00                  | 0.00                  |
| 11,200.0                            | 90.00           | 179.54      | 10,812.0              | -25.1        | -21.4        | 22.9                    | 0.00                    | 0.00                   | 0.00                  |
| 11,300.0                            | 90.00           | 179.54      | 10,812.0              | -125.1       | -20.6        | 122.6                   | 0.00                    | 0.00                   | 0.00                  |
| 11,400.0                            | 90.00           | 179.54      | 10,812.0              | -225.1       | -19.8        | 222.2                   | 0.00                    | 0.00                   | 0.00                  |
| 11,500.0                            | 90.00           | 179.54      | 10,812.0              | -325.1       | -19.0        | 321.8                   | 0.00                    | 0.00                   | 0.00                  |
| 11,600.0                            | 90.00           | 179.54      | 10,812.0              | -425.1       | -18.2        | 421.4                   | 0.00                    | 0.00                   | 0.00                  |
| 11,700.0                            | 90.00           | 179.54      | 10,812.0              | -525.1       | -17.4        | 521.0                   | 0.00                    | 0.00                   | 0.00                  |
| 11,800.0                            | 90.00           | 179.54      | 10,812.0              | -625.1       | -16.6        | 620.6                   | 0.00                    | 0.00                   | 0.00                  |
| 11,900.0                            | 90.00           | 179.54      | 10,812.0              | -725.1       | -15.8        | 720.2                   | 0.00                    | 0.00                   | 0.00                  |
| 12,000.0                            | 90.00           | 179.54      | 10,812.0              | -825.1       | -15.0        | 819.9                   | 0.00                    | 0.00                   | 0.00                  |
| 12,100.0                            | 90.00           | 179.54      | 10,812.0              | -925.1       | -14.2        | 919.5                   | 0.00                    | 0.00                   | 0.00                  |
| 12,200.0                            | 90.00           | 179.54      | 10,812.0              | -1,025.1     | -13.4        | 1,019.1                 | 0.00                    | 0.00                   | 0.00                  |
| 12,300.0                            | 90.00           | 179.54      | 10,812.0              | -1,125.1     | -12.6        | 1,118.7                 | 0.00                    | 0.00                   | 0.00                  |
| 12,400.0                            | 90.00           | 179.54      | 10,812.0              | -1,225.1     | -11.8        | 1,218.3                 | 0.00                    | 0.00                   | 0.00                  |
| 12,500.0                            | 90.00           | 179.54      | 10,812.0              | -1,325.1     | -11.0        | 1,317.9                 | 0.00                    | 0.00                   | 0.00                  |
| 12,600.0                            | 90.00           | 179.54      | 10,812.0              | -1,425.1     | -10.2        | 1,417.5                 | 0.00                    | 0.00                   | 0.00                  |
| 12,700.0                            | 90.00           | 179.54      | 10,812.0              | -1,525.1     | -9.4         | 1,517.2                 | 0.00                    | 0.00                   | 0.00                  |
| 12,800.0                            | 90.00           | 179.54      | 10,812.0              | -1,625.1     | -8.6         | 1,616.8                 | 0.00                    | 0.00                   | 0.00                  |
| 12,900.0                            | 90.00           | 179.54      | 10,812.0              | -1,725.1     | -7.8         | 1,716.4                 | 0.00                    | 0.00                   | 0.00                  |
| 13,000.0                            | 90.00           | 179.54      | 10,812.0              | -1,825.1     | -7.0         | 1,816.0                 | 0.00                    | 0.00                   | 0.00                  |
| 13,100.0                            | 90.00           | 179.54      | 10,812.0              | -1,925.1     | -6.2         | 1,915.6                 | 0.00                    | 0.00                   | 0.00                  |

|                  |                             |                                     |                      |
|------------------|-----------------------------|-------------------------------------|----------------------|
| <b>Database:</b> | EDM 5000.14                 | <b>Local Co-ordinate Reference:</b> | Well #502H           |
| <b>Company:</b>  | EOG Resources - Midland     | <b>TVD Reference:</b>               | KB = 25 @ 3451.0usft |
| <b>Project:</b>  | Lea County, NM (NAD 83 NME) | <b>MD Reference:</b>                | KB = 25 @ 3451.0usft |
| <b>Site:</b>     | Gem 36 State Com            | <b>North Reference:</b>             | Grid                 |
| <b>Well:</b>     | #502H                       | <b>Survey Calculation Method:</b>   | Minimum Curvature    |
| <b>Wellbore:</b> | OH                          |                                     |                      |
| <b>Design:</b>   | Plan #0.1                   |                                     |                      |

| Planned 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) | Bulld<br>Rate<br>(°/100usft) | Turn<br>Rate<br>(°/100usft) |  |
| 13,200.0                      | 90.00              | 179.54         | 10,812.0                    | -2,025.1        | -5.4            | 2,015.2                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,300.0                      | 90.00              | 179.54         | 10,812.0                    | -2,125.1        | -4.6            | 2,114.8                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,400.0                      | 90.00              | 179.54         | 10,812.0                    | -2,225.0        | -3.8            | 2,214.4                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,500.0                      | 90.00              | 179.54         | 10,812.0                    | -2,325.0        | -3.0            | 2,314.1                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,600.0                      | 90.00              | 179.54         | 10,812.0                    | -2,425.0        | -2.2            | 2,413.7                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,700.0                      | 90.00              | 179.54         | 10,812.0                    | -2,525.0        | -1.4            | 2,513.3                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,800.0                      | 90.00              | 179.54         | 10,812.0                    | -2,625.0        | -0.6            | 2,612.9                       | 0.00                          | 0.00                         | 0.00                        |  |
| 13,900.0                      | 90.00              | 179.54         | 10,812.0                    | -2,725.0        | 0.2             | 2,712.5                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,000.0                      | 90.00              | 179.54         | 10,812.0                    | -2,825.0        | 1.0             | 2,812.1                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,100.0                      | 90.00              | 179.54         | 10,812.0                    | -2,925.0        | 1.8             | 2,911.7                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,200.0                      | 90.00              | 179.54         | 10,812.0                    | -3,025.0        | 2.6             | 3,011.4                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,300.0                      | 90.00              | 179.54         | 10,812.0                    | -3,125.0        | 3.4             | 3,111.0                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,400.0                      | 90.00              | 179.54         | 10,812.0                    | -3,225.0        | 4.2             | 3,210.6                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,500.0                      | 90.00              | 179.54         | 10,812.0                    | -3,325.0        | 5.0             | 3,310.2                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,600.0                      | 90.00              | 179.54         | 10,812.0                    | -3,425.0        | 5.8             | 3,409.8                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,700.0                      | 90.00              | 179.54         | 10,812.0                    | -3,525.0        | 6.6             | 3,509.4                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,800.0                      | 90.00              | 179.54         | 10,812.0                    | -3,625.0        | 7.4             | 3,609.0                       | 0.00                          | 0.00                         | 0.00                        |  |
| 14,900.0                      | 90.00              | 179.54         | 10,812.0                    | -3,725.0        | 8.2             | 3,708.6                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,000.0                      | 90.00              | 179.54         | 10,812.0                    | -3,825.0        | 9.0             | 3,808.3                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,100.0                      | 90.00              | 179.54         | 10,812.0                    | -3,925.0        | 9.8             | 3,907.9                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,200.0                      | 90.00              | 179.54         | 10,812.0                    | -4,025.0        | 10.6            | 4,007.5                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,300.0                      | 90.00              | 179.54         | 10,812.0                    | -4,125.0        | 11.4            | 4,107.1                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,400.0                      | 90.00              | 179.54         | 10,812.0                    | -4,225.0        | 12.2            | 4,206.7                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,500.0                      | 90.00              | 179.54         | 10,812.0                    | -4,325.0        | 13.0            | 4,306.3                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,600.0                      | 90.00              | 179.54         | 10,812.0                    | -4,425.0        | 13.8            | 4,405.9                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,700.0                      | 90.00              | 179.54         | 10,812.0                    | -4,525.0        | 14.6            | 4,505.6                       | 0.00                          | 0.00                         | 0.00                        |  |
| 15,756.0                      | 90.00              | 179.54         | 10,812.0                    | -4,581.0        | 15.0            | 4,561.4                       | 0.00                          | 0.00                         | 0.00                        |  |
| PBHL (Gem 36 State Com #502H) |                    |                |                             |                 |                 |                               |                               |                              |                             |  |

| Design Targets                                                                                                                 |               |              |            |              |              |                 |                |                 |                   |
|--------------------------------------------------------------------------------------------------------------------------------|---------------|--------------|------------|--------------|--------------|-----------------|----------------|-----------------|-------------------|
| Target Name                                                                                                                    | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude        | Longitude         |
| KOP (Gem 36 State Cor<br>- hit/miss target<br>- Shape<br>- Point                                                               | 0.00          | 0.00         | 10,334.5   | 547.0        | -26.0        | 398,714.00      | 761,034.00     | 32° 5' 38.967 N | 103° 37' 26.003 W |
| PBHL (Gem 36 State Co<br>- plan hits target center<br>- Point                                                                  | 0.00          | 0.00         | 10,812.0   | -4,581.0     | 15.0         | 393,586.00      | 761,075.00     | 32° 4' 48.220 N | 103° 37' 25.918 W |
| FTP (Gem 36 State Cor<br>- plan misses target center by 163.4usft at 10754.7usft MD (10688.9 TVD, 389.5 N, -24.7 E)<br>- Point | 0.00          | 0.00         | 10,812.0   | 497.0        | -26.0        | 398,664.00      | 761,034.00     | 32° 5' 38.473 N | 103° 37' 26.007 W |