**Revised Permit Information:** 30-025-42340

Well Name: Opal 36 State No. 301H

Location:
SL: 220' FSL & 2260' FEL, Section 36, T-25-S, R-34-E, Lea Co., N.M.
BHL: 230' FNL & 2260' FEL, Section 36, T-25-S, R-34-E, Lea Co., N.M.

**Casing Program:**

| Hole Size | Interval | Csg OD | Weight | Grade | Conn | $DF_{min}$ Collapse | $DF_{min}$ Burst | $DF_{min}$ Tension |
|---|---|---|---|---|---|---|---|---|
| 17.5" | 0 – 1,010' | 13.375" | 54.5# | J55 | STC | 1.125 | 1.25 | 1.60 |
| 12.25" | 0-4000' | 9.625" | 40# | J55 | LTC | 1.125 | 1.25 | 1.60 |
| 12.25" | 4000' – 5200' | 9.625" | 40# | HCK-55 | LTC | 1.125 | 1.25 | 1.60 |
| 8.75" | 0'-15,746' | 5.5" | 17# | HCP-110 | LTC | 1.125 | 1.25 | 1.60 |

**Cement Program:**

| Depth | No. Sacks | Wt. ppg | Yld $Ft^3/ft$ | Slurry Description |
|---|---|---|---|---|
| 1,010' | 500 | 13.5 | 1.73 | Class C + 4.0% Bentonite + 0.6% CD-32 + 0.5% $CaCl_2$ + 0.25 lb/sk Cello-Flake (TOC @ Surface) |
| | 200 | 14.8 | 1.34 | Class C + 0.6% FL-62 + 0.25 lb/sk Cello-Flake + 0.2% Sodium Metasilicate |
| 5,200' | 800 | 12.7 | 2.22 | Class 'C' + 1.50% R-3 + 0.25 lb/sk Cello-Flake + 2.0% Sodium Metasilicate + 10% Salt + 0.005 lb/sk Static Free |
| | 200 | 14.8 | 1.32 | Tail: Class 'C' + 0.25 lb/sk Cello Flake + 0.005 lb/sk Static Free |
| 15,746' | 400 | 10.8 | 3.67 | 60:40:0 Class C + 15.0 pps BA-90 + 4% MPA-5 + 3.0% SMS + 5.0% A-10 + 1.0% BA-10A + 0.80% ASA-301 + 2.55% R-21 + 8.0 pps LCM-1 |
| | 550 | 11.8 | 2.38 | 50:50:10 Class H + 0.80% FL-52 + 0.30% ASA-301 + 0.40% SMS + 2.0% Salt + 0.30% R-21 + 3.0 pps LCM-1 + 0.25 pps Celloflake |
| | 1325 | 14.2 | 1.28 | 50:50:2 Class H + 0.65% FL-52 + 0.45% CD-32 + 0.10% SMS + 2.0% Salt |

**Mud Program:**

| Depth | Type | Weight (ppg) | Viscosity | Water Loss |
|---|---|---|---|---|
| 0 – 1010' | Fresh - Gel | 8.6-8.8 | 28-34 | N/c |
| 1010' – 5,200' | Brine | 10.0-10.2 | 28-34 | N/c |
| 5,200' – 10,436' | Cut Brine | 8.4-9.0 | 28-34 | N/c |
| KOP – 15,746' Lateral | Cut Brine | 9.0-9.5 | 40-42 | 8-10 |

DEC 18 2014

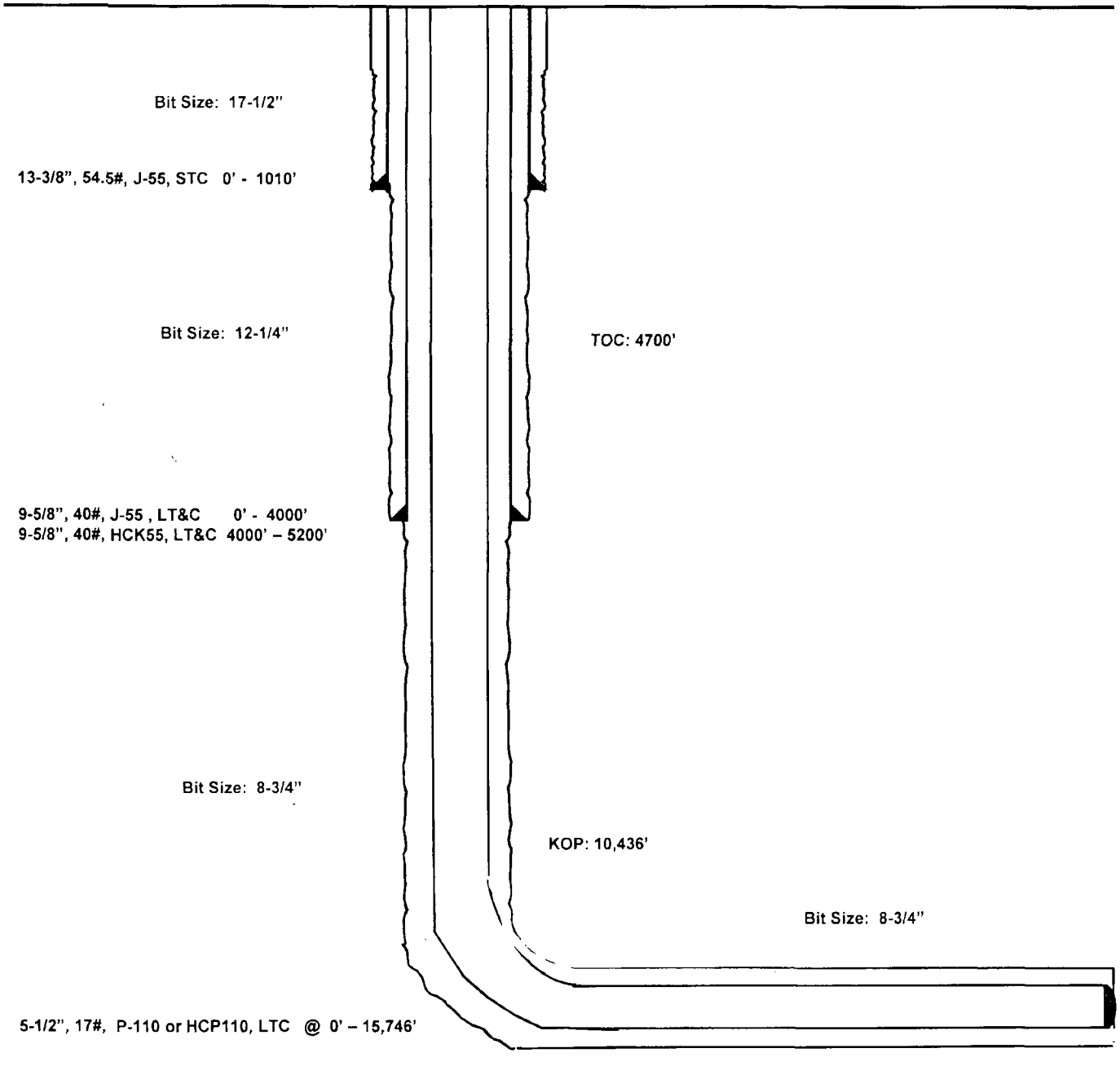
# Opal 36 State #301H
## Red Hills
## Lea County, New Mexico

220' FSL
2260' FEL
Section 36
T-25-S, R-34-E

**Proposed Wellbore**

API: 30-025-41823

KB: 3,399'
GL: 3,375'




Lateral: 15,746' MD, 10,926' TVD

BH Location: 230' FNL & 2260' FEL
Section 36
T-25-S, R-34-E

eog resources

**Lea County, NM (NAD 27 NME)**

**Opal 36 State #301H**

**Plan #1**

Azimuths to Grid North
True North: -0.48°
Magnetic North: 6.59°

Magnetic Field
Strength: 48195.1snT
Dip Angle: 59.99°
Date: 12/18/2014
Model: IGRF201014

To convert a Magnetic Direction to a Grid Direction, Add 6.59°
To convert a Magnetic Direction to a True Direction, Add 7.07° East
To convert a True Direction to a Grid Direction, Subtract 0.48°

**PROJECT DETAILS: Lea County NM (NAD 27 NME)**

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

**WELL DETAILS: #301H**

Ground Level: 3375.0
KB = 24 @ 3400.0usft

| Northing | Easting | Latitude | Longitude |
|---|---|---|---|
| 394070.00 | 782279.00 | 32° 4' 48.490 N | 103° 25' 19.069 W |

**SECTION DETAILS**

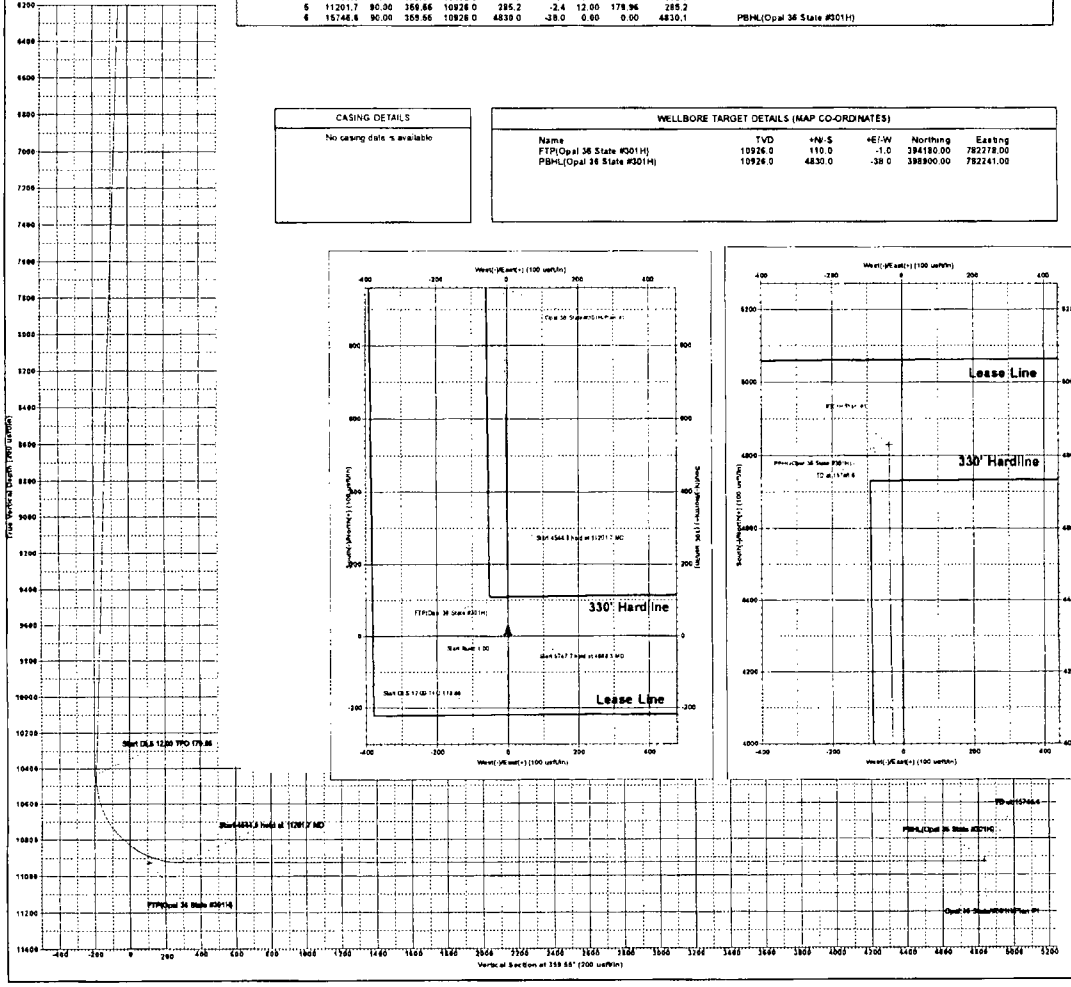
| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Target | Annotation |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | | |
| 2 | 4500.0 | 0.00 | 0.00 | 4500.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | | |
| 3 | 4688.3 | 1.88 | 179.69 | 4688.3 | -3.1 | 0.0 | 1.00 | 179.59 | -3.1 | | |
| 4 | 10436.0 | 1.88 | 179.69 | 10432.8 | -192.0 | 1.4 | 0.00 | 0.00 | -192.0 | | |
| 5 | 11201.7 | 90.00 | 359.66 | 10926.0 | 285.2 | -2.4 | 12.00 | 179.96 | 285.2 | | |
| 6 | 15746.6 | 90.00 | 359.66 | 10926.0 | 4839.0 | -38.0 | 0.00 | 0.00 | 4839.1 | PBHL(Opal 36 State #301H) | |

**CASING DETAILS**

No casing data is available

**WELLBORE TARGET DETAILS (MAP CO-ORDINATES)**

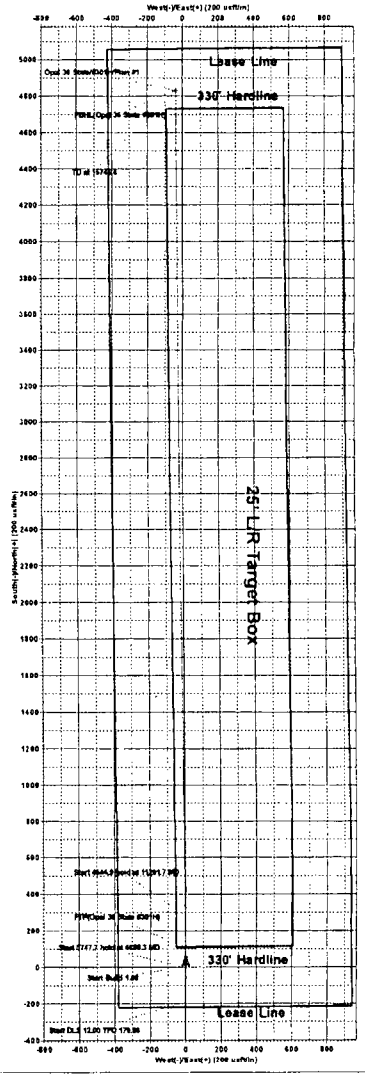
| Name | TVD | +N/-S | +E/-W | Northing | Easting |
|---|---|---|---|---|---|
| FTP(Opal 36 State #301H) | 10926.0 | 110.0 | -1.0 | 394180.00 | 782278.00 |
| PBHL(Opal 36 State #301H) | 10926.0 | 4830.0 | -38.0 | 398900.00 | 782241.00 |

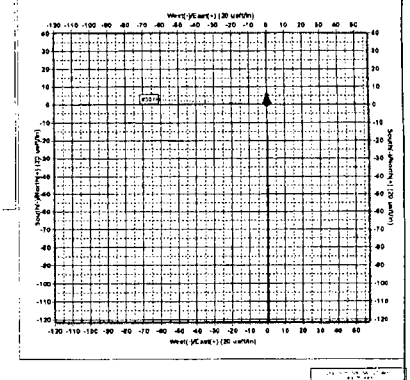








# EOG Resources - Midland

Lea County, NM (NAD 27 NME)
Opal 36 State
#301H

OH

Plan: Plan #1

# Standard Planning Report

16 December, 2014

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well #301H |
| **Company:** | EOG Resources - Midland | **TVD Reference:** | KB = 24 @ 3400.0usft |
| **Project:** | Lea County, NM (NAD 27 NME) | **MD Reference:** | KB = 24 @ 3400.0usft |
| **Site:** | Opal 36 State | **North Reference:** | Grid |
| **Well:** | #301H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #1 | | |

| | | | |
|---|---|---|---|
| **Project** | Lea County, NM (NAD 27 NME) | | |
| ***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** | Opal 36 State | | | | |
| **Site Position:** | | **Northing:** | 394,083.00 usft | **Latitude:** | 32° 4' 48.454 N |
| **From:** | Map | **Easting:** | 784,250.00 usft | **Longitude:** | 103° 24' 56.161 W |
| **Position Uncertainty:** | 0.0 usft | **Slot Radius:** | 13-3/16 " | **Grid Convergence:** | 0.49 ° |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well** | #301H | | | | | |
| **Well Position** | **+N/-S** | -13.0 usft | **Northing:** | 394,070.00 usft | **Latitude:** | 32° 4' 48.490 N |
| | **+E/-W** | -1,971.0 usft | **Easting:** | 782,279.00 usft | **Longitude:** | 103° 25' 19.069 W |
| **Position Uncertainty** | | 0.0 usft | **Wellhead Elevation:** | 0.0 usft | **Ground Level:** | 3,375.0 usft |

| | | | | | |
|---|---|---|---|---|---|
| **Wellbore** | OH | | | | |
| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
| | IGRF201014 | 12/16/2014 | 7.07 | 59.99 | 48,195 |

| | | | | | |
|---|---|---|---|---|---|
| **Design** | Plan #1 | | | | |
| **Audit Notes:** | | | | | |
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0.0 |
| **Vertical Section:** | **Depth From (TVD) (usft)** | **+N/-S (usft)** | **+E/-W (usft)** | **Direction (°)** | |
| | 0.0 | 0.0 | 0.0 | 359.55 | |

**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 | |
| 4,500.0 | 0.00 | 0.00 | 4,500.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 4,688.3 | 1.88 | 179.59 | 4,688.3 | -3.1 | 0.0 | 1.00 | 1.00 | 0.00 | 179.59 | |
| 10,436.0 | 1.88 | 179.59 | 10,432.8 | -192.0 | 1.4 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 11,201.7 | 90.00 | 359.55 | 10,926.0 | 285.2 | -2.4 | 12.00 | 11.51 | 23.50 | 179.96 | |
| 15,746.6 | 90.00 | 359.55 | 10,926.0 | 4,830.0 | -38.0 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL(Opal 36 State # |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well #301H |
| **Company:** | EOG Resources - Midland | **TVD Reference:** | KB = 24 @ 3400.0usft |
| **Project:** | Lea County, NM (NAD 27 NME) | **MD Reference:** | KB = 24 @ 3400.0usft |
| **Site:** | Opal 36 State | **North Reference:** | Grid |
| **Well:** | #301H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #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 | 0.00 | 0.00 | 3,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 0.00 | 0.00 | 3,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,300.0 | 0.00 | 0.00 | 3,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 0.00 | 0.00 | 3,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,500.0 | 0.00 | 0.00 | 3,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 0.00 | 0.00 | 3,600.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,700.0 | 0.00 | 0.00 | 3,700.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 0.00 | 0.00 | 3,800.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 3,900.0 | 0.00 | 0.00 | 3,900.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 0.00 | 0.00 | 4,000.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,100.0 | 0.00 | 0.00 | 4,100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 0.00 | 0.00 | 4,200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,300.0 | 0.00 | 0.00 | 4,300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 0.00 | 0.00 | 4,400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,500.0 | 0.00 | 0.00 | 4,500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 4,600.0 | 1.00 | 179.59 | 4,600.0 | -0.9 | 0.0 | -0.9 | 1.00 | 1.00 | 0.00 |
| 4,688.3 | 1.88 | 179.59 | 4,688.3 | -3.1 | 0.0 | -3.1 | 1.00 | 1.00 | 0.00 |
| 4,700.0 | 1.88 | 179.59 | 4,700.0 | -3.5 | 0.0 | -3.5 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 1.88 | 179.59 | 4,799.9 | -6.8 | 0.0 | -6.8 | 0.00 | 0.00 | 0.00 |
| 4,900.0 | 1.88 | 179.59 | 4,899.9 | -10.0 | 0.1 | -10.1 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 1.88 | 179.59 | 4,999.8 | -13.3 | 0.1 | -13.3 | 0.00 | 0.00 | 0.00 |
| 5,100.0 | 1.88 | 179.59 | 5,099.7 | -16.6 | 0.1 | -16.6 | 0.00 | 0.00 | 0.00 |
| 5,200.0 | 1.88 | 179.59 | 5,199.7 | -19.9 | 0.1 | -19.9 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well #301H |
| **Company:** | EOG Resources - Midland | **TVD Reference:** | KB = 24 @ 3400.0usft |
| **Project:** | Lea County, NM (NAD 27 NME) | **MD Reference:** | KB = 24 @ 3400.0usft |
| **Site:** | Opal 36 State | **North Reference:** | Grid |
| **Well:** | #301H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #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 | 1.88 | 179.59 | 5,299.6 | -23.2 | 0.2 | -23.2 | 0.00 | 0.00 | 0.00 |
| 5,400.0 | 1.88 | 179.59 | 5,399.6 | -26.5 | 0.2 | -26.5 | 0.00 | 0.00 | 0.00 |
| 5,500.0 | 1.88 | 179.59 | 5,499.5 | -29.8 | 0.2 | -29.8 | 0.00 | 0.00 | 0.00 |
| 5,600.0 | 1.88 | 179.59 | 5,599.5 | -33.1 | 0.2 | -33.1 | 0.00 | 0.00 | 0.00 |
| 5,700.0 | 1.88 | 179.59 | 5,699.4 | -36.3 | 0.3 | -36.3 | 0.00 | 0.00 | 0.00 |
| 5,800.0 | 1.88 | 179.59 | 5,799.4 | -39.6 | 0.3 | -39.6 | 0.00 | 0.00 | 0.00 |
| 5,900.0 | 1.88 | 179.59 | 5,899.3 | -42.9 | 0.3 | -42.9 | 0.00 | 0.00 | 0.00 |
| 6,000.0 | 1.88 | 179.59 | 5,999.3 | -46.2 | 0.3 | -46.2 | 0.00 | 0.00 | 0.00 |
| 6,100.0 | 1.88 | 179.59 | 6,099.2 | -49.5 | 0.4 | -49.5 | 0.00 | 0.00 | 0.00 |
| 6,200.0 | 1.88 | 179.59 | 6,199.1 | -52.8 | 0.4 | -52.8 | 0.00 | 0.00 | 0.00 |
| 6,300.0 | 1.88 | 179.59 | 6,299.1 | -56.1 | 0.4 | -56.1 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 1.88 | 179.59 | 6,399.0 | -59.3 | 0.4 | -59.3 | 0.00 | 0.00 | 0.00 |
| 6,500.0 | 1.88 | 179.59 | 6,499.0 | -62.6 | 0.4 | -62.6 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 1.88 | 179.59 | 6,598.9 | -65.9 | 0.5 | -65.9 | 0.00 | 0.00 | 0.00 |
| 6,700.0 | 1.88 | 179.59 | 6,698.9 | -69.2 | 0.5 | -69.2 | 0.00 | 0.00 | 0.00 |
| 6,800.0 | 1.88 | 179.59 | 6,798.8 | -72.5 | 0.5 | -72.5 | 0.00 | 0.00 | 0.00 |
| 6,900.0 | 1.88 | 179.59 | 6,898.8 | -75.8 | 0.5 | -75.8 | 0.00 | 0.00 | 0.00 |
| 7,000.0 | 1.88 | 179.59 | 6,998.7 | -79.1 | 0.6 | -79.1 | 0.00 | 0.00 | 0.00 |
| 7,100.0 | 1.88 | 179.59 | 7,098.7 | -82.3 | 0.6 | -82.3 | 0.00 | 0.00 | 0.00 |
| 7,200.0 | 1.88 | 179.59 | 7,198.6 | -85.6 | 0.6 | -85.6 | 0.00 | 0.00 | 0.00 |
| 7,300.0 | 1.88 | 179.59 | 7,298.6 | -88.9 | 0.6 | -88.9 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 1.88 | 179.59 | 7,398.5 | -92.2 | 0.7 | -92.2 | 0.00 | 0.00 | 0.00 |
| 7,500.0 | 1.88 | 179.59 | 7,498.4 | -95.5 | 0.7 | -95.5 | 0.00 | 0.00 | 0.00 |
| 7,600.0 | 1.88 | 179.59 | 7,598.4 | -98.8 | 0.7 | -98.8 | 0.00 | 0.00 | 0.00 |
| 7,700.0 | 1.88 | 179.59 | 7,698.3 | -102.1 | 0.7 | -102.1 | 0.00 | 0.00 | 0.00 |
| 7,800.0 | 1.88 | 179.59 | 7,798.3 | -105.3 | 0.8 | -105.3 | 0.00 | 0.00 | 0.00 |
| 7,900.0 | 1.88 | 179.59 | 7,898.2 | -108.6 | 0.8 | -108.6 | 0.00 | 0.00 | 0.00 |
| 8,000.0 | 1.88 | 179.59 | 7,998.2 | -111.9 | 0.8 | -111.9 | 0.00 | 0.00 | 0.00 |
| 8,100.0 | 1.88 | 179.59 | 8,098.1 | -115.2 | 0.8 | -115.2 | 0.00 | 0.00 | 0.00 |
| 8,200.0 | 1.88 | 179.59 | 8,198.1 | -118.5 | 0.9 | -118.5 | 0.00 | 0.00 | 0.00 |
| 8,300.0 | 1.88 | 179.59 | 8,298.0 | -121.8 | 0.9 | -121.8 | 0.00 | 0.00 | 0.00 |
| 8,400.0 | 1.88 | 179.59 | 8,398.0 | -125.1 | 0.9 | -125.1 | 0.00 | 0.00 | 0.00 |
| 8,500.0 | 1.88 | 179.59 | 8,497.9 | -128.3 | 0.9 | -128.3 | 0.00 | 0.00 | 0.00 |
| 8,600.0 | 1.88 | 179.59 | 8,597.9 | -131.6 | 0.9 | -131.6 | 0.00 | 0.00 | 0.00 |
| 8,700.0 | 1.88 | 179.59 | 8,697.8 | -134.9 | 1.0 | -134.9 | 0.00 | 0.00 | 0.00 |
| 8,800.0 | 1.88 | 179.59 | 8,797.7 | -138.2 | 1.0 | -138.2 | 0.00 | 0.00 | 0.00 |
| 8,900.0 | 1.88 | 179.59 | 8,897.7 | -141.5 | 1.0 | -141.5 | 0.00 | 0.00 | 0.00 |
| 9,000.0 | 1.88 | 179.59 | 8,997.6 | -144.8 | 1.0 | -144.8 | 0.00 | 0.00 | 0.00 |
| 9,100.0 | 1.88 | 179.59 | 9,097.6 | -148.1 | 1.1 | -148.1 | 0.00 | 0.00 | 0.00 |
| 9,200.0 | 1.88 | 179.59 | 9,197.5 | -151.3 | 1.1 | -151.3 | 0.00 | 0.00 | 0.00 |
| 9,300.0 | 1.88 | 179.59 | 9,297.5 | -154.6 | 1.1 | -154.6 | 0.00 | 0.00 | 0.00 |
| 9,400.0 | 1.88 | 179.59 | 9,397.4 | -157.9 | 1.1 | -157.9 | 0.00 | 0.00 | 0.00 |
| 9,500.0 | 1.88 | 179.59 | 9,497.4 | -161.2 | 1.2 | -161.2 | 0.00 | 0.00 | 0.00 |
| 9,600.0 | 1.88 | 179.59 | 9,597.3 | -164.5 | 1.2 | -164.5 | 0.00 | 0.00 | 0.00 |
| 9,700.0 | 1.88 | 179.59 | 9,697.3 | -167.8 | 1.2 | -167.8 | 0.00 | 0.00 | 0.00 |
| 9,800.0 | 1.88 | 179.59 | 9,797.2 | -171.1 | 1.2 | -171.1 | 0.00 | 0.00 | 0.00 |
| 9,900.0 | 1.88 | 179.59 | 9,897.2 | -174.3 | 1.3 | -174.3 | 0.00 | 0.00 | 0.00 |
| 10,000.0 | 1.88 | 179.59 | 9,997.1 | -177.6 | 1.3 | -177.6 | 0.00 | 0.00 | 0.00 |
| 10,100.0 | 1.88 | 179.59 | 10,097.0 | -180.9 | 1.3 | -180.9 | 0.00 | 0.00 | 0.00 |
| 10,200.0 | 1.88 | 179.59 | 10,197.0 | -184.2 | 1.3 | -184.2 | 0.00 | 0.00 | 0.00 |
| 10,300.0 | 1.88 | 179.59 | 10,296.9 | -187.5 | 1.3 | -187.5 | 0.00 | 0.00 | 0.00 |
| 10,400.0 | 1.88 | 179.59 | 10,396.9 | -190.8 | 1.4 | -190.8 | 0.00 | 0.00 | 0.00 |
| 10,436.0 | 1.88 | 179.59 | 10,432.8 | -192.0 | 1.4 | -192.0 | 0.00 | 0.00 | 0.00 |
| 10,450.0 | 0.20 | 179.91 | 10,446.9 | -192.2 | 1.4 | -192.2 | 12.00 | -12.00 | 2.26 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well #301H |
| **Company:** | EOG Resources - Midland | **TVD Reference:** | KB = 24 @ 3400.0usft |
| **Project:** | Lea County, NM (NAD 27 NME) | **MD Reference:** | KB = 24 @ 3400.0usft |
| **Site:** | Opal 36 State | **North Reference:** | Grid |
| **Well:** | #301H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #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) |
|---|---|---|---|---|---|---|---|---|---|
| 10,475.0 | 2.80 | 359.53 | 10,471.8 | -191.6 | 1.4 | -191.6 | 12.00 | 10.39 | 718.48 |
| 10,500.0 | 5.80 | 359.54 | 10,496.8 | -189.8 | 1.4 | -189.8 | 12.00 | 12.00 | 0.05 |
| 10,525.0 | 8.80 | 359.54 | 10,521.6 | -186.6 | 1.3 | -186.6 | 12.00 | 12.00 | 0.02 |
| 10,550.0 | 11.80 | 359.54 | 10,546.2 | -182.1 | 1.3 | -182.1 | 12.00 | 12.00 | 0.01 |
| 10,575.0 | 14.80 | 359.55 | 10,570.5 | -176.4 | 1.3 | -176.4 | 12.00 | 12.00 | 0.00 |
| 10,600.0 | 17.80 | 359.55 | 10,594.5 | -169.4 | 1.2 | -169.4 | 12.00 | 12.00 | 0.00 |
| 10,625.0 | 20.80 | 359.55 | 10,618.1 | -161.1 | 1.1 | -161.1 | 12.00 | 12.00 | 0.00 |
| 10,650.0 | 23.80 | 359.55 | 10,641.2 | -151.6 | 1.1 | -151.6 | 12.00 | 12.00 | 0.00 |
| 10,675.0 | 26.80 | 359.55 | 10,663.8 | -140.9 | 1.0 | -140.9 | 12.00 | 12.00 | 0.00 |
| 10,700.0 | 29.80 | 359.55 | 10,685.8 | -129.1 | 0.9 | -129.1 | 12.00 | 12.00 | 0.00 |
| 10,725.0 | 32.80 | 359.55 | 10,707.2 | -116.1 | 0.8 | -116.1 | 12.00 | 12.00 | 0.00 |
| 10,750.0 | 35.80 | 359.55 | 10,727.8 | -102.0 | 0.7 | -102.0 | 12.00 | 12.00 | 0.00 |
| 10,775.0 | 38.80 | 359.55 | 10,747.7 | -86.9 | 0.5 | -86.9 | 12.00 | 12.00 | 0.00 |
| 10,800.0 | 41.80 | 359.55 | 10,766.8 | -70.7 | 0.4 | -70.7 | 12.00 | 12.00 | 0.00 |
| 10,825.0 | 44.80 | 359.55 | 10,785.0 | -53.6 | 0.3 | -53.6 | 12.00 | 12.00 | 0.00 |
| 10,850.0 | 47.80 | 359.55 | 10,802.2 | -35.5 | 0.1 | -35.5 | 12.00 | 12.00 | 0.00 |
| 10,875.0 | 50.80 | 359.55 | 10,818.5 | -16.5 | 0.0 | -16.5 | 12.00 | 12.00 | 0.00 |
| 10,900.0 | 53.80 | 359.55 | 10,833.8 | 3.2 | -0.2 | 3.2 | 12.00 | 12.00 | 0.00 |
| 10,925.0 | 56.80 | 359.55 | 10,848.1 | 23.8 | -0.3 | 23.8 | 12.00 | 12.00 | 0.00 |
| 10,950.0 | 59.80 | 359.55 | 10,861.2 | 45.1 | -0.5 | 45.1 | 12.00 | 12.00 | 0.00 |
| 10,975.0 | 62.80 | 359.55 | 10,873.2 | 67.0 | -0.7 | 67.0 | 12.00 | 12.00 | 0.00 |
| 11,000.0 | 65.80 | 359.55 | 10,884.0 | 89.5 | -0.8 | 89.5 | 12.00 | 12.00 | 0.00 |
| 11,025.0 | 68.80 | 359.55 | 10,893.7 | 112.6 | -1.0 | 112.6 | 12.00 | 12.00 | 0.00 |
| 11,033.5 | 69.82 | 359.55 | 10,896.7 | 120.5 | -1.1 | 120.5 | 12.00 | 12.00 | 0.00 |
| **FTP(Opal 36 State #301H)** | | | | | | | | | |
| 11,050.0 | 71.80 | 359.55 | 10,902.1 | 136.1 | -1.2 | 136.1 | 12.00 | 12.00 | 0.00 |
| 11,075.0 | 74.80 | 359.55 | 10,909.3 | 160.0 | -1.4 | 160.1 | 12.00 | 12.00 | 0.00 |
| 11,100.0 | 77.80 | 359.55 | 10,915.2 | 184.3 | -1.6 | 184.3 | 12.00 | 12.00 | 0.00 |
| 11,125.0 | 80.80 | 359.55 | 10,919.9 | 208.9 | -1.8 | 208.9 | 12.00 | 12.00 | 0.00 |
| 11,150.0 | 83.80 | 359.55 | 10,923.2 | 233.7 | -2.0 | 233.7 | 12.00 | 12.00 | 0.00 |
| 11,175.0 | 86.80 | 359.55 | 10,925.3 | 258.6 | -2.2 | 258.6 | 12.00 | 12.00 | 0.00 |
| 11,201.7 | 90.00 | 359.55 | 10,926.0 | 285.2 | -2.4 | 285.2 | 12.00 | 12.00 | 0.00 |
| 11,300.0 | 90.00 | 359.55 | 10,926.0 | 383.6 | -3.1 | 383.6 | 0.00 | 0.00 | 0.00 |
| 11,400.0 | 90.00 | 359.55 | 10,926.0 | 483.6 | -3.9 | 483.6 | 0.00 | 0.00 | 0.00 |
| 11,500.0 | 90.00 | 359.55 | 10,926.0 | 583.6 | -4.7 | 583.6 | 0.00 | 0.00 | 0.00 |
| 11,600.0 | 90.00 | 359.55 | 10,926.0 | 683.6 | -5.5 | 683.6 | 0.00 | 0.00 | 0.00 |
| 11,700.0 | 90.00 | 359.55 | 10,926.0 | 783.5 | -6.3 | 783.6 | 0.00 | 0.00 | 0.00 |
| 11,800.0 | 90.00 | 359.55 | 10,926.0 | 883.5 | -7.1 | 883.6 | 0.00 | 0.00 | 0.00 |
| 11,900.0 | 90.00 | 359.55 | 10,926.0 | 983.5 | -7.8 | 983.6 | 0.00 | 0.00 | 0.00 |
| 12,000.0 | 90.00 | 359.55 | 10,926.0 | 1,083.5 | -8.6 | 1,083.6 | 0.00 | 0.00 | 0.00 |
| 12,100.0 | 90.00 | 359.55 | 10,926.0 | 1,183.5 | -9.4 | 1,183.6 | 0.00 | 0.00 | 0.00 |
| 12,200.0 | 90.00 | 359.55 | 10,926.0 | 1,283.5 | -10.2 | 1,283.6 | 0.00 | 0.00 | 0.00 |
| 12,300.0 | 90.00 | 359.55 | 10,926.0 | 1,383.5 | -11.0 | 1,383.6 | 0.00 | 0.00 | 0.00 |
| 12,400.0 | 90.00 | 359.55 | 10,926.0 | 1,483.5 | -11.8 | 1,483.6 | 0.00 | 0.00 | 0.00 |
| 12,500.0 | 90.00 | 359.55 | 10,926.0 | 1,583.5 | -12.6 | 1,583.6 | 0.00 | 0.00 | 0.00 |
| 12,600.0 | 90.00 | 359.55 | 10,926.0 | 1,683.5 | -13.3 | 1,683.6 | 0.00 | 0.00 | 0.00 |
| 12,700.0 | 90.00 | 359.55 | 10,926.0 | 1,783.5 | -14.1 | 1,783.6 | 0.00 | 0.00 | 0.00 |
| 12,800.0 | 90.00 | 359.55 | 10,926.0 | 1,883.5 | -14.9 | 1,883.6 | 0.00 | 0.00 | 0.00 |
| 12,900.0 | 90.00 | 359.55 | 10,926.0 | 1,983.5 | -15.7 | 1,983.6 | 0.00 | 0.00 | 0.00 |
| 13,000.0 | 90.00 | 359.55 | 10,926.0 | 2,083.5 | -16.5 | 2,083.6 | 0.00 | 0.00 | 0.00 |
| 13,100.0 | 90.00 | 359.55 | 10,926.0 | 2,183.5 | -17.3 | 2,183.6 | 0.00 | 0.00 | 0.00 |
| 13,200.0 | 90.00 | 359.55 | 10,926.0 | 2,283.5 | -18.0 | 2,283.6 | 0.00 | 0.00 | 0.00 |
| 13,300.0 | 90.00 | 359.55 | 10,926.0 | 2,383.5 | -18.8 | 2,383.6 | 0.00 | 0.00 | 0.00 |

| | | | |
|---|---|---|---|
| **Database:** | EDM 5000.1 Single User Db | **Local Co-ordinate Reference:** | Well #301H |
| **Company:** | EOG Resources - Midland | **TVD Reference:** | KB = 24 @ 3400.0usft |
| **Project:** | Lea County, NM (NAD 27 NME) | **MD Reference:** | KB = 24 @ 3400.0usft |
| **Site:** | Opal 36 State | **North Reference:** | Grid |
| **Well:** | #301H | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | OH | | |
| **Design:** | Plan #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) |
|---|---|---|---|---|---|---|---|---|---|
| 13,400.0 | 90.00 | 359.55 | 10,926.0 | 2,483.5 | -19.6 | 2,483.6 | 0.00 | 0.00 | 0.00 |
| 13,500.0 | 90.00 | 359.55 | 10,926.0 | 2,583.5 | -20.4 | 2,583.6 | 0.00 | 0.00 | 0.00 |
| 13,600.0 | 90.00 | 359.55 | 10,926.0 | 2,683.5 | -21.2 | 2,683.6 | 0.00 | 0.00 | 0.00 |
| 13,700.0 | 90.00 | 359.55 | 10,926.0 | 2,783.5 | -22.0 | 2,783.6 | 0.00 | 0.00 | 0.00 |
| 13,800.0 | 90.00 | 359.55 | 10,926.0 | 2,883.5 | -22.7 | 2,883.6 | 0.00 | 0.00 | 0.00 |
| 13,900.0 | 90.00 | 359.55 | 10,926.0 | 2,983.5 | -23.5 | 2,983.6 | 0.00 | 0.00 | 0.00 |
| 14,000.0 | 90.00 | 359.55 | 10,926.0 | 3,083.5 | -24.3 | 3,083.6 | 0.00 | 0.00 | 0.00 |
| 14,100.0 | 90.00 | 359.55 | 10,926.0 | 3,183.5 | -25.1 | 3,183.6 | 0.00 | 0.00 | 0.00 |
| 14,200.0 | 90.00 | 359.55 | 10,926.0 | 3,283.5 | -25.9 | 3,283.6 | 0.00 | 0.00 | 0.00 |
| 14,300.0 | 90.00 | 359.55 | 10,926.0 | 3,383.5 | -26.7 | 3,383.6 | 0.00 | 0.00 | 0.00 |
| 14,400.0 | 90.00 | 359.55 | 10,926.0 | 3,483.5 | -27.4 | 3,483.6 | 0.00 | 0.00 | 0.00 |
| 14,500.0 | 90.00 | 359.55 | 10,926.0 | 3,583.5 | -28.2 | 3,583.6 | 0.00 | 0.00 | 0.00 |
| 14,600.0 | 90.00 | 359.55 | 10,926.0 | 3,683.5 | -29.0 | 3,683.6 | 0.00 | 0.00 | 0.00 |
| 14,700.0 | 90.00 | 359.55 | 10,926.0 | 3,783.5 | -29.8 | 3,783.6 | 0.00 | 0.00 | 0.00 |
| 14,800.0 | 90.00 | 359.55 | 10,926.0 | 3,883.5 | -30.6 | 3,883.6 | 0.00 | 0.00 | 0.00 |
| 14,900.0 | 90.00 | 359.55 | 10,926.0 | 3,983.5 | -31.4 | 3,983.6 | 0.00 | 0.00 | 0.00 |
| 15,000.0 | 90.00 | 359.55 | 10,926.0 | 4,083.4 | -32.1 | 4,083.6 | 0.00 | 0.00 | 0.00 |
| 15,100.0 | 90.00 | 359.55 | 10,926.0 | 4,183.4 | -32.9 | 4,183.6 | 0.00 | 0.00 | 0.00 |
| 15,200.0 | 90.00 | 359.55 | 10,926.0 | 4,283.4 | -33.7 | 4,283.6 | 0.00 | 0.00 | 0.00 |
| 15,300.0 | 90.00 | 359.55 | 10,926.0 | 4,383.4 | -34.5 | 4,383.6 | 0.00 | 0.00 | 0.00 |
| 15,400.0 | 90.00 | 359.55 | 10,926.0 | 4,483.4 | -35.3 | 4,483.6 | 0.00 | 0.00 | 0.00 |
| 15,500.0 | 90.00 | 359.55 | 10,926.0 | 4,583.4 | -36.1 | 4,583.6 | 0.00 | 0.00 | 0.00 |
| 15,600.0 | 90.00 | 359.55 | 10,926.0 | 4,683.4 | -36.9 | 4,683.6 | 0.00 | 0.00 | 0.00 |
| 15,700.0 | 90.00 | 359.55 | 10,926.0 | 4,783.4 | -37.6 | 4,783.6 | 0.00 | 0.00 | 0.00 |
| 15,746.6 | 90.00 | 359.55 | 10,926.0 | 4,830.0 | -38.0 | 4,830.1 | 0.00 | 0.00 | 0.00 |
| PBHL(Opal 36 State #301H) | | | | | | | | | |

**Design Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| PBHL(Opal 36 State #3( - plan hits target center - Point | 0.00 | 0.00 | 10,926.0 | 4,830.0 | -38.0 | 398,900.00 | 782,241.00 | 32° 5' 36.288 N | 103° 25' 19.036 W |
| FTP(Opal 36 State #301 - plan misses target center by 31.1usft at 11033.5usft MD (10896.7 TVD, 120.5 N, -1.1 E) - Point | 0.00 | 0.00 | 10,926.0 | 110.0 | -1.0 | 394,180.00 | 782,278.00 | 32° 4' 49.579 N | 103° 25' 19.070 W |