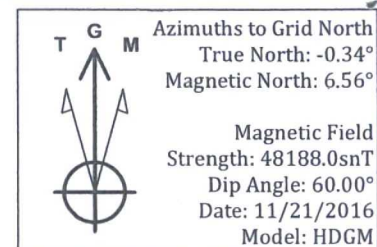
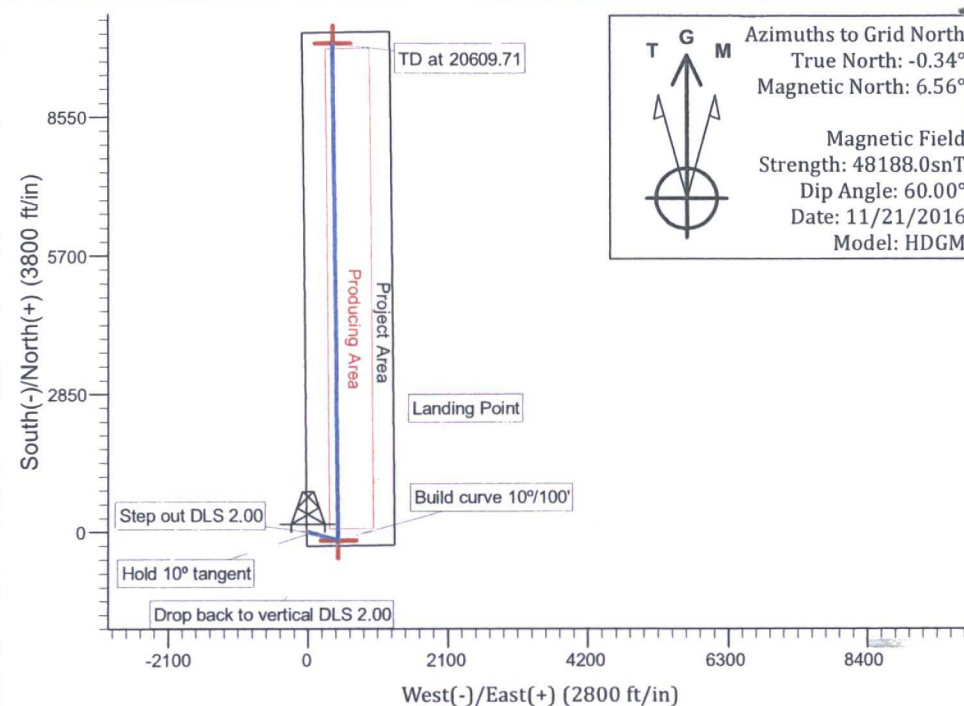
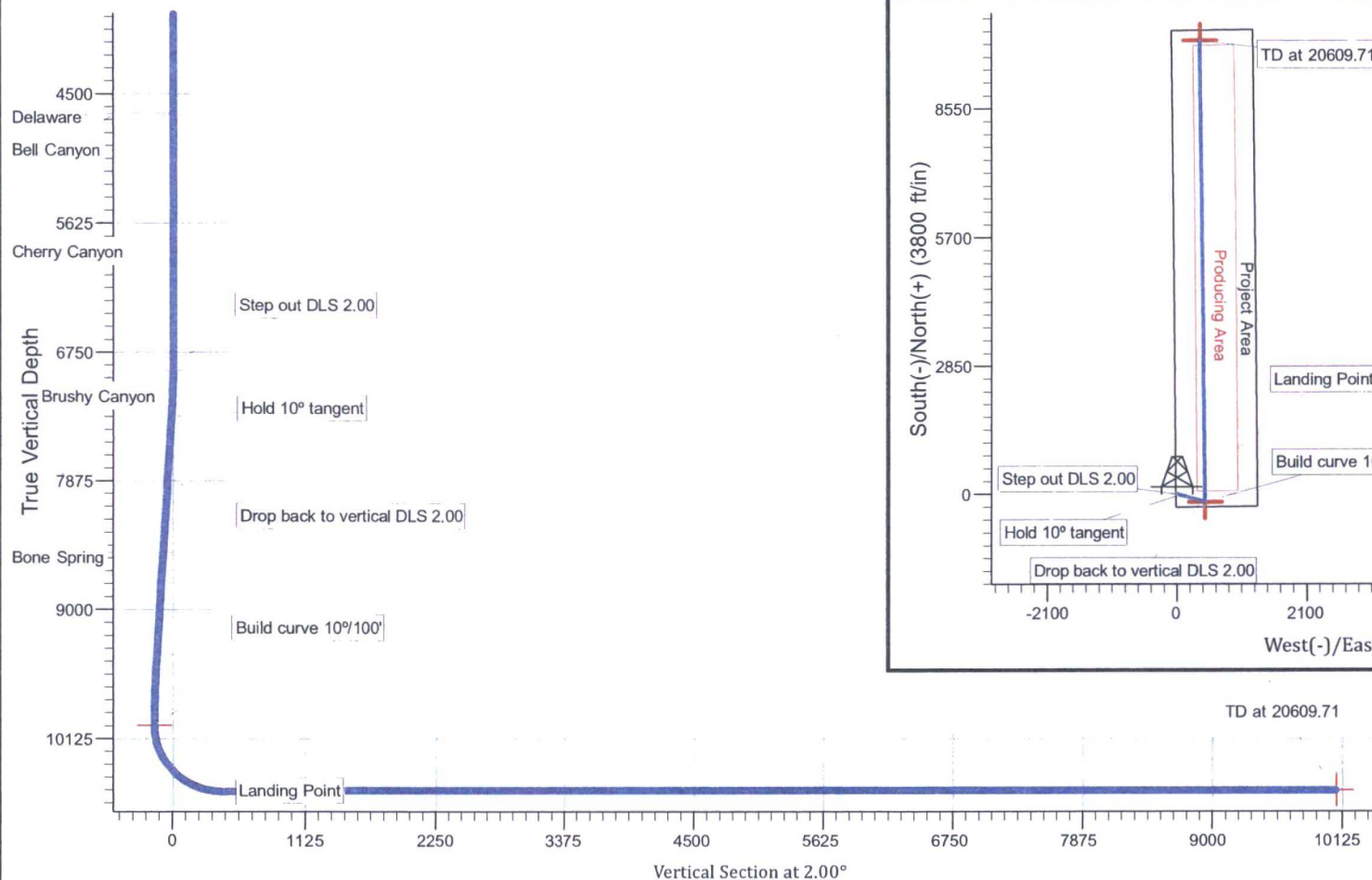




Project: PRD NM DIRECTIONAL PLANS (NAD 1983)  
Site: Mesa Verde 17-8 Fed Com  
Well: Mesa Verde 17-8 Fed Com 4H  
Wellbore: WB00  
Design: Permitting Plan

# WELL DETAILS: Mesa Verde 17-8 Fed Com 4H

|                       |                                       |           |           |                     |                      |
|-----------------------|---------------------------------------|-----------|-----------|---------------------|----------------------|
| Ground Level: 3559.60 | WELL @ 3586.10ft (Original Well Elev) |           |           |                     |                      |
| +N/-S                 | +E/-W                                 | Northing  | Easting   | Latitude            | Longitude            |
| 0.00                  | 0.00                                  | 441074.64 | 738243.71 | 32° 12' 39.556553 N | 103° 41' 48.015637 W |



## PROJECT DETAILS: NM DIRECTIONAL PLANS (NAD 1983)

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

## ANNOTATIONS

| TVD      | MD       | Inc   | Azi    | +N/-S    | +E/-W  | Vsect    | Departure | Annotation                     |
|----------|----------|-------|--------|----------|--------|----------|-----------|--------------------------------|
| 6818.00  | 6818.00  | 0.00  | 0.00   | 0.00     | 0.00   | 0.00     | 0.00      | Step out DLS 2.00              |
| 7315.68  | 7318.22  | 10.00 | 111.64 | -16.06   | 40.49  | -14.64   | 43.56     | Hold 10° tangent               |
| 9511.36  | 9547.80  | 10.00 | 111.64 | -158.90  | 400.52 | -144.80  | 430.89    | Drop back to vertical DLS 2.00 |
| 10009.04 | 10048.02 | 0.00  | 359.50 | -174.96  | 441.01 | -159.44  | 474.45    | Build curve 10°/100'           |
| 10582.00 | 10948.02 | 90.00 | 359.50 | 397.98   | 436.01 | 412.97   | 1047.41   | Landing Point                  |
| 10582.00 | 20609.71 | 90.00 | 359.50 | 10059.30 | 351.75 | 10065.45 | 10709.09  | TD at 20609.71                 |

**OXY**

**PRD NM DIRECTIONAL PLANS (NAD 1983)  
Mesa Verde 17-8 Fed Com  
Mesa Verde 17-8 Fed Com 4H**

**WB00**

**Plan: Permitting Plan**

## **Standard Planning Report**

**21 November, 2016**

**HOBBS OCD**

**SEP 25 2017**

**RECEIVED**

# Oxy

## Planning Report

**Database:** HOPSP  
**Company:** OXY  
**Project:** PRD NM DIRECTIONAL PLANS (NAD 1983)  
**Site:** Mesa Verde 17-8 Fed Com  
**Well:** Mesa Verde 17-8 Fed Com 4H  
**Wellbore:** WB00  
**Design:** Permitting Plan

**Local Co-ordinate Reference:** Well Mesa Verde 17-8 Fed Com 4H  
**TVD Reference:** WELL @ 3586.10ft (Original Well Elev)  
**MD Reference:** WELL @ 3586.10ft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

|                    |                                     |                      |                             |
|--------------------|-------------------------------------|----------------------|-----------------------------|
| <b>Project</b>     | PRD NM DIRECTIONAL PLANS (NAD 1983) |                      |                             |
| <b>Map System:</b> | US State Plane 1983                 | <b>System Datum:</b> | Mean Sea Level              |
| <b>Geo Datum:</b>  | North American Datum 1983           |                      |                             |
| <b>Map Zone:</b>   | New Mexico Eastern Zone             |                      | Using geodetic scale factor |

|                              |                         |                          |                      |
|------------------------------|-------------------------|--------------------------|----------------------|
| <b>Site</b>                  | Mesa Verde 17-8 Fed Com |                          |                      |
| <b>Site Position:</b>        |                         | <b>Northing:</b>         | 441,093.32 usft      |
| <b>From:</b>                 | Map                     | <b>Easting:</b>          | 739,872.60 usft      |
| <b>Position Uncertainty:</b> | 0.00 ft                 | <b>Slot Radius:</b>      | 13.200 in            |
|                              |                         | <b>Latitude:</b>         | 32° 12' 39.645531 N  |
|                              |                         | <b>Longitude:</b>        | 103° 41' 29.055109 W |
|                              |                         | <b>Grid Convergence:</b> | 0.34 °               |

|                             |                            |                            |                      |
|-----------------------------|----------------------------|----------------------------|----------------------|
| <b>Well</b>                 | Mesa Verde 17-8 Fed Com 4H |                            |                      |
| <b>Well Position</b>        | <b>+N/-S</b>               | -18.68 ft                  | <b>Northing:</b>     |
|                             | <b>+E/-W</b>               | -1,628.97 ft               | <b>Easting:</b>      |
| <b>Position Uncertainty</b> | 0.00 ft                    | <b>Wellhead Elevation:</b> | 3,559.60 ft          |
|                             |                            | <b>Latitude:</b>           | 32° 12' 39.556554 N  |
|                             |                            | <b>Longitude:</b>          | 103° 41' 48.015637 W |
|                             |                            | <b>Ground Level:</b>       | 3,559.60 ft          |

|                  |                   |                            |                        |
|------------------|-------------------|----------------------------|------------------------|
| <b>Wellbore</b>  | WB00              |                            |                        |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b>         | <b>Declination (°)</b> |
|                  | HDGM              | 11/21/2016                 | 6.90                   |
|                  |                   | <b>Dip Angle (°)</b>       | 60.00                  |
|                  |                   | <b>Field Strength (nT)</b> | 48,188                 |

|                          |                         |                  |                      |
|--------------------------|-------------------------|------------------|----------------------|
| <b>Design</b>            | Permitting Plan         |                  |                      |
| <b>Audit Notes:</b>      |                         |                  |                      |
| <b>Version:</b>          | <b>Phase:</b>           | PROTOTYPE        | <b>Tie On Depth:</b> |
|                          |                         |                  | 0.00                 |
| <b>Vertical Section:</b> | <b>Depth From (TVD)</b> | <b>+N/-S</b>     | <b>+E/-W</b>         |
|                          | (ft)                    | (ft)             | (ft)                 |
|                          | 0.00                    | 0.00             | 0.00                 |
|                          |                         | <b>Direction</b> | <b>Direction</b>     |
|                          |                         | (°)              | (°)                  |
|                          |                         | 2.00             |                      |

| Plan Sections       |                 |             |                     |            |            |                       |                      |                     |         |               |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|----------------------|---------------------|---------|---------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target        |
| 0.00                | 0.00            | 0.00        | 0.00                | 0.00       | 0.00       | 0.00                  | 0.00                 | 0.00                | 0.00    |               |
| 6,818.00            | 0.00            | 0.00        | 6,818.00            | 0.00       | 0.00       | 0.00                  | 0.00                 | 0.00                | 0.00    |               |
| 7,318.22            | 10.00           | 111.64      | 7,315.68            | -16.06     | 40.49      | 2.00                  | 2.00                 | 0.00                | 111.64  |               |
| 9,547.80            | 10.00           | 111.64      | 9,511.36            | -158.90    | 400.52     | 0.00                  | 0.00                 | 0.00                | 0.00    |               |
| 10,048.02           | 0.00            | 359.50      | 10,009.04           | -174.96    | 441.01     | 2.00                  | -2.00                | 0.00                | 180.00  | MV17-8_4H_KOP |
| 10,948.02           | 90.00           | 359.50      | 10,582.00           | 397.98     | 436.01     | 10.00                 | 10.00                | 0.00                | -0.50   |               |
| 20,609.71           | 90.00           | 359.50      | 10,582.00           | 10,059.30  | 351.75     | 0.00                  | 0.00                 | 0.00                | 0.00    | MV17-8_4H_BHL |

# Oxy Planning Report

**Database:** HOPSPP  
**Company:** OXY  
**Project:** PRD NM DIRECTIONAL PLANS (NAD 1983)  
**Site:** Mesa Verde 17-8 Fed Com  
**Well:** Mesa Verde 17-8 Fed Com 4H  
**Wellbore:** WB00  
**Design:** Permitting Plan

**Local Co-ordinate Reference:** Well Mesa Verde 17-8 Fed Com 4H  
**TVD Reference:** WELL @ 3586.10ft (Original Well Elev)  
**MD Reference:** WELL @ 3586.10ft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

## Planned Survey

| Measured Depth (ft)                   | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---------------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 0.00                                  | 0.00            | 0.00        | 0.00                | 0.00       | 0.00       | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| 919.00                                | 0.00            | 0.00        | 919.00              | 0.00       | 0.00       | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| <b>Rustler</b>                        |                 |             |                     |            |            |                       |                       |                      |                     |
| 1,007.00                              | 0.00            | 0.00        | 1,007.00            | 0.00       | 0.00       | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| <b>Salado</b>                         |                 |             |                     |            |            |                       |                       |                      |                     |
| 3,300.00                              | 0.00            | 0.00        | 3,300.00            | 0.00       | 0.00       | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| <b>Castile</b>                        |                 |             |                     |            |            |                       |                       |                      |                     |
| 4,670.00                              | 0.00            | 0.00        | 4,670.00            | 0.00       | 0.00       | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| <b>Delaware</b>                       |                 |             |                     |            |            |                       |                       |                      |                     |
| 4,685.00                              | 0.00            | 0.00        | 4,685.00            | 0.00       | 0.00       | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| <b>Bell Canyon</b>                    |                 |             |                     |            |            |                       |                       |                      |                     |
| 5,543.00                              | 0.00            | 0.00        | 5,543.00            | 0.00       | 0.00       | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| <b>Cherry Canyon</b>                  |                 |             |                     |            |            |                       |                       |                      |                     |
| 6,818.00                              | 0.00            | 0.00        | 6,818.00            | 0.00       | 0.00       | 0.00                  | 0.00                  | 0.00                 | 0.00                |
| <b>Step out DLS 2.00</b>              |                 |             |                     |            |            |                       |                       |                      |                     |
| 6,900.00                              | 1.64            | 111.64      | 6,899.99            | -0.43      | 1.09       | -0.39                 | 2.00                  | 2.00                 | 0.00                |
| 6,911.02                              | 1.86            | 111.64      | 6,911.00            | -0.56      | 1.40       | -0.51                 | 2.00                  | 2.00                 | 0.00                |
| <b>Brushy Canyon</b>                  |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,000.00                              | 3.64            | 111.64      | 6,999.88            | -2.13      | 5.37       | -1.94                 | 2.00                  | 2.00                 | 0.00                |
| 7,100.00                              | 5.64            | 111.64      | 7,099.54            | -5.11      | 12.89      | -4.66                 | 2.00                  | 2.00                 | 0.00                |
| 7,200.00                              | 7.64            | 111.64      | 7,198.87            | -9.38      | 23.64      | -8.55                 | 2.00                  | 2.00                 | 0.00                |
| 7,300.00                              | 9.64            | 111.64      | 7,297.73            | -14.92     | 37.60      | -13.59                | 2.00                  | 2.00                 | 0.00                |
| 7,318.22                              | 10.00           | 111.64      | 7,315.68            | -16.06     | 40.49      | -14.64                | 2.00                  | 2.00                 | 0.00                |
| <b>Hold 10° tangent</b>               |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,400.00                              | 10.00           | 111.64      | 7,396.22            | -21.30     | 53.70      | -19.41                | 0.00                  | 0.00                 | 0.00                |
| 7,500.00                              | 10.00           | 111.64      | 7,494.70            | -27.71     | 69.84      | -25.25                | 0.00                  | 0.00                 | 0.00                |
| 7,600.00                              | 10.00           | 111.64      | 7,593.18            | -34.11     | 85.99      | -31.09                | 0.00                  | 0.00                 | 0.00                |
| 7,700.00                              | 10.00           | 111.64      | 7,691.66            | -40.52     | 102.14     | -36.93                | 0.00                  | 0.00                 | 0.00                |
| 7,800.00                              | 10.00           | 111.64      | 7,790.14            | -46.93     | 118.29     | -42.77                | 0.00                  | 0.00                 | 0.00                |
| 7,900.00                              | 10.00           | 111.64      | 7,888.62            | -53.33     | 134.44     | -48.60                | 0.00                  | 0.00                 | 0.00                |
| 8,000.00                              | 10.00           | 111.64      | 7,987.10            | -59.74     | 150.58     | -54.44                | 0.00                  | 0.00                 | 0.00                |
| 8,100.00                              | 10.00           | 111.64      | 8,085.58            | -66.15     | 166.73     | -60.28                | 0.00                  | 0.00                 | 0.00                |
| 8,200.00                              | 10.00           | 111.64      | 8,184.05            | -72.55     | 182.88     | -66.12                | 0.00                  | 0.00                 | 0.00                |
| 8,300.00                              | 10.00           | 111.64      | 8,282.53            | -78.96     | 199.03     | -71.95                | 0.00                  | 0.00                 | 0.00                |
| 8,400.00                              | 10.00           | 111.64      | 8,381.01            | -85.36     | 215.18     | -77.79                | 0.00                  | 0.00                 | 0.00                |
| 8,500.00                              | 10.00           | 111.64      | 8,479.49            | -91.77     | 231.32     | -83.63                | 0.00                  | 0.00                 | 0.00                |
| 8,523.87                              | 10.00           | 111.64      | 8,503.00            | -93.30     | 235.18     | -85.02                | 0.00                  | 0.00                 | 0.00                |
| <b>Bone Spring</b>                    |                 |             |                     |            |            |                       |                       |                      |                     |
| 8,600.00                              | 10.00           | 111.64      | 8,577.97            | -98.18     | 247.47     | -89.47                | 0.00                  | 0.00                 | 0.00                |
| 8,700.00                              | 10.00           | 111.64      | 8,676.45            | -104.58    | 263.62     | -95.31                | 0.00                  | 0.00                 | 0.00                |
| 8,800.00                              | 10.00           | 111.64      | 8,774.93            | -110.99    | 279.77     | -101.14               | 0.00                  | 0.00                 | 0.00                |
| 8,900.00                              | 10.00           | 111.64      | 8,873.41            | -117.40    | 295.91     | -106.98               | 0.00                  | 0.00                 | 0.00                |
| 9,000.00                              | 10.00           | 111.64      | 8,971.89            | -123.80    | 312.06     | -112.82               | 0.00                  | 0.00                 | 0.00                |
| 9,100.00                              | 10.00           | 111.64      | 9,070.37            | -130.21    | 328.21     | -118.66               | 0.00                  | 0.00                 | 0.00                |
| 9,200.00                              | 10.00           | 111.64      | 9,168.85            | -136.61    | 344.36     | -124.50               | 0.00                  | 0.00                 | 0.00                |
| 9,300.00                              | 10.00           | 111.64      | 9,267.33            | -143.02    | 360.51     | -130.33               | 0.00                  | 0.00                 | 0.00                |
| 9,400.00                              | 10.00           | 111.64      | 9,365.81            | -149.43    | 376.65     | -136.17               | 0.00                  | 0.00                 | 0.00                |
| 9,500.00                              | 10.00           | 111.64      | 9,464.29            | -155.83    | 392.80     | -142.01               | 0.00                  | 0.00                 | 0.00                |
| 9,547.80                              | 10.00           | 111.64      | 9,511.36            | -158.90    | 400.52     | -144.80               | 0.00                  | 0.00                 | 0.00                |
| <b>Drop back to vertical DLS 2.00</b> |                 |             |                     |            |            |                       |                       |                      |                     |
| 9,600.00                              | 8.96            | 111.64      | 9,562.85            | -162.07    | 408.51     | -147.69               | 2.00                  | -2.00                | 0.00                |
| 9,700.00                              | 6.96            | 111.64      | 9,661.88            | -167.17    | 421.39     | -152.35               | 2.00                  | -2.00                | 0.00                |
| 9,800.00                              | 4.96            | 111.64      | 9,761.33            | -171.00    | 431.04     | -155.83               | 2.00                  | -2.00                | 0.00                |

# Oxy

## Planning Report

**Database:** HOPSPP  
**Company:** OXY  
**Project:** PRD NM DIRECTIONAL PLANS (NAD 1983)  
**Site:** Mesa Verde 17-8 Fed Com  
**Well:** Mesa Verde 17-8 Fed Com 4H  
**Wellbore:** WB00  
**Design:** Permitting Plan

**Local Co-ordinate Reference:** Well Mesa Verde 17-8 Fed Com 4H  
**TVD Reference:** WELL @ 3586.10ft (Original Well Elev)  
**MD Reference:** WELL @ 3586.10ft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### Planned Survey

| Measured Depth (ft)                         | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---------------------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 9,900.00                                    | 2.96            | 111.64      | 9,861.09            | -173.55    | 437.46     | -158.16               | 2.00                  | -2.00                | 0.00                |
| 10,000.00                                   | 0.96            | 111.64      | 9,961.03            | -174.81    | 440.64     | -159.30               | 2.00                  | -2.00                | 0.00                |
| 10,048.02                                   | 0.00            | 359.50      | 10,009.04           | -174.96    | 441.01     | -159.44               | 2.00                  | -2.00                | 0.00                |
| <b>Build curve 10°/100' - MV17-8_4H_KOP</b> |                 |             |                     |            |            |                       |                       |                      |                     |
| 10,100.00                                   | 5.20            | 359.50      | 10,060.95           | -172.60    | 440.99     | -157.09               | 10.00                 | 10.00                | 0.00                |
| 10,200.00                                   | 15.20           | 359.50      | 10,159.25           | -154.92    | 440.84     | -139.42               | 10.00                 | 10.00                | 0.00                |
| 10,300.00                                   | 25.20           | 359.50      | 10,252.98           | -120.44    | 440.54     | -104.97               | 10.00                 | 10.00                | 0.00                |
| 10,400.00                                   | 35.20           | 359.50      | 10,339.30           | -70.20     | 440.10     | -54.78                | 10.00                 | 10.00                | 0.00                |
| 10,500.00                                   | 45.20           | 359.50      | 10,415.58           | -5.75      | 439.54     | 9.62                  | 10.00                 | 10.00                | 0.00                |
| 10,600.00                                   | 55.20           | 359.50      | 10,479.51           | 70.98      | 438.87     | 86.27                 | 10.00                 | 10.00                | 0.00                |
| 10,700.00                                   | 65.20           | 359.50      | 10,529.15           | 157.64     | 438.11     | 172.86                | 10.00                 | 10.00                | 0.00                |
| 10,800.00                                   | 75.20           | 359.50      | 10,562.98           | 251.61     | 437.29     | 266.73                | 10.00                 | 10.00                | 0.00                |
| 10,900.00                                   | 85.20           | 359.50      | 10,579.99           | 350.02     | 436.43     | 365.06                | 10.00                 | 10.00                | 0.00                |
| 10,948.02                                   | 90.00           | 359.50      | 10,582.00           | 397.98     | 436.01     | 412.97                | 10.00                 | 10.00                | 0.00                |
| <b>Landing Point</b>                        |                 |             |                     |            |            |                       |                       |                      |                     |
| 11,000.00                                   | 90.00           | 359.50      | 10,582.00           | 449.96     | 435.56     | 464.90                | 0.00                  | 0.00                 | 0.00                |
| 11,100.00                                   | 90.00           | 359.50      | 10,582.00           | 549.95     | 434.69     | 564.81                | 0.00                  | 0.00                 | 0.00                |
| 11,200.00                                   | 90.00           | 359.50      | 10,582.00           | 649.95     | 433.82     | 664.71                | 0.00                  | 0.00                 | 0.00                |
| 11,300.00                                   | 90.00           | 359.50      | 10,582.00           | 749.95     | 432.94     | 764.62                | 0.00                  | 0.00                 | 0.00                |
| 11,400.00                                   | 90.00           | 359.50      | 10,582.00           | 849.94     | 432.07     | 864.52                | 0.00                  | 0.00                 | 0.00                |
| 11,500.00                                   | 90.00           | 359.50      | 10,582.00           | 949.94     | 431.20     | 964.43                | 0.00                  | 0.00                 | 0.00                |
| 11,600.00                                   | 90.00           | 359.50      | 10,582.00           | 1,049.94   | 430.33     | 1,064.33              | 0.00                  | 0.00                 | 0.00                |
| 11,700.00                                   | 90.00           | 359.50      | 10,582.00           | 1,149.93   | 429.46     | 1,164.24              | 0.00                  | 0.00                 | 0.00                |
| 11,800.00                                   | 90.00           | 359.50      | 10,582.00           | 1,249.93   | 428.58     | 1,264.14              | 0.00                  | 0.00                 | 0.00                |
| 11,900.00                                   | 90.00           | 359.50      | 10,582.00           | 1,349.92   | 427.71     | 1,364.05              | 0.00                  | 0.00                 | 0.00                |
| 12,000.00                                   | 90.00           | 359.50      | 10,582.00           | 1,449.92   | 426.84     | 1,463.95              | 0.00                  | 0.00                 | 0.00                |
| 12,100.00                                   | 90.00           | 359.50      | 10,582.00           | 1,549.92   | 425.97     | 1,563.86              | 0.00                  | 0.00                 | 0.00                |
| 12,200.00                                   | 90.00           | 359.50      | 10,582.00           | 1,649.91   | 425.09     | 1,663.76              | 0.00                  | 0.00                 | 0.00                |
| 12,300.00                                   | 90.00           | 359.50      | 10,582.00           | 1,749.91   | 424.22     | 1,763.66              | 0.00                  | 0.00                 | 0.00                |
| 12,400.00                                   | 90.00           | 359.50      | 10,582.00           | 1,849.90   | 423.35     | 1,863.57              | 0.00                  | 0.00                 | 0.00                |
| 12,500.00                                   | 90.00           | 359.50      | 10,582.00           | 1,949.90   | 422.48     | 1,963.47              | 0.00                  | 0.00                 | 0.00                |
| 12,600.00                                   | 90.00           | 359.50      | 10,582.00           | 2,049.90   | 421.61     | 2,063.38              | 0.00                  | 0.00                 | 0.00                |
| 12,700.00                                   | 90.00           | 359.50      | 10,582.00           | 2,149.89   | 420.73     | 2,163.28              | 0.00                  | 0.00                 | 0.00                |
| 12,800.00                                   | 90.00           | 359.50      | 10,582.00           | 2,249.89   | 419.86     | 2,263.19              | 0.00                  | 0.00                 | 0.00                |
| 12,900.00                                   | 90.00           | 359.50      | 10,582.00           | 2,349.89   | 418.99     | 2,363.09              | 0.00                  | 0.00                 | 0.00                |
| 13,000.00                                   | 90.00           | 359.50      | 10,582.00           | 2,449.88   | 418.12     | 2,463.00              | 0.00                  | 0.00                 | 0.00                |
| 13,100.00                                   | 90.00           | 359.50      | 10,582.00           | 2,549.88   | 417.25     | 2,562.90              | 0.00                  | 0.00                 | 0.00                |
| 13,200.00                                   | 90.00           | 359.50      | 10,582.00           | 2,649.87   | 416.37     | 2,662.81              | 0.00                  | 0.00                 | 0.00                |
| 13,300.00                                   | 90.00           | 359.50      | 10,582.00           | 2,749.87   | 415.50     | 2,762.71              | 0.00                  | 0.00                 | 0.00                |
| 13,400.00                                   | 90.00           | 359.50      | 10,582.00           | 2,849.87   | 414.63     | 2,862.62              | 0.00                  | 0.00                 | 0.00                |
| 13,500.00                                   | 90.00           | 359.50      | 10,582.00           | 2,949.86   | 413.76     | 2,962.52              | 0.00                  | 0.00                 | 0.00                |
| 13,600.00                                   | 90.00           | 359.50      | 10,582.00           | 3,049.86   | 412.88     | 3,062.43              | 0.00                  | 0.00                 | 0.00                |
| 13,700.00                                   | 90.00           | 359.50      | 10,582.00           | 3,149.86   | 412.01     | 3,162.33              | 0.00                  | 0.00                 | 0.00                |
| 13,800.00                                   | 90.00           | 359.50      | 10,582.00           | 3,249.85   | 411.14     | 3,262.23              | 0.00                  | 0.00                 | 0.00                |
| 13,900.00                                   | 90.00           | 359.50      | 10,582.00           | 3,349.85   | 410.27     | 3,362.14              | 0.00                  | 0.00                 | 0.00                |
| 14,000.00                                   | 90.00           | 359.50      | 10,582.00           | 3,449.84   | 409.40     | 3,462.04              | 0.00                  | 0.00                 | 0.00                |
| 14,100.00                                   | 90.00           | 359.50      | 10,582.00           | 3,549.84   | 408.52     | 3,561.95              | 0.00                  | 0.00                 | 0.00                |
| 14,200.00                                   | 90.00           | 359.50      | 10,582.00           | 3,649.84   | 407.65     | 3,661.85              | 0.00                  | 0.00                 | 0.00                |
| 14,300.00                                   | 90.00           | 359.50      | 10,582.00           | 3,749.83   | 406.78     | 3,761.76              | 0.00                  | 0.00                 | 0.00                |
| 14,400.00                                   | 90.00           | 359.50      | 10,582.00           | 3,849.83   | 405.91     | 3,861.66              | 0.00                  | 0.00                 | 0.00                |
| 14,500.00                                   | 90.00           | 359.50      | 10,582.00           | 3,949.83   | 405.03     | 3,961.57              | 0.00                  | 0.00                 | 0.00                |
| 14,600.00                                   | 90.00           | 359.50      | 10,582.00           | 4,049.82   | 404.16     | 4,061.47              | 0.00                  | 0.00                 | 0.00                |
| 14,700.00                                   | 90.00           | 359.50      | 10,582.00           | 4,149.82   | 403.29     | 4,161.38              | 0.00                  | 0.00                 | 0.00                |
| 14,800.00                                   | 90.00           | 359.50      | 10,582.00           | 4,249.81   | 402.42     | 4,261.28              | 0.00                  | 0.00                 | 0.00                |

# Oxy

## Planning Report

**Database:** HOPSP  
**Company:** OXY  
**Project:** PRD NM DIRECTIONAL PLANS (NAD 1983)  
**Site:** Mesa Verde 17-8 Fed Com  
**Well:** Mesa Verde 17-8 Fed Com 4H  
**Wellbore:** WB00  
**Design:** Permitting Plan

**Local Co-ordinate Reference:** Well Mesa Verde 17-8 Fed Com 4H  
**TVD Reference:** WELL @ 3586.10ft (Original Well Elev)  
**MD Reference:** WELL @ 3586.10ft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 14,900.00           | 90.00           | 359.50      | 10,582.00           | 4,349.81   | 401.55     | 4,361.19              | 0.00                  | 0.00                 | 0.00                |
| 15,000.00           | 90.00           | 359.50      | 10,582.00           | 4,449.81   | 400.67     | 4,461.09              | 0.00                  | 0.00                 | 0.00                |
| 15,100.00           | 90.00           | 359.50      | 10,582.00           | 4,549.80   | 399.80     | 4,560.99              | 0.00                  | 0.00                 | 0.00                |
| 15,200.00           | 90.00           | 359.50      | 10,582.00           | 4,649.80   | 398.93     | 4,660.90              | 0.00                  | 0.00                 | 0.00                |
| 15,300.00           | 90.00           | 359.50      | 10,582.00           | 4,749.79   | 398.06     | 4,760.80              | 0.00                  | 0.00                 | 0.00                |
| 15,400.00           | 90.00           | 359.50      | 10,582.00           | 4,849.79   | 397.18     | 4,860.71              | 0.00                  | 0.00                 | 0.00                |
| 15,500.00           | 90.00           | 359.50      | 10,582.00           | 4,949.79   | 396.31     | 4,960.61              | 0.00                  | 0.00                 | 0.00                |
| 15,600.00           | 90.00           | 359.50      | 10,582.00           | 5,049.78   | 395.44     | 5,060.52              | 0.00                  | 0.00                 | 0.00                |
| 15,700.00           | 90.00           | 359.50      | 10,582.00           | 5,149.78   | 394.57     | 5,160.42              | 0.00                  | 0.00                 | 0.00                |
| 15,800.00           | 90.00           | 359.50      | 10,582.00           | 5,249.78   | 393.70     | 5,260.33              | 0.00                  | 0.00                 | 0.00                |
| 15,900.00           | 90.00           | 359.50      | 10,582.00           | 5,349.77   | 392.82     | 5,360.23              | 0.00                  | 0.00                 | 0.00                |
| 16,000.00           | 90.00           | 359.50      | 10,582.00           | 5,449.77   | 391.95     | 5,460.14              | 0.00                  | 0.00                 | 0.00                |
| 16,100.00           | 90.00           | 359.50      | 10,582.00           | 5,549.76   | 391.08     | 5,560.04              | 0.00                  | 0.00                 | 0.00                |
| 16,200.00           | 90.00           | 359.50      | 10,582.00           | 5,649.76   | 390.21     | 5,659.95              | 0.00                  | 0.00                 | 0.00                |
| 16,300.00           | 90.00           | 359.50      | 10,582.00           | 5,749.76   | 389.34     | 5,759.85              | 0.00                  | 0.00                 | 0.00                |
| 16,400.00           | 90.00           | 359.50      | 10,582.00           | 5,849.75   | 388.46     | 5,859.76              | 0.00                  | 0.00                 | 0.00                |
| 16,500.00           | 90.00           | 359.50      | 10,582.00           | 5,949.75   | 387.59     | 5,959.66              | 0.00                  | 0.00                 | 0.00                |
| 16,600.00           | 90.00           | 359.50      | 10,582.00           | 6,049.75   | 386.72     | 6,059.56              | 0.00                  | 0.00                 | 0.00                |
| 16,700.00           | 90.00           | 359.50      | 10,582.00           | 6,149.74   | 385.85     | 6,159.47              | 0.00                  | 0.00                 | 0.00                |
| 16,800.00           | 90.00           | 359.50      | 10,582.00           | 6,249.74   | 384.97     | 6,259.37              | 0.00                  | 0.00                 | 0.00                |
| 16,900.00           | 90.00           | 359.50      | 10,582.00           | 6,349.73   | 384.10     | 6,359.28              | 0.00                  | 0.00                 | 0.00                |
| 17,000.00           | 90.00           | 359.50      | 10,582.00           | 6,449.73   | 383.23     | 6,459.18              | 0.00                  | 0.00                 | 0.00                |
| 17,100.00           | 90.00           | 359.50      | 10,582.00           | 6,549.73   | 382.36     | 6,559.09              | 0.00                  | 0.00                 | 0.00                |
| 17,200.00           | 90.00           | 359.50      | 10,582.00           | 6,649.72   | 381.49     | 6,658.99              | 0.00                  | 0.00                 | 0.00                |
| 17,300.00           | 90.00           | 359.50      | 10,582.00           | 6,749.72   | 380.61     | 6,758.90              | 0.00                  | 0.00                 | 0.00                |
| 17,400.00           | 90.00           | 359.50      | 10,582.00           | 6,849.71   | 379.74     | 6,858.80              | 0.00                  | 0.00                 | 0.00                |
| 17,500.00           | 90.00           | 359.50      | 10,582.00           | 6,949.71   | 378.87     | 6,958.71              | 0.00                  | 0.00                 | 0.00                |
| 17,600.00           | 90.00           | 359.50      | 10,582.00           | 7,049.71   | 378.00     | 7,058.61              | 0.00                  | 0.00                 | 0.00                |
| 17,700.00           | 90.00           | 359.50      | 10,582.00           | 7,149.70   | 377.12     | 7,158.52              | 0.00                  | 0.00                 | 0.00                |
| 17,800.00           | 90.00           | 359.50      | 10,582.00           | 7,249.70   | 376.25     | 7,258.42              | 0.00                  | 0.00                 | 0.00                |
| 17,900.00           | 90.00           | 359.50      | 10,582.00           | 7,349.70   | 375.38     | 7,358.32              | 0.00                  | 0.00                 | 0.00                |
| 18,000.00           | 90.00           | 359.50      | 10,582.00           | 7,449.69   | 374.51     | 7,458.23              | 0.00                  | 0.00                 | 0.00                |
| 18,100.00           | 90.00           | 359.50      | 10,582.00           | 7,549.69   | 373.64     | 7,558.13              | 0.00                  | 0.00                 | 0.00                |
| 18,200.00           | 90.00           | 359.50      | 10,582.00           | 7,649.68   | 372.76     | 7,658.04              | 0.00                  | 0.00                 | 0.00                |
| 18,300.00           | 90.00           | 359.50      | 10,582.00           | 7,749.68   | 371.89     | 7,757.94              | 0.00                  | 0.00                 | 0.00                |
| 18,400.00           | 90.00           | 359.50      | 10,582.00           | 7,849.68   | 371.02     | 7,857.85              | 0.00                  | 0.00                 | 0.00                |
| 18,500.00           | 90.00           | 359.50      | 10,582.00           | 7,949.67   | 370.15     | 7,957.75              | 0.00                  | 0.00                 | 0.00                |
| 18,600.00           | 90.00           | 359.50      | 10,582.00           | 8,049.67   | 369.28     | 8,057.66              | 0.00                  | 0.00                 | 0.00                |
| 18,700.00           | 90.00           | 359.50      | 10,582.00           | 8,149.67   | 368.40     | 8,157.56              | 0.00                  | 0.00                 | 0.00                |
| 18,800.00           | 90.00           | 359.50      | 10,582.00           | 8,249.66   | 367.53     | 8,257.47              | 0.00                  | 0.00                 | 0.00                |
| 18,900.00           | 90.00           | 359.50      | 10,582.00           | 8,349.66   | 366.66     | 8,357.37              | 0.00                  | 0.00                 | 0.00                |
| 19,000.00           | 90.00           | 359.50      | 10,582.00           | 8,449.65   | 365.79     | 8,457.28              | 0.00                  | 0.00                 | 0.00                |
| 19,100.00           | 90.00           | 359.50      | 10,582.00           | 8,549.65   | 364.91     | 8,557.18              | 0.00                  | 0.00                 | 0.00                |
| 19,200.00           | 90.00           | 359.50      | 10,582.00           | 8,649.65   | 364.04     | 8,657.09              | 0.00                  | 0.00                 | 0.00                |
| 19,300.00           | 90.00           | 359.50      | 10,582.00           | 8,749.64   | 363.17     | 8,756.99              | 0.00                  | 0.00                 | 0.00                |
| 19,400.00           | 90.00           | 359.50      | 10,582.00           | 8,849.64   | 362.30     | 8,856.89              | 0.00                  | 0.00                 | 0.00                |
| 19,500.00           | 90.00           | 359.50      | 10,582.00           | 8,949.64   | 361.43     | 8,956.80              | 0.00                  | 0.00                 | 0.00                |
| 19,600.00           | 90.00           | 359.50      | 10,582.00           | 9,049.63   | 360.55     | 9,056.70              | 0.00                  | 0.00                 | 0.00                |
| 19,700.00           | 90.00           | 359.50      | 10,582.00           | 9,149.63   | 359.68     | 9,156.61              | 0.00                  | 0.00                 | 0.00                |
| 19,800.00           | 90.00           | 359.50      | 10,582.00           | 9,249.62   | 358.81     | 9,256.51              | 0.00                  | 0.00                 | 0.00                |
| 19,900.00           | 90.00           | 359.50      | 10,582.00           | 9,349.62   | 357.94     | 9,356.42              | 0.00                  | 0.00                 | 0.00                |
| 20,000.00           | 90.00           | 359.50      | 10,582.00           | 9,449.62   | 357.06     | 9,456.32              | 0.00                  | 0.00                 | 0.00                |
| 20,100.00           | 90.00           | 359.50      | 10,582.00           | 9,549.61   | 356.19     | 9,556.23              | 0.00                  | 0.00                 | 0.00                |
| 20,200.00           | 90.00           | 359.50      | 10,582.00           | 9,649.61   | 355.32     | 9,656.13              | 0.00                  | 0.00                 | 0.00                |

# Oxy

## Planning Report

**Database:** HOPSPP  
**Company:** OXY  
**Project:** PRD NM DIRECTIONAL PLANS (NAD 1983)  
**Site:** Mesa Verde 17-8 Fed Com  
**Well:** Mesa Verde 17-8 Fed Com 4H  
**Wellbore:** WB00  
**Design:** Permitting Plan

**Local Co-ordinate Reference:** Well Mesa Verde 17-8 Fed Com 4H  
**TVD Reference:** WELL @ 3586.10ft (Original Well Elev)  
**MD Reference:** WELL @ 3586.10ft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

### Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 20,300.00           | 90.00           | 359.50      | 10,582.00           | 9,749.60   | 354.45     | 9,756.04              | 0.00                  | 0.00                 | 0.00                |
| 20,400.00           | 90.00           | 359.50      | 10,582.00           | 9,849.60   | 353.58     | 9,855.94              | 0.00                  | 0.00                 | 0.00                |
| 20,500.00           | 90.00           | 359.50      | 10,582.00           | 9,949.60   | 352.70     | 9,955.85              | 0.00                  | 0.00                 | 0.00                |
| 20,600.00           | 90.00           | 359.50      | 10,582.00           | 10,049.59  | 351.83     | 10,055.75             | 0.00                  | 0.00                 | 0.00                |
| 20,609.71           | 90.00           | 359.50      | 10,582.00           | 10,059.30  | 351.75     | 10,065.45             | 0.00                  | 0.00                 | 0.00                |

TD at 20609.71 - MV17-8\_4H\_BHL

### Design Targets

| Target Name<br>- hit/miss target<br>- Shape           | Dip Angle (°) | Dip Dir. (°) | TVD (ft)  | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude            | Longitude          |
|-------------------------------------------------------|---------------|--------------|-----------|------------|------------|-----------------|----------------|---------------------|--------------------|
| MV17-8_4H_KOP<br>- plan hits target center<br>- Point | 0.00          | 0.01         | 10,009.04 | -174.96    | 441.01     | 440,899.69      | 738,684.70     | 32° 12' 37.799464 N | 103° 41' 42.894884 |
| MV17-8_4H_BHL<br>- plan hits target center<br>- Point | 0.00          | 0.00         | 10,582.00 | 10,059.30  | 351.75     | 451,133.45      | 738,595.44     | 32° 14' 19.072355 N | 103° 41' 43.226521 |

### Formations

| Measured Depth (ft) | Vertical Depth (ft) | Name          | Lithology | Dip (°) | Dip Direction (°) |
|---------------------|---------------------|---------------|-----------|---------|-------------------|
| 919.00              | 919.00              | Rustler       |           |         |                   |
| 1,007.00            | 1,007.00            | Salado        |           |         |                   |
| 3,300.00            | 3,300.00            | Castile       |           |         |                   |
| 4,670.00            | 4,670.00            | Delaware      |           |         |                   |
| 4,685.00            | 4,685.00            | Bell Canyon   |           |         |                   |
| 5,543.00            | 5,543.00            | Cherry Canyon |           |         |                   |
| 6,911.02            | 6,911.00            | Brushy Canyon |           |         |                   |
| 8,523.87            | 8,503.00            | Bone Spring   |           |         |                   |

### Plan Annotations

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates |            | Comment                        |
|---------------------|---------------------|-------------------|------------|--------------------------------|
|                     |                     | +N/-S (ft)        | +E/-W (ft) |                                |
| 6,818.00            | 6,818.00            | 0.00              | 0.00       | Step out DLS 2.00              |
| 7,318.22            | 7,315.68            | -16.06            | 40.49      | Hold 10° tangent               |
| 9,547.80            | 9,511.36            | -158.90           | 400.52     | Drop back to vertical DLS 2.00 |
| 10,048.02           | 10,009.04           | -174.96           | 441.01     | Build curve 10°/100'           |
| 10,948.02           | 10,582.00           | 397.98            | 436.01     | Landing Point                  |
| 20,609.71           | 10,582.00           | 10,059.30         | 351.75     | TD at 20609.71                 |