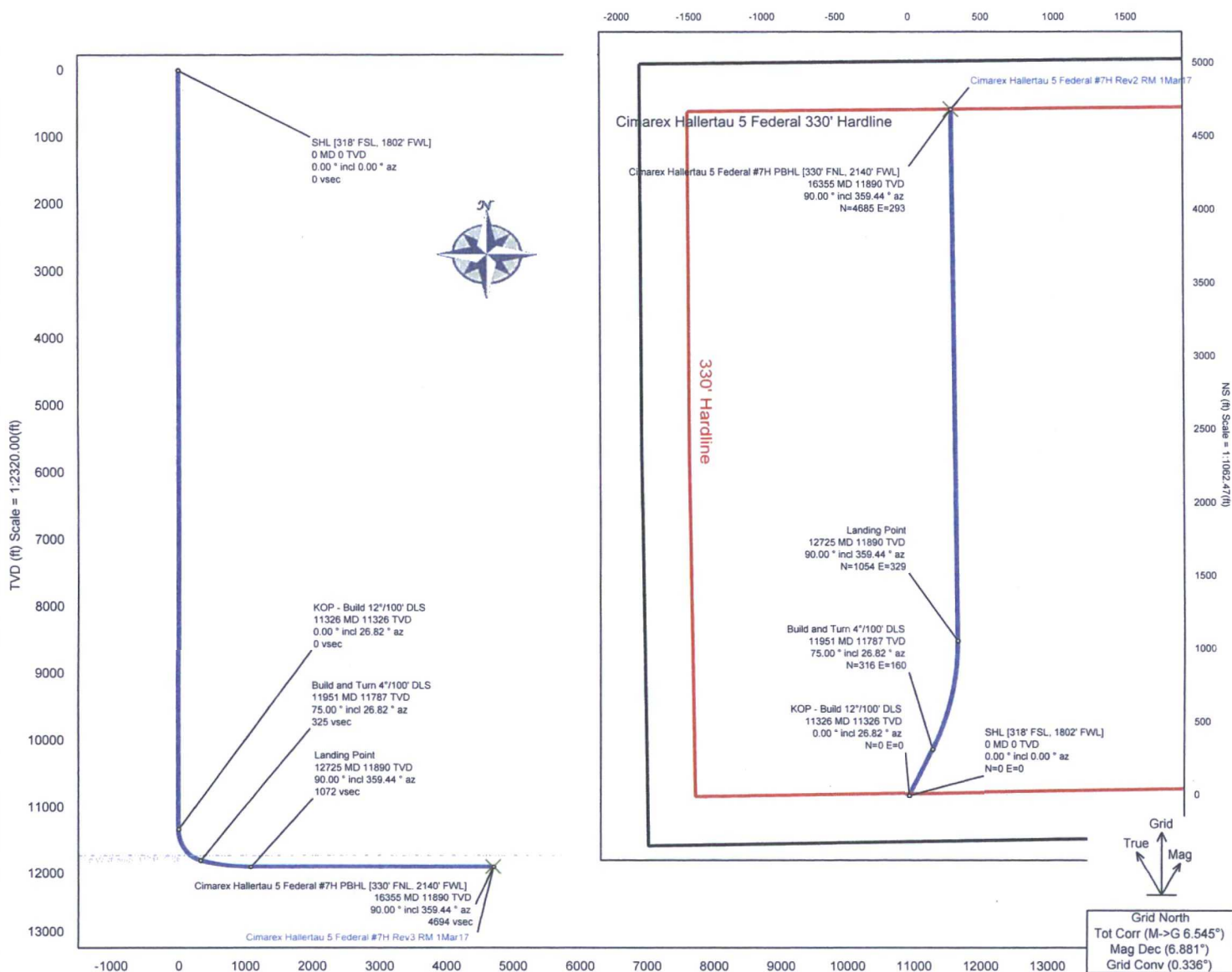


|                   |                                 |                        |                                 |
|-------------------|---------------------------------|------------------------|---------------------------------|
| Borehole:         | Well:                           | Field:                 | Structure:                      |
| Original Borehole | Cimarex Hallertau 5 Federal #7H | NM Lea County (NAD 83) | Cimarex Hallertau 5 Federal #7H |

|                                                                       |                                                                 |                                                      |                                  |
|-----------------------------------------------------------------------|-----------------------------------------------------------------|------------------------------------------------------|----------------------------------|
| Gravity & Magnetic Parameters                                         | Surface Location                                                | NAD83 New Mexico State Plane, Eastern Zone, US Feet  | Miscellaneous                    |
| Model: HDGM 2016 Dip: 59.781° Date: 01-Mar-2017                       | Lat: N 32 3 56.94 Northing: 388257.09RUS Grid Conv: 0.3362°     | Slot: Hallertau 5 Federal #7H                        | TVD Ref: RKB(3291.9ft above MSL) |
| MagDec: 6.881° FS: 47993.577nT Gravity FS: 998.426mgN (9.80665 Based) | Lon: W 103 42 0.03 Easting: 737521.89RUS Scale Fact: 0.99995317 | Plan: Cimarex Hallertau 5 Federal #7H Rev2 RM 1Mar17 |                                  |

EW (ft) Scale = 1:1062.47 (ft)



Critical Points

| Critical Point                                             | MD       | INCL  | AZIM   | TVD      | VSEC    | N(+)/S(-) | E(+)/W(-) | DLS   |
|------------------------------------------------------------|----------|-------|--------|----------|---------|-----------|-----------|-------|
| SHL [318' FSL, 1802' FWL]                                  | 0.00     | 0.00  | 0.00   | 0.00     | 0.00    | 0.00      | 0.00      |       |
| KOP - Build 12°/100' DLS                                   | 11326.21 | 0.00  | 26.82  | 11326.21 | 0.00    | 0.00      | 0.00      | 0.00  |
| Top Wolfcamp                                               | 11780.51 | 54.52 | 26.82  | 11715.00 | 184.06  | 178.76    | 90.38     | 12.00 |
| Build and Turn 4°/100' DLS                                 | 11951.21 | 75.00 | 26.82  | 11787.41 | 325.18  | 315.82    | 159.67    | 12.00 |
| Landing Point                                              | 12724.63 | 90.00 | 359.44 | 11890.00 | 1072.35 | 1053.88   | 328.56    | 4.00  |
| Cimarex Hallertau 5 Federal #7H PBHL [330' FNL, 2140' FWL] | 16355.44 | 90.00 | 359.44 | 11890.00 | 4693.69 | 4684.52   | 293.20    | 0.00  |

# Cimarex Hallertau 5 Federal #7H Rev2 RM 1Mar17 Proposal Geodetic Report

(Non-Def Plan)

|                                      |                                                                   |                                             |                              |
|--------------------------------------|-------------------------------------------------------------------|---------------------------------------------|------------------------------|
| <b>Report Date:</b>                  | March 01, 2017 - 04:55 PM                                         | <b>Survey / DLS Computation:</b>            | Minimum Curvature / Lubinski |
| <b>Client:</b>                       | Cimarex                                                           | <b>Vertical Section Azimuth:</b>            | 3.581 ° (Grid North)         |
| <b>Field:</b>                        | NM Lea County (NAD 83)                                            | <b>Vertical Section Origin:</b>             | 0.000 ft, 0.000 ft           |
| <b>Structure / Slot:</b>             | Cimarex Hallertau 5 Federal #7H / Cimarex Hallertau 5 Federal #7H | <b>TVD Reference Datum:</b>                 | RKB                          |
| <b>Well:</b>                         | Cimarex Hallertau 5 Federal #7H                                   | <b>TVD Reference Elevation:</b>             | 3291.900 ft above MSL        |
| <b>Borehole:</b>                     | Original Borehole                                                 | <b>Seabed / Ground Elevation:</b>           | 3273.000 ft above MSL        |
| <b>UWI / API#:</b>                   | Unknown / Unknown                                                 | <b>Magnetic Declination:</b>                | 6.881 °                      |
| <b>Survey Name:</b>                  | Cimarex Hallertau 5 Federal #7H Rev2 RM 1Mar17                    | <b>Total Gravity Field Strength:</b>        | 998.4260mgn (9.80665 Based)  |
| <b>Survey Date:</b>                  | March 01, 2017                                                    | <b>Gravity Model:</b>                       | GARM                         |
| <b>Tort / AHD / DDI / ERD Ratio:</b> | 105.937 ° / 4749.037 ft / 5.840 / 0.399                           | <b>Total Magnetic Field Strength:</b>       | 47993.577 nT                 |
| <b>Coordinate Reference System:</b>  | NAD83 New Mexico State Plane, Eastern Zone, US Feet               | <b>Magnetic Dip Angle:</b>                  | 59.781 °                     |
| <b>Location Lat / Long:</b>          | N 32° 3' 56.93788", W 103° 42' 0.03221"                           | <b>Declination Date:</b>                    | March 01, 2017               |
| <b>Location Grid N/E Y/X:</b>        | N 388257.090 ftUS, E 737521.890 ftUS                              | <b>Magnetic Declination Model:</b>          | HDGM 2016                    |
| <b>CRS Grid Convergence Angle:</b>   | 0.3362 °                                                          | <b>North Reference:</b>                     | Grid North                   |
| <b>Grid Scale Factor:</b>            | 0.99995317                                                        | <b>Grid Convergence Used:</b>               | 0.3362 °                     |
| <b>Version / Patch:</b>              | 2.10.254.0                                                        | <b>Total Corr Mag North-&gt;Grid North:</b> | 6.5446 °                     |
|                                      |                                                                   | <b>Local Coord Referenced To:</b>           | Structure Reference Point    |

| Comments                     | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°/100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ")    | Longitude<br>(E/W ° ' ") |
|------------------------------|------------|-------------|------------------|-------------|--------------|------------|------------|------------------|--------------------|-------------------|----------------------------|--------------------------|
| SHL [318' FSL,<br>1802' FWL] | 0.00       | 0.00        | 0.00             | 0.00        | 0.00         | 0.00       | 0.00       | N/A              | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 100.00     | 0.00        | 26.82            | 100.00      | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 200.00     | 0.00        | 26.82            | 200.00      | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 300.00     | 0.00        | 26.82            | 300.00      | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 400.00     | 0.00        | 26.82            | 400.00      | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 500.00     | 0.00        | 26.82            | 500.00      | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 600.00     | 0.00        | 26.82            | 600.00      | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 700.00     | 0.00        | 26.82            | 700.00      | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 800.00     | 0.00        | 26.82            | 800.00      | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 900.00     | 0.00        | 26.82            | 900.00      | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 1000.00    | 0.00        | 26.82            | 1000.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 1100.00    | 0.00        | 26.82            | 1100.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 1200.00    | 0.00        | 26.82            | 1200.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 1300.00    | 0.00        | 26.82            | 1300.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 1400.00    | 0.00        | 26.82            | 1400.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 1500.00    | 0.00        | 26.82            | 1500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 1600.00    | 0.00        | 26.82            | 1600.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 1700.00    | 0.00        | 26.82            | 1700.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 1800.00    | 0.00        | 26.82            | 1800.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 1900.00    | 0.00        | 26.82            | 1900.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 2000.00    | 0.00        | 26.82            | 2000.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 2100.00    | 0.00        | 26.82            | 2100.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 2200.00    | 0.00        | 26.82            | 2200.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 2300.00    | 0.00        | 26.82            | 2300.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 2400.00    | 0.00        | 26.82            | 2400.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |
|                              | 2500.00    | 0.00        | 26.82            | 2500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03 |                          |



| Comments                      | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°/100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ")     | Longitude<br>(E/W ° ' ") |
|-------------------------------|------------|-------------|------------------|-------------|--------------|------------|------------|------------------|--------------------|-------------------|-----------------------------|--------------------------|
|                               | 8500.00    | 0.00        | 26.82            | 8500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 8600.00    | 0.00        | 26.82            | 8600.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 8700.00    | 0.00        | 26.82            | 8700.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 8800.00    | 0.00        | 26.82            | 8800.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 8900.00    | 0.00        | 26.82            | 8900.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 9000.00    | 0.00        | 26.82            | 9000.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 9100.00    | 0.00        | 26.82            | 9100.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 9200.00    | 0.00        | 26.82            | 9200.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 9300.00    | 0.00        | 26.82            | 9300.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 9400.00    | 0.00        | 26.82            | 9400.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 9500.00    | 0.00        | 26.82            | 9500.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 9600.00    | 0.00        | 26.82            | 9600.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 9700.00    | 0.00        | 26.82            | 9700.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 9800.00    | 0.00        | 26.82            | 9800.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 9900.00    | 0.00        | 26.82            | 9900.00     | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 10000.00   | 0.00        | 26.82            | 10000.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 10100.00   | 0.00        | 26.82            | 10100.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 10200.00   | 0.00        | 26.82            | 10200.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 10300.00   | 0.00        | 26.82            | 10300.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 10400.00   | 0.00        | 26.82            | 10400.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 10500.00   | 0.00        | 26.82            | 10500.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 10600.00   | 0.00        | 26.82            | 10600.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 10700.00   | 0.00        | 26.82            | 10700.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 10800.00   | 0.00        | 26.82            | 10800.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 10900.00   | 0.00        | 26.82            | 10900.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 11000.00   | 0.00        | 26.82            | 11000.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 11100.00   | 0.00        | 26.82            | 11100.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 11200.00   | 0.00        | 26.82            | 11200.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 11300.00   | 0.00        | 26.82            | 11300.00    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
| KOP - Build<br>12°/100' DLS   | 11326.21   | 0.00        | 26.82            | 11326.21    | 0.00         | 0.00       | 0.00       | 0.00             | 388257.09          | 737521.89         | N 32 3 56.94 W 103 42 0.03  |                          |
|                               | 11400.00   | 8.85        | 26.82            | 11399.71    | 5.23         | 5.08       | 2.57       | 12.00            | 388262.17          | 737524.46         | N 32 3 56.99 W 103 42 0.00  |                          |
|                               | 11500.00   | 20.85       | 26.82            | 11496.19    | 28.74        | 27.92      | 14.11      | 12.00            | 388285.00          | 737536.00         | N 32 3 57.21 W 103 41 59.87 |                          |
|                               | 11600.00   | 32.85       | 26.82            | 11585.24    | 70.18        | 68.16      | 34.46      | 12.00            | 388325.24          | 737556.35         | N 32 3 57.61 W 103 41 59.63 |                          |
|                               | 11700.00   | 44.85       | 26.82            | 11662.97    | 127.72       | 124.04     | 62.71      | 12.00            | 388381.12          | 737584.60         | N 32 3 58.16 W 103 41 59.30 |                          |
| Top Wolfcamp                  | 11780.51   | 54.52       | 26.82            | 11715.00    | 184.06       | 178.76     | 90.38      | 12.00            | 388435.84          | 737612.26         | N 32 3 58.70 W 103 41 58.97 |                          |
|                               | 11800.00   | 56.85       | 26.82            | 11725.99    | 198.85       | 193.13     | 97.64      | 12.00            | 388450.21          | 737619.52         | N 32 3 58.84 W 103 41 58.88 |                          |
|                               | 11900.00   | 68.85       | 26.82            | 11771.53    | 280.46       | 272.39     | 137.72     | 12.00            | 388529.47          | 737659.60         | N 32 3 59.63 W 103 41 58.41 |                          |
| Build and Turn<br>4°/100' DLS | 11951.21   | 75.00       | 26.82            | 11787.41    | 325.18       | 315.82     | 159.67     | 12.00            | 388572.89          | 737681.55         | N 32 4 0.05 W 103 41 58.16  |                          |
|                               | 12000.00   | 75.88       | 25.02            | 11799.67    | 368.85       | 358.29     | 180.31     | 4.00             | 388615.36          | 737702.19         | N 32 4 0.47 W 103 41 57.91  |                          |
|                               | 12100.00   | 77.72       | 21.37            | 11822.51    | 460.55       | 447.76     | 218.64     | 4.00             | 388704.83          | 737740.52         | N 32 4 1.36 W 103 41 57.46  |                          |
|                               | 12200.00   | 79.61       | 17.78            | 11842.17    | 554.78       | 540.13     | 251.47     | 4.00             | 388797.19          | 737773.35         | N 32 4 2.27 W 103 41 57.07  |                          |
|                               | 12300.00   | 81.54       | 14.23            | 11858.54    | 651.11       | 634.94     | 278.65     | 4.00             | 388892.00          | 737800.53         | N 32 4 3.20 W 103 41 56.75  |                          |
|                               | 12400.00   | 83.50       | 10.71            | 11871.56    | 749.05       | 731.73     | 300.05     | 4.00             | 388988.79          | 737821.92         | N 32 4 4.16 W 103 41 56.50  |                          |
|                               | 12500.00   | 85.49       | 7.22             | 11881.15    | 848.13       | 830.03     | 315.55     | 4.00             | 389087.08          | 737837.43         | N 32 4 5.13 W 103 41 56.31  |                          |
|                               | 12600.00   | 87.49       | 3.75             | 11887.27    | 947.86       | 929.37     | 325.09     | 4.00             | 389186.41          | 737846.97         | N 32 4 6.12 W 103 41 56.19  |                          |
|                               | 12700.00   | 89.50       | 0.29             | 11889.89    | 1047.77      | 1029.25    | 328.62     | 4.00             | 389286.29          | 737850.49         | N 32 4 7.10 W 103 41 56.14  |                          |
| Landing Point                 | 12724.63   | 90.00       | 359.44           | 11890.00    | 1072.35      | 1053.88    | 328.56     | 4.00             | 389310.92          | 737850.44         | N 32 4 7.35 W 103 41 56.14  |                          |
|                               | 12800.00   | 90.00       | 359.44           | 11890.00    | 1147.52      | 1129.25    | 327.83     | 0.00             | 389386.28          | 737849.70         | N 32 4 8.09 W 103 41 56.15  |                          |
|                               | 12900.00   | 90.00       | 359.44           | 11890.00    | 1247.26      | 1229.24    | 326.85     | 0.00             | 389486.27          | 737848.73         | N 32 4 9.08 W 103 41 56.15  |                          |
|                               | 13000.00   | 90.00       | 359.44           | 11890.00    | 1347.00      | 1329.24    | 325.88     | 0.00             | 389586.26          | 737847.75         | N 32 4 10.07 W 103 41 56.15 |                          |
|                               | 13100.00   | 90.00       | 359.44           | 11890.00    | 1446.74      | 1429.23    | 324.91     | 0.00             | 389686.25          | 737846.78         | N 32 4 11.06 W 103 41 56.16 |                          |
|                               | 13200.00   | 90.00       | 359.44           | 11890.00    | 1546.48      | 1529.23    | 323.93     | 0.00             | 389786.24          | 737845.81         | N 32 4 12.05 W 103 41 56.16 |                          |
|                               | 13300.00   | 90.00       | 359.44           | 11890.00    | 1646.22      | 1629.22    | 322.96     | 0.00             | 389886.24          | 737844.83         | N 32 4 13.04 W 103 41 56.17 |                          |
|                               | 13400.00   | 90.00       | 359.44           | 11890.00    | 1745.96      | 1729.22    | 321.99     | 0.00             | 389986.23          | 737843.86         | N 32 4 14.03 W 103 41 56.17 |                          |
|                               | 13500.00   | 90.00       | 359.44           | 11890.00    | 1845.70      | 1829.22    | 321.01     | 0.00             | 390086.22          | 737842.89         | N 32 4 15.02 W 103 41 56.18 |                          |
|                               | 13600.00   | 90.00       | 359.44           | 11890.00    | 1945.43      | 1929.21    | 320.04     | 0.00             | 390186.21          | 737841.91         | N 32 4 16.01 W 103 41 56.18 |                          |
|                               | 13700.00   | 90.00       | 359.44           | 11890.00    | 2045.17      | 2029.21    | 319.06     | 0.00             | 390286.20          | 737840.94         | N 32 4 17.00 W 103 41 56.19 |                          |

| Comments                                                                  | MD<br>(ft) | Incl<br>(°) | Azim Grid<br>(°) | TVD<br>(ft) | VSEC<br>(ft) | NS<br>(ft) | EW<br>(ft) | DLS<br>(°/100ft) | Northing<br>(ftUS) | Easting<br>(ftUS) | Latitude<br>(N/S ° ' ")     | Longitude<br>(E/W ° ' ") |
|---------------------------------------------------------------------------|------------|-------------|------------------|-------------|--------------|------------|------------|------------------|--------------------|-------------------|-----------------------------|--------------------------|
|                                                                           | 13800.00   | 90.00       | 359.44           | 11890.00    | 2144.91      | 2129.20    | 318.09     | 0.00             | 390386.19          | 737839.96         | N 32 4 17.99 W 103 41 56.19 |                          |
|                                                                           | 13900.00   | 90.00       | 359.44           | 11890.00    | 2244.65      | 2229.20    | 317.12     | 0.00             | 390486.18          | 737838.99         | N 32 4 18.98 W 103 41 56.19 |                          |
|                                                                           | 14000.00   | 90.00       | 359.44           | 11890.00    | 2344.39      | 2329.19    | 316.14     | 0.00             | 390586.17          | 737838.02         | N 32 4 19.97 W 103 41 56.20 |                          |
|                                                                           | 14100.00   | 90.00       | 359.44           | 11890.00    | 2444.13      | 2429.19    | 315.17     | 0.00             | 390686.16          | 737837.04         | N 32 4 20.96 W 103 41 56.20 |                          |
|                                                                           | 14200.00   | 90.00       | 359.44           | 11890.00    | 2543.87      | 2529.18    | 314.19     | 0.00             | 390786.15          | 737836.07         | N 32 4 21.95 W 103 41 56.21 |                          |
|                                                                           | 14300.00   | 90.00       | 359.44           | 11890.00    | 2643.61      | 2629.18    | 313.22     | 0.00             | 390886.14          | 737835.10         | N 32 4 22.94 W 103 41 56.21 |                          |
|                                                                           | 14400.00   | 90.00       | 359.44           | 11890.00    | 2743.35      | 2729.17    | 312.25     | 0.00             | 390986.13          | 737834.12         | N 32 4 23.93 W 103 41 56.22 |                          |
|                                                                           | 14500.00   | 90.00       | 359.44           | 11890.00    | 2843.09      | 2829.17    | 311.27     | 0.00             | 391086.12          | 737833.15         | N 32 4 24.92 W 103 41 56.22 |                          |
|                                                                           | 14600.00   | 90.00       | 359.44           | 11890.00    | 2942.83      | 2929.16    | 310.30     | 0.00             | 391186.11          | 737832.17         | N 32 4 25.90 W 103 41 56.23 |                          |
|                                                                           | 14700.00   | 90.00       | 359.44           | 11890.00    | 3042.57      | 3029.16    | 309.33     | 0.00             | 391286.10          | 737831.20         | N 32 4 26.89 W 103 41 56.23 |                          |
|                                                                           | 14800.00   | 90.00       | 359.44           | 11890.00    | 3142.30      | 3129.15    | 308.35     | 0.00             | 391386.09          | 737830.23         | N 32 4 27.88 W 103 41 56.24 |                          |
|                                                                           | 14900.00   | 90.00       | 359.44           | 11890.00    | 3242.04      | 3229.15    | 307.38     | 0.00             | 391486.08          | 737829.25         | N 32 4 28.87 W 103 41 56.24 |                          |
|                                                                           | 15000.00   | 90.00       | 359.44           | 11890.00    | 3341.78      | 3329.14    | 306.40     | 0.00             | 391586.07          | 737828.28         | N 32 4 29.86 W 103 41 56.24 |                          |
|                                                                           | 15100.00   | 90.00       | 359.44           | 11890.00    | 3441.52      | 3429.14    | 305.43     | 0.00             | 391686.06          | 737827.31         | N 32 4 30.85 W 103 41 56.25 |                          |
|                                                                           | 15200.00   | 90.00       | 359.44           | 11890.00    | 3541.26      | 3529.13    | 304.46     | 0.00             | 391786.05          | 737826.33         | N 32 4 31.84 W 103 41 56.25 |                          |
|                                                                           | 15300.00   | 90.00       | 359.44           | 11890.00    | 3641.00      | 3629.13    | 303.48     | 0.00             | 391886.04          | 737825.36         | N 32 4 32.83 W 103 41 56.26 |                          |
|                                                                           | 15400.00   | 90.00       | 359.44           | 11890.00    | 3740.74      | 3729.13    | 302.51     | 0.00             | 391986.03          | 737824.38         | N 32 4 33.82 W 103 41 56.26 |                          |
|                                                                           | 15500.00   | 90.00       | 359.44           | 11890.00    | 3840.48      | 3829.12    | 301.53     | 0.00             | 392086.02          | 737823.41         | N 32 4 34.81 W 103 41 56.27 |                          |
|                                                                           | 15600.00   | 90.00       | 359.44           | 11890.00    | 3940.22      | 3929.12    | 300.56     | 0.00             | 392186.01          | 737822.44         | N 32 4 35.80 W 103 41 56.27 |                          |
|                                                                           | 15700.00   | 90.00       | 359.44           | 11890.00    | 4039.96      | 4029.11    | 299.59     | 0.00             | 392286.00          | 737821.46         | N 32 4 36.79 W 103 41 56.28 |                          |
|                                                                           | 15800.00   | 90.00       | 359.44           | 11890.00    | 4139.70      | 4129.11    | 298.61     | 0.00             | 392385.99          | 737820.49         | N 32 4 37.78 W 103 41 56.28 |                          |
|                                                                           | 15900.00   | 90.00       | 359.44           | 11890.00    | 4239.43      | 4229.10    | 297.64     | 0.00             | 392485.99          | 737819.51         | N 32 4 38.77 W 103 41 56.28 |                          |
|                                                                           | 16000.00   | 90.00       | 359.44           | 11890.00    | 4339.17      | 4329.10    | 296.67     | 0.00             | 392585.98          | 737818.54         | N 32 4 39.76 W 103 41 56.29 |                          |
|                                                                           | 16100.00   | 90.00       | 359.44           | 11890.00    | 4438.91      | 4429.09    | 295.69     | 0.00             | 392685.97          | 737817.57         | N 32 4 40.75 W 103 41 56.29 |                          |
|                                                                           | 16200.00   | 90.00       | 359.44           | 11890.00    | 4538.65      | 4529.09    | 294.72     | 0.00             | 392785.96          | 737816.59         | N 32 4 41.74 W 103 41 56.30 |                          |
|                                                                           | 16300.00   | 90.00       | 359.44           | 11890.00    | 4638.39      | 4629.08    | 293.74     | 0.00             | 392885.95          | 737815.62         | N 32 4 42.73 W 103 41 56.30 |                          |
| Cimarex<br>Hallertau 5<br>Federal #7H<br>PBHL [330'<br>FNL, 2140'<br>FWL] | 16355.44   | 90.00       | 359.44           | 11890.00    | 4693.69      | 4684.52    | 293.20     | 0.00             | 392941.38          | 737815.08         | N 32 4 43.28 W 103 41 56.31 |                          |

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 \*\*\* 3-D 95.000% Confidence 2.7955 sigma  
Survey Program:

| Description | Part | MD From<br>(ft) | MD To<br>(ft) | EOU Freq<br>(ft) | Hole Size<br>(in) | Casing<br>Diameter<br>(in) | Expected Max<br>Inclination<br>(deg) | Survey Tool Type                    | Borehole / Survey                                                        |
|-------------|------|-----------------|---------------|------------------|-------------------|----------------------------|--------------------------------------|-------------------------------------|--------------------------------------------------------------------------|
|             | 1    | 0.000           | 18.900        | 1/100.000        | 30.000            | 30.000                     |                                      | NAL_MWD_PLUS_0.5_DEG-<br>Depth Only | Original Borehole / Cimarex<br>Hallertau 5 Federal #7H Rev2<br>RM 1Mar17 |
|             | 1    | 18.900          | 16355.439     | 1/100.000        | 30.000            | 30.000                     |                                      | NAL_MWD_PLUS_0.5_DEG                | Original Borehole / Cimarex<br>Hallertau 5 Federal #7H Rev2              |