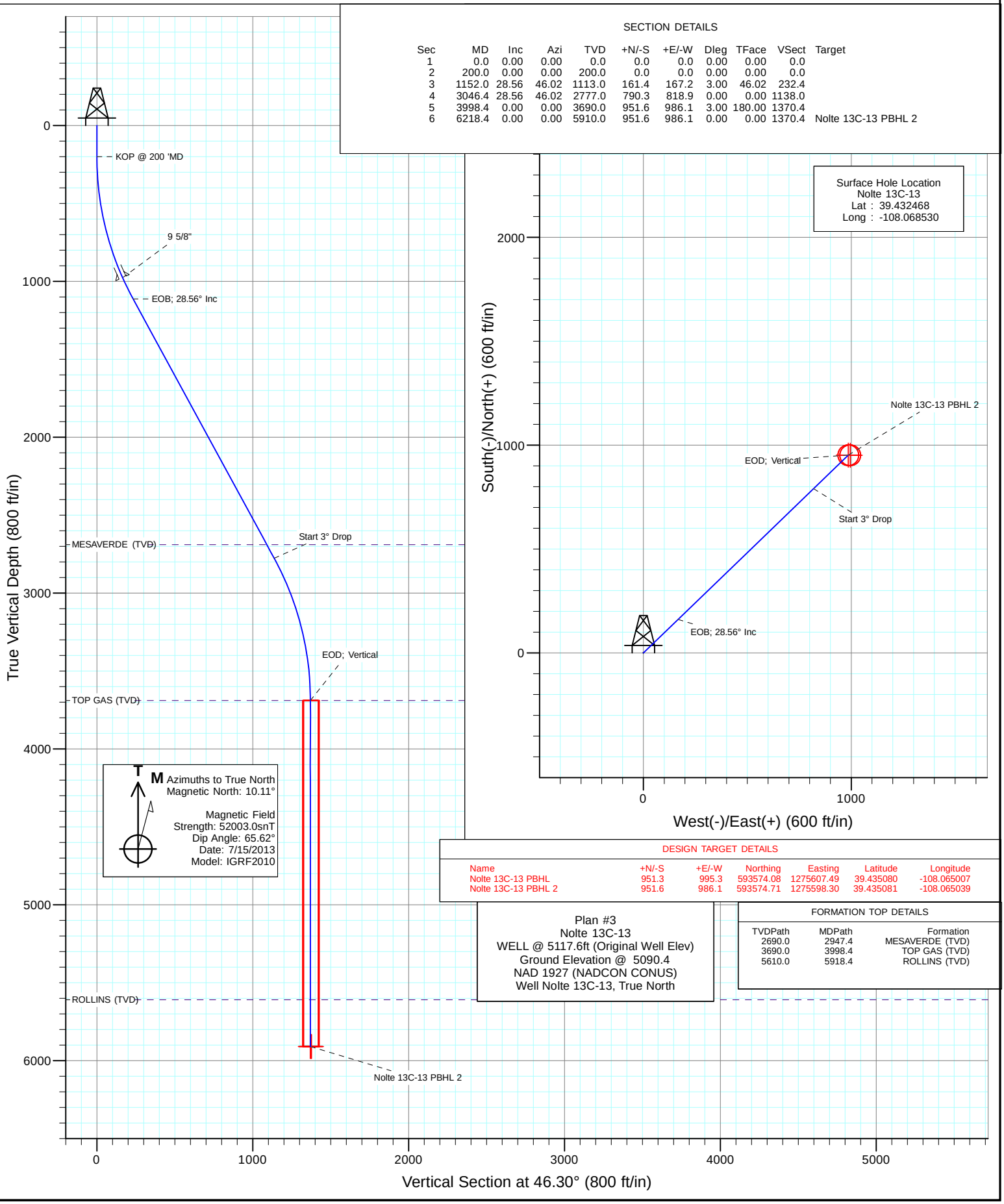
Project: Garfield County, CO
Site: S14-T7S-R96W
Well: Nolte 13C-13
Wellbore: DD
Design: Plan #3

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 2 | 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 3 | 1152.0 | 28.56 | 46.02 | 1113.0 | 161.4 | 167.2 | 3.00 | 46.02 | 232.4 | |
| 4 | 3046.4 | 28.56 | 46.02 | 2777.0 | 790.3 | 818.9 | 0.00 | 0.00 | 1138.0 | |
| 5 | 3998.4 | 0.00 | 0.00 | 3690.0 | 951.6 | 986.1 | 3.00 | 180.00 | 1370.4 | |
| 6 | 6218.4 | 0.00 | 0.00 | 5910.0 | 951.6 | 986.1 | 0.00 | 0.00 | 1370.4 | Nolte 13C-13 PBHL 2 |







T M Azimuths to True North
Magnetic North: 10.11°

Magnetic Field
Strength: 52003.0snT
Dip Angle: 65.62°
Date: 7/15/2013
Model: IGRF2010

DESIGN TARGET DETAILS

| Name | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---|---|---|---|---|---|---|
| Nolte 13C-13 PBHL | 951.3 | 995.3 | 593574.08 | 1275607.49 | 39.435080 | -108.065007 |
| Nolte 13C-13 PBHL 2 | 951.6 | 986.1 | 593574.71 | 1275598.30 | 39.435081 | -108.065039 |

Plan #3
Nolte 13C-13
WELL @ 5117.6ft (Original Well Elev)
Ground Elevation @ 5090.4
NAD 1927 (NADCON CONUS)
Well Nolte 13C-13, True North

FORMATION TOP DETAILS

| TVDPath | MDPath | Formation |
|---|---|---|
| 2690.0 | 2947.4 | MESAVERDE (TVD) |
| 3690.0 | 3998.4 | TOP GAS (TVD) |
| 5610.0 | 5918.4 | ROLLINS (TVD) |

# Cathedral Energy Services

## Planning Report

| | | | |
|---|---|---|---|
| **Database:** | USA EDM 5000 Multi Users DB | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Company:** | Caerus Oil & Gas (NAD 27) | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Project:** | Garfield County, CO | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site:** | S14-T7S-R96W | **North Reference:** | True |
| **Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | DD | | |
| **Design:** | Plan #3 | | |

| **Project** | Garfield County, CO | | |
|---|---|---|---|
| **Map System:** | US State Plane 1927 (Exact solution) | **System Datum:** | Mean Sea Level |
| **Geo Datum:** | NAD 1927 (NADCON CONUS) | | |
| **Map Zone:** | Colorado Central 502 | | |

| **Site** | S14-T7S-R96W | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 592,603.28 ft | **Latitude:** | 39.432320 |
| **From:** | Lat/Long | **Easting:** | 1,274,372.48 ft | **Longitude:** | -108.069280 |
| **Position Uncertainty:** | 0.0 ft | **Slot Radius:** | 13.200 in | **Grid Convergence:** | -1.62 ° |

| **Well** | Nolte 13C-13 | | | | |
|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 ft | **Northing:** | 592,651.33 ft | **Latitude:** | 39.432468 |
| | **+E/-W** | 0.0 ft | **Easting:** | 1,274,585.69 ft | **Longitude:** | -108.068530 |
| **Position Uncertainty** | | 0.0 ft | **Wellhead Elevation:** | ft | **Ground Level:** | 5,090.4 ft |

| **Wellbore** | DD | | | | |
|---|---|---|---|---|---|
| **Magnetics** | **Model Name** | **Sample Date** | **Declination (°)** | **Dip Angle (°)** | **Field Strength (nT)** |
| | IGRF2010 | 7/15/2013 | 10.11 | 65.62 | 52,003 |

| **Design** | Plan #3 | | | | |
|---|---|---|---|---|---|
| **Audit Notes:** | | | | | |
| **Version:** | | **Phase:** | PLAN | **Tie On Depth:** | 0.0 |
| **Vertical Section:** | **Depth From (TVD) (ft)** | **+N/-S (ft)** | **+E/-W (ft)** | **Direction (°)** | |
| | 0.0 | 0.0 | 0.0 | 46.30 | |

**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 |
|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,152.0 | 28.56 | 46.02 | 1,113.0 | 161.4 | 167.2 | 3.00 | 3.00 | 0.00 | 46.02 | |
| 3,046.4 | 28.56 | 46.02 | 2,777.0 | 790.3 | 818.9 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3,998.4 | 0.00 | 0.00 | 3,690.0 | 951.6 | 986.1 | 3.00 | -3.00 | 0.00 | 180.00 | |
| 6,218.4 | 0.00 | 0.00 | 5,910.0 | 951.6 | 986.1 | 0.00 | 0.00 | 0.00 | 0.00 | Nolte 13C-13 PBHL 2 |

| | | | |
|---|---|---|---|
| **Database:** | USA EDM 5000 Multi Users DB | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Company:** | Caerus Oil & Gas (NAD 27) | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Project:** | Garfield County, CO | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site:** | S14-T7S-R96W | **North Reference:** | True |
| **Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | DD | | |
| **Design:** | Plan #3 | | |

**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) | Comments / Formations |
|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 100.0 | 0.00 | 0.00 | 100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | KOP @ 200 'MD |
| 300.0 | 3.00 | 46.02 | 300.0 | 1.8 | 1.9 | 2.6 | 3.00 | 3.00 | |
| 400.0 | 6.00 | 46.02 | 399.6 | 7.3 | 7.5 | 10.5 | 3.00 | 3.00 | |
| 500.0 | 9.00 | 46.02 | 498.8 | 16.3 | 16.9 | 23.5 | 3.00 | 3.00 | |
| 600.0 | 12.00 | 46.02 | 597.1 | 29.0 | 30.0 | 41.7 | 3.00 | 3.00 | |
| 700.0 | 15.00 | 46.02 | 694.3 | 45.2 | 46.8 | 65.1 | 3.00 | 3.00 | |
| 800.0 | 18.00 | 46.02 | 790.2 | 64.9 | 67.3 | 93.5 | 3.00 | 3.00 | |
| 900.0 | 21.00 | 46.02 | 884.4 | 88.1 | 91.3 | 126.9 | 3.00 | 3.00 | |
| 1,000.0 | 24.00 | 46.02 | 976.8 | 114.7 | 118.8 | 165.1 | 3.00 | 3.00 | 9 5/8" |
| 1,100.0 | 27.00 | 46.02 | 1,067.1 | 144.6 | 149.8 | 208.2 | 3.00 | 3.00 | |
| 1,152.0 | 28.56 | 46.02 | 1,113.1 | 161.4 | 167.2 | 232.4 | 3.00 | 3.00 | EOB; 28.56° Inc |
| 1,200.0 | 28.56 | 46.02 | 1,155.2 | 177.3 | 183.7 | 255.3 | 0.00 | 0.00 | |
| 1,300.0 | 28.56 | 46.02 | 1,243.1 | 210.5 | 218.1 | 303.1 | 0.00 | 0.00 | |
| 1,400.0 | 28.56 | 46.02 | 1,330.9 | 243.7 | 252.5 | 351.0 | 0.00 | 0.00 | |
| 1,500.0 | 28.56 | 46.02 | 1,418.7 | 276.9 | 286.9 | 398.8 | 0.00 | 0.00 | |
| 1,600.0 | 28.56 | 46.02 | 1,506.6 | 310.1 | 321.3 | 446.6 | 0.00 | 0.00 | |
| 1,700.0 | 28.56 | 46.02 | 1,594.4 | 343.3 | 355.7 | 494.4 | 0.00 | 0.00 | |
| 1,800.0 | 28.56 | 46.02 | 1,682.2 | 376.5 | 390.1 | 542.2 | 0.00 | 0.00 | |
| 1,900.0 | 28.56 | 46.02 | 1,770.1 | 409.7 | 424.5 | 590.0 | 0.00 | 0.00 | |
| 2,000.0 | 28.56 | 46.02 | 1,857.9 | 442.9 | 458.9 | 637.8 | 0.00 | 0.00 | |
| 2,100.0 | 28.56 | 46.02 | 1,945.7 | 476.1 | 493.3 | 685.6 | 0.00 | 0.00 | |
| 2,200.0 | 28.56 | 46.02 | 2,033.6 | 509.3 | 527.7 | 733.4 | 0.00 | 0.00 | |
| 2,300.0 | 28.56 | 46.02 | 2,121.4 | 542.5 | 562.1 | 781.2 | 0.00 | 0.00 | |
| 2,400.0 | 28.56 | 46.02 | 2,209.2 | 575.7 | 596.5 | 829.0 | 0.00 | 0.00 | |
| 2,500.0 | 28.56 | 46.02 | 2,297.1 | 608.9 | 630.9 | 876.8 | 0.00 | 0.00 | |
| 2,600.0 | 28.56 | 46.02 | 2,384.9 | 642.1 | 665.3 | 924.6 | 0.00 | 0.00 | |
| 2,700.0 | 28.56 | 46.02 | 2,472.7 | 675.3 | 699.7 | 972.4 | 0.00 | 0.00 | |
| 2,800.0 | 28.56 | 46.02 | 2,560.6 | 708.5 | 734.1 | 1,020.2 | 0.00 | 0.00 | |
| 2,900.0 | 28.56 | 46.02 | 2,648.4 | 741.7 | 768.5 | 1,068.0 | 0.00 | 0.00 | |
| 2,947.4 | 28.56 | 46.02 | 2,690.0 | 757.4 | 784.8 | 1,090.7 | 0.00 | 0.00 | MESAVERDE (TVD) |
| 3,000.0 | 28.56 | 46.02 | 2,736.2 | 774.9 | 802.9 | 1,115.8 | 0.00 | 0.00 | |
| 3,046.4 | 28.56 | 46.02 | 2,777.0 | 790.3 | 818.9 | 1,138.0 | 0.00 | 0.00 | Start 3° Drop |
| 3,100.0 | 26.95 | 46.02 | 2,824.4 | 807.6 | 836.8 | 1,163.0 | 3.00 | -3.00 | |
| 3,200.0 | 23.95 | 46.02 | 2,914.7 | 837.4 | 867.8 | 1,205.9 | 3.00 | -3.00 | |
| 3,300.0 | 20.95 | 46.02 | 3,007.1 | 864.0 | 895.2 | 1,244.1 | 3.00 | -3.00 | |
| 3,400.0 | 17.95 | 46.02 | 3,101.4 | 887.1 | 919.2 | 1,277.4 | 3.00 | -3.00 | |
| 3,500.0 | 14.95 | 46.02 | 3,197.3 | 906.7 | 939.6 | 1,305.7 | 3.00 | -3.00 | |
| 3,600.0 | 11.95 | 46.02 | 3,294.5 | 922.9 | 956.3 | 1,329.0 | 3.00 | -3.00 | |
| 3,700.0 | 8.95 | 46.02 | 3,392.9 | 935.5 | 969.4 | 1,347.1 | 3.00 | -3.00 | |
| 3,800.0 | 5.95 | 46.02 | 3,492.0 | 944.5 | 978.7 | 1,360.1 | 3.00 | -3.00 | |
| 3,900.0 | 2.95 | 46.02 | 3,591.7 | 949.9 | 984.3 | 1,367.9 | 3.00 | -3.00 | |
| 3,998.4 | 0.00 | 0.00 | 3,690.0 | 951.6 | 986.1 | 1,370.4 | 3.00 | -3.00 | EOD; Vertical - TOP GAS (TVD) |
| 4,000.0 | 0.00 | 0.00 | 3,691.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 4,100.0 | 0.00 | 0.00 | 3,791.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 4,200.0 | 0.00 | 0.00 | 3,891.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 4,300.0 | 0.00 | 0.00 | 3,991.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 4,400.0 | 0.00 | 0.00 | 4,091.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 4,500.0 | 0.00 | 0.00 | 4,191.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 4,600.0 | 0.00 | 0.00 | 4,291.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 4,700.0 | 0.00 | 0.00 | 4,391.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |

| | | | |
|---|---|---|---|
| **Database:** | USA EDM 5000 Multi Users DB | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Company:** | Caerus Oil & Gas (NAD 27) | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Project:** | Garfield County, CO | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site:** | S14-T7S-R96W | **North Reference:** | True |
| **Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | DD | | |
| **Design:** | Plan #3 | | |

**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) | Comments / Formations |
|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 0.00 | 0.00 | 4,491.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 4,900.0 | 0.00 | 0.00 | 4,591.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 5,000.0 | 0.00 | 0.00 | 4,691.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 5,100.0 | 0.00 | 0.00 | 4,791.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 5,200.0 | 0.00 | 0.00 | 4,891.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 5,300.0 | 0.00 | 0.00 | 4,991.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 5,400.0 | 0.00 | 0.00 | 5,091.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 5,500.0 | 0.00 | 0.00 | 5,191.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 5,600.0 | 0.00 | 0.00 | 5,291.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 5,700.0 | 0.00 | 0.00 | 5,391.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 5,800.0 | 0.00 | 0.00 | 5,491.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 5,900.0 | 0.00 | 0.00 | 5,591.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 5,918.4 | 0.00 | 0.00 | 5,610.0 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | ROLLINS (TVD) |
| 6,000.0 | 0.00 | 0.00 | 5,691.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 6,100.0 | 0.00 | 0.00 | 5,791.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 6,200.0 | 0.00 | 0.00 | 5,891.6 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | |
| 6,218.4 | 0.00 | 0.00 | 5,910.0 | 951.6 | 986.1 | 1,370.4 | 0.00 | 0.00 | PBHL @ 6,218' MD |

**Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| Nolte 13C-13 PBHL 2 | 0.00 | 0.00 | 5,910.0 | 951.6 | 986.1 | 593,574.71 | 1,275,598.30 | 39.435081 | -108.065039 |
| - plan hits target center<br>- Circle (radius 50.0) | | | | | | | | | |
| Nolte 13C-13 PBHL | 0.00 | 0.00 | 5,910.0 | 951.3 | 995.3 | 593,574.08 | 1,275,607.49 | 39.435080 | -108.065007 |
| - plan misses target center by 9.2ft at 6218.4ft MD (5910.0 TVD, 951.6 N, 986.1 E)<br>- Circle (radius 50.0) | | | | | | | | | |

**Casing Points**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (in) | Hole Diameter (in) |
|---|---|---|---|---|
| 1,000.0 | 976.8 | 9 5/8" | 9.625 | 12.250 |

**Formations**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 2,947.4 | 2,690.0 | MESAVERDE (TVD) | | 0.00 | |
| 3,998.4 | 3,690.0 | TOP GAS (TVD) | | 0.00 | |
| 5,918.4 | 5,610.0 | ROLLINS (TVD) | | 0.00 | |

| | | | |
|---|---|---|---|
| **Database:** | USA EDM 5000 Multi Users DB | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Company:** | Caerus Oil & Gas (NAD 27) | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Project:** | Garfield County, CO | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site:** | S14-T7S-R96W | **North Reference:** | True |
| **Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | DD | | |
| **Design:** | Plan #3 | | |

**Plan Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 200.0 | 200.0 | 0.0 | 0.0 | KOP @ 200 'MD |
| 1,152.0 | 1,113.1 | 161.4 | 167.2 | EOB; 28.56° Inc |
| 3,046.4 | 2,777.0 | 790.3 | 818.9 | Start 3° Drop |
| 3,998.4 | 3,690.0 | 951.6 | 986.1 | EOD; Vertical |
| 6,218.4 | 5,910.0 | 951.6 | 986.1 | PBHL @ 6,218' MD |

# Caerus Oil & Gas (NAD 27)

**Garfield County, CO**
**S14-T7S-R96W**
**Nolte 13C-13**
**DD**
**Plan #3**

# Anticollision Report

**09 September, 2013**

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Reference** Plan #3

| | | | |
|---|---|---|---|
| **Filter type:** | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| **Interpolation Method:** | MD Interval 100.0ft | **Error Model:** | ISCWSA |
| **Depth Range:** | Unlimited | **Scan Method:** | Closest Approach 3D |
| **Results Limited by:** | Maximum center-center distance of 1,356.1ft | **Error Surface:** | Elliptical Conic |
| **Warning Levels Evaluated at:** | 2.00 **Sigma** | | |

**Survey Tool Program** **Date** 8/29/2013

| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.0 | 6,218.4 | Plan #3 (DD) | MWD | Geolink MWD |

**Summary**

| Site Name<br>Offset Well - Wellbore - Design | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|
| S14-T7S-R96W | | | | | | |
| Nolte 11A-24 - DD - Plan #3 | 200.0 | 200.2 | 48.0 | 47.4 | 79.443 | CC, ES |
| Nolte 11A-24 - DD - Plan #3 | 500.0 | 497.0 | 73.1 | 71.4 | 43.091 | SF |
| Nolte 11B-24 - DD - Plan #3 | 166.6 | 166.8 | 56.0 | 55.5 | 114.811 | CC |
| Nolte 11B-24 - DD - Plan #3 | 200.0 | 200.0 | 56.0 | 55.4 | 92.712 | ES |
| Nolte 11B-24 - DD - Plan #3 | 500.0 | 492.9 | 88.4 | 86.7 | 49.661 | SF |
| Nolte 11C-24 - DD - Plan #3 | 200.0 | 190.5 | 64.0 | 63.4 | 105.852 | CC, ES |
| Nolte 11C-24 - DD - Plan #3 | 500.0 | 483.8 | 93.5 | 91.8 | 54.725 | SF |
| Nolte 13A-13 - DD - Plan #3 | 200.1 | 200.3 | 10.0 | 9.4 | 16.555 | CC, ES |
| Nolte 13A-13 - DD - Plan #3 | 1,300.0 | 1,295.1 | 86.5 | 74.0 | 6.920 | SF |
| Nolte 13B-13 - DD - Plan #3 | 200.0 | 200.2 | 12.8 | 12.2 | 21.211 | CC, ES |
| Nolte 13B-13 - DD - Plan #3 | 1,600.0 | 1,609.5 | 73.1 | 54.9 | 4.030 | SF |
| Nolte 13D-13 - DD - Plan #3 | 200.0 | 200.2 | 8.0 | 7.4 | 13.257 | CC, ES |
| Nolte 13D-13 - DD - Plan #3 | 6,200.0 | 6,122.5 | 329.9 | 287.6 | 7.805 | SF |
| Nolte 14A-13 - DD - Plan #3 | 200.0 | 200.2 | 16.0 | 15.4 | 26.514 | CC, ES |
| Nolte 14A-13 - DD - Plan #3 | 6,200.0 | 6,060.0 | 660.2 | 617.8 | 15.588 | SF |
| Nolte 14B-13 - DD - Plan #3 | 200.0 | 200.2 | 24.0 | 23.4 | 39.753 | CC, ES |
| Nolte 14B-13 - DD - Plan #3 | 6,200.0 | 6,048.1 | 990.2 | 947.7 | 23.286 | SF |
| Nolte 14C-13 - DD - Plan #3 | 200.0 | 200.2 | 31.5 | 30.9 | 52.182 | CC, ES |
| Nolte 14C-13 - DD - Plan #3 | 6,200.0 | 6,052.0 | 1,330.6 | 1,288.0 | 31.252 | SF |
| Nolte 14D-13 - DD - Plan #3 | 200.0 | 200.2 | 40.0 | 39.4 | 66.207 | CC, ES |
| Nolte 14D-13 - DD - Plan #3 | 500.0 | 499.0 | 62.7 | 61.1 | 37.886 | SF |
| Nolte 43A-14 - DD - Plan #3 | 200.0 | 200.2 | 18.9 | 18.3 | 31.240 | CC, ES |
| Nolte 43A-14 - DD - Plan #3 | 400.0 | 400.4 | 28.2 | 26.9 | 21.537 | SF |
| Nolte 43B-14 - DD - Plan #3 | 200.0 | 200.2 | 26.0 | 25.4 | 43.031 | CC, ES |
| Nolte 43B-14 - DD - Plan #3 | 400.0 | 400.3 | 36.1 | 34.8 | 27.814 | SF |
| Nolte 43C-14 - DD - Plan #3 | 200.0 | 200.2 | 33.5 | 32.9 | 55.437 | CC, ES |
| Nolte 43C-14 - DD - Plan #3 | 400.0 | 399.8 | 44.0 | 42.7 | 33.868 | SF |
| Nolte 44A-14 - DD - Plan #3 | 200.0 | 200.2 | 41.2 | 40.6 | 68.160 | CC, ES |
| Nolte 44A-14 - DD - Plan #3 | 500.0 | 499.3 | 64.6 | 62.9 | 39.343 | SF |
| Nolte 44B-14 - DD - Plan #3 | 200.0 | 200.2 | 49.0 | 48.4 | 81.048 | CC, ES |
| Nolte 44B-14 - DD - Plan #3 | 500.0 | 499.0 | 72.4 | 70.8 | 44.128 | SF |
| Nolte 44C-14 - DD - Plan #3 | 200.0 | 200.2 | 56.9 | 56.3 | 94.007 | CC, ES |
| Nolte 44C-14 - DD - Plan #3 | 500.0 | 495.8 | 82.1 | 80.5 | 50.146 | SF |
| Nolte SWD 1-14 - DD - Plan #3 | 200.0 | 200.2 | 64.8 | 64.1 | 107.013 | CC, ES |
| Nolte SWD 1-14 - DD - Plan #3 | 500.0 | 499.0 | 88.0 | 86.4 | 53.571 | SF |

# Cathedral Energy Services

## Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 11A-24 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -152.48 | -42.6 | -22.2 | 48.0 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -152.48 | -42.6 | -22.2 | 48.0 | 47.7 | 0.25 | 188.194 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -152.48 | -42.6 | -22.2 | 48.0 | 47.4 | 0.60 | 79.443 | CC, ES |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 162.42 | -42.6 | -22.2 | 50.5 | 49.5 | 0.95 | 52.973 | |
| 400.0 | 399.6 | 399.1 | 399.0 | 0.7 | 0.7 | 162.21 | -44.3 | -20.3 | 58.6 | 57.3 | 1.31 | 44.820 | |
| 500.0 | 498.8 | 497.0 | 496.7 | 1.0 | 0.9 | 159.36 | -49.5 | -14.8 | 73.1 | 71.4 | 1.70 | 43.091 | SF |
| 600.0 | 597.1 | 593.2 | 592.1 | 1.4 | 1.1 | 155.66 | -58.0 | -5.9 | 94.2 | 92.1 | 2.15 | 43.796 | |
| 700.0 | 694.3 | 687.0 | 684.4 | 1.8 | 1.4 | 152.10 | -69.4 | 6.2 | 122.0 | 119.3 | 2.69 | 45.328 | |
| 800.0 | 790.2 | 777.9 | 772.9 | 2.4 | 1.8 | 149.00 | -83.5 | 21.0 | 156.4 | 153.1 | 3.33 | 47.020 | |
| 900.0 | 884.4 | 865.3 | 857.0 | 3.0 | 2.3 | 146.36 | -99.7 | 38.1 | 197.1 | 193.0 | 4.05 | 48.635 | |
| 1,000.0 | 976.8 | 948.8 | 936.4 | 3.7 | 2.8 | 144.06 | -117.6 | 57.1 | 243.7 | 238.9 | 4.86 | 50.115 | |
| 1,100.0 | 1,067.1 | 1,028.3 | 1,010.7 | 4.5 | 3.3 | 142.00 | -136.9 | 77.4 | 296.0 | 290.3 | 5.75 | 51.457 | |
| 1,200.0 | 1,155.2 | 1,100.0 | 1,076.8 | 5.4 | 3.8 | 140.70 | -156.1 | 97.7 | 353.2 | 346.5 | 6.68 | 52.853 | |
| 1,300.0 | 1,243.1 | 1,176.3 | 1,145.9 | 6.3 | 4.4 | 139.84 | -178.4 | 121.2 | 412.5 | 404.7 | 7.72 | 53.419 | |
| 1,400.0 | 1,330.9 | 1,246.5 | 1,208.3 | 7.2 | 5.0 | 138.88 | -200.6 | 144.7 | 473.4 | 464.6 | 8.77 | 53.963 | |
| 1,500.0 | 1,418.7 | 1,314.2 | 1,267.2 | 8.1 | 5.7 | 137.87 | -223.4 | 168.8 | 536.0 | 526.2 | 9.85 | 54.433 | |
| 1,600.0 | 1,506.6 | 1,379.3 | 1,322.8 | 9.0 | 6.3 | 136.84 | -246.8 | 193.4 | 600.3 | 589.3 | 10.95 | 54.822 | |
| 1,700.0 | 1,594.4 | 1,447.3 | 1,379.7 | 9.9 | 7.0 | 135.75 | -272.3 | 220.4 | 666.0 | 653.9 | 12.09 | 55.094 | |
| 1,800.0 | 1,682.2 | 1,521.8 | 1,441.8 | 10.8 | 7.8 | 134.73 | -300.6 | 250.2 | 732.1 | 718.8 | 13.28 | 55.135 | |
| 1,900.0 | 1,770.1 | 1,596.2 | 1,503.9 | 11.6 | 8.6 | 133.87 | -328.8 | 280.0 | 798.3 | 783.8 | 14.47 | 55.185 | |
| 2,000.0 | 1,857.9 | 1,670.7 | 1,566.0 | 12.5 | 9.3 | 133.15 | -357.0 | 309.9 | 864.5 | 848.9 | 15.65 | 55.236 | |
| 2,100.0 | 1,945.7 | 1,745.1 | 1,628.1 | 13.4 | 10.1 | 132.52 | -385.3 | 339.7 | 930.9 | 914.1 | 16.84 | 55.290 | |
| 2,200.0 | 2,033.6 | 1,819.6 | 1,690.2 | 14.3 | 10.9 | 131.98 | -413.5 | 369.5 | 997.3 | 979.3 | 18.02 | 55.344 | |
| 2,300.0 | 2,121.4 | 1,894.0 | 1,752.3 | 15.2 | 11.6 | 131.51 | -441.7 | 399.3 | 1,063.7 | 1,044.5 | 19.20 | 55.396 | |
| 2,400.0 | 2,209.2 | 1,968.5 | 1,814.5 | 16.1 | 12.4 | 131.09 | -470.0 | 429.1 | 1,130.2 | 1,109.9 | 20.38 | 55.445 | |
| 2,500.0 | 2,297.1 | 2,042.9 | 1,876.6 | 17.0 | 13.2 | 130.72 | -498.2 | 458.9 | 1,196.8 | 1,175.2 | 21.57 | 55.493 | |
| 2,600.0 | 2,384.9 | 2,117.4 | 1,938.7 | 17.9 | 14.0 | 130.39 | -526.4 | 488.7 | 1,263.3 | 1,240.5 | 22.75 | 55.538 | |
| 2,700.0 | 2,472.7 | 2,191.8 | 2,000.8 | 18.8 | 14.8 | 130.09 | -554.7 | 518.5 | 1,329.9 | 1,305.9 | 23.93 | 55.581 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 11B-24 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -152.47 | -49.6 | -25.9 | 56.0 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -152.47 | -49.6 | -25.9 | 56.0 | 55.7 | 0.26 | 219.413 | |
| 166.6 | 166.6 | 166.8 | 166.8 | 0.2 | 0.2 | -152.47 | -49.6 | -25.9 | 56.0 | 55.5 | 0.49 | 114.811 | CC |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -152.47 | -49.6 | -25.9 | 56.0 | 55.4 | 0.60 | 92.712 | ES |
| 300.0 | 300.0 | 298.9 | 298.9 | 0.5 | 0.5 | 159.99 | -51.6 | -24.3 | 59.5 | 58.6 | 0.96 | 62.099 | |
| 400.0 | 399.6 | 396.8 | 396.4 | 0.7 | 0.7 | 156.38 | -57.5 | -19.5 | 70.3 | 68.9 | 1.34 | 52.287 | |
| 500.0 | 498.8 | 492.9 | 491.8 | 1.0 | 1.0 | 152.31 | -67.0 | -11.7 | 88.4 | 86.7 | 1.78 | 49.661 | SF |
| 600.0 | 597.1 | 586.6 | 584.0 | 1.4 | 1.3 | 148.72 | -79.9 | -1.2 | 114.1 | 111.8 | 2.28 | 49.934 | |
| 700.0 | 694.3 | 677.3 | 672.3 | 1.8 | 1.7 | 145.82 | -95.6 | 11.6 | 146.9 | 144.0 | 2.86 | 51.339 | |
| 800.0 | 790.2 | 764.2 | 756.1 | 2.4 | 2.2 | 143.50 | -113.8 | 26.4 | 186.5 | 183.0 | 3.51 | 53.116 | |
| 900.0 | 884.4 | 847.1 | 834.8 | 3.0 | 2.6 | 141.55 | -133.8 | 42.7 | 232.6 | 228.4 | 4.23 | 54.950 | |
| 1,000.0 | 976.8 | 925.6 | 908.2 | 3.7 | 3.2 | 139.84 | -155.2 | 60.1 | 284.6 | 279.6 | 5.02 | 56.718 | |
| 1,100.0 | 1,067.1 | 1,000.0 | 976.8 | 4.5 | 3.7 | 138.23 | -177.7 | 78.4 | 342.2 | 336.3 | 5.87 | 58.338 | |
| 1,200.0 | 1,155.2 | 1,068.8 | 1,039.1 | 5.4 | 4.3 | 137.38 | -200.2 | 96.8 | 404.5 | 397.7 | 6.77 | 59.719 | |
| 1,300.0 | 1,243.1 | 1,135.2 | 1,098.3 | 6.3 | 4.8 | 137.14 | -223.7 | 115.9 | 469.0 | 461.3 | 7.72 | 60.755 | |
| 1,400.0 | 1,330.9 | 1,200.0 | 1,154.9 | 7.2 | 5.4 | 136.71 | -248.0 | 135.7 | 535.3 | 526.6 | 8.69 | 61.625 | |
| 1,500.0 | 1,418.7 | 1,260.2 | 1,206.6 | 8.1 | 6.0 | 136.20 | -272.0 | 155.2 | 603.1 | 593.4 | 9.67 | 62.390 | |
| 1,600.0 | 1,506.6 | 1,318.8 | 1,255.9 | 9.0 | 6.6 | 135.62 | -296.5 | 175.2 | 672.5 | 661.9 | 10.66 | 63.113 | |
| 1,700.0 | 1,594.4 | 1,374.9 | 1,302.2 | 9.9 | 7.2 | 135.02 | -321.1 | 195.2 | 743.5 | 731.8 | 11.66 | 63.784 | |
| 1,800.0 | 1,682.2 | 1,428.5 | 1,345.5 | 10.8 | 7.8 | 134.41 | -345.6 | 215.2 | 815.8 | 803.1 | 12.66 | 64.444 | |
| 1,900.0 | 1,770.1 | 1,479.8 | 1,386.2 | 11.6 | 8.4 | 133.80 | -369.9 | 234.9 | 889.5 | 875.8 | 13.66 | 65.103 | |
| 2,000.0 | 1,857.9 | 1,528.8 | 1,424.2 | 12.5 | 9.0 | 133.20 | -393.8 | 254.5 | 964.5 | 949.8 | 14.66 | 65.784 | |
| 2,100.0 | 1,945.7 | 1,588.1 | 1,469.4 | 13.4 | 9.7 | 132.50 | -423.5 | 278.7 | 1,040.4 | 1,024.7 | 15.74 | 66.107 | |
| 2,200.0 | 2,033.6 | 1,652.5 | 1,518.5 | 14.3 | 10.5 | 131.83 | -455.8 | 305.0 | 1,116.5 | 1,099.6 | 16.85 | 66.263 | |
| 2,300.0 | 2,121.4 | 1,716.9 | 1,567.6 | 15.2 | 11.3 | 131.25 | -488.1 | 331.3 | 1,192.6 | 1,174.6 | 17.96 | 66.413 | |
| 2,400.0 | 2,209.2 | 1,781.3 | 1,616.8 | 16.1 | 12.1 | 130.73 | -520.4 | 357.6 | 1,268.8 | 1,249.7 | 19.06 | 66.555 | |
| 2,500.0 | 2,297.1 | 1,845.7 | 1,665.9 | 17.0 | 12.9 | 130.27 | -552.7 | 383.9 | 1,345.0 | 1,324.8 | 20.17 | 66.687 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 11C-24 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -152.47 | -56.7 | -29.6 | 64.7 | | | | |
| 100.0 | 100.0 | 90.5 | 90.5 | 0.1 | 0.1 | -152.47 | -56.7 | -29.6 | 64.0 | 63.7 | 0.26 | 247.821 | |
| 200.0 | 200.0 | 190.5 | 190.5 | 0.3 | 0.3 | -152.47 | -56.7 | -29.6 | 64.0 | 63.4 | 0.60 | 105.852 | CC, ES |
| 300.0 | 300.0 | 289.8 | 289.8 | 0.5 | 0.5 | 161.88 | -57.1 | -29.3 | 66.7 | 65.7 | 0.95 | 69.974 | |
| 400.0 | 399.6 | 387.5 | 387.4 | 0.7 | 0.7 | 160.57 | -60.8 | -26.8 | 76.3 | 75.0 | 1.31 | 58.165 | |
| 500.0 | 498.8 | 483.8 | 483.2 | 1.0 | 0.9 | 157.93 | -68.6 | -21.6 | 93.5 | 91.8 | 1.71 | 54.725 | SF |
| 600.0 | 597.1 | 577.7 | 576.1 | 1.4 | 1.2 | 154.99 | -80.0 | -14.0 | 118.1 | 116.0 | 2.16 | 54.745 | |
| 700.0 | 694.3 | 668.6 | 665.2 | 1.8 | 1.5 | 152.29 | -94.7 | -4.2 | 150.2 | 147.5 | 2.67 | 56.210 | |
| 800.0 | 790.2 | 755.7 | 749.8 | 2.4 | 1.9 | 149.95 | -112.1 | 7.4 | 189.3 | 186.1 | 3.25 | 58.209 | |
| 900.0 | 884.4 | 838.6 | 829.3 | 3.0 | 2.3 | 147.92 | -131.5 | 20.4 | 235.2 | 231.3 | 3.90 | 60.334 | |
| 1,000.0 | 976.8 | 917.0 | 903.5 | 3.7 | 2.8 | 146.09 | -152.6 | 34.5 | 287.4 | 282.8 | 4.60 | 62.409 | |
| 1,100.0 | 1,067.1 | 990.5 | 972.1 | 4.5 | 3.3 | 144.39 | -174.6 | 49.2 | 345.3 | 340.0 | 5.37 | 64.294 | |
| 1,200.0 | 1,155.2 | 1,059.3 | 1,035.3 | 5.4 | 3.8 | 143.39 | -197.1 | 64.3 | 408.3 | 402.1 | 6.19 | 65.910 | |
| 1,300.0 | 1,243.1 | 1,125.0 | 1,094.8 | 6.3 | 4.3 | 142.97 | -220.5 | 79.9 | 473.4 | 466.4 | 7.05 | 67.140 | |
| 1,400.0 | 1,330.9 | 1,188.1 | 1,150.9 | 7.2 | 4.9 | 142.42 | -244.4 | 95.9 | 540.3 | 532.3 | 7.93 | 68.135 | |
| 1,500.0 | 1,418.7 | 1,248.6 | 1,203.7 | 8.1 | 5.4 | 141.81 | -268.8 | 112.3 | 608.8 | 599.9 | 8.83 | 68.938 | |
| 1,600.0 | 1,506.6 | 1,300.0 | 1,247.9 | 9.0 | 5.9 | 141.24 | -290.7 | 126.9 | 678.9 | 669.2 | 9.70 | 70.012 | |
| 1,700.0 | 1,594.4 | 1,361.7 | 1,300.0 | 9.9 | 6.5 | 140.51 | -318.2 | 145.3 | 750.4 | 739.7 | 10.66 | 70.388 | |
| 1,800.0 | 1,682.2 | 1,414.5 | 1,343.7 | 10.8 | 7.1 | 139.87 | -342.8 | 161.7 | 823.3 | 811.7 | 11.58 | 71.078 | |
| 1,900.0 | 1,770.1 | 1,465.0 | 1,384.7 | 11.6 | 7.7 | 139.23 | -367.3 | 178.1 | 897.6 | 885.1 | 12.51 | 71.725 | |
| 2,000.0 | 1,857.9 | 1,500.0 | 1,412.6 | 12.5 | 8.0 | 138.79 | -384.8 | 189.8 | 973.3 | 960.0 | 13.35 | 72.911 | |
| 2,100.0 | 1,945.7 | 1,559.1 | 1,459.0 | 13.4 | 8.7 | 138.03 | -415.3 | 210.2 | 1,050.0 | 1,035.6 | 14.38 | 73.038 | |
| 2,200.0 | 2,033.6 | 1,600.0 | 1,490.4 | 14.3 | 9.2 | 137.50 | -437.1 | 224.8 | 1,128.0 | 1,112.7 | 15.28 | 73.825 | |
| 2,300.0 | 2,121.4 | 1,644.9 | 1,524.1 | 15.2 | 9.8 | 136.92 | -461.7 | 241.2 | 1,207.0 | 1,190.7 | 16.23 | 74.357 | |
| 2,400.0 | 2,209.2 | 1,700.0 | 1,564.7 | 16.1 | 10.5 | 136.20 | -492.7 | 262.0 | 1,287.1 | 1,269.9 | 17.26 | 74.559 | |

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 13A-13 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -62.45 | 4.6 | -8.9 | 10.0 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -62.45 | 4.6 | -8.9 | 10.0 | 9.7 | 0.25 | 39.231 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -62.45 | 4.6 | -8.9 | 10.0 | 9.4 | 0.60 | 16.560 | |
| 200.1 | 200.1 | 200.3 | 200.3 | 0.3 | 0.3 | -62.45 | 4.6 | -8.9 | 10.0 | 9.4 | 0.60 | 16.555 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | -107.70 | 6.9 | -7.5 | 10.6 | 9.7 | 0.97 | 10.980 | |
| 400.0 | 399.6 | 400.2 | 399.9 | 0.7 | 0.7 | -105.96 | 13.6 | -3.4 | 12.6 | 11.2 | 1.41 | 8.935 | |
| 500.0 | 498.8 | 500.2 | 499.0 | 1.0 | 1.0 | -104.01 | 24.7 | 3.5 | 15.8 | 13.9 | 1.97 | 8.026 | |
| 600.0 | 597.1 | 600.1 | 597.1 | 1.4 | 1.4 | -102.33 | 40.2 | 13.0 | 20.4 | 17.7 | 2.69 | 7.566 | |
| 700.0 | 694.3 | 699.8 | 694.2 | 1.8 | 1.8 | -100.99 | 60.0 | 25.2 | 26.2 | 22.6 | 3.59 | 7.311 | |
| 800.0 | 790.2 | 799.5 | 789.7 | 2.4 | 2.3 | -99.96 | 84.1 | 40.0 | 33.3 | 28.7 | 4.66 | 7.158 | |
| 900.0 | 884.4 | 899.0 | 883.5 | 3.0 | 3.0 | -99.16 | 112.4 | 57.4 | 41.7 | 35.8 | 5.91 | 7.059 | |
| 1,000.0 | 976.8 | 998.4 | 975.3 | 3.7 | 3.7 | -98.51 | 144.7 | 77.3 | 51.3 | 43.9 | 7.33 | 6.992 | |
| 1,100.0 | 1,067.1 | 1,097.5 | 1,064.9 | 4.5 | 4.5 | -97.97 | 181.0 | 99.6 | 62.1 | 53.1 | 8.94 | 6.942 | |
| 1,200.0 | 1,155.2 | 1,196.5 | 1,151.9 | 5.4 | 5.4 | -97.21 | 221.1 | 124.3 | 73.9 | 63.2 | 10.68 | 6.920 | |
| 1,300.0 | 1,243.1 | 1,295.1 | 1,236.1 | 6.3 | 6.3 | -93.87 | 264.8 | 151.2 | 86.5 | 74.0 | 12.50 | 6.920 | SF |
| 1,400.0 | 1,330.9 | 1,392.8 | 1,316.7 | 7.2 | 7.4 | -88.56 | 311.7 | 180.0 | 100.4 | 86.1 | 14.30 | 7.026 | |
| 1,500.0 | 1,418.7 | 1,489.1 | 1,393.4 | 8.1 | 8.5 | -82.29 | 361.3 | 210.5 | 116.7 | 100.7 | 15.93 | 7.322 | |
| 1,600.0 | 1,506.6 | 1,583.6 | 1,465.7 | 9.0 | 9.6 | -75.81 | 413.1 | 242.4 | 136.1 | 118.8 | 17.32 | 7.858 | |
| 1,700.0 | 1,594.4 | 1,677.2 | 1,534.4 | 9.9 | 10.8 | -69.61 | 467.3 | 275.7 | 159.4 | 140.9 | 18.42 | 8.653 | |
| 1,800.0 | 1,682.2 | 1,772.8 | 1,603.9 | 10.8 | 12.0 | -64.61 | 523.2 | 310.1 | 184.7 | 165.3 | 19.38 | 9.527 | |
| 1,900.0 | 1,770.1 | 1,868.4 | 1,673.4 | 11.6 | 13.2 | -60.81 | 579.2 | 344.6 | 211.0 | 190.7 | 20.31 | 10.387 | |
| 2,000.0 | 1,857.9 | 1,964.1 | 1,742.9 | 12.5 | 14.4 | -57.86 | 635.1 | 379.0 | 238.0 | 216.7 | 21.23 | 11.207 | |
| 2,100.0 | 1,945.7 | 2,059.7 | 1,812.3 | 13.4 | 15.7 | -55.50 | 691.1 | 413.4 | 265.4 | 243.3 | 22.16 | 11.978 | |
| 2,200.0 | 2,033.6 | 2,155.3 | 1,881.8 | 14.3 | 16.9 | -53.58 | 747.1 | 447.8 | 293.3 | 270.2 | 23.10 | 12.696 | |
| 2,300.0 | 2,121.4 | 2,250.9 | 1,951.3 | 15.2 | 18.1 | -52.00 | 803.0 | 482.3 | 321.3 | 297.3 | 24.05 | 13.362 | |
| 2,400.0 | 2,209.2 | 2,346.6 | 2,020.8 | 16.1 | 19.3 | -50.67 | 859.0 | 516.7 | 349.6 | 324.6 | 25.01 | 13.980 | |
| 2,500.0 | 2,297.1 | 2,442.2 | 2,090.3 | 17.0 | 20.6 | -49.53 | 915.0 | 551.1 | 378.0 | 352.0 | 25.97 | 14.553 | |
| 2,600.0 | 2,384.9 | 2,537.8 | 2,159.8 | 17.9 | 21.8 | -48.56 | 970.9 | 585.5 | 406.5 | 379.6 | 26.95 | 15.085 | |
| 2,700.0 | 2,472.7 | 2,633.5 | 2,229.3 | 18.8 | 23.0 | -47.71 | 1,026.9 | 619.9 | 435.2 | 407.2 | 27.93 | 15.579 | |
| 2,800.0 | 2,560.6 | 2,729.1 | 2,298.8 | 19.7 | 24.2 | -46.97 | 1,082.8 | 654.4 | 463.8 | 434.9 | 28.92 | 16.038 | |
| 2,900.0 | 2,648.4 | 2,824.7 | 2,368.2 | 20.6 | 25.5 | -46.31 | 1,138.8 | 688.8 | 492.6 | 462.7 | 29.92 | 16.466 | |
| 3,000.0 | 2,736.2 | 2,934.5 | 2,448.7 | 21.5 | 26.8 | -45.71 | 1,202.4 | 727.9 | 520.8 | 489.8 | 30.99 | 16.807 | |
| 3,100.0 | 2,824.4 | 3,061.0 | 2,546.1 | 22.4 | 28.3 | -45.72 | 1,271.1 | 770.2 | 544.9 | 512.5 | 32.37 | 16.831 | |
| 3,200.0 | 2,914.7 | 3,189.9 | 2,650.7 | 23.1 | 29.6 | -45.99 | 1,335.4 | 809.7 | 566.7 | 532.9 | 33.74 | 16.794 | |
| 3,300.0 | 3,007.1 | 3,321.1 | 2,762.0 | 23.8 | 30.8 | -46.21 | 1,394.4 | 846.0 | 586.5 | 551.5 | 34.97 | 16.773 | |
| 3,400.0 | 3,101.4 | 3,454.4 | 2,879.7 | 24.4 | 31.9 | -46.39 | 1,447.6 | 878.7 | 604.2 | 568.1 | 36.04 | 16.765 | |
| 3,500.0 | 3,197.3 | 3,589.6 | 3,003.3 | 24.9 | 32.9 | -46.53 | 1,494.2 | 907.4 | 619.6 | 582.6 | 36.96 | 16.765 | |
| 3,600.0 | 3,294.5 | 3,726.5 | 3,132.1 | 25.3 | 33.7 | -46.63 | 1,533.8 | 931.7 | 632.6 | 594.9 | 37.71 | 16.777 | |
| 3,700.0 | 3,392.9 | 3,864.9 | 3,265.3 | 25.6 | 34.3 | -46.68 | 1,565.7 | 951.4 | 643.2 | 604.9 | 38.30 | 16.796 | |
| 3,800.0 | 3,492.0 | 4,004.5 | 3,402.1 | 25.8 | 34.7 | -46.70 | 1,589.4 | 966.0 | 651.3 | 612.6 | 38.72 | 16.819 | |
| 3,900.0 | 3,591.7 | 4,145.1 | 3,541.4 | 25.9 | 35.0 | -46.67 | 1,604.7 | 975.4 | 656.8 | 617.8 | 38.98 | 16.851 | |
| 4,000.0 | 3,691.6 | 4,286.2 | 3,682.3 | 26.0 | 35.1 | -0.59 | 1,611.2 | 979.3 | 659.6 | 620.5 | 39.07 | 16.882 | |
| 4,100.0 | 3,791.6 | 4,395.7 | 3,791.8 | 26.0 | 35.2 | -0.57 | 1,611.4 | 979.5 | 659.8 | 620.6 | 39.20 | 16.832 | |
| 4,200.0 | 3,891.6 | 4,495.7 | 3,891.8 | 26.1 | 35.2 | -0.57 | 1,611.4 | 979.5 | 659.8 | 620.5 | 39.33 | 16.775 | |
| 4,300.0 | 3,991.6 | 4,595.7 | 3,991.8 | 26.1 | 35.3 | -0.57 | 1,611.4 | 979.5 | 659.8 | 620.3 | 39.47 | 16.718 | |
| 4,400.0 | 4,091.6 | 4,695.7 | 4,091.8 | 26.2 | 35.3 | -0.57 | 1,611.4 | 979.5 | 659.8 | 620.2 | 39.60 | 16.660 | |
| 4,500.0 | 4,191.6 | 4,795.7 | 4,191.8 | 26.2 | 35.3 | -0.57 | 1,611.4 | 979.5 | 659.8 | 620.0 | 39.74 | 16.601 | |
| 4,600.0 | 4,291.6 | 4,895.7 | 4,291.8 | 26.3 | 35.4 | -0.57 | 1,611.4 | 979.5 | 659.8 | 619.9 | 39.89 | 16.541 | |
| 4,700.0 | 4,391.6 | 4,995.7 | 4,391.8 | 26.3 | 35.4 | -0.57 | 1,611.4 | 979.5 | 659.8 | 619.8 | 40.03 | 16.481 | |
| 4,800.0 | 4,491.6 | 5,095.7 | 4,491.8 | 26.4 | 35.5 | -0.57 | 1,611.4 | 979.5 | 659.8 | 619.6 | 40.18 | 16.421 | |
| 4,900.0 | 4,591.6 | 5,195.7 | 4,591.8 | 26.4 | 35.5 | -0.57 | 1,611.4 | 979.5 | 659.8 | 619.5 | 40.33 | 16.359 | |
| 5,000.0 | 4,691.6 | 5,295.7 | 4,691.8 | 26.5 | 35.6 | -0.57 | 1,611.4 | 979.5 | 659.8 | 619.3 | 40.48 | 16.297 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 13A-13 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,100.0 | 4,791.6 | 5,395.7 | 4,791.8 | 26.5 | 35.6 | -0.57 | 1,611.4 | 979.5 | 659.8 | 619.1 | 40.64 | 16.235 | |
| 5,200.0 | 4,891.6 | 5,495.7 | 4,891.8 | 26.6 | 35.7 | -0.57 | 1,611.4 | 979.5 | 659.8 | 619.0 | 40.80 | 16.172 | |
| 5,300.0 | 4,991.6 | 5,595.7 | 4,991.8 | 26.7 | 35.7 | -0.57 | 1,611.4 | 979.5 | 659.8 | 618.8 | 40.96 | 16.109 | |
| 5,400.0 | 5,091.6 | 5,695.7 | 5,091.8 | 26.7 | 35.8 | -0.57 | 1,611.4 | 979.5 | 659.8 | 618.7 | 41.12 | 16.046 | |
| 5,500.0 | 5,191.6 | 5,795.7 | 5,191.8 | 26.8 | 35.8 | -0.57 | 1,611.4 | 979.5 | 659.8 | 618.5 | 41.28 | 15.982 | |
| 5,600.0 | 5,291.6 | 5,895.7 | 5,291.8 | 26.8 | 35.8 | -0.57 | 1,611.4 | 979.5 | 659.8 | 618.3 | 41.45 | 15.917 | |
| 5,700.0 | 5,391.6 | 5,995.7 | 5,391.8 | 26.9 | 35.9 | -0.57 | 1,611.4 | 979.5 | 659.8 | 618.2 | 41.62 | 15.852 | |
| 5,800.0 | 5,491.6 | 6,095.7 | 5,491.8 | 27.0 | 36.0 | -0.57 | 1,611.4 | 979.5 | 659.8 | 618.0 | 41.79 | 15.787 | |
| 5,900.0 | 5,591.6 | 6,195.7 | 5,591.8 | 27.0 | 36.0 | -0.57 | 1,611.4 | 979.5 | 659.8 | 617.8 | 41.97 | 15.722 | |
| 6,000.0 | 5,691.6 | 6,295.7 | 5,691.8 | 27.1 | 36.1 | -0.57 | 1,611.4 | 979.5 | 659.8 | 617.6 | 42.14 | 15.656 | |
| 6,100.0 | 5,791.6 | 6,395.7 | 5,791.8 | 27.2 | 36.1 | -0.57 | 1,611.4 | 979.5 | 659.8 | 617.5 | 42.32 | 15.591 | |
| 6,200.0 | 5,891.6 | 6,495.7 | 5,891.8 | 27.2 | 36.2 | -0.57 | 1,611.4 | 979.5 | 659.8 | 617.3 | 42.50 | 15.524 | |
| 6,218.4 | 5,910.0 | 6,514.1 | 5,910.2 | 27.2 | 36.2 | -0.57 | 1,611.4 | 979.5 | 659.8 | 617.3 | 42.53 | 15.512 | |

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 13B-13 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -101.09 | -2.5 | -12.6 | 12.8 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -101.09 | -2.5 | -12.6 | 12.8 | 12.6 | 0.25 | 50.267 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -101.09 | -2.5 | -12.6 | 12.8 | 12.2 | 0.60 | 21.211 | CC, ES |
| 300.0 | 300.0 | 300.5 | 300.5 | 0.5 | 0.5 | -150.99 | -1.9 | -12.2 | 14.5 | 13.6 | 0.96 | 15.224 | |
| 400.0 | 399.6 | 401.1 | 400.9 | 0.7 | 0.7 | -153.01 | 2.3 | -8.9 | 17.2 | 15.9 | 1.32 | 13.048 | |
| 500.0 | 498.8 | 501.9 | 501.1 | 1.0 | 0.9 | -152.57 | 10.6 | -2.4 | 20.3 | 18.5 | 1.72 | 11.799 | |
| 600.0 | 597.1 | 602.7 | 600.7 | 1.4 | 1.2 | -150.62 | 23.2 | 7.3 | 23.7 | 21.5 | 2.18 | 10.850 | |
| 700.0 | 694.3 | 703.7 | 699.5 | 1.8 | 1.6 | -147.81 | 39.9 | 20.3 | 27.5 | 24.7 | 2.76 | 9.964 | |
| 800.0 | 790.2 | 804.8 | 797.0 | 2.4 | 2.1 | -144.55 | 60.8 | 36.5 | 31.8 | 28.3 | 3.50 | 9.083 | |
| 900.0 | 884.4 | 905.9 | 893.1 | 3.0 | 2.7 | -141.14 | 85.7 | 55.8 | 36.6 | 32.2 | 4.44 | 8.243 | |
| 1,000.0 | 976.8 | 1,007.1 | 987.5 | 3.7 | 3.4 | -137.73 | 114.6 | 78.2 | 42.0 | 36.3 | 5.60 | 7.488 | |
| 1,100.0 | 1,067.1 | 1,108.4 | 1,079.8 | 4.5 | 4.2 | -134.46 | 147.4 | 103.6 | 47.9 | 40.9 | 7.00 | 6.844 | |
| 1,200.0 | 1,155.2 | 1,209.7 | 1,169.9 | 5.4 | 5.1 | -130.95 | 184.1 | 132.1 | 54.1 | 45.4 | 8.65 | 6.252 | |
| 1,300.0 | 1,243.1 | 1,310.9 | 1,257.2 | 6.3 | 6.0 | -124.25 | 224.5 | 163.4 | 58.2 | 47.4 | 10.80 | 5.388 | |
| 1,400.0 | 1,330.9 | 1,411.5 | 1,341.2 | 7.2 | 7.1 | -113.95 | 268.2 | 197.2 | 61.3 | 47.9 | 13.44 | 4.562 | |
| 1,500.0 | 1,418.7 | 1,510.8 | 1,421.5 | 8.1 | 8.2 | -100.97 | 314.3 | 233.0 | 65.7 | 49.6 | 16.08 | 4.085 | |
| 1,600.0 | 1,506.6 | 1,609.5 | 1,500.9 | 9.0 | 9.3 | -89.49 | 360.8 | 269.0 | 73.1 | 54.9 | 18.13 | 4.030 | SF |
| 1,700.0 | 1,594.4 | 1,708.3 | 1,580.2 | 9.9 | 10.4 | -80.38 | 407.2 | 305.0 | 82.8 | 63.2 | 19.65 | 4.214 | |
| 1,800.0 | 1,682.2 | 1,807.0 | 1,659.6 | 10.8 | 11.4 | -73.31 | 453.6 | 341.0 | 94.2 | 73.4 | 20.85 | 4.519 | |
| 1,900.0 | 1,770.1 | 1,905.8 | 1,739.0 | 11.6 | 12.5 | -67.81 | 500.0 | 377.0 | 106.8 | 84.9 | 21.88 | 4.881 | |
| 2,000.0 | 1,857.9 | 2,004.5 | 1,818.4 | 12.5 | 13.6 | -63.48 | 546.5 | 413.0 | 120.1 | 97.3 | 22.81 | 5.264 | |
| 2,100.0 | 1,945.7 | 2,103.3 | 1,897.7 | 13.4 | 14.7 | -60.03 | 592.9 | 449.0 | 133.9 | 110.2 | 23.70 | 5.649 | |
| 2,200.0 | 2,033.6 | 2,202.0 | 1,977.1 | 14.3 | 15.8 | -57.23 | 639.3 | 484.9 | 148.1 | 123.5 | 24.58 | 6.025 | |
| 2,300.0 | 2,121.4 | 2,300.7 | 2,056.5 | 15.2 | 16.9 | -54.93 | 685.7 | 520.9 | 162.6 | 137.2 | 25.46 | 6.387 | |
| 2,400.0 | 2,209.2 | 2,399.5 | 2,135.9 | 16.1 | 18.0 | -53.00 | 732.1 | 556.9 | 177.4 | 151.0 | 26.35 | 6.732 | |
| 2,500.0 | 2,297.1 | 2,498.2 | 2,215.2 | 17.0 | 19.1 | -51.37 | 778.6 | 592.9 | 192.3 | 165.0 | 27.24 | 7.058 | |
| 2,600.0 | 2,384.9 | 2,597.0 | 2,294.6 | 17.9 | 20.2 | -49.97 | 825.0 | 628.9 | 207.3 | 179.2 | 28.14 | 7.366 | |
| 2,700.0 | 2,472.7 | 2,695.7 | 2,374.0 | 18.8 | 21.3 | -48.77 | 871.4 | 664.9 | 222.4 | 193.4 | 29.05 | 7.657 | |
| 2,800.0 | 2,560.6 | 2,794.5 | 2,453.4 | 19.7 | 22.4 | -47.71 | 917.8 | 700.9 | 237.6 | 207.7 | 29.97 | 7.930 | |
| 2,900.0 | 2,648.4 | 2,893.2 | 2,532.7 | 20.6 | 23.5 | -46.79 | 964.3 | 736.9 | 252.9 | 222.0 | 30.89 | 8.188 | |
| 3,000.0 | 2,736.2 | 2,998.6 | 2,618.0 | 21.5 | 24.7 | -46.04 | 1,013.2 | 774.8 | 267.6 | 235.7 | 31.89 | 8.391 | |
| 3,100.0 | 2,824.4 | 3,110.4 | 2,711.7 | 22.4 | 25.8 | -46.08 | 1,061.3 | 812.1 | 278.8 | 245.6 | 33.22 | 8.392 | |
| 3,200.0 | 2,914.7 | 3,222.9 | 2,809.5 | 23.1 | 26.8 | -46.29 | 1,105.3 | 846.2 | 288.7 | 254.2 | 34.48 | 8.373 | |
| 3,300.0 | 3,007.1 | 3,336.0 | 2,910.9 | 23.8 | 27.6 | -46.45 | 1,144.9 | 876.9 | 297.5 | 262.0 | 35.58 | 8.362 | |
| 3,400.0 | 3,101.4 | 3,449.7 | 3,015.7 | 24.4 | 28.4 | -46.57 | 1,179.8 | 903.9 | 305.4 | 268.9 | 36.54 | 8.358 | |
| 3,500.0 | 3,197.3 | 3,563.9 | 3,123.3 | 24.9 | 29.0 | -46.66 | 1,209.8 | 927.2 | 312.2 | 274.9 | 37.35 | 8.360 | |
| 3,600.0 | 3,294.5 | 3,678.5 | 3,233.4 | 25.3 | 29.6 | -46.72 | 1,234.8 | 946.6 | 318.0 | 280.0 | 38.01 | 8.367 | |
| 3,700.0 | 3,392.9 | 3,793.4 | 3,345.6 | 25.6 | 30.0 | -46.74 | 1,254.6 | 961.9 | 322.7 | 284.1 | 38.51 | 8.378 | |
| 3,800.0 | 3,492.0 | 3,908.7 | 3,459.4 | 25.8 | 30.3 | -46.72 | 1,269.0 | 973.1 | 326.2 | 287.3 | 38.87 | 8.393 | |
| 3,900.0 | 3,591.7 | 4,024.1 | 3,574.3 | 25.9 | 30.5 | -46.68 | 1,278.0 | 980.1 | 328.6 | 289.5 | 39.07 | 8.411 | |
| 4,000.0 | 3,691.6 | 4,139.7 | 3,689.8 | 26.0 | 30.5 | -0.58 | 1,281.5 | 982.8 | 329.9 | 290.7 | 39.14 | 8.429 | |
| 4,100.0 | 3,791.6 | 4,241.8 | 3,791.8 | 26.0 | 30.6 | -0.57 | 1,281.5 | 982.8 | 329.9 | 290.6 | 39.26 | 8.403 | |
| 4,200.0 | 3,891.6 | 4,341.8 | 3,891.8 | 26.1 | 30.6 | -0.57 | 1,281.5 | 982.8 | 329.9 | 290.5 | 39.39 | 8.375 | |
| 4,300.0 | 3,991.6 | 4,441.8 | 3,991.8 | 26.1 | 30.7 | -0.57 | 1,281.5 | 982.8 | 329.9 | 290.4 | 39.52 | 8.347 | |
| 4,400.0 | 4,091.6 | 4,541.8 | 4,091.8 | 26.2 | 30.7 | -0.57 | 1,281.5 | 982.8 | 329.9 | 290.2 | 39.66 | 8.319 | |
| 4,500.0 | 4,191.6 | 4,641.8 | 4,191.8 | 26.2 | 30.8 | -0.57 | 1,281.5 | 982.8 | 329.9 | 290.1 | 39.79 | 8.290 | |
| 4,600.0 | 4,291.6 | 4,741.8 | 4,291.8 | 26.3 | 30.8 | -0.57 | 1,281.5 | 982.8 | 329.9 | 290.0 | 39.94 | 8.261 | |
| 4,700.0 | 4,391.6 | 4,841.8 | 4,391.8 | 26.3 | 30.9 | -0.57 | 1,281.5 | 982.8 | 329.9 | 289.8 | 40.08 | 8.231 | |
| 4,800.0 | 4,491.6 | 4,941.8 | 4,491.8 | 26.4 | 30.9 | -0.57 | 1,281.5 | 982.8 | 329.9 | 289.7 | 40.22 | 8.201 | |
| 4,900.0 | 4,591.6 | 5,041.8 | 4,591.8 | 26.4 | 31.0 | -0.57 | 1,281.5 | 982.8 | 329.9 | 289.5 | 40.37 | 8.171 | |
| 5,000.0 | 4,691.6 | 5,141.8 | 4,691.8 | 26.5 | 31.0 | -0.57 | 1,281.5 | 982.8 | 329.9 | 289.4 | 40.52 | 8.141 | |
| 5,100.0 | 4,791.6 | 5,241.8 | 4,791.8 | 26.5 | 31.1 | -0.57 | 1,281.5 | 982.8 | 329.9 | 289.2 | 40.68 | 8.110 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 13B-13 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 4,891.6 | 5,341.8 | 4,891.8 | 26.6 | 31.1 | -0.57 | 1,281.5 | 982.8 | 329.9 | 289.1 | 40.83 | 8.080 | |
| 5,300.0 | 4,991.6 | 5,441.8 | 4,991.8 | 26.7 | 31.2 | -0.57 | 1,281.5 | 982.8 | 329.9 | 288.9 | 40.99 | 8.049 | |
| 5,400.0 | 5,091.6 | 5,541.8 | 5,091.8 | 26.7 | 31.2 | -0.57 | 1,281.5 | 982.8 | 329.9 | 288.7 | 41.15 | 8.017 | |
| 5,500.0 | 5,191.6 | 5,641.8 | 5,191.8 | 26.8 | 31.3 | -0.57 | 1,281.5 | 982.8 | 329.9 | 288.6 | 41.31 | 7.986 | |
| 5,600.0 | 5,291.6 | 5,741.8 | 5,291.8 | 26.8 | 31.3 | -0.57 | 1,281.5 | 982.8 | 329.9 | 288.4 | 41.48 | 7.954 | |
| 5,700.0 | 5,391.6 | 5,841.8 | 5,391.8 | 26.9 | 31.4 | -0.57 | 1,281.5 | 982.8 | 329.9 | 288.3 | 41.64 | 7.922 | |
| 5,800.0 | 5,491.6 | 5,941.8 | 5,491.8 | 27.0 | 31.4 | -0.57 | 1,281.5 | 982.8 | 329.9 | 288.1 | 41.81 | 7.890 | |
| 5,900.0 | 5,591.6 | 6,041.8 | 5,591.8 | 27.0 | 31.5 | -0.57 | 1,281.5 | 982.8 | 329.9 | 287.9 | 41.98 | 7.858 | |
| 6,000.0 | 5,691.6 | 6,141.8 | 5,691.8 | 27.1 | 31.6 | -0.57 | 1,281.5 | 982.8 | 329.9 | 287.7 | 42.16 | 7.826 | |
| 6,100.0 | 5,791.6 | 6,241.8 | 5,791.8 | 27.2 | 31.6 | -0.57 | 1,281.5 | 982.8 | 329.9 | 287.6 | 42.33 | 7.793 | |
| 6,200.0 | 5,891.6 | 6,341.8 | 5,891.8 | 27.2 | 31.7 | -0.57 | 1,281.5 | 982.8 | 329.9 | 287.4 | 42.51 | 7.760 | |
| 6,218.4 | 5,910.0 | 6,360.2 | 5,910.2 | 27.2 | 31.7 | -0.57 | 1,281.5 | 982.8 | 329.9 | 287.4 | 42.54 | 7.754 | |

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 13D-13 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -152.44 | -7.1 | -3.7 | 8.0 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -152.44 | -7.1 | -3.7 | 8.0 | 7.7 | 0.25 | 31.455 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -152.44 | -7.1 | -3.7 | 8.0 | 7.4 | 0.60 | 13.257 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | 166.04 | -7.1 | -3.7 | 10.5 | 9.6 | 0.95 | 11.043 | |
| 400.0 | 399.6 | 400.6 | 400.6 | 0.7 | 0.7 | 168.77 | -5.7 | -1.5 | 15.8 | 14.5 | 1.30 | 12.114 | |
| 500.0 | 498.8 | 501.4 | 501.0 | 1.0 | 0.9 | 167.32 | -1.4 | 5.3 | 21.3 | 19.7 | 1.66 | 12.839 | |
| 600.0 | 597.1 | 602.4 | 601.1 | 1.4 | 1.1 | 164.30 | 5.7 | 16.5 | 27.2 | 25.2 | 2.05 | 13.270 | |
| 700.0 | 694.3 | 703.5 | 700.6 | 1.8 | 1.5 | 160.62 | 15.6 | 32.2 | 33.5 | 31.0 | 2.51 | 13.357 | |
| 800.0 | 790.2 | 804.9 | 799.1 | 2.4 | 2.0 | 156.71 | 28.4 | 52.4 | 40.4 | 37.3 | 3.09 | 13.058 | |
| 900.0 | 884.4 | 906.5 | 896.4 | 3.0 | 2.5 | 152.79 | 44.0 | 77.0 | 47.8 | 44.0 | 3.85 | 12.429 | |
| 1,000.0 | 976.8 | 1,008.2 | 992.1 | 3.7 | 3.2 | 148.98 | 62.4 | 106.0 | 55.9 | 51.1 | 4.82 | 11.612 | |
| 1,100.0 | 1,067.1 | 1,110.1 | 1,086.0 | 4.5 | 3.9 | 145.34 | 83.5 | 139.3 | 64.8 | 58.8 | 6.02 | 10.760 | |
| 1,200.0 | 1,155.2 | 1,210.0 | 1,176.7 | 5.4 | 4.7 | 142.81 | 105.9 | 174.7 | 75.1 | 67.8 | 7.31 | 10.268 | |
| 1,300.0 | 1,243.1 | 1,309.3 | 1,266.8 | 6.3 | 5.4 | 141.22 | 128.2 | 210.0 | 86.0 | 77.4 | 8.62 | 9.980 | |
| 1,400.0 | 1,330.9 | 1,408.7 | 1,357.0 | 7.2 | 6.2 | 140.00 | 150.5 | 245.2 | 97.0 | 87.0 | 9.95 | 9.752 | |
| 1,500.0 | 1,418.7 | 1,508.1 | 1,447.2 | 8.1 | 7.0 | 139.02 | 172.9 | 280.5 | 108.0 | 96.7 | 11.29 | 9.570 | |
| 1,600.0 | 1,506.6 | 1,607.5 | 1,537.4 | 9.0 | 7.8 | 138.22 | 195.2 | 315.8 | 119.0 | 106.4 | 12.63 | 9.422 | |
| 1,700.0 | 1,594.4 | 1,706.8 | 1,627.6 | 9.9 | 8.6 | 137.56 | 217.6 | 351.1 | 130.1 | 116.1 | 13.99 | 9.300 | |
| 1,800.0 | 1,682.2 | 1,806.2 | 1,717.7 | 10.8 | 9.3 | 137.00 | 239.9 | 386.3 | 141.2 | 125.8 | 15.35 | 9.197 | |
| 1,900.0 | 1,770.1 | 1,905.6 | 1,807.9 | 11.6 | 10.1 | 136.53 | 262.2 | 421.6 | 152.2 | 135.5 | 16.71 | 9.109 | |
| 2,000.0 | 1,857.9 | 2,005.0 | 1,898.1 | 12.5 | 10.9 | 136.11 | 284.6 | 456.9 | 163.3 | 145.2 | 18.08 | 9.034 | |
| 2,100.0 | 1,945.7 | 2,104.3 | 1,988.3 | 13.4 | 11.7 | 135.75 | 306.9 | 492.2 | 174.4 | 155.0 | 19.45 | 8.969 | |
| 2,200.0 | 2,033.6 | 2,203.7 | 2,078.5 | 14.3 | 12.5 | 135.44 | 329.2 | 527.5 | 185.5 | 164.7 | 20.82 | 8.912 | |
| 2,300.0 | 2,121.4 | 2,303.1 | 2,168.6 | 15.2 | 13.3 | 135.16 | 351.6 | 562.7 | 196.6 | 174.4 | 22.19 | 8.861 | |
| 2,400.0 | 2,209.2 | 2,402.5 | 2,258.8 | 16.1 | 14.1 | 134.90 | 373.9 | 598.0 | 207.7 | 184.2 | 23.56 | 8.817 | |
| 2,500.0 | 2,297.1 | 2,501.9 | 2,349.0 | 17.0 | 14.9 | 134.68 | 396.3 | 633.3 | 218.8 | 193.9 | 24.93 | 8.776 | |
| 2,600.0 | 2,384.9 | 2,601.2 | 2,439.2 | 17.9 | 15.7 | 134.48 | 418.6 | 668.6 | 230.0 | 203.6 | 26.31 | 8.740 | |
| 2,700.0 | 2,472.7 | 2,700.6 | 2,529.4 | 18.8 | 16.5 | 134.29 | 440.9 | 703.9 | 241.1 | 213.4 | 27.68 | 8.708 | |
| 2,800.0 | 2,560.6 | 2,800.0 | 2,619.5 | 19.7 | 17.2 | 134.12 | 463.3 | 739.1 | 252.2 | 223.1 | 29.06 | 8.678 | |
| 2,900.0 | 2,648.4 | 2,899.4 | 2,709.7 | 20.6 | 18.0 | 133.97 | 485.6 | 774.4 | 263.3 | 232.9 | 30.44 | 8.651 | |
| 3,000.0 | 2,736.2 | 2,998.7 | 2,799.9 | 21.5 | 18.8 | 133.83 | 508.0 | 809.7 | 274.4 | 242.6 | 31.81 | 8.626 | |
| 3,100.0 | 2,824.4 | 3,097.1 | 2,889.2 | 22.4 | 19.6 | 133.72 | 530.1 | 844.6 | 285.1 | 251.9 | 33.19 | 8.588 | |
| 3,200.0 | 2,914.7 | 3,189.1 | 2,973.8 | 23.1 | 20.2 | 133.56 | 549.3 | 875.0 | 294.1 | 259.7 | 34.42 | 8.545 | |
| 3,300.0 | 3,007.1 | 3,281.0 | 3,060.0 | 23.8 | 20.8 | 133.45 | 566.4 | 902.0 | 302.2 | 266.7 | 35.50 | 8.514 | |
| 3,400.0 | 3,101.4 | 3,372.9 | 3,147.5 | 24.4 | 21.3 | 133.36 | 581.3 | 925.4 | 309.3 | 272.9 | 36.43 | 8.491 | |
| 3,500.0 | 3,197.3 | 3,464.7 | 3,236.3 | 24.9 | 21.7 | 133.31 | 593.8 | 945.3 | 315.4 | 278.2 | 37.21 | 8.476 | |
| 3,600.0 | 3,294.5 | 3,556.5 | 3,326.1 | 25.3 | 22.0 | 133.29 | 604.1 | 961.5 | 320.4 | 282.6 | 37.84 | 8.467 | |
| 3,700.0 | 3,392.9 | 3,648.2 | 3,416.6 | 25.6 | 22.3 | 133.29 | 612.0 | 974.0 | 324.4 | 286.1 | 38.32 | 8.464 | |
| 3,800.0 | 3,492.0 | 3,740.0 | 3,507.7 | 25.8 | 22.4 | 133.31 | 617.6 | 982.8 | 327.3 | 288.6 | 38.67 | 8.465 | |
| 3,900.0 | 3,591.7 | 3,831.7 | 3,599.2 | 25.9 | 22.5 | 133.35 | 620.8 | 988.0 | 329.1 | 290.3 | 38.86 | 8.469 | |
| 4,000.0 | 3,691.6 | 3,924.3 | 3,691.8 | 26.0 | 22.6 | 179.42 | 621.8 | 989.4 | 329.9 | 291.0 | 38.94 | 8.471 | |
| 4,100.0 | 3,791.6 | 4,024.3 | 3,791.8 | 26.0 | 22.6 | 179.42 | 621.8 | 989.4 | 329.9 | 290.8 | 39.07 | 8.444 | |
| 4,200.0 | 3,891.6 | 4,124.3 | 3,891.8 | 26.1 | 22.7 | 179.42 | 621.8 | 989.4 | 329.9 | 290.7 | 39.20 | 8.417 | |
| 4,300.0 | 3,991.6 | 4,224.3 | 3,991.8 | 26.1 | 22.8 | 179.42 | 621.8 | 989.4 | 329.9 | 290.6 | 39.33 | 8.389 | |
| 4,400.0 | 4,091.6 | 4,324.3 | 4,091.8 | 26.2 | 22.8 | 179.42 | 621.8 | 989.4 | 329.9 | 290.4 | 39.46 | 8.361 | |
| 4,500.0 | 4,191.6 | 4,424.3 | 4,191.8 | 26.2 | 22.9 | 179.42 | 621.8 | 989.4 | 329.9 | 290.3 | 39.59 | 8.332 | |
| 4,600.0 | 4,291.6 | 4,524.3 | 4,291.8 | 26.3 | 22.9 | 179.42 | 621.8 | 989.4 | 329.9 | 290.2 | 39.73 | 8.303 | |
| 4,700.0 | 4,391.6 | 4,624.3 | 4,391.8 | 26.3 | 23.0 | 179.42 | 621.8 | 989.4 | 329.9 | 290.0 | 39.87 | 8.274 | |
| 4,800.0 | 4,491.6 | 4,724.3 | 4,491.8 | 26.4 | 23.1 | 179.42 | 621.8 | 989.4 | 329.9 | 289.9 | 40.01 | 8.244 | |
| 4,900.0 | 4,591.6 | 4,824.3 | 4,591.8 | 26.4 | 23.1 | 179.42 | 621.8 | 989.4 | 329.9 | 289.7 | 40.16 | 8.215 | |
| 5,000.0 | 4,691.6 | 4,924.3 | 4,691.8 | 26.5 | 23.2 | 179.42 | 621.8 | 989.4 | 329.9 | 289.6 | 40.31 | 8.184 | |
| 5,100.0 | 4,791.6 | 5,024.3 | 4,791.8 | 26.5 | 23.2 | 179.42 | 621.8 | 989.4 | 329.9 | 289.4 | 40.46 | 8.154 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 13D-13 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 4,891.6 | 5,124.3 | 4,891.8 | 26.6 | 23.3 | 179.42 | 621.8 | 989.4 | 329.9 | 289.3 | 40.61 | 8.123 | |
| 5,300.0 | 4,991.6 | 5,224.3 | 4,991.8 | 26.7 | 23.4 | 179.42 | 621.8 | 989.4 | 329.9 | 289.1 | 40.77 | 8.092 | |
| 5,400.0 | 5,091.6 | 5,324.3 | 5,091.8 | 26.7 | 23.4 | 179.42 | 621.8 | 989.4 | 329.9 | 289.0 | 40.92 | 8.061 | |
| 5,500.0 | 5,191.6 | 5,424.3 | 5,191.8 | 26.8 | 23.5 | 179.42 | 621.8 | 989.4 | 329.9 | 288.8 | 41.08 | 8.030 | |
| 5,600.0 | 5,291.6 | 5,524.3 | 5,291.8 | 26.8 | 23.6 | 179.42 | 621.8 | 989.4 | 329.9 | 288.7 | 41.25 | 7.998 | |
| 5,700.0 | 5,391.6 | 5,624.3 | 5,391.8 | 26.9 | 23.7 | 179.42 | 621.8 | 989.4 | 329.9 | 288.5 | 41.41 | 7.966 | |
| 5,800.0 | 5,491.6 | 5,724.3 | 5,491.8 | 27.0 | 23.7 | 179.42 | 621.8 | 989.4 | 329.9 | 288.3 | 41.58 | 7.934 | |
| 5,900.0 | 5,591.6 | 5,824.3 | 5,591.8 | 27.0 | 23.8 | 179.42 | 621.8 | 989.4 | 329.9 | 288.1 | 41.75 | 7.902 | |
| 6,000.0 | 5,691.6 | 5,924.3 | 5,691.8 | 27.1 | 23.9 | 179.42 | 621.8 | 989.4 | 329.9 | 288.0 | 41.92 | 7.870 | |
| 6,100.0 | 5,791.6 | 6,024.3 | 5,791.8 | 27.2 | 24.0 | 179.42 | 621.8 | 989.4 | 329.9 | 287.8 | 42.09 | 7.837 | |
| 6,166.0 | 5,857.7 | 6,090.4 | 5,857.9 | 27.2 | 24.0 | 179.42 | 621.8 | 989.4 | 329.9 | 287.7 | 42.21 | 7.816 | |
| 6,200.0 | 5,891.6 | 6,122.5 | 5,890.0 | 27.2 | 24.0 | 179.42 | 621.8 | 989.4 | 329.9 | 287.6 | 42.27 | 7.805 | SF |
| 6,218.4 | 5,910.0 | 6,122.5 | 5,890.0 | 27.2 | 24.0 | 179.42 | 621.8 | 989.4 | 330.5 | 288.2 | 42.28 | 7.817 | |

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 14A-13 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -152.44 | -14.2 | -7.4 | 16.0 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -152.44 | -14.2 | -7.4 | 16.0 | 15.7 | 0.25 | 62.910 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -152.44 | -14.2 | -7.4 | 16.0 | 15.4 | 0.60 | 26.514 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | 164.08 | -14.2 | -7.4 | 18.5 | 17.5 | 0.95 | 19.426 | |
| 400.0 | 399.6 | 399.8 | 399.8 | 0.7 | 0.7 | 168.76 | -14.2 | -7.4 | 26.1 | 24.8 | 1.30 | 20.110 | |
| 500.0 | 498.8 | 500.6 | 500.5 | 1.0 | 0.8 | 170.16 | -13.4 | -4.9 | 36.9 | 35.2 | 1.65 | 22.377 | |
| 600.0 | 597.1 | 601.7 | 601.3 | 1.4 | 1.0 | 168.17 | -11.1 | 2.8 | 48.6 | 46.6 | 2.02 | 24.107 | |
| 700.0 | 694.3 | 703.0 | 701.7 | 1.8 | 1.3 | 164.81 | -7.2 | 15.5 | 61.4 | 59.0 | 2.44 | 25.214 | |
| 800.0 | 790.2 | 804.5 | 801.5 | 2.4 | 1.7 | 160.92 | -1.7 | 33.4 | 75.5 | 72.6 | 2.96 | 25.543 | |
| 900.0 | 884.4 | 906.2 | 900.3 | 3.0 | 2.1 | 156.89 | 5.3 | 56.4 | 91.2 | 87.5 | 3.64 | 25.074 | |
| 1,000.0 | 976.8 | 1,007.8 | 997.6 | 3.7 | 2.6 | 152.93 | 13.9 | 84.3 | 108.5 | 104.0 | 4.52 | 24.019 | |
| 1,100.0 | 1,067.1 | 1,109.4 | 1,093.2 | 4.5 | 3.3 | 149.15 | 23.9 | 117.1 | 127.6 | 122.0 | 5.62 | 22.698 | |
| 1,200.0 | 1,155.2 | 1,208.7 | 1,185.1 | 5.4 | 4.0 | 145.94 | 35.0 | 153.3 | 148.5 | 141.6 | 6.89 | 21.548 | |
| 1,300.0 | 1,243.1 | 1,306.2 | 1,275.0 | 6.3 | 4.6 | 143.67 | 46.0 | 189.3 | 170.0 | 161.8 | 8.21 | 20.717 | |
| 1,400.0 | 1,330.9 | 1,403.7 | 1,364.9 | 7.2 | 5.3 | 141.91 | 57.0 | 225.3 | 191.7 | 182.1 | 9.54 | 20.080 | |
| 1,500.0 | 1,418.7 | 1,501.2 | 1,454.8 | 8.1 | 6.0 | 140.50 | 68.1 | 261.3 | 213.5 | 202.6 | 10.90 | 19.584 | |
| 1,600.0 | 1,506.6 | 1,598.6 | 1,544.7 | 9.0 | 6.8 | 139.36 | 79.1 | 297.3 | 235.4 | 223.1 | 12.27 | 19.188 | |
| 1,700.0 | 1,594.4 | 1,696.1 | 1,634.6 | 9.9 | 7.5 | 138.41 | 90.1 | 333.3 | 257.3 | 243.7 | 13.64 | 18.867 | |
| 1,800.0 | 1,682.2 | 1,793.6 | 1,724.5 | 10.8 | 8.2 | 137.61 | 101.1 | 369.3 | 279.4 | 264.4 | 15.02 | 18.603 | |
| 1,900.0 | 1,770.1 | 1,891.1 | 1,814.4 | 11.6 | 8.9 | 136.93 | 112.1 | 405.3 | 301.4 | 285.0 | 16.40 | 18.381 | |
| 2,000.0 | 1,857.9 | 1,988.5 | 1,904.3 | 12.5 | 9.6 | 136.34 | 123.1 | 441.3 | 323.6 | 305.8 | 17.78 | 18.193 | |
| 2,100.0 | 1,945.7 | 2,086.0 | 1,994.2 | 13.4 | 10.3 | 135.82 | 134.2 | 477.3 | 345.7 | 326.5 | 19.17 | 18.032 | |
| 2,200.0 | 2,033.6 | 2,183.5 | 2,084.1 | 14.3 | 11.0 | 135.37 | 145.2 | 513.3 | 367.9 | 347.3 | 20.56 | 17.892 | |
| 2,300.0 | 2,121.4 | 2,281.0 | 2,174.1 | 15.2 | 11.8 | 134.97 | 156.2 | 549.3 | 390.0 | 368.1 | 21.95 | 17.769 | |
| 2,400.0 | 2,209.2 | 2,378.4 | 2,264.0 | 16.1 | 12.5 | 134.61 | 167.2 | 585.3 | 412.2 | 388.9 | 23.34 | 17.661 | |
| 2,500.0 | 2,297.1 | 2,475.9 | 2,353.9 | 17.0 | 13.2 | 134.29 | 178.2 | 621.3 | 434.5 | 409.7 | 24.73 | 17.566 | |
| 2,600.0 | 2,384.9 | 2,573.4 | 2,443.8 | 17.9 | 13.9 | 134.00 | 189.3 | 657.3 | 456.7 | 430.6 | 26.13 | 17.480 | |
| 2,700.0 | 2,472.7 | 2,670.8 | 2,533.7 | 18.8 | 14.6 | 133.74 | 200.3 | 693.3 | 478.9 | 451.4 | 27.52 | 17.403 | |
| 2,800.0 | 2,560.6 | 2,768.3 | 2,623.6 | 19.7 | 15.3 | 133.50 | 211.3 | 729.3 | 501.2 | 472.3 | 28.91 | 17.333 | |
| 2,900.0 | 2,648.4 | 2,865.8 | 2,713.5 | 20.6 | 16.1 | 133.28 | 222.3 | 765.3 | 523.4 | 493.1 | 30.31 | 17.270 | |
| 3,000.0 | 2,736.2 | 2,963.3 | 2,803.4 | 21.5 | 16.8 | 133.08 | 233.3 | 801.3 | 545.7 | 514.0 | 31.70 | 17.213 | |
| 3,100.0 | 2,824.4 | 3,060.8 | 2,893.4 | 22.4 | 17.5 | 133.09 | 244.4 | 837.4 | 567.4 | 534.4 | 33.08 | 17.152 | |
| 3,200.0 | 2,914.7 | 3,153.7 | 2,979.3 | 23.1 | 18.1 | 133.06 | 254.6 | 870.9 | 586.4 | 552.0 | 34.37 | 17.059 | |
| 3,300.0 | 3,007.1 | 3,243.7 | 3,064.1 | 23.8 | 18.7 | 133.04 | 263.5 | 899.9 | 603.2 | 567.7 | 35.50 | 16.993 | |
| 3,400.0 | 3,101.4 | 3,334.0 | 3,150.4 | 24.4 | 19.1 | 133.05 | 271.2 | 925.1 | 617.8 | 581.4 | 36.46 | 16.944 | |
| 3,500.0 | 3,197.3 | 3,424.5 | 3,238.2 | 24.9 | 19.5 | 133.08 | 277.7 | 946.5 | 630.3 | 593.1 | 37.28 | 16.910 | |
| 3,600.0 | 3,294.5 | 3,515.3 | 3,327.1 | 25.3 | 19.8 | 133.12 | 283.1 | 963.9 | 640.7 | 602.8 | 37.94 | 16.889 | |
| 3,700.0 | 3,392.9 | 3,606.2 | 3,416.9 | 25.6 | 20.1 | 133.18 | 287.1 | 977.2 | 648.8 | 610.4 | 38.44 | 16.879 | |
| 3,800.0 | 3,492.0 | 3,700.0 | 3,510.2 | 25.8 | 20.2 | 133.25 | 290.0 | 986.7 | 654.7 | 616.0 | 38.79 | 16.878 | |
| 3,900.0 | 3,591.7 | 3,788.3 | 3,598.4 | 25.9 | 20.3 | 133.33 | 291.5 | 991.6 | 658.4 | 619.4 | 38.98 | 16.890 | |
| 4,000.0 | 3,691.6 | 3,881.8 | 3,691.8 | 26.0 | 20.4 | 179.43 | 291.9 | 992.7 | 659.8 | 620.7 | 39.07 | 16.889 | |
| 4,100.0 | 3,791.6 | 3,981.8 | 3,791.8 | 26.0 | 20.5 | 179.43 | 291.9 | 992.7 | 659.8 | 620.6 | 39.19 | 16.835 | |
| 4,200.0 | 3,891.6 | 4,081.8 | 3,891.8 | 26.1 | 20.5 | 179.43 | 291.9 | 992.7 | 659.8 | 620.5 | 39.32 | 16.781 | |
| 4,300.0 | 3,991.6 | 4,181.8 | 3,991.8 | 26.1 | 20.6 | 179.43 | 291.9 | 992.7 | 659.8 | 620.3 | 39.45 | 16.727 | |
| 4,400.0 | 4,091.6 | 4,281.8 | 4,091.8 | 26.2 | 20.6 | 179.43 | 291.9 | 992.7 | 659.8 | 620.2 | 39.58 | 16.671 | |
| 4,500.0 | 4,191.6 | 4,381.8 | 4,191.8 | 26.2 | 20.7 | 179.43 | 291.9 | 992.7 | 659.8 | 620.1 | 39.71 | 16.615 | |
| 4,600.0 | 4,291.6 | 4,481.8 | 4,291.8 | 26.3 | 20.8 | 179.43 | 291.9 | 992.7 | 659.8 | 619.9 | 39.85 | 16.558 | |
| 4,700.0 | 4,391.6 | 4,581.8 | 4,391.8 | 26.3 | 20.8 | 179.43 | 291.9 | 992.7 | 659.8 | 619.8 | 39.99 | 16.500 | |
| 4,800.0 | 4,491.6 | 4,681.8 | 4,491.8 | 26.4 | 20.9 | 179.43 | 291.9 | 992.7 | 659.8 | 619.7 | 40.13 | 16.442 | |
| 4,900.0 | 4,591.6 | 4,781.8 | 4,591.8 | 26.4 | 21.0 | 179.43 | 291.9 | 992.7 | 659.8 | 619.5 | 40.27 | 16.383 | |
| 5,000.0 | 4,691.6 | 4,881.8 | 4,691.8 | 26.5 | 21.0 | 179.43 | 291.9 | 992.7 | 659.8 | 619.4 | 40.42 | 16.323 | |
| 5,100.0 | 4,791.6 | 4,981.8 | 4,791.8 | 26.5 | 21.1 | 179.43 | 291.9 | 992.7 | 659.8 | 619.2 | 40.57 | 16.263 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 14A-13 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 4,891.6 | 5,081.8 | 4,891.8 | 26.6 | 21.2 | 179.43 | 291.9 | 992.7 | 659.8 | 619.1 | 40.72 | 16.202 | |
| 5,300.0 | 4,991.6 | 5,181.8 | 4,991.8 | 26.7 | 21.3 | 179.43 | 291.9 | 992.7 | 659.8 | 618.9 | 40.88 | 16.141 | |
| 5,400.0 | 5,091.6 | 5,281.8 | 5,091.8 | 26.7 | 21.3 | 179.43 | 291.9 | 992.7 | 659.8 | 618.8 | 41.03 | 16.080 | |
| 5,500.0 | 5,191.6 | 5,381.8 | 5,191.8 | 26.8 | 21.4 | 179.43 | 291.9 | 992.7 | 659.8 | 618.6 | 41.19 | 16.018 | |
| 5,600.0 | 5,291.6 | 5,481.8 | 5,291.8 | 26.8 | 21.5 | 179.43 | 291.9 | 992.7 | 659.8 | 618.4 | 41.35 | 15.955 | |
| 5,700.0 | 5,391.6 | 5,581.8 | 5,391.8 | 26.9 | 21.6 | 179.43 | 291.9 | 992.7 | 659.8 | 618.3 | 41.52 | 15.892 | |
| 5,800.0 | 5,491.6 | 5,681.8 | 5,491.8 | 27.0 | 21.6 | 179.43 | 291.9 | 992.7 | 659.8 | 618.1 | 41.68 | 15.829 | |
| 5,900.0 | 5,591.6 | 5,781.8 | 5,591.8 | 27.0 | 21.7 | 179.43 | 291.9 | 992.7 | 659.8 | 617.9 | 41.85 | 15.765 | |
| 6,000.0 | 5,691.6 | 5,881.8 | 5,691.8 | 27.1 | 21.8 | 179.43 | 291.9 | 992.7 | 659.8 | 617.8 | 42.02 | 15.701 | |
| 6,100.0 | 5,791.6 | 5,981.8 | 5,791.8 | 27.2 | 21.9 | 179.43 | 291.9 | 992.7 | 659.8 | 617.6 | 42.19 | 15.637 | |
| 6,157.4 | 5,849.0 | 6,039.2 | 5,849.2 | 27.2 | 21.9 | 179.43 | 291.9 | 992.7 | 659.8 | 617.5 | 42.29 | 15.600 | |
| 6,200.0 | 5,891.6 | 6,060.0 | 5,870.0 | 27.2 | 21.9 | 179.43 | 291.9 | 992.7 | 660.2 | 617.8 | 42.35 | 15.588 | SF |
| 6,218.4 | 5,910.0 | 6,060.0 | 5,870.0 | 27.2 | 21.9 | 179.43 | 291.9 | 992.7 | 661.0 | 618.6 | 42.37 | 15.603 | |

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 14B-13 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -152.44 | -21.3 | -11.1 | 24.0 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -152.44 | -21.3 | -11.1 | 24.0 | 23.7 | 0.25 | 94.284 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -152.44 | -21.3 | -11.1 | 24.0 | 23.4 | 0.60 | 39.753 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | 163.31 | -21.3 | -11.1 | 26.5 | 25.5 | 0.95 | 27.808 | |
| 400.0 | 399.6 | 399.8 | 399.8 | 0.7 | 0.7 | 167.05 | -21.3 | -11.1 | 34.1 | 32.8 | 1.30 | 26.206 | |
| 500.0 | 498.8 | 499.0 | 499.0 | 1.0 | 0.8 | 170.56 | -21.3 | -11.1 | 46.9 | 45.2 | 1.64 | 28.526 | |
| 600.0 | 597.1 | 598.3 | 598.3 | 1.4 | 1.0 | 172.72 | -21.3 | -10.5 | 64.6 | 62.6 | 1.98 | 32.558 | |
| 700.0 | 694.3 | 698.6 | 698.5 | 1.8 | 1.2 | 171.89 | -21.4 | -5.3 | 84.6 | 82.3 | 2.33 | 36.269 | |
| 800.0 | 790.2 | 799.0 | 798.3 | 2.4 | 1.4 | 169.43 | -21.5 | 5.1 | 106.8 | 104.0 | 2.72 | 39.205 | |
| 900.0 | 884.4 | 899.3 | 897.3 | 3.0 | 1.7 | 166.27 | -21.8 | 20.7 | 131.2 | 128.0 | 3.20 | 41.054 | |
| 1,000.0 | 976.8 | 999.1 | 995.0 | 3.7 | 2.0 | 162.85 | -22.1 | 41.5 | 158.2 | 154.4 | 3.80 | 41.618 | |
| 1,100.0 | 1,067.1 | 1,098.4 | 1,090.9 | 4.5 | 2.5 | 159.40 | -22.6 | 67.1 | 188.0 | 183.4 | 4.58 | 41.030 | |
| 1,200.0 | 1,155.2 | 1,197.0 | 1,184.7 | 5.4 | 3.0 | 156.17 | -23.1 | 97.4 | 220.1 | 214.6 | 5.57 | 39.546 | |
| 1,300.0 | 1,243.1 | 1,295.7 | 1,276.9 | 6.3 | 3.7 | 152.87 | -23.7 | 132.6 | 251.6 | 244.8 | 6.78 | 37.076 | |
| 1,400.0 | 1,330.9 | 1,391.7 | 1,365.0 | 7.2 | 4.4 | 149.56 | -24.3 | 170.7 | 282.3 | 274.1 | 8.15 | 34.648 | |
| 1,500.0 | 1,418.7 | 1,485.7 | 1,451.1 | 8.1 | 5.0 | 146.87 | -24.9 | 208.4 | 313.5 | 304.0 | 9.54 | 32.861 | |
| 1,600.0 | 1,506.6 | 1,579.7 | 1,537.3 | 9.0 | 5.7 | 144.66 | -25.5 | 246.1 | 345.3 | 334.4 | 10.96 | 31.513 | |
| 1,700.0 | 1,594.4 | 1,673.8 | 1,623.4 | 9.9 | 6.5 | 142.82 | -26.2 | 283.8 | 377.5 | 365.1 | 12.39 | 30.474 | |
| 1,800.0 | 1,682.2 | 1,767.8 | 1,709.5 | 10.8 | 7.2 | 141.26 | -26.8 | 321.5 | 410.0 | 396.2 | 13.83 | 29.655 | |
| 1,900.0 | 1,770.1 | 1,861.8 | 1,795.7 | 11.6 | 7.9 | 139.94 | -27.4 | 359.2 | 442.7 | 427.4 | 15.27 | 28.997 | |
| 2,000.0 | 1,857.9 | 1,955.8 | 1,881.8 | 12.5 | 8.6 | 138.79 | -28.0 | 396.9 | 475.6 | 458.9 | 16.71 | 28.460 | |
| 2,100.0 | 1,945.7 | 2,049.9 | 1,968.0 | 13.4 | 9.3 | 137.79 | -28.7 | 434.6 | 508.6 | 490.5 | 18.16 | 28.015 | |
| 2,200.0 | 2,033.6 | 2,143.9 | 2,054.1 | 14.3 | 10.0 | 136.92 | -29.3 | 472.3 | 541.8 | 522.2 | 19.60 | 27.640 | |
| 2,300.0 | 2,121.4 | 2,237.9 | 2,140.2 | 15.2 | 10.7 | 136.14 | -29.9 | 510.0 | 575.1 | 554.0 | 21.05 | 27.322 | |
| 2,400.0 | 2,209.2 | 2,332.0 | 2,226.4 | 16.1 | 11.5 | 135.45 | -30.5 | 547.7 | 608.4 | 585.9 | 22.49 | 27.048 | |
| 2,500.0 | 2,297.1 | 2,426.0 | 2,312.5 | 17.0 | 12.2 | 134.83 | -31.2 | 585.4 | 641.9 | 617.9 | 23.94 | 26.811 | |
| 2,600.0 | 2,384.9 | 2,520.0 | 2,398.6 | 17.9 | 12.9 | 134.27 | -31.8 | 623.2 | 675.3 | 650.0 | 25.39 | 26.604 | |
| 2,700.0 | 2,472.7 | 2,614.1 | 2,484.8 | 18.8 | 13.6 | 133.76 | -32.4 | 660.9 | 708.9 | 682.0 | 26.83 | 26.421 | |
| 2,800.0 | 2,560.6 | 2,708.1 | 2,570.9 | 19.7 | 14.4 | 133.30 | -33.1 | 698.6 | 742.5 | 714.2 | 28.27 | 26.259 | |
| 2,900.0 | 2,648.4 | 2,802.1 | 2,657.1 | 20.6 | 15.1 | 132.88 | -33.7 | 736.3 | 776.1 | 746.4 | 29.72 | 26.114 | |
| 3,000.0 | 2,736.2 | 2,896.2 | 2,743.2 | 21.5 | 15.8 | 132.50 | -34.3 | 774.0 | 809.7 | 778.6 | 31.16 | 25.984 | |
| 3,100.0 | 2,824.4 | 2,990.3 | 2,829.5 | 22.4 | 16.5 | 132.51 | -34.9 | 811.7 | 842.9 | 810.3 | 32.60 | 25.860 | |
| 3,200.0 | 2,914.7 | 3,085.2 | 2,916.5 | 23.1 | 17.2 | 132.64 | -35.6 | 849.5 | 873.2 | 839.2 | 33.99 | 25.687 | |
| 3,300.0 | 3,007.1 | 3,181.1 | 3,005.9 | 23.8 | 17.9 | 132.71 | -36.1 | 884.1 | 900.2 | 864.9 | 35.23 | 25.548 | |
| 3,400.0 | 3,101.4 | 3,278.4 | 3,098.4 | 24.4 | 18.4 | 132.80 | -36.6 | 914.5 | 923.7 | 887.4 | 36.31 | 25.437 | |
| 3,500.0 | 3,197.3 | 3,377.0 | 3,193.4 | 24.9 | 18.8 | 132.89 | -37.1 | 940.6 | 943.8 | 906.6 | 37.23 | 25.351 | |
| 3,600.0 | 3,294.5 | 3,476.5 | 3,290.6 | 25.3 | 19.2 | 132.99 | -37.4 | 961.8 | 960.3 | 922.4 | 37.97 | 25.290 | |
| 3,700.0 | 3,392.9 | 3,576.9 | 3,389.6 | 25.6 | 19.5 | 133.09 | -37.7 | 978.1 | 973.2 | 934.7 | 38.54 | 25.249 | |
| 3,800.0 | 3,492.0 | 3,677.8 | 3,489.9 | 25.8 | 19.7 | 133.20 | -37.9 | 989.2 | 982.4 | 943.5 | 38.94 | 25.229 | |
| 3,900.0 | 3,591.7 | 3,779.1 | 3,591.0 | 25.9 | 19.8 | 133.32 | -38.0 | 995.0 | 987.9 | 948.8 | 39.16 | 25.225 | |
| 4,000.0 | 3,691.6 | 3,879.9 | 3,691.8 | 26.0 | 19.9 | 179.43 | -38.0 | 995.9 | 989.7 | 950.4 | 39.27 | 25.205 | |
| 4,100.0 | 3,791.6 | 3,979.9 | 3,791.8 | 26.0 | 19.9 | 179.43 | -38.0 | 995.9 | 989.7 | 950.3 | 39.39 | 25.127 | |
| 4,200.0 | 3,891.6 | 4,079.9 | 3,891.8 | 26.1 | 20.0 | 179.43 | -38.0 | 995.9 | 989.7 | 950.2 | 39.51 | 25.047 | |
| 4,300.0 | 3,991.6 | 4,179.9 | 3,991.8 | 26.1 | 20.0 | 179.43 | -38.0 | 995.9 | 989.7 | 950.0 | 39.64 | 24.966 | |
| 4,400.0 | 4,091.6 | 4,279.9 | 4,091.8 | 26.2 | 20.1 | 179.43 | -38.0 | 995.9 | 989.7 | 949.9 | 39.77 | 24.884 | |
| 4,500.0 | 4,191.6 | 4,379.9 | 4,191.8 | 26.2 | 20.2 | 179.43 | -38.0 | 995.9 | 989.7 | 949.8 | 39.91 | 24.800 | |
| 4,600.0 | 4,291.6 | 4,479.9 | 4,291.8 | 26.3 | 20.2 | 179.43 | -38.0 | 995.9 | 989.7 | 949.6 | 40.04 | 24.716 | |
| 4,700.0 | 4,391.6 | 4,579.9 | 4,391.8 | 26.3 | 20.3 | 179.43 | -38.0 | 995.9 | 989.7 | 949.5 | 40.18 | 24.631 | |
| 4,800.0 | 4,491.6 | 4,679.9 | 4,491.8 | 26.4 | 20.4 | 179.43 | -38.0 | 995.9 | 989.7 | 949.4 | 40.32 | 24.545 | |
| 4,900.0 | 4,591.6 | 4,779.9 | 4,591.8 | 26.4 | 20.4 | 179.43 | -38.0 | 995.9 | 989.7 | 949.2 | 40.47 | 24.457 | |
| 5,000.0 | 4,691.6 | 4,879.9 | 4,691.8 | 26.5 | 20.5 | 179.43 | -38.0 | 995.9 | 989.7 | 949.1 | 40.61 | 24.369 | |
| 5,100.0 | 4,791.6 | 4,979.9 | 4,791.8 | 26.5 | 20.6 | 179.43 | -38.0 | 995.9 | 989.7 | 948.9 | 40.76 | 24.281 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 14B-13 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 4,891.6 | 5,079.9 | 4,891.8 | 26.6 | 20.7 | 179.43 | -38.0 | 995.9 | 989.7 | 948.8 | 40.91 | 24.191 | |
| 5,300.0 | 4,991.6 | 5,179.9 | 4,991.8 | 26.7 | 20.7 | 179.43 | -38.0 | 995.9 | 989.7 | 948.6 | 41.06 | 24.100 | |
| 5,400.0 | 5,091.6 | 5,279.9 | 5,091.8 | 26.7 | 20.8 | 179.43 | -38.0 | 995.9 | 989.7 | 948.5 | 41.22 | 24.009 | |
| 5,500.0 | 5,191.6 | 5,379.9 | 5,191.8 | 26.8 | 20.9 | 179.43 | -38.0 | 995.9 | 989.7 | 948.3 | 41.38 | 23.917 | |
| 5,600.0 | 5,291.6 | 5,479.9 | 5,291.8 | 26.8 | 21.0 | 179.43 | -38.0 | 995.9 | 989.7 | 948.1 | 41.54 | 23.825 | |
| 5,700.0 | 5,391.6 | 5,579.9 | 5,391.8 | 26.9 | 21.0 | 179.43 | -38.0 | 995.9 | 989.7 | 948.0 | 41.70 | 23.732 | |
| 5,800.0 | 5,491.6 | 5,679.9 | 5,491.8 | 27.0 | 21.1 | 179.43 | -38.0 | 995.9 | 989.7 | 947.8 | 41.87 | 23.638 | |
| 5,900.0 | 5,591.6 | 5,779.9 | 5,591.8 | 27.0 | 21.2 | 179.43 | -38.0 | 995.9 | 989.7 | 947.6 | 42.04 | 23.544 | |
| 6,000.0 | 5,691.6 | 5,879.9 | 5,691.8 | 27.1 | 21.3 | 179.43 | -38.0 | 995.9 | 989.7 | 947.5 | 42.20 | 23.450 | |
| 6,100.0 | 5,791.6 | 5,979.9 | 5,791.8 | 27.2 | 21.4 | 179.43 | -38.0 | 995.9 | 989.7 | 947.3 | 42.38 | 23.355 | |
| 6,151.1 | 5,842.7 | 6,031.0 | 5,842.9 | 27.2 | 21.4 | 179.43 | -38.0 | 995.9 | 989.7 | 947.2 | 42.47 | 23.306 | |
| 6,200.0 | 5,891.6 | 6,048.1 | 5,860.0 | 27.2 | 21.4 | 179.43 | -38.0 | 995.9 | 990.2 | 947.7 | 42.52 | 23.286 | SF |
| 6,218.4 | 5,910.0 | 6,048.1 | 5,860.0 | 27.2 | 21.4 | 179.43 | -38.0 | 995.9 | 991.0 | 948.4 | 42.54 | 23.295 | |

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 14C-13 - DD - Plan #3 — **Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD — **Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -152.09 | -27.8 | -14.7 | 31.5 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -152.09 | -27.8 | -14.7 | 31.5 | 31.2 | 0.25 | 123.714 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -152.09 | -27.8 | -14.7 | 31.5 | 30.9 | 0.60 | 52.182 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | 163.24 | -27.8 | -14.7 | 34.0 | 33.0 | 0.95 | 35.688 | |
| 400.0 | 399.6 | 399.8 | 399.8 | 0.7 | 0.7 | 166.30 | -27.8 | -14.7 | 41.6 | 40.3 | 1.30 | 31.958 | |
| 500.0 | 498.8 | 499.0 | 499.0 | 1.0 | 0.8 | 169.49 | -27.8 | -14.7 | 54.3 | 52.7 | 1.65 | 33.033 | |
| 600.0 | 597.1 | 598.4 | 598.4 | 1.4 | 1.0 | 170.12 | -28.7 | -12.3 | 71.6 | 69.6 | 1.99 | 35.904 | |
| 700.0 | 694.3 | 697.4 | 697.0 | 1.8 | 1.2 | 167.89 | -31.2 | -5.1 | 92.4 | 90.0 | 2.37 | 38.933 | |
| 800.0 | 790.2 | 795.4 | 794.2 | 2.4 | 1.4 | 164.52 | -35.3 | 6.8 | 117.1 | 114.3 | 2.83 | 41.416 | |
| 900.0 | 884.4 | 892.0 | 889.3 | 3.0 | 1.8 | 160.85 | -40.9 | 23.2 | 146.0 | 142.6 | 3.40 | 42.942 | |
| 1,000.0 | 976.8 | 987.0 | 981.7 | 3.7 | 2.1 | 157.24 | -48.0 | 43.6 | 179.2 | 175.1 | 4.12 | 43.511 | |
| 1,100.0 | 1,067.1 | 1,079.9 | 1,071.0 | 4.5 | 2.6 | 153.85 | -56.3 | 67.8 | 217.0 | 212.0 | 5.00 | 43.406 | |
| 1,200.0 | 1,155.2 | 1,170.6 | 1,156.9 | 5.4 | 3.1 | 150.98 | -65.9 | 95.4 | 258.7 | 252.7 | 6.03 | 42.878 | |
| 1,300.0 | 1,243.1 | 1,260.2 | 1,240.3 | 6.3 | 3.7 | 148.34 | -76.6 | 126.4 | 301.4 | 294.2 | 7.22 | 41.730 | |
| 1,400.0 | 1,330.9 | 1,348.7 | 1,321.0 | 7.2 | 4.4 | 145.62 | -88.4 | 160.6 | 344.7 | 336.2 | 8.52 | 40.457 | |
| 1,500.0 | 1,418.7 | 1,437.4 | 1,401.3 | 8.1 | 5.1 | 143.22 | -100.7 | 196.2 | 388.7 | 378.8 | 9.87 | 39.369 | |
| 1,600.0 | 1,506.6 | 1,526.1 | 1,481.6 | 9.0 | 5.8 | 141.30 | -113.0 | 231.9 | 433.2 | 421.9 | 11.23 | 38.568 | |
| 1,700.0 | 1,594.4 | 1,614.8 | 1,561.9 | 9.9 | 6.5 | 139.74 | -125.3 | 267.6 | 477.9 | 465.3 | 12.59 | 37.958 | |
| 1,800.0 | 1,682.2 | 1,703.5 | 1,642.2 | 10.8 | 7.2 | 138.44 | -137.6 | 303.3 | 523.0 | 509.0 | 13.95 | 37.484 | |
| 1,900.0 | 1,770.1 | 1,792.2 | 1,722.4 | 11.6 | 7.9 | 137.35 | -149.9 | 338.9 | 568.1 | 552.8 | 15.31 | 37.107 | |
| 2,000.0 | 1,857.9 | 1,880.9 | 1,802.7 | 12.5 | 8.6 | 136.41 | -162.2 | 374.6 | 613.5 | 596.8 | 16.67 | 36.801 | |
| 2,100.0 | 1,945.7 | 1,969.7 | 1,883.0 | 13.4 | 9.3 | 135.60 | -174.6 | 410.3 | 658.9 | 640.9 | 18.03 | 36.550 | |
| 2,200.0 | 2,033.6 | 2,058.4 | 1,963.3 | 14.3 | 10.1 | 134.90 | -186.9 | 446.0 | 704.5 | 685.1 | 19.39 | 36.341 | |
| 2,300.0 | 2,121.4 | 2,147.1 | 2,043.6 | 15.2 | 10.8 | 134.28 | -199.2 | 481.6 | 750.1 | 729.4 | 20.74 | 36.164 | |
| 2,400.0 | 2,209.2 | 2,235.8 | 2,123.9 | 16.1 | 11.5 | 133.73 | -211.5 | 517.3 | 795.8 | 773.7 | 22.10 | 36.014 | |
| 2,500.0 | 2,297.1 | 2,324.5 | 2,204.2 | 17.0 | 12.2 | 133.24 | -223.8 | 553.0 | 841.5 | 818.1 | 23.45 | 35.884 | |
| 2,600.0 | 2,384.9 | 2,413.2 | 2,284.4 | 17.9 | 12.9 | 132.81 | -236.1 | 588.7 | 887.3 | 862.5 | 24.80 | 35.771 | |
| 2,700.0 | 2,472.7 | 2,501.9 | 2,364.7 | 18.8 | 13.7 | 132.41 | -248.4 | 624.3 | 933.1 | 906.9 | 26.16 | 35.673 | |
| 2,800.0 | 2,560.6 | 2,590.7 | 2,445.0 | 19.7 | 14.4 | 132.05 | -260.8 | 660.0 | 978.9 | 951.4 | 27.51 | 35.585 | |
| 2,900.0 | 2,648.4 | 2,679.4 | 2,525.3 | 20.6 | 15.1 | 131.72 | -273.1 | 695.7 | 1,024.8 | 995.9 | 28.86 | 35.508 | |
| 3,000.0 | 2,736.2 | 2,768.1 | 2,605.6 | 21.5 | 15.8 | 131.42 | -285.4 | 731.4 | 1,070.7 | 1,040.5 | 30.21 | 35.439 | |
| 3,100.0 | 2,824.4 | 2,857.0 | 2,686.0 | 22.4 | 16.6 | 131.73 | -297.7 | 767.1 | 1,116.2 | 1,084.6 | 31.58 | 35.349 | |
| 3,200.0 | 2,914.7 | 2,947.0 | 2,767.5 | 23.1 | 17.3 | 132.31 | -310.2 | 803.3 | 1,158.9 | 1,126.0 | 32.92 | 35.203 | |
| 3,300.0 | 3,007.1 | 3,045.2 | 2,856.6 | 23.8 | 18.1 | 132.58 | -323.8 | 842.5 | 1,198.4 | 1,164.1 | 34.27 | 34.968 | |
| 3,400.0 | 3,101.4 | 3,161.4 | 2,964.0 | 24.4 | 18.8 | 132.69 | -338.1 | 884.2 | 1,233.4 | 1,197.8 | 35.59 | 34.656 | |
| 3,500.0 | 3,197.3 | 3,281.5 | 3,077.7 | 24.9 | 19.5 | 132.80 | -350.8 | 920.7 | 1,263.3 | 1,226.6 | 36.74 | 34.389 | |
| 3,600.0 | 3,294.5 | 3,405.3 | 3,197.2 | 25.3 | 20.1 | 132.91 | -361.3 | 951.2 | 1,287.9 | 1,250.2 | 37.69 | 34.175 | |
| 3,700.0 | 3,392.9 | 3,531.9 | 3,321.3 | 25.6 | 20.5 | 133.03 | -369.4 | 974.8 | 1,306.9 | 1,268.5 | 38.41 | 34.023 | |
| 3,800.0 | 3,492.0 | 3,660.7 | 3,448.9 | 25.8 | 20.8 | 133.16 | -374.9 | 990.7 | 1,320.2 | 1,281.2 | 38.92 | 33.919 | |
| 3,900.0 | 3,591.7 | 3,790.7 | 3,578.7 | 25.9 | 20.9 | 133.31 | -377.6 | 998.5 | 1,327.6 | 1,288.4 | 39.21 | 33.859 | |
| 4,000.0 | 3,691.6 | 3,903.9 | 3,691.8 | 26.0 | 21.0 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,290.2 | 39.33 | 33.804 | |
| 4,100.0 | 3,791.6 | 4,003.9 | 3,791.8 | 26.0 | 21.1 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,290.1 | 39.46 | 33.699 | |
| 4,200.0 | 3,891.6 | 4,103.9 | 3,891.8 | 26.1 | 21.1 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,290.0 | 39.58 | 33.592 | |
| 4,300.0 | 3,991.6 | 4,203.9 | 3,991.8 | 26.1 | 21.2 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,289.9 | 39.71 | 33.483 | |
| 4,400.0 | 4,091.6 | 4,303.9 | 4,091.8 | 26.2 | 21.2 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,289.7 | 39.84 | 33.373 | |
| 4,500.0 | 4,191.6 | 4,403.9 | 4,191.8 | 26.2 | 21.3 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,289.6 | 39.97 | 33.261 | |
| 4,600.0 | 4,291.6 | 4,503.9 | 4,291.8 | 26.3 | 21.4 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,289.5 | 40.11 | 33.148 | |
| 4,700.0 | 4,391.6 | 4,603.9 | 4,391.8 | 26.3 | 21.4 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,289.3 | 40.25 | 33.034 | |
| 4,800.0 | 4,491.6 | 4,703.9 | 4,491.8 | 26.4 | 21.5 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,289.2 | 40.39 | 32.919 | |
| 4,900.0 | 4,591.6 | 4,803.9 | 4,591.8 | 26.4 | 21.6 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,289.0 | 40.53 | 32.802 | |
| 5,000.0 | 4,691.6 | 4,903.9 | 4,691.8 | 26.5 | 21.6 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,288.9 | 40.68 | 32.684 | |
| 5,100.0 | 4,791.6 | 5,003.9 | 4,791.8 | 26.5 | 21.7 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,288.7 | 40.83 | 32.565 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 14C-13 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 4,891.6 | 5,103.9 | 4,891.8 | 26.6 | 21.8 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,288.6 | 40.98 | 32.444 | |
| 5,300.0 | 4,991.6 | 5,203.9 | 4,991.8 | 26.7 | 21.8 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,288.4 | 41.13 | 32.323 | |
| 5,400.0 | 5,091.6 | 5,303.9 | 5,091.8 | 26.7 | 21.9 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,288.3 | 41.29 | 32.201 | |
| 5,500.0 | 5,191.6 | 5,403.9 | 5,191.8 | 26.8 | 22.0 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,288.1 | 41.45 | 32.078 | |
| 5,600.0 | 5,291.6 | 5,503.9 | 5,291.8 | 26.8 | 22.1 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,288.0 | 41.61 | 31.954 | |
| 5,700.0 | 5,391.6 | 5,603.9 | 5,391.8 | 26.9 | 22.1 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,287.8 | 41.77 | 31.830 | |
| 5,800.0 | 5,491.6 | 5,703.9 | 5,491.8 | 27.0 | 22.2 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,287.6 | 41.94 | 31.704 | |
| 5,900.0 | 5,591.6 | 5,803.9 | 5,591.8 | 27.0 | 22.3 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,287.5 | 42.10 | 31.578 | |
| 6,000.0 | 5,691.6 | 5,903.9 | 5,691.8 | 27.1 | 22.4 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,287.3 | 42.27 | 31.451 | |
| 6,100.0 | 5,791.6 | 6,003.9 | 5,791.8 | 27.2 | 22.5 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,287.1 | 42.45 | 31.324 | |
| 6,130.8 | 5,822.4 | 6,034.6 | 5,822.6 | 27.2 | 22.5 | 179.43 | -377.9 | 999.3 | 1,329.6 | 1,287.1 | 42.50 | 31.285 | |
| 6,200.0 | 5,891.6 | 6,052.0 | 5,840.0 | 27.2 | 22.5 | 179.43 | -377.9 | 999.3 | 1,330.6 | 1,288.0 | 42.58 | 31.252 | SF |
| 6,218.4 | 5,910.0 | 6,052.0 | 5,840.0 | 27.2 | 22.5 | 179.43 | -377.9 | 999.3 | 1,331.4 | 1,288.8 | 42.59 | 31.260 | |

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 14D-13 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -152.48 | -35.5 | -18.5 | 40.0 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -152.48 | -35.5 | -18.5 | 40.0 | 39.7 | 0.25 | 156.900 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -152.48 | -35.5 | -18.5 | 40.0 | 39.4 | 0.60 | 66.207 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | 162.60 | -35.5 | -18.5 | 42.5 | 41.5 | 0.95 | 44.568 | |
| 400.0 | 399.6 | 399.8 | 399.8 | 0.7 | 0.7 | 165.23 | -35.5 | -18.5 | 50.0 | 48.7 | 1.30 | 38.423 | |
| 500.0 | 498.8 | 499.0 | 498.9 | 1.0 | 0.8 | 165.82 | -36.9 | -16.3 | 62.7 | 61.1 | 1.66 | 37.886 | SF |
| 600.0 | 597.1 | 597.2 | 596.8 | 1.4 | 1.0 | 163.36 | -41.0 | -9.9 | 80.6 | 78.5 | 2.04 | 39.411 | |
| 700.0 | 694.3 | 693.9 | 692.7 | 1.8 | 1.3 | 159.78 | -47.7 | 0.5 | 103.9 | 101.4 | 2.51 | 41.400 | |
| 800.0 | 790.2 | 788.5 | 785.8 | 2.4 | 1.6 | 156.08 | -56.9 | 14.6 | 132.8 | 129.7 | 3.08 | 43.130 | |
| 900.0 | 884.4 | 880.6 | 875.6 | 3.0 | 2.0 | 152.66 | -68.2 | 32.0 | 167.4 | 163.6 | 3.77 | 44.415 | |
| 1,000.0 | 976.8 | 969.8 | 961.4 | 3.7 | 2.4 | 149.60 | -81.4 | 52.3 | 207.6 | 203.0 | 4.58 | 45.332 | |
| 1,100.0 | 1,067.1 | 1,055.7 | 1,042.9 | 4.5 | 2.9 | 146.87 | -96.1 | 75.0 | 253.2 | 247.7 | 5.50 | 46.012 | |
| 1,200.0 | 1,155.2 | 1,138.2 | 1,120.0 | 5.4 | 3.5 | 144.82 | -112.1 | 99.7 | 303.5 | 297.0 | 6.52 | 46.544 | |
| 1,300.0 | 1,243.1 | 1,218.7 | 1,193.8 | 6.3 | 4.1 | 143.17 | -129.5 | 126.5 | 355.6 | 348.0 | 7.62 | 46.648 | |
| 1,400.0 | 1,330.9 | 1,300.0 | 1,267.1 | 7.2 | 4.7 | 141.37 | -148.7 | 156.2 | 409.2 | 400.3 | 8.82 | 46.401 | |
| 1,500.0 | 1,418.7 | 1,376.0 | 1,334.2 | 8.1 | 5.4 | 139.68 | -168.1 | 186.0 | 464.1 | 454.1 | 10.03 | 46.287 | |
| 1,600.0 | 1,506.6 | 1,458.5 | 1,406.9 | 9.0 | 6.1 | 138.15 | -189.4 | 218.8 | 519.6 | 508.3 | 11.30 | 46.001 | |
| 1,700.0 | 1,594.4 | 1,540.9 | 1,479.5 | 9.9 | 6.8 | 136.91 | -210.6 | 251.5 | 575.3 | 562.7 | 12.56 | 45.794 | |
| 1,800.0 | 1,682.2 | 1,623.4 | 1,552.1 | 10.8 | 7.6 | 135.88 | -231.9 | 284.3 | 631.1 | 617.3 | 13.83 | 45.640 | |
| 1,900.0 | 1,770.1 | 1,705.9 | 1,624.8 | 11.6 | 8.3 | 135.02 | -253.1 | 317.1 | 687.1 | 672.0 | 15.09 | 45.523 | |
| 2,000.0 | 1,857.9 | 1,788.4 | 1,697.4 | 12.5 | 9.0 | 134.29 | -274.4 | 349.8 | 743.1 | 726.8 | 16.36 | 45.431 | |
| 2,100.0 | 1,945.7 | 1,870.8 | 1,770.0 | 13.4 | 9.8 | 133.66 | -295.6 | 382.6 | 799.2 | 781.6 | 17.62 | 45.358 | |
| 2,200.0 | 2,033.6 | 1,953.3 | 1,842.7 | 14.3 | 10.5 | 133.12 | -316.9 | 415.4 | 855.4 | 836.5 | 18.88 | 45.301 | |
| 2,300.0 | 2,121.4 | 2,035.8 | 1,915.3 | 15.2 | 11.3 | 132.64 | -338.2 | 448.1 | 911.6 | 891.5 | 20.14 | 45.254 | |
| 2,400.0 | 2,209.2 | 2,118.2 | 1,987.9 | 16.1 | 12.0 | 132.21 | -359.4 | 480.9 | 967.9 | 946.5 | 21.41 | 45.217 | |
| 2,500.0 | 2,297.1 | 2,200.7 | 2,060.6 | 17.0 | 12.7 | 131.83 | -380.7 | 513.7 | 1,024.2 | 1,001.5 | 22.67 | 45.185 | |
| 2,600.0 | 2,384.9 | 2,283.2 | 2,133.2 | 17.9 | 13.5 | 131.50 | -401.9 | 546.4 | 1,080.5 | 1,056.6 | 23.93 | 45.159 | |
| 2,700.0 | 2,472.7 | 2,365.6 | 2,205.8 | 18.8 | 14.2 | 131.19 | -423.2 | 579.2 | 1,136.9 | 1,111.7 | 25.19 | 45.138 | |
| 2,800.0 | 2,560.6 | 2,448.1 | 2,278.5 | 19.7 | 15.0 | 130.91 | -444.4 | 612.0 | 1,193.2 | 1,166.8 | 26.45 | 45.120 | |
| 2,900.0 | 2,648.4 | 2,530.6 | 2,351.1 | 20.6 | 15.7 | 130.66 | -465.7 | 644.7 | 1,249.6 | 1,221.9 | 27.71 | 45.104 | |
| 3,000.0 | 2,736.2 | 2,613.0 | 2,423.7 | 21.5 | 16.5 | 130.43 | -486.9 | 677.5 | 1,306.0 | 1,277.1 | 28.96 | 45.091 | |

# Cathedral Energy Services

## Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 43A-14 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -120.44 | -9.6 | -16.3 | 18.9 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -120.44 | -9.6 | -16.3 | 18.9 | 18.6 | 0.26 | 74.002 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -120.44 | -9.6 | -16.3 | 18.9 | 18.3 | 0.60 | 31.240 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | -168.08 | -9.6 | -16.3 | 21.4 | 20.5 | 0.95 | 22.488 | |
| 400.0 | 399.6 | 400.4 | 400.3 | 0.7 | 0.7 | -166.34 | -7.0 | -16.8 | 28.2 | 26.9 | 1.31 | 21.537 | SF |
| 500.0 | 498.8 | 500.2 | 499.9 | 1.0 | 0.9 | -159.76 | 0.7 | -18.3 | 38.5 | 36.8 | 1.71 | 22.569 | |
| 600.0 | 597.1 | 599.4 | 598.2 | 1.4 | 1.1 | -152.63 | 13.4 | -20.8 | 53.1 | 50.9 | 2.20 | 24.108 | |
| 700.0 | 694.3 | 697.5 | 694.6 | 1.8 | 1.5 | -146.51 | 30.9 | -24.2 | 72.4 | 69.6 | 2.84 | 25.485 | |
| 800.0 | 790.2 | 794.2 | 788.7 | 2.4 | 1.9 | -141.62 | 52.8 | -28.4 | 96.5 | 92.8 | 3.63 | 26.556 | |
| 900.0 | 884.4 | 889.2 | 879.9 | 3.0 | 2.4 | -137.72 | 78.9 | -33.5 | 125.2 | 120.7 | 4.57 | 27.379 | |
| 1,000.0 | 976.8 | 982.3 | 967.9 | 3.7 | 2.9 | -134.55 | 108.8 | -39.4 | 158.5 | 152.9 | 5.66 | 28.036 | |
| 1,100.0 | 1,067.1 | 1,073.2 | 1,052.3 | 4.5 | 3.6 | -131.90 | 142.0 | -45.8 | 196.2 | 189.3 | 6.86 | 28.585 | |
| 1,200.0 | 1,155.2 | 1,162.0 | 1,133.1 | 5.4 | 4.2 | -129.99 | 178.2 | -52.9 | 237.7 | 229.5 | 8.17 | 29.078 | |
| 1,300.0 | 1,243.1 | 1,249.3 | 1,210.7 | 6.3 | 5.0 | -128.26 | 217.3 | -60.5 | 280.6 | 271.1 | 9.57 | 29.313 | |
| 1,400.0 | 1,330.9 | 1,334.9 | 1,285.0 | 7.2 | 5.7 | -126.26 | 259.0 | -68.7 | 324.8 | 313.8 | 11.04 | 29.413 | |
| 1,500.0 | 1,418.7 | 1,418.6 | 1,355.8 | 8.1 | 6.5 | -124.14 | 302.9 | -77.2 | 370.5 | 358.0 | 12.56 | 29.489 | |
| 1,600.0 | 1,506.6 | 1,500.0 | 1,422.6 | 9.0 | 7.4 | -121.98 | 348.4 | -86.1 | 417.8 | 403.7 | 14.11 | 29.603 | |
| 1,700.0 | 1,594.4 | 1,579.2 | 1,485.7 | 9.9 | 8.2 | -119.84 | 395.4 | -95.3 | 466.9 | 451.2 | 15.69 | 29.753 | |
| 1,800.0 | 1,682.2 | 1,656.2 | 1,545.1 | 10.8 | 9.1 | -117.75 | 443.5 | -104.7 | 517.9 | 500.6 | 17.26 | 30.007 | |
| 1,900.0 | 1,770.1 | 1,739.8 | 1,608.6 | 11.6 | 10.1 | -115.71 | 496.9 | -115.1 | 570.0 | 551.1 | 18.88 | 30.193 | |
| 2,000.0 | 1,857.9 | 1,823.4 | 1,672.1 | 12.5 | 11.0 | -113.99 | 550.3 | -125.5 | 622.6 | 602.1 | 20.48 | 30.405 | |
| 2,100.0 | 1,945.7 | 1,907.1 | 1,735.7 | 13.4 | 12.0 | -112.54 | 603.6 | -135.9 | 675.6 | 653.5 | 22.06 | 30.625 | |
| 2,200.0 | 2,033.6 | 1,990.7 | 1,799.2 | 14.3 | 12.9 | -111.29 | 657.0 | -146.3 | 728.8 | 705.2 | 23.63 | 30.844 | |
| 2,300.0 | 2,121.4 | 2,074.4 | 1,862.8 | 15.2 | 13.9 | -110.21 | 710.4 | -156.7 | 782.3 | 757.1 | 25.19 | 31.058 | |
| 2,400.0 | 2,209.2 | 2,158.0 | 1,926.3 | 16.1 | 14.9 | -109.26 | 763.7 | -167.1 | 835.9 | 809.2 | 26.74 | 31.263 | |
| 2,500.0 | 2,297.1 | 2,241.6 | 1,989.8 | 17.0 | 15.8 | -108.43 | 817.1 | -177.6 | 889.7 | 861.4 | 28.28 | 31.459 | |
| 2,600.0 | 2,384.9 | 2,325.3 | 2,053.4 | 17.9 | 16.8 | -107.69 | 870.5 | -188.0 | 943.6 | 913.7 | 29.82 | 31.644 | |
| 2,700.0 | 2,472.7 | 2,408.9 | 2,116.9 | 18.8 | 17.7 | -107.03 | 923.9 | -198.4 | 997.6 | 966.2 | 31.35 | 31.820 | |
| 2,800.0 | 2,560.6 | 2,492.5 | 2,180.5 | 19.7 | 18.7 | -106.44 | 977.2 | -208.8 | 1,051.6 | 1,018.8 | 32.88 | 31.986 | |
| 2,900.0 | 2,648.4 | 2,576.2 | 2,244.0 | 20.6 | 19.7 | -105.90 | 1,030.6 | -219.2 | 1,105.8 | 1,071.4 | 34.40 | 32.142 | |
| 3,000.0 | 2,736.2 | 2,659.8 | 2,307.6 | 21.5 | 20.6 | -105.42 | 1,084.0 | -229.6 | 1,160.0 | 1,124.1 | 35.93 | 32.289 | |
| 3,100.0 | 2,824.4 | 2,743.5 | 2,371.1 | 22.4 | 21.6 | -105.93 | 1,137.4 | -240.0 | 1,214.1 | 1,176.5 | 37.58 | 32.307 | |
| 3,200.0 | 2,914.7 | 2,827.2 | 2,434.8 | 23.1 | 22.6 | -107.05 | 1,190.8 | -250.5 | 1,267.2 | 1,228.0 | 39.25 | 32.283 | |
| 3,300.0 | 3,007.1 | 2,956.7 | 2,535.2 | 23.8 | 24.0 | -107.55 | 1,271.0 | -266.1 | 1,318.1 | 1,276.9 | 41.12 | 32.053 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 43B-14 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -129.82 | -16.6 | -20.0 | 26.0 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -129.82 | -16.6 | -20.0 | 26.0 | 25.7 | 0.26 | 101.905 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -129.82 | -16.6 | -20.0 | 26.0 | 25.4 | 0.60 | 43.031 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | -176.21 | -16.6 | -20.0 | 28.6 | 27.7 | 0.95 | 30.038 | |
| 400.0 | 399.6 | 400.3 | 400.3 | 0.7 | 0.7 | -176.09 | -16.0 | -20.1 | 36.1 | 34.8 | 1.30 | 27.814 | SF |
| 500.0 | 498.8 | 500.5 | 500.4 | 1.0 | 0.8 | -171.38 | -10.9 | -21.3 | 47.0 | 45.3 | 1.66 | 28.288 | |
| 600.0 | 597.1 | 600.2 | 599.5 | 1.4 | 1.1 | -164.74 | -0.7 | -23.7 | 61.4 | 59.4 | 2.08 | 29.580 | |
| 700.0 | 694.3 | 698.9 | 696.9 | 1.8 | 1.4 | -158.16 | 14.3 | -27.2 | 80.3 | 77.7 | 2.61 | 30.786 | |
| 800.0 | 790.2 | 796.2 | 792.2 | 2.4 | 1.7 | -152.39 | 33.9 | -31.8 | 103.8 | 100.6 | 3.29 | 31.561 | |
| 900.0 | 884.4 | 891.9 | 884.7 | 3.0 | 2.2 | -147.55 | 57.7 | -37.4 | 132.2 | 128.1 | 4.13 | 31.978 | |
| 1,000.0 | 976.8 | 985.7 | 974.0 | 3.7 | 2.7 | -143.51 | 85.4 | -43.9 | 165.4 | 160.2 | 5.13 | 32.210 | |
| 1,100.0 | 1,067.1 | 1,077.3 | 1,059.8 | 4.5 | 3.3 | -140.10 | 116.5 | -51.2 | 203.1 | 196.8 | 6.27 | 32.374 | |
| 1,200.0 | 1,155.2 | 1,166.6 | 1,141.9 | 5.4 | 3.9 | -137.51 | 150.7 | -59.2 | 244.8 | 237.3 | 7.53 | 32.527 | |
| 1,300.0 | 1,243.1 | 1,254.5 | 1,221.0 | 6.3 | 4.6 | -135.23 | 188.0 | -68.0 | 287.8 | 279.0 | 8.88 | 32.400 | |
| 1,400.0 | 1,330.9 | 1,340.7 | 1,296.9 | 7.2 | 5.3 | -132.82 | 228.0 | -77.3 | 332.0 | 321.7 | 10.33 | 32.150 | |
| 1,500.0 | 1,418.7 | 1,425.7 | 1,369.8 | 8.1 | 6.1 | -130.35 | 270.5 | -87.3 | 377.5 | 365.7 | 11.82 | 31.926 | |
| 1,600.0 | 1,506.6 | 1,513.3 | 1,444.2 | 9.0 | 6.9 | -128.16 | 315.5 | -97.8 | 423.9 | 410.5 | 13.35 | 31.742 | |
| 1,700.0 | 1,594.4 | 1,600.8 | 1,518.6 | 9.9 | 7.7 | -126.39 | 360.4 | -108.4 | 470.6 | 455.7 | 14.87 | 31.646 | |
| 1,800.0 | 1,682.2 | 1,688.3 | 1,593.0 | 10.8 | 8.6 | -124.94 | 405.3 | -118.9 | 517.7 | 501.3 | 16.38 | 31.601 | |
| 1,900.0 | 1,770.1 | 1,775.9 | 1,667.3 | 11.6 | 9.4 | -123.72 | 450.2 | -129.5 | 564.9 | 547.0 | 17.88 | 31.589 | |
| 2,000.0 | 1,857.9 | 1,863.4 | 1,741.7 | 12.5 | 10.2 | -122.69 | 495.1 | -140.0 | 612.3 | 593.0 | 19.38 | 31.596 | |
| 2,100.0 | 1,945.7 | 1,951.0 | 1,816.1 | 13.4 | 11.0 | -121.81 | 540.0 | -150.5 | 659.9 | 639.0 | 20.87 | 31.615 | |
| 2,200.0 | 2,033.6 | 2,038.5 | 1,890.5 | 14.3 | 11.8 | -121.05 | 585.0 | -161.1 | 707.6 | 685.2 | 22.36 | 31.642 | |
| 2,300.0 | 2,121.4 | 2,126.0 | 1,964.9 | 15.2 | 12.6 | -120.38 | 629.9 | -171.6 | 755.3 | 731.5 | 23.85 | 31.672 | |
| 2,400.0 | 2,209.2 | 2,213.6 | 2,039.3 | 16.1 | 13.5 | -119.79 | 674.8 | -182.1 | 803.2 | 777.8 | 25.33 | 31.706 | |
| 2,500.0 | 2,297.1 | 2,301.1 | 2,113.7 | 17.0 | 14.3 | -119.26 | 719.7 | -192.7 | 851.0 | 824.2 | 26.81 | 31.740 | |
| 2,600.0 | 2,384.9 | 2,388.7 | 2,188.1 | 17.9 | 15.1 | -118.80 | 764.6 | -203.2 | 899.0 | 870.7 | 28.29 | 31.774 | |
| 2,700.0 | 2,472.7 | 2,476.2 | 2,262.5 | 18.8 | 15.9 | -118.38 | 809.6 | -213.7 | 946.9 | 917.2 | 29.77 | 31.808 | |
| 2,800.0 | 2,560.6 | 2,563.7 | 2,336.9 | 19.7 | 16.8 | -117.99 | 854.5 | -224.3 | 995.0 | 963.7 | 31.25 | 31.841 | |
| 2,900.0 | 2,648.4 | 2,651.3 | 2,411.3 | 20.6 | 17.6 | -117.65 | 899.4 | -234.8 | 1,043.0 | 1,010.3 | 32.72 | 31.873 | |
| 3,000.0 | 2,736.2 | 2,738.8 | 2,485.7 | 21.5 | 18.4 | -117.33 | 944.3 | -245.3 | 1,091.1 | 1,056.9 | 34.20 | 31.904 | |
| 3,100.0 | 2,824.4 | 2,826.5 | 2,560.2 | 22.4 | 19.2 | -117.78 | 989.3 | -255.9 | 1,138.8 | 1,103.1 | 35.72 | 31.880 | |
| 3,200.0 | 2,914.7 | 2,914.8 | 2,635.2 | 23.1 | 20.1 | -118.62 | 1,034.6 | -266.5 | 1,184.8 | 1,147.5 | 37.22 | 31.829 | |
| 3,300.0 | 3,007.1 | 3,021.9 | 2,726.8 | 23.8 | 21.0 | -119.06 | 1,088.8 | -279.2 | 1,228.2 | 1,189.4 | 38.77 | 31.676 | |
| 3,400.0 | 3,101.4 | 3,152.7 | 2,842.3 | 24.4 | 22.1 | -119.27 | 1,148.5 | -293.2 | 1,267.1 | 1,226.8 | 40.32 | 31.429 | |
| 3,500.0 | 3,197.3 | 3,289.5 | 2,967.2 | 24.9 | 23.0 | -119.43 | 1,202.6 | -305.9 | 1,300.6 | 1,259.0 | 41.69 | 31.194 | |
| 3,600.0 | 3,294.5 | 3,431.8 | 3,101.2 | 25.3 | 23.8 | -119.55 | 1,249.4 | -316.9 | 1,328.6 | 1,285.7 | 42.87 | 30.993 | |
| 3,700.0 | 3,392.9 | 3,579.0 | 3,243.0 | 25.6 | 24.5 | -119.63 | 1,287.6 | -325.8 | 1,350.5 | 1,306.7 | 43.82 | 30.821 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 43C-14 - DD - Plan #3 — **Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD — **Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -135.12 | -23.7 | -23.6 | 33.5 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -135.12 | -23.7 | -23.6 | 33.5 | 33.2 | 0.26 | 131.239 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -135.12 | -23.7 | -23.6 | 33.5 | 32.9 | 0.60 | 55.437 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | 178.94 | -23.7 | -23.6 | 36.1 | 35.2 | 0.95 | 37.919 | |
| 400.0 | 399.6 | 399.8 | 399.8 | 0.7 | 0.7 | 179.13 | -23.7 | -23.6 | 44.0 | 42.7 | 1.30 | 33.868 | SF |
| 500.0 | 498.8 | 500.1 | 500.1 | 1.0 | 0.8 | -178.21 | -21.3 | -24.5 | 56.0 | 54.3 | 1.65 | 34.013 | |
| 600.0 | 597.1 | 599.8 | 599.5 | 1.4 | 1.0 | -172.76 | -13.9 | -27.2 | 71.6 | 69.6 | 2.02 | 35.441 | |
| 700.0 | 694.3 | 698.4 | 697.2 | 1.8 | 1.3 | -166.64 | -1.9 | -31.6 | 91.5 | 89.1 | 2.47 | 37.102 | |
| 800.0 | 790.2 | 795.6 | 792.7 | 2.4 | 1.6 | -160.89 | 14.6 | -37.6 | 116.4 | 113.3 | 3.04 | 38.329 | |
| 900.0 | 884.4 | 890.8 | 885.4 | 3.0 | 2.0 | -155.83 | 35.2 | -45.2 | 146.3 | 142.6 | 3.75 | 38.983 | |
| 1,000.0 | 976.8 | 983.7 | 974.7 | 3.7 | 2.5 | -151.49 | 59.4 | -54.0 | 181.5 | 176.8 | 4.62 | 39.245 | |
| 1,100.0 | 1,067.1 | 1,074.5 | 1,060.7 | 4.5 | 3.0 | -147.87 | 86.6 | -63.9 | 221.5 | 215.9 | 5.60 | 39.558 | |
| 1,200.0 | 1,155.2 | 1,164.1 | 1,145.4 | 5.4 | 3.5 | -145.86 | 114.0 | -74.0 | 265.5 | 258.9 | 6.62 | 40.143 | |
| 1,300.0 | 1,243.1 | 1,253.5 | 1,229.9 | 6.3 | 4.0 | -144.79 | 141.4 | -83.9 | 310.2 | 302.5 | 7.65 | 40.546 | |
| 1,400.0 | 1,330.9 | 1,342.8 | 1,314.4 | 7.2 | 4.5 | -143.99 | 168.7 | -93.9 | 354.9 | 346.2 | 8.70 | 40.810 | |
| 1,500.0 | 1,418.7 | 1,432.2 | 1,398.9 | 8.1 | 5.0 | -143.37 | 196.0 | -103.9 | 399.6 | 389.9 | 9.75 | 40.991 | |
| 1,600.0 | 1,506.6 | 1,521.5 | 1,483.4 | 9.0 | 5.5 | -142.87 | 223.4 | -113.9 | 444.4 | 433.6 | 10.81 | 41.121 | |
| 1,700.0 | 1,594.4 | 1,610.9 | 1,567.9 | 9.9 | 6.1 | -142.47 | 250.7 | -123.9 | 489.2 | 477.3 | 11.87 | 41.216 | |
| 1,800.0 | 1,682.2 | 1,700.3 | 1,652.3 | 10.8 | 6.6 | -142.13 | 278.0 | -133.9 | 534.0 | 521.1 | 12.93 | 41.287 | |
| 1,900.0 | 1,770.1 | 1,789.6 | 1,736.8 | 11.6 | 7.1 | -141.85 | 305.4 | -143.9 | 578.8 | 564.8 | 14.00 | 41.342 | |
| 2,000.0 | 1,857.9 | 1,879.0 | 1,821.3 | 12.5 | 7.7 | -141.60 | 332.7 | -153.8 | 623.7 | 608.6 | 15.07 | 41.385 | |
| 2,100.0 | 1,945.7 | 1,968.3 | 1,905.8 | 13.4 | 8.2 | -141.39 | 360.1 | -163.8 | 668.5 | 652.4 | 16.14 | 41.419 | |
| 2,200.0 | 2,033.6 | 2,057.7 | 1,990.3 | 14.3 | 8.7 | -141.21 | 387.4 | -173.8 | 713.4 | 696.2 | 17.21 | 41.447 | |
| 2,300.0 | 2,121.4 | 2,147.0 | 2,074.8 | 15.2 | 9.2 | -141.04 | 414.7 | -183.8 | 758.2 | 740.0 | 18.28 | 41.470 | |
| 2,400.0 | 2,209.2 | 2,236.4 | 2,159.2 | 16.1 | 9.8 | -140.90 | 442.1 | -193.8 | 803.1 | 783.7 | 19.36 | 41.489 | |
| 2,500.0 | 2,297.1 | 2,325.7 | 2,243.7 | 17.0 | 10.3 | -140.77 | 469.4 | -203.8 | 848.0 | 827.5 | 20.43 | 41.504 | |
| 2,600.0 | 2,384.9 | 2,415.1 | 2,328.2 | 17.9 | 10.8 | -140.65 | 496.8 | -213.8 | 892.8 | 871.3 | 21.50 | 41.518 | |
| 2,700.0 | 2,472.7 | 2,504.5 | 2,412.7 | 18.8 | 11.4 | -140.55 | 524.1 | -223.7 | 937.7 | 915.1 | 22.58 | 41.529 | |
| 2,800.0 | 2,560.6 | 2,593.8 | 2,497.2 | 19.7 | 11.9 | -140.45 | 551.4 | -233.7 | 982.6 | 958.9 | 23.65 | 41.538 | |
| 2,900.0 | 2,648.4 | 2,683.2 | 2,581.7 | 20.6 | 12.4 | -140.37 | 578.8 | -243.7 | 1,027.4 | 1,002.7 | 24.73 | 41.547 | |
| 3,000.0 | 2,736.2 | 2,772.5 | 2,666.1 | 21.5 | 13.0 | -140.29 | 606.1 | -253.7 | 1,072.3 | 1,046.5 | 25.81 | 41.554 | |
| 3,100.0 | 2,824.4 | 2,862.1 | 2,750.9 | 22.4 | 13.5 | -140.68 | 633.5 | -263.7 | 1,116.7 | 1,089.8 | 26.88 | 41.547 | |
| 3,200.0 | 2,914.7 | 2,953.2 | 2,836.9 | 23.1 | 14.0 | -141.28 | 661.4 | -273.9 | 1,157.8 | 1,129.8 | 27.93 | 41.448 | |
| 3,300.0 | 3,007.1 | 3,045.6 | 2,924.3 | 23.8 | 14.6 | -141.63 | 689.6 | -284.2 | 1,195.2 | 1,166.2 | 28.99 | 41.231 | |
| 3,400.0 | 3,101.4 | 3,139.1 | 3,012.7 | 24.4 | 15.1 | -141.75 | 718.3 | -294.7 | 1,228.8 | 1,198.7 | 30.03 | 40.915 | |
| 3,500.0 | 3,197.3 | 3,247.7 | 3,116.0 | 24.9 | 15.7 | -141.66 | 749.5 | -306.1 | 1,258.2 | 1,227.1 | 31.08 | 40.487 | |
| 3,600.0 | 3,294.5 | 3,362.1 | 3,226.8 | 25.3 | 16.2 | -141.58 | 776.4 | -315.9 | 1,282.4 | 1,250.5 | 31.96 | 40.120 | |
| 3,700.0 | 3,392.9 | 3,479.2 | 3,341.7 | 25.6 | 16.6 | -141.55 | 797.5 | -323.6 | 1,301.3 | 1,268.7 | 32.67 | 39.831 | |
| 3,800.0 | 3,492.0 | 3,598.2 | 3,459.7 | 25.8 | 16.9 | -141.56 | 812.1 | -328.9 | 1,314.7 | 1,281.5 | 33.18 | 39.621 | |
| 3,900.0 | 3,591.7 | 3,718.6 | 3,579.8 | 25.9 | 17.0 | -141.61 | 819.8 | -331.8 | 1,322.5 | 1,289.0 | 33.48 | 39.504 | |
| 4,000.0 | 3,691.6 | 3,830.7 | 3,691.8 | 26.0 | 17.1 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,291.1 | 33.61 | 39.418 | |
| 4,100.0 | 3,791.6 | 3,930.7 | 3,791.8 | 26.0 | 17.2 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,291.0 | 33.75 | 39.251 | |
| 4,200.0 | 3,891.6 | 4,030.7 | 3,891.8 | 26.1 | 17.3 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,290.9 | 33.90 | 39.083 | |
| 4,300.0 | 3,991.6 | 4,130.7 | 3,991.8 | 26.1 | 17.3 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,290.7 | 34.04 | 38.912 | |
| 4,400.0 | 4,091.6 | 4,230.7 | 4,091.8 | 26.2 | 17.4 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,290.6 | 34.20 | 38.740 | |
| 4,500.0 | 4,191.6 | 4,330.7 | 4,191.8 | 26.2 | 17.5 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,290.4 | 34.35 | 38.566 | |
| 4,600.0 | 4,291.6 | 4,430.7 | 4,291.8 | 26.3 | 17.6 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,290.2 | 34.51 | 38.391 | |
| 4,700.0 | 4,391.6 | 4,530.7 | 4,391.8 | 26.3 | 17.6 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,290.1 | 34.67 | 38.214 | |
| 4,800.0 | 4,491.6 | 4,630.7 | 4,491.8 | 26.4 | 17.7 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,289.9 | 34.83 | 38.035 | |
| 4,900.0 | 4,591.6 | 4,730.7 | 4,591.8 | 26.4 | 17.8 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,289.8 | 34.99 | 37.856 | |
| 5,000.0 | 4,691.6 | 4,830.7 | 4,691.8 | 26.5 | 17.9 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,289.6 | 35.16 | 37.675 | |
| 5,100.0 | 4,791.6 | 4,930.7 | 4,791.8 | 26.5 | 18.0 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,289.4 | 35.33 | 37.493 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 43C-14 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 4,891.6 | 5,030.7 | 4,891.8 | 26.6 | 18.0 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,289.2 | 35.51 | 37.310 | |
| 5,300.0 | 4,991.6 | 5,130.7 | 4,991.8 | 26.7 | 18.1 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,289.1 | 35.68 | 37.126 | |
| 5,400.0 | 5,091.6 | 5,230.7 | 5,091.8 | 26.7 | 18.2 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,288.9 | 35.86 | 36.941 | |
| 5,500.0 | 5,191.6 | 5,330.7 | 5,191.8 | 26.8 | 18.3 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,288.7 | 36.04 | 36.756 | |
| 5,600.0 | 5,291.6 | 5,430.7 | 5,291.8 | 26.8 | 18.4 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,288.5 | 36.23 | 36.570 | |
| 5,700.0 | 5,391.6 | 5,530.7 | 5,391.8 | 26.9 | 18.5 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,288.3 | 36.41 | 36.383 | |
| 5,800.0 | 5,491.6 | 5,630.7 | 5,491.8 | 27.0 | 18.6 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,288.1 | 36.60 | 36.196 | |
| 5,900.0 | 5,591.6 | 5,730.7 | 5,591.8 | 27.0 | 18.7 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,288.0 | 36.79 | 36.008 | |
| 6,000.0 | 5,691.6 | 5,830.7 | 5,691.8 | 27.1 | 18.8 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,287.8 | 36.98 | 35.821 | |
| 6,100.0 | 5,791.6 | 5,930.7 | 5,791.8 | 27.2 | 18.9 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,287.6 | 37.18 | 35.633 | |
| 6,142.7 | 5,834.3 | 5,973.3 | 5,834.5 | 27.2 | 18.9 | -95.66 | 821.0 | -332.2 | 1,324.7 | 1,287.5 | 37.26 | 35.552 | |
| 6,200.0 | 5,891.6 | 5,988.8 | 5,850.0 | 27.2 | 18.9 | -95.66 | 821.0 | -332.2 | 1,325.4 | 1,288.1 | 37.33 | 35.501 | |
| 6,218.4 | 5,910.0 | 5,988.8 | 5,850.0 | 27.2 | 18.9 | -95.66 | 821.0 | -332.2 | 1,326.1 | 1,288.8 | 37.35 | 35.503 | |

# Cathedral Energy Services

## Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 44A-14 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -138.43 | -30.8 | -27.3 | 41.2 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -138.43 | -30.8 | -27.3 | 41.2 | 41.0 | 0.26 | 161.276 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -138.43 | -30.8 | -27.3 | 41.2 | 40.6 | 0.60 | 68.160 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | 175.81 | -30.8 | -27.3 | 43.8 | 42.9 | 0.95 | 45.987 | |
| 400.0 | 399.6 | 399.8 | 399.8 | 0.7 | 0.7 | 176.43 | -30.8 | -27.3 | 51.6 | 50.3 | 1.30 | 39.771 | |
| 500.0 | 498.8 | 499.3 | 499.3 | 1.0 | 0.8 | 177.50 | -30.5 | -27.6 | 64.6 | 62.9 | 1.64 | 39.343 | SF |
| 600.0 | 597.1 | 598.4 | 598.3 | 1.4 | 1.0 | -179.63 | -27.5 | -29.2 | 81.9 | 79.9 | 1.98 | 41.291 | |
| 700.0 | 694.3 | 696.5 | 696.2 | 1.8 | 1.2 | -175.98 | -21.6 | -32.5 | 103.7 | 101.4 | 2.34 | 44.389 | |
| 800.0 | 790.2 | 793.2 | 792.4 | 2.4 | 1.4 | -172.32 | -12.9 | -37.4 | 130.5 | 127.7 | 2.73 | 47.865 | |
| 900.0 | 884.4 | 888.2 | 886.5 | 3.0 | 1.7 | -168.97 | -1.7 | -43.7 | 162.1 | 159.0 | 3.17 | 51.151 | |
| 1,000.0 | 976.8 | 981.2 | 978.2 | 3.7 | 2.0 | -165.98 | 12.0 | -51.4 | 198.8 | 195.1 | 3.69 | 53.920 | |
| 1,100.0 | 1,067.1 | 1,071.9 | 1,067.0 | 4.5 | 2.3 | -163.35 | 27.8 | -60.3 | 240.3 | 236.1 | 4.29 | 56.076 | |
| 1,200.0 | 1,155.2 | 1,160.3 | 1,153.0 | 5.4 | 2.6 | -161.21 | 45.5 | -70.3 | 286.2 | 281.2 | 4.98 | 57.435 | |
| 1,300.0 | 1,243.1 | 1,247.7 | 1,237.5 | 6.3 | 3.0 | -159.37 | 65.4 | -81.4 | 332.9 | 327.1 | 5.78 | 57.580 | |
| 1,400.0 | 1,330.9 | 1,334.5 | 1,320.5 | 7.2 | 3.5 | -157.53 | 87.3 | -93.7 | 380.1 | 373.4 | 6.66 | 57.035 | |
| 1,500.0 | 1,418.7 | 1,420.8 | 1,402.3 | 8.1 | 4.0 | -155.73 | 111.1 | -107.1 | 427.8 | 420.2 | 7.62 | 56.158 | |
| 1,600.0 | 1,506.6 | 1,507.8 | 1,484.6 | 9.0 | 4.5 | -154.18 | 135.7 | -120.9 | 475.9 | 467.3 | 8.60 | 55.330 | |
| 1,700.0 | 1,594.4 | 1,594.8 | 1,567.0 | 9.9 | 5.0 | -152.91 | 160.3 | -134.7 | 524.2 | 514.6 | 9.59 | 54.636 | |
| 1,800.0 | 1,682.2 | 1,681.8 | 1,649.3 | 10.8 | 5.5 | -151.86 | 184.8 | -148.5 | 572.7 | 562.1 | 10.60 | 54.053 | |
| 1,900.0 | 1,770.1 | 1,768.8 | 1,731.6 | 11.6 | 6.0 | -150.97 | 209.4 | -162.3 | 621.3 | 609.7 | 11.60 | 53.561 | |
| 2,000.0 | 1,857.9 | 1,855.8 | 1,813.9 | 12.5 | 6.5 | -150.20 | 234.0 | -176.2 | 670.0 | 657.4 | 12.61 | 53.142 | |
| 2,100.0 | 1,945.7 | 1,942.8 | 1,896.2 | 13.4 | 7.0 | -149.54 | 258.6 | -190.0 | 718.8 | 705.2 | 13.62 | 52.783 | |
| 2,200.0 | 2,033.6 | 2,029.8 | 1,978.5 | 14.3 | 7.5 | -148.97 | 283.2 | -203.8 | 767.7 | 753.0 | 14.63 | 52.471 | |
| 2,300.0 | 2,121.4 | 2,116.8 | 2,060.8 | 15.2 | 8.0 | -148.46 | 307.7 | -217.6 | 816.6 | 800.9 | 15.64 | 52.199 | |
| 2,400.0 | 2,209.2 | 2,203.9 | 2,143.2 | 16.1 | 8.5 | -148.01 | 332.3 | -231.4 | 865.5 | 848.8 | 16.66 | 51.960 | |
| 2,500.0 | 2,297.1 | 2,290.9 | 2,225.5 | 17.0 | 9.0 | -147.60 | 356.9 | -245.2 | 914.5 | 896.8 | 17.67 | 51.747 | |
| 2,600.0 | 2,384.9 | 2,381.3 | 2,311.2 | 17.9 | 9.5 | -147.25 | 382.2 | -259.4 | 963.4 | 944.7 | 18.69 | 51.540 | |
| 2,700.0 | 2,472.7 | 2,477.0 | 2,402.6 | 18.8 | 10.0 | -147.08 | 406.8 | -273.2 | 1,011.8 | 992.1 | 19.66 | 51.466 | |
| 2,800.0 | 2,560.6 | 2,573.7 | 2,495.9 | 19.7 | 10.5 | -147.11 | 428.9 | -285.6 | 1,059.4 | 1,038.9 | 20.55 | 51.560 | |
| 2,900.0 | 2,648.4 | 2,671.1 | 2,590.7 | 20.6 | 10.9 | -147.34 | 448.3 | -296.6 | 1,106.3 | 1,084.9 | 21.35 | 51.813 | |
| 3,000.0 | 2,736.2 | 2,769.0 | 2,686.7 | 21.5 | 11.2 | -147.72 | 465.0 | -306.0 | 1,152.5 | 1,130.4 | 22.07 | 52.217 | |
| 3,100.0 | 2,824.4 | 2,867.5 | 2,783.9 | 22.4 | 11.5 | -148.64 | 479.0 | -313.8 | 1,197.4 | 1,174.7 | 22.71 | 52.731 | |
| 3,200.0 | 2,914.7 | 2,968.3 | 2,883.9 | 23.1 | 11.8 | -149.82 | 490.2 | -320.1 | 1,238.0 | 1,214.7 | 23.25 | 53.248 | |
| 3,300.0 | 3,007.1 | 3,071.3 | 2,986.4 | 23.8 | 12.0 | -150.89 | 498.5 | -324.8 | 1,273.8 | 1,250.1 | 23.70 | 53.755 | |
| 3,400.0 | 3,101.4 | 3,176.1 | 3,091.1 | 24.4 | 12.1 | -151.87 | 503.7 | -327.7 | 1,304.5 | 1,280.5 | 24.04 | 54.269 | |
| 3,500.0 | 3,197.3 | 3,282.3 | 3,197.2 | 24.9 | 12.2 | -152.78 | 505.5 | -328.7 | 1,330.2 | 1,306.0 | 24.28 | 54.795 | |
| 3,600.0 | 3,294.5 | 3,379.8 | 3,294.7 | 25.3 | 12.3 | -153.52 | 505.5 | -328.7 | 1,351.1 | 1,326.6 | 24.48 | 55.203 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 44B-14 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -140.70 | -37.9 | -31.0 | 49.0 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -140.70 | -37.9 | -31.0 | 49.0 | 48.8 | 0.26 | 191.708 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -140.70 | -37.9 | -31.0 | 49.0 | 48.4 | 0.60 | 81.048 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | 173.61 | -37.9 | -31.0 | 51.6 | 50.7 | 0.95 | 54.154 | |
| 400.0 | 399.6 | 399.8 | 399.8 | 0.7 | 0.7 | 174.43 | -37.9 | -31.0 | 59.4 | 58.1 | 1.30 | 45.737 | |
| 500.0 | 498.8 | 499.0 | 499.0 | 1.0 | 0.8 | 175.40 | -37.9 | -31.0 | 72.4 | 70.8 | 1.64 | 44.128 | SF |
| 600.0 | 597.1 | 596.2 | 596.2 | 1.4 | 1.0 | 177.80 | -36.7 | -33.1 | 91.2 | 89.2 | 1.98 | 46.094 | |
| 700.0 | 694.3 | 691.2 | 690.9 | 1.8 | 1.2 | -178.23 | -33.2 | -39.4 | 116.5 | 114.2 | 2.32 | 50.165 | |
| 800.0 | 790.2 | 784.9 | 784.0 | 2.4 | 1.4 | -174.38 | -27.9 | -48.6 | 148.6 | 145.9 | 2.69 | 55.327 | |
| 900.0 | 884.4 | 877.5 | 875.9 | 3.0 | 1.6 | -171.94 | -22.6 | -57.9 | 186.0 | 182.9 | 3.06 | 60.758 | |
| 1,000.0 | 976.8 | 968.0 | 965.8 | 3.7 | 1.8 | -170.42 | -17.4 | -67.0 | 228.3 | 224.8 | 3.44 | 66.322 | |
| 1,100.0 | 1,067.1 | 1,056.2 | 1,053.4 | 4.5 | 2.1 | -169.46 | -12.4 | -75.9 | 275.2 | 271.4 | 3.82 | 71.965 | |
| 1,200.0 | 1,155.2 | 1,142.2 | 1,138.9 | 5.4 | 2.3 | -168.99 | -7.4 | -84.6 | 326.2 | 321.9 | 4.23 | 77.169 | |
| 1,300.0 | 1,243.1 | 1,227.9 | 1,224.0 | 6.3 | 2.5 | -168.79 | -2.5 | -93.2 | 377.7 | 373.1 | 4.66 | 81.130 | |
| 1,400.0 | 1,330.9 | 1,313.6 | 1,309.1 | 7.2 | 2.7 | -168.64 | 2.4 | -101.8 | 429.3 | 424.2 | 5.09 | 84.360 | |
| 1,500.0 | 1,418.7 | 1,399.3 | 1,394.2 | 8.1 | 2.9 | -168.52 | 7.3 | -110.4 | 480.8 | 475.3 | 5.52 | 87.037 | |
| 1,600.0 | 1,506.6 | 1,485.0 | 1,479.3 | 9.0 | 3.2 | -168.43 | 12.2 | -119.1 | 532.4 | 526.4 | 5.96 | 89.288 | |
| 1,700.0 | 1,594.4 | 1,570.6 | 1,564.4 | 9.9 | 3.4 | -168.35 | 17.2 | -127.7 | 583.9 | 577.5 | 6.40 | 91.204 | |
| 1,800.0 | 1,682.2 | 1,656.3 | 1,649.5 | 10.8 | 3.6 | -168.29 | 22.1 | -136.3 | 635.5 | 628.6 | 6.84 | 92.855 | |
| 1,900.0 | 1,770.1 | 1,742.0 | 1,734.6 | 11.6 | 3.8 | -168.23 | 27.0 | -145.0 | 687.1 | 679.8 | 7.29 | 94.290 | |
| 2,000.0 | 1,857.9 | 1,827.7 | 1,819.7 | 12.5 | 4.1 | -168.18 | 31.9 | -153.6 | 738.6 | 730.9 | 7.73 | 95.549 | |
| 2,100.0 | 1,945.7 | 1,913.4 | 1,904.8 | 13.4 | 4.3 | -168.14 | 36.8 | -162.2 | 790.2 | 782.0 | 8.17 | 96.661 | |
| 2,200.0 | 2,033.6 | 1,999.1 | 1,989.9 | 14.3 | 4.5 | -168.10 | 41.8 | -170.8 | 841.7 | 833.1 | 8.62 | 97.651 | |
| 2,300.0 | 2,121.4 | 2,084.7 | 2,075.1 | 15.2 | 4.7 | -168.07 | 46.7 | -179.5 | 893.3 | 884.2 | 9.07 | 98.537 | |
| 2,400.0 | 2,209.2 | 2,170.4 | 2,160.2 | 16.1 | 5.0 | -168.04 | 51.6 | -188.1 | 944.8 | 935.3 | 9.51 | 99.334 | |
| 2,500.0 | 2,297.1 | 2,256.1 | 2,245.3 | 17.0 | 5.2 | -168.02 | 56.5 | -196.7 | 996.4 | 986.4 | 9.96 | 100.056 | |
| 2,600.0 | 2,384.9 | 2,341.8 | 2,330.4 | 17.9 | 5.4 | -167.99 | 61.4 | -205.3 | 1,048.0 | 1,037.6 | 10.41 | 100.711 | |
| 2,700.0 | 2,472.7 | 2,427.5 | 2,415.5 | 18.8 | 5.6 | -167.97 | 66.3 | -214.0 | 1,099.5 | 1,088.7 | 10.85 | 101.310 | |
| 2,800.0 | 2,560.6 | 2,513.2 | 2,500.6 | 19.7 | 5.9 | -167.95 | 71.3 | -222.6 | 1,151.1 | 1,139.8 | 11.30 | 101.859 | |
| 2,900.0 | 2,648.4 | 2,598.8 | 2,585.7 | 20.6 | 6.1 | -167.93 | 76.2 | -231.2 | 1,202.6 | 1,190.9 | 11.75 | 102.363 | |
| 3,000.0 | 2,736.2 | 2,684.5 | 2,670.8 | 21.5 | 6.3 | -167.92 | 81.1 | -239.9 | 1,254.2 | 1,242.0 | 12.20 | 102.828 | |
| 3,100.0 | 2,824.4 | 2,770.6 | 2,756.3 | 22.4 | 6.6 | -168.09 | 86.0 | -248.5 | 1,305.1 | 1,292.5 | 12.68 | 102.964 | |
| 3,200.0 | 2,914.7 | 2,858.8 | 2,843.9 | 23.1 | 6.8 | -168.35 | 91.1 | -257.4 | 1,352.1 | 1,338.9 | 13.18 | 102.601 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

# Cathedral Energy Services

## Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte 44C-14 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -142.34 | -45.0 | -34.7 | 56.9 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -142.34 | -45.0 | -34.7 | 56.9 | 56.6 | 0.26 | 222.264 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -142.34 | -45.0 | -34.7 | 56.9 | 56.3 | 0.60 | 94.007 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | 172.00 | -45.0 | -34.7 | 59.5 | 58.5 | 0.95 | 62.368 | |
| 400.0 | 399.6 | 399.8 | 399.8 | 0.7 | 0.7 | 172.90 | -45.0 | -34.7 | 67.2 | 65.9 | 1.30 | 51.734 | |
| 500.0 | 498.8 | 495.8 | 495.8 | 1.0 | 0.8 | 175.07 | -45.4 | -37.1 | 82.1 | 80.5 | 1.64 | 50.146 | SF |
| 600.0 | 597.1 | 589.0 | 588.7 | 1.4 | 1.0 | 178.20 | -46.7 | -43.8 | 106.1 | 104.2 | 1.97 | 53.911 | |
| 700.0 | 694.3 | 679.1 | 678.3 | 1.8 | 1.2 | 179.69 | -51.2 | -52.1 | 139.1 | 136.8 | 2.28 | 60.912 | |
| 800.0 | 790.2 | 770.9 | 769.5 | 2.4 | 1.4 | -179.75 | -57.7 | -60.8 | 178.5 | 175.9 | 2.59 | 68.821 | |
| 900.0 | 884.4 | 860.6 | 858.6 | 3.0 | 1.6 | -179.40 | -64.0 | -69.3 | 222.7 | 219.8 | 2.89 | 77.011 | |
| 1,000.0 | 976.8 | 947.9 | 945.2 | 3.7 | 1.9 | -179.16 | -70.1 | -77.6 | 271.5 | 268.3 | 3.18 | 85.458 | |
| 1,100.0 | 1,067.1 | 1,032.5 | 1,029.2 | 4.5 | 2.1 | -179.00 | -76.0 | -85.6 | 324.8 | 321.4 | 3.45 | 94.168 | |
| 1,200.0 | 1,155.2 | 1,114.5 | 1,110.7 | 5.4 | 2.3 | -178.90 | -81.8 | -93.3 | 382.0 | 378.3 | 3.73 | 102.285 | |
| 1,300.0 | 1,243.1 | 1,196.1 | 1,191.7 | 6.3 | 2.5 | -178.85 | -87.5 | -101.1 | 439.8 | 435.7 | 4.04 | 108.724 | |
| 1,400.0 | 1,330.9 | 1,277.8 | 1,272.8 | 7.2 | 2.7 | -178.81 | -93.3 | -108.8 | 497.5 | 493.2 | 4.35 | 114.253 | |
| 1,500.0 | 1,418.7 | 1,359.4 | 1,353.8 | 8.1 | 2.9 | -178.77 | -99.0 | -116.6 | 555.3 | 550.6 | 4.66 | 119.057 | |
| 1,600.0 | 1,506.6 | 1,441.0 | 1,434.9 | 9.0 | 3.2 | -178.74 | -104.7 | -124.3 | 613.0 | 608.1 | 4.97 | 123.270 | |
| 1,700.0 | 1,594.4 | 1,522.6 | 1,516.0 | 9.9 | 3.4 | -178.72 | -110.4 | -132.0 | 670.8 | 665.5 | 5.28 | 126.996 | |
| 1,800.0 | 1,682.2 | 1,604.3 | 1,597.0 | 10.8 | 3.6 | -178.70 | -116.2 | -139.8 | 728.6 | 723.0 | 5.59 | 130.314 | |
| 1,900.0 | 1,770.1 | 1,685.9 | 1,678.1 | 11.6 | 3.8 | -178.69 | -121.9 | -147.5 | 786.3 | 780.4 | 5.90 | 133.286 | |
| 2,000.0 | 1,857.9 | 1,767.5 | 1,759.1 | 12.5 | 4.0 | -178.67 | -127.6 | -155.2 | 844.1 | 837.9 | 6.21 | 135.966 | |
| 2,100.0 | 1,945.7 | 1,849.2 | 1,840.2 | 13.4 | 4.2 | -178.66 | -133.4 | -163.0 | 901.9 | 895.3 | 6.52 | 138.394 | |
| 2,200.0 | 2,033.6 | 1,930.8 | 1,921.3 | 14.3 | 4.5 | -178.65 | -139.1 | -170.7 | 959.6 | 952.8 | 6.82 | 140.605 | |
| 2,300.0 | 2,121.4 | 2,012.4 | 2,002.3 | 15.2 | 4.7 | -178.64 | -144.8 | -178.5 | 1,017.4 | 1,010.3 | 7.13 | 142.627 | |
| 2,400.0 | 2,209.2 | 2,094.1 | 2,083.4 | 16.1 | 4.9 | -178.63 | -150.6 | -186.2 | 1,075.2 | 1,067.7 | 7.44 | 144.482 | |
| 2,500.0 | 2,297.1 | 2,175.7 | 2,164.4 | 17.0 | 5.1 | -178.62 | -156.3 | -193.9 | 1,132.9 | 1,125.2 | 7.75 | 146.190 | |
| 2,600.0 | 2,384.9 | 2,257.3 | 2,245.5 | 17.9 | 5.3 | -178.62 | -162.0 | -201.7 | 1,190.7 | 1,182.6 | 8.06 | 147.769 | |
| 2,700.0 | 2,472.7 | 2,338.9 | 2,326.6 | 18.8 | 5.6 | -178.61 | -167.7 | -209.4 | 1,248.4 | 1,240.1 | 8.37 | 149.233 | |
| 2,800.0 | 2,560.6 | 2,420.6 | 2,407.6 | 19.7 | 5.8 | -178.61 | -173.5 | -217.1 | 1,306.2 | 1,297.5 | 8.67 | 150.593 | |

# Cathedral Energy Services

## Anticollision Report

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S14-T7S-R96W - Nolte SWD 1-14 - DD - Plan #3

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.2 | 0.2 | 0.0 | 0.0 | -143.58 | -52.1 | -38.4 | 64.8 | | | | |
| 100.0 | 100.0 | 100.2 | 100.2 | 0.1 | 0.1 | -143.58 | -52.1 | -38.4 | 64.8 | 64.5 | 0.26 | 252.916 | |
| 200.0 | 200.0 | 200.2 | 200.2 | 0.3 | 0.3 | -143.58 | -52.1 | -38.4 | 64.8 | 64.1 | 0.61 | 107.013 | CC, ES |
| 300.0 | 300.0 | 300.2 | 300.2 | 0.5 | 0.5 | 170.76 | -52.1 | -38.4 | 67.3 | 66.4 | 0.95 | 70.614 | |
| 400.0 | 399.6 | 399.8 | 399.8 | 0.7 | 0.7 | 171.69 | -52.1 | -38.4 | 75.1 | 73.8 | 1.30 | 57.755 | |
| 500.0 | 498.8 | 499.0 | 499.0 | 1.0 | 0.8 | 172.87 | -52.1 | -38.4 | 88.0 | 86.4 | 1.64 | 53.571 | SF |
| 600.0 | 597.1 | 597.3 | 597.3 | 1.4 | 1.0 | 174.03 | -52.1 | -38.4 | 106.1 | 104.2 | 1.98 | 53.587 | |
| 700.0 | 694.3 | 694.5 | 694.5 | 1.8 | 1.2 | 175.04 | -52.1 | -38.4 | 129.4 | 127.1 | 2.31 | 55.993 | |
| 800.0 | 790.2 | 790.4 | 790.4 | 2.4 | 1.3 | 175.87 | -52.1 | -38.4 | 157.7 | 155.1 | 2.63 | 59.922 | |
| 900.0 | 884.4 | 884.6 | 884.6 | 3.0 | 1.5 | 176.53 | -52.1 | -38.4 | 191.0 | 188.1 | 2.94 | 64.910 | |
| 1,000.0 | 976.8 | 977.0 | 977.0 | 3.7 | 1.7 | 177.04 | -52.1 | -38.4 | 229.2 | 226.0 | 3.24 | 70.693 | |
| 1,100.0 | 1,067.1 | 1,067.3 | 1,067.3 | 4.5 | 1.8 | 177.45 | -52.1 | -38.4 | 272.2 | 268.7 | 3.53 | 77.113 | |
| 1,200.0 | 1,155.2 | 1,155.4 | 1,155.4 | 5.4 | 2.0 | 177.79 | -52.1 | -38.4 | 319.4 | 315.5 | 3.83 | 83.385 | |
| 1,300.0 | 1,243.1 | 1,243.3 | 1,243.3 | 6.3 | 2.1 | 178.08 | -52.1 | -38.4 | 367.2 | 363.0 | 4.15 | 88.400 | |
| 1,400.0 | 1,330.9 | 1,331.1 | 1,331.1 | 7.2 | 2.3 | 178.30 | -52.1 | -38.4 | 414.9 | 410.5 | 4.48 | 92.702 | |
| 1,500.0 | 1,418.7 | 1,418.9 | 1,418.9 | 8.1 | 2.4 | 178.48 | -52.1 | -38.4 | 462.7 | 457.9 | 4.80 | 96.433 | |
| 1,600.0 | 1,506.6 | 1,506.8 | 1,506.8 | 9.0 | 2.6 | 178.62 | -52.1 | -38.4 | 510.5 | 505.4 | 5.12 | 99.700 | |
| 1,700.0 | 1,594.4 | 1,594.6 | 1,594.6 | 9.9 | 2.7 | 178.74 | -52.1 | -38.4 | 558.3 | 552.9 | 5.44 | 102.586 | |
| 1,800.0 | 1,682.2 | 1,682.4 | 1,682.4 | 10.8 | 2.9 | 178.84 | -52.1 | -38.4 | 606.1 | 600.4 | 5.76 | 105.152 | |
| 1,900.0 | 1,770.1 | 1,770.3 | 1,770.3 | 11.6 | 3.0 | 178.92 | -52.1 | -38.4 | 653.9 | 647.8 | 6.09 | 107.450 | |
| 2,000.0 | 1,857.9 | 1,858.1 | 1,858.1 | 12.5 | 3.2 | 179.00 | -52.1 | -38.4 | 701.7 | 695.3 | 6.41 | 109.520 | |
| 2,100.0 | 1,945.7 | 1,945.9 | 1,945.9 | 13.4 | 3.4 | 179.06 | -52.1 | -38.4 | 749.5 | 742.8 | 6.73 | 111.394 | |
| 2,200.0 | 2,033.6 | 2,033.8 | 2,033.8 | 14.3 | 3.5 | 179.12 | -52.1 | -38.4 | 797.3 | 790.3 | 7.05 | 113.098 | |
| 2,300.0 | 2,121.4 | 2,121.6 | 2,121.6 | 15.2 | 3.7 | 179.17 | -52.1 | -38.4 | 845.1 | 837.7 | 7.37 | 114.655 | |
| 2,400.0 | 2,209.2 | 2,209.4 | 2,209.4 | 16.1 | 3.8 | 179.21 | -52.1 | -38.4 | 892.9 | 885.2 | 7.69 | 116.083 | |
| 2,500.0 | 2,297.1 | 2,297.3 | 2,297.3 | 17.0 | 4.0 | 179.25 | -52.1 | -38.4 | 940.7 | 932.7 | 8.01 | 117.397 | |
| 2,600.0 | 2,384.9 | 2,385.1 | 2,385.1 | 17.9 | 4.1 | 179.29 | -52.1 | -38.4 | 988.5 | 980.2 | 8.33 | 118.611 | |
| 2,700.0 | 2,472.7 | 2,472.9 | 2,472.9 | 18.8 | 4.3 | 179.32 | -52.1 | -38.4 | 1,036.3 | 1,027.7 | 8.66 | 119.735 | |
| 2,800.0 | 2,560.6 | 2,560.8 | 2,560.8 | 19.7 | 4.4 | 179.35 | -52.1 | -38.4 | 1,084.1 | 1,075.2 | 8.98 | 120.780 | |
| 2,900.0 | 2,648.4 | 2,648.6 | 2,648.6 | 20.6 | 4.6 | 179.38 | -52.1 | -38.4 | 1,131.9 | 1,122.6 | 9.30 | 121.753 | |
| 3,000.0 | 2,736.2 | 2,736.4 | 2,736.4 | 21.5 | 4.7 | 179.40 | -52.1 | -38.4 | 1,179.7 | 1,170.1 | 9.62 | 122.661 | |
| 3,100.0 | 2,824.4 | 2,824.6 | 2,824.6 | 22.4 | 4.9 | 179.43 | -52.1 | -38.4 | 1,226.9 | 1,216.9 | 9.99 | 122.822 | |
| 3,200.0 | 2,914.7 | 2,914.9 | 2,914.9 | 23.1 | 5.0 | 179.47 | -52.1 | -38.4 | 1,269.8 | 1,259.5 | 10.40 | 122.145 | |
| 3,300.0 | 3,007.1 | 3,007.3 | 3,007.3 | 23.8 | 5.2 | 179.49 | -52.1 | -38.4 | 1,308.0 | 1,297.2 | 10.79 | 121.200 | |
| 3,400.0 | 3,101.4 | 3,101.6 | 3,101.6 | 24.4 | 5.4 | 179.52 | -52.1 | -38.4 | 1,341.3 | 1,330.1 | 11.18 | 120.019 | |

| | | | |
|---|---|---|---|
| **Company:** | Caerus Oil & Gas (NAD 27) | **Local Co-ordinate Reference:** | Well Nolte 13C-13 |
| **Project:** | Garfield County, CO | **TVD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Reference Site:** | S14-T7S-R96W | **MD Reference:** | WELL @ 5117.6ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | Nolte 13C-13 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0ft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | DD | **Database:** | USA EDM 5000 Multi Users DB |
| **Reference Design:** | Plan #3 | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to WELL @ 5117.6ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °
Coordinates are relative to: Nolte 13C-13
Coordinate System is US State Plane 1927 (Exact solution), Colorado Central 502
Grid Convergence at Surface is: -1.62°