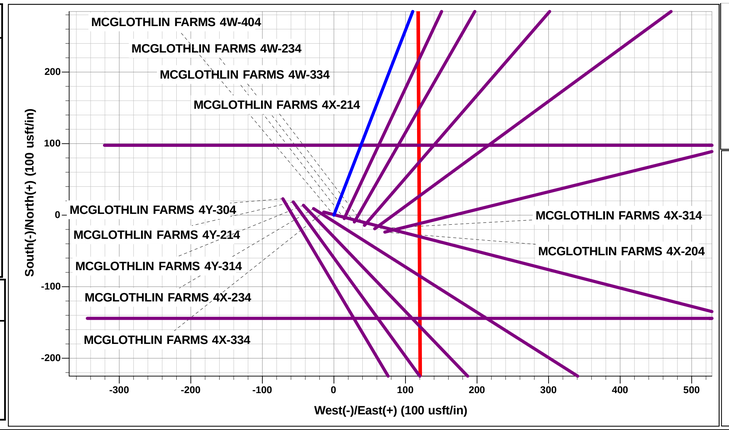
Project: WELD COUNTY, COLORADO
Site: SE SE SEC. 4 T5N R64W 6th P.M.
Well: MCGLOTHLIN FARMS 4W-404
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

## ANNOTATIONS

| TVD | MD | Inc | Azi | +N/-S | +E/-W | VSect | Dep | Annotation |
|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | SHL:1185ft FSL & 579ft FEL of Sec 4 |
| 800.0 | 800.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | START NUDGE #1(2°/100ft BUR) |
| 1500.0 | 1507.2 | 14.14 | 21.16 | 81.0 | 31.3 | -15.1 | 86.8 | SURFACE CASING |
| 1563.1 | 1572.2 | 14.14 | 21.16 | 95.8 | 37.1 | -17.9 | 102.7 | START NUDGE #2 (2°/100ft BUR) |
| 1798.2 | 1817.6 | 19.05 | 21.16 | 161.2 | 62.4 | -30.1 | 172.8 | EOB TO 19.05° INC |
| 5310.5 | 5533.5 | 19.05 | 21.16 | 1292.3 | 500.2 | -241.5 | 1385.8 | END OF TANGENT |
| 6245.7 | 6486.1 | 0.00 | 21.16 | 1438.7 | 556.9 | -268.9 | 1542.7 | EOD TO VERTICAL |
| 6275.7 | 6516.1 | 0.00 | 0.00 | 1438.7 | 556.9 | -268.9 | 1542.7 | KOP (8°/100ft BUR) |
| 6473.1 | 6716.1 | 16.00 | 270.00 | 1438.7 | 529.2 | -241.7 | 1570.5 | START 12°/100ft BUR |
| 6819.0 | 7332.8 | 90.00 | 270.00 | 1438.7 | 70.2 | 208.7 | 2029.4 | HZ LP *NEW*: 2648.1ft FNL & 501.7ft FEL of Sec 4 |
| 6819.0 | 14720.3 | 90.00 | 270.00 | 1438.7 | -7317.3 | 7457.4 | 9416.9 | BHL: 2580ft FNL & 2611ft FEL of Sec 5 |

## WELLBORE TARGET DETAILS (LAT/LONG)

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude |
|---|---|---|---|---|---|
| KOP - MCGLOTHLIN FARMS 4W-404 | 6275.7 | 1438.7 | 556.9 | 40.428195 | -104.545822 |
| BHL - MCGLOTHLIN FARMS 4W-404 | 6819.0 | 1438.7 | -7317.3 | 40.428192 | -104.574105 |
| HZ LP *NEW* - MCGLOTHLIN FARMS 4W-404 | 6819.0 | 1438.7 | 70.2 | 40.428195 | -104.547570 |

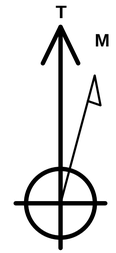



**PROPOSED LOCAL COORDINATES:**

SHL: 1185ft FSL & 579ft FEL of Sec 4

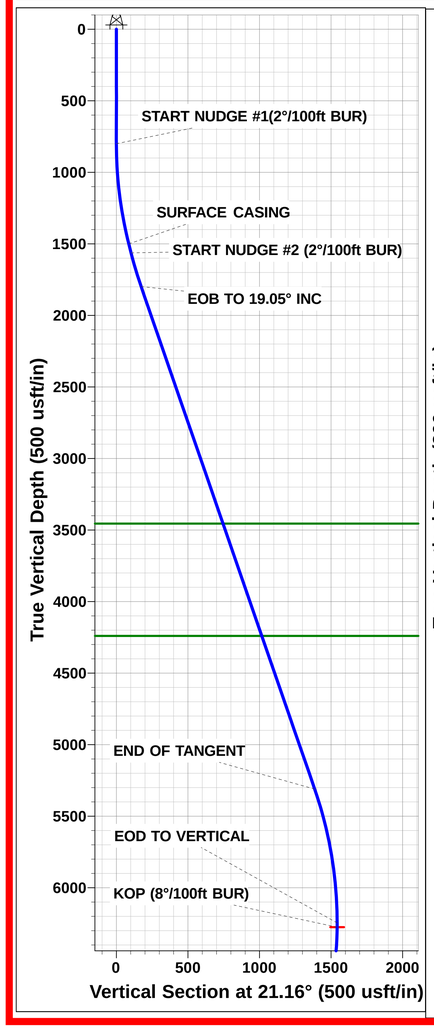
HZ LP *NEW*: 2648.1ft FNL & 501.7ft FEL of Sec 4

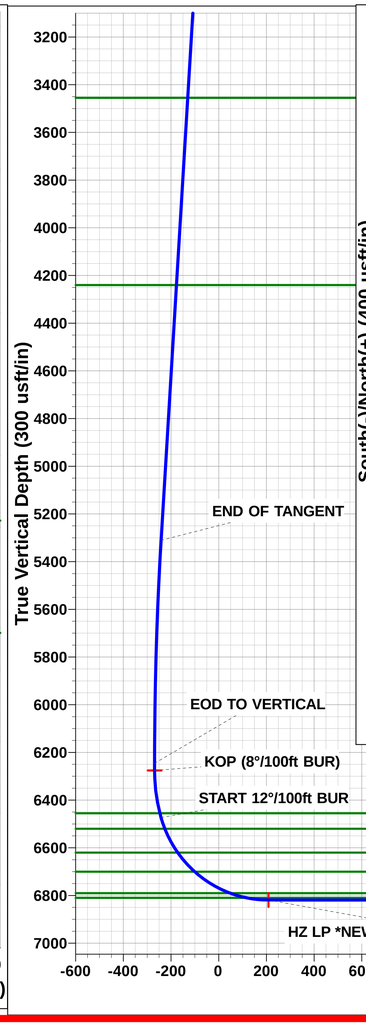
BHL: 2580ft FNL & 2611ft FEL of Sec 5

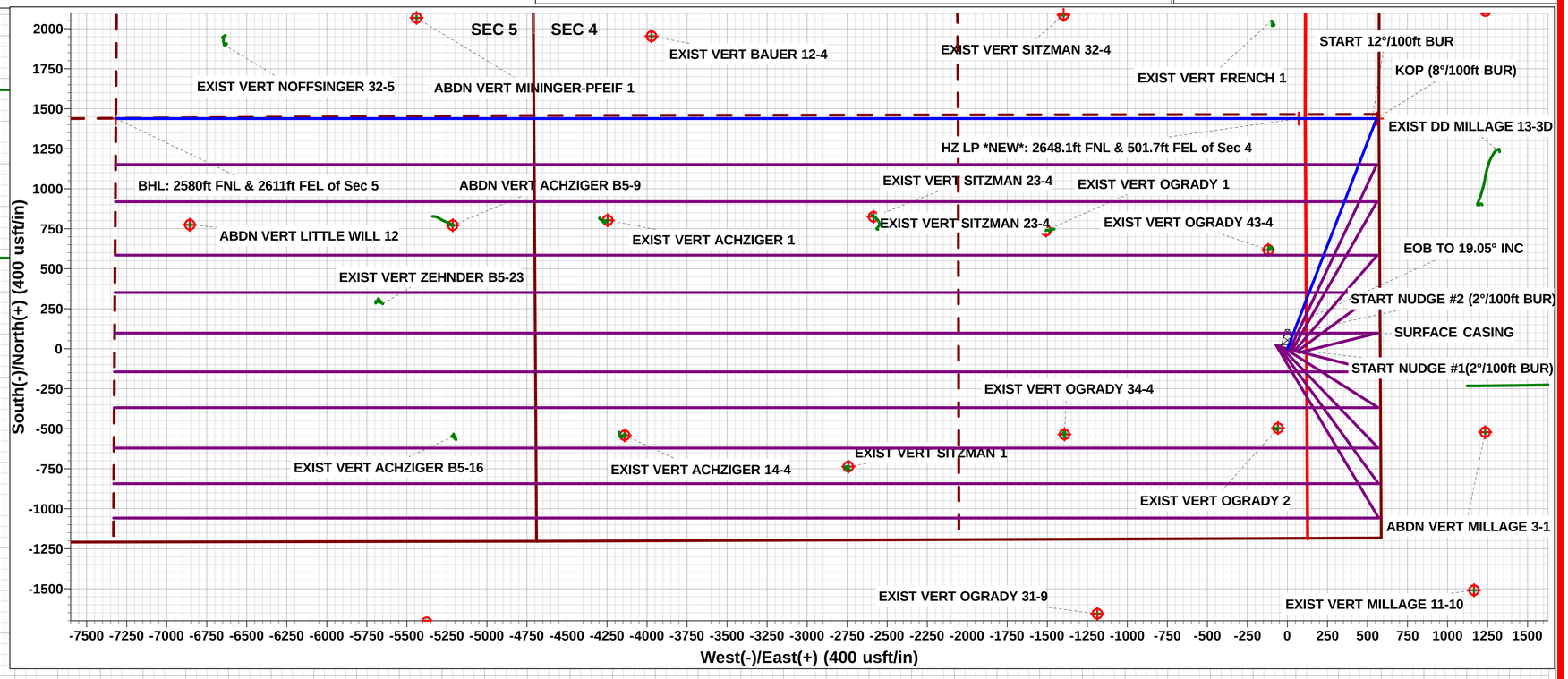



Azimuths to True North
Magnetic North: 8.19°

Magnetic Field
Strength: 52530.1snT
Dip Angle: 66.93°
Date: 29/07/2016
Model: IGRF2015



# PDC ENERGY

**WELD COUNTY, COLORADO**
**SE SE SEC. 4 T5N R64W 6th P.M.**
**MCGLOTHLIN FARMS 4W-404**

**ORIGINAL WELLBORE**
**PROPOSAL #1**

# Anticollision Report

**06 August, 2016**

total

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

| | | | |
|---|---|---|---|
| **Reference** | PROPOSAL #1 | | |
| **Filter type:** | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| **Interpolation Method:** | MD + Stations Interval 100.0usft | **Error Model:** | ISCWSA |
| **Depth Range:** | Unlimited | **Scan Method:** | Closest Approach 3D |
| **Results Limited by:** | Maximum center-center distance of 10,000.0 us | **Error Surface:** | Elliptical Conic |
| **Warning Levels Evaluated at:** | 2.00 **Sigma** | **Casing Method:** | Not applied |

**Survey Tool Program** **Date** 06/08/2016

| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.0 | 14,720.3 | PROPOSAL #1 (ORIGINAL WELLBORE) | MWD | MWD - Standard |

**Summary**

| Site Name<br>Offset Well - Wellbore - Design | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|
| NW NW SEC. 5 T5N R64W 6th P.M. | | | | | | |
| ABDN VERT LITTLE WILL #12 - Wellbore #1 - Design # | 14,258.4 | 6,802.0 | 663.9 | 327.5 | 1.974 | CC, ES |
| ABDN VERT LITTLE WILL #12 - Wellbore #1 - Design # | 14,300.0 | 6,802.0 | 665.3 | 327.7 | 1.971 | SF |
| ABDN VERT NOFFSINGER #1 - Wellbore #1 - Wellbore | 14,720.3 | 6,400.0 | 1,039.0 | 845.9 | 5.382 | CC, ES, SF |
| EHRLICH 5M-243 - ORIGINAL WELLBORE - PROPOSA | 14,720.3 | 9,255.6 | 328.0 | 244.5 | 3.928 | CC, ES, SF |
| EHRLICH 5M-343 - ORIGINAL WELLBORE - PROPOSA | 14,720.3 | 9,216.5 | 563.8 | 481.7 | 6.865 | CC, ES, SF |
| EXIST VERT NOFFSINGER #21-5 - Wellbore #1 - Wellb | 14,720.3 | 6,833.7 | 2,017.9 | 1,801.2 | 9.309 | CC, ES, SF |
| EXIST VERT NOFFSINGER #32-5 - Wellbore #1 - Wellb | 14,040.2 | 6,810.0 | 519.3 | 321.3 | 2.623 | CC, ES |
| EXIST VERT NOFFSINGER #32-5 - Wellbore #1 - Wellb | 14,100.0 | 6,810.7 | 522.8 | 323.1 | 2.618 | SF |
| EXIST VERT PLUMB #B5-11 - Wellbore #1 - Wellbore #: | 14,720.3 | 6,750.0 | 1,059.0 | 842.9 | 4.900 | CC, ES, SF |
| EXIST VERT PLUMB B5-14 - Wellbore #1 - Wellbore #1 | 14,720.3 | 6,753.5 | 1,975.1 | 1,758.5 | 9.118 | CC, ES, SF |
| SE SE SEC. 4 T5N R64W 6th P.M. | | | | | | |
| ABDN VERT ACHZIGER B5-9 - Wellbore #1 - Wellbore # | 12,743.1 | 6,800.0 | 611.5 | 450.2 | 3.791 | CC, ES |
| ABDN VERT ACHZIGER B5-9 - Wellbore #1 - Wellbore # | 12,800.0 | 6,800.0 | 614.1 | 451.2 | 3.771 | SF |
| ABDN VERT MILLAGE 3-1 - Wellbore #1 - Design #1 | 800.0 | 787.0 | 1,340.9 | 1,325.9 | 89.888 | CC |
| ABDN VERT MILLAGE 3-1 - Wellbore #1 - Design #1 | 1,507.2 | 1,487.0 | 1,346.3 | 1,315.3 | 43.531 | ES |
| ABDN VERT MILLAGE 3-1 - Wellbore #1 - Design #1 | 6,716.1 | 6,460.1 | 2,083.4 | 1,932.4 | 13.801 | SF |
| ABDN VERT MININGER-PFEIF 1 - Wellbore #1 - Design | 12,842.3 | 6,822.0 | 629.0 | 332.0 | 2.118 | CC, ES |
| ABDN VERT MININGER-PFEIF 1 - Wellbore #1 - Design | 12,900.0 | 6,822.0 | 631.6 | 333.0 | 2.115 | SF |
| ABDN VERT OGRADY 3 - Wellbore #1 - Design #1 | 800.0 | 792.0 | 2,325.0 | 2,310.0 | 155.327 | CC |
| ABDN VERT OGRADY 3 - Wellbore #1 - Design #1 | 900.0 | 892.0 | 2,326.7 | 2,309.5 | 135.271 | ES |
| ABDN VERT OGRADY 3 - Wellbore #1 - Design #1 | 10,400.0 | 6,811.0 | 3,675.5 | 3,446.4 | 16.043 | SF |
| EXIST DD MILLAGE 13-3D - Wellbore #1 - Wellbore #1 | 5,203.5 | 5,035.9 | 795.1 | 757.0 | 20.868 | CC |
| EXIST DD MILLAGE 13-3D - Wellbore #1 - Wellbore #1 | 5,300.0 | 5,126.0 | 795.8 | 757.0 | 20.473 | ES |
| EXIST DD MILLAGE 13-3D - Wellbore #1 - Wellbore #1 | 6,550.0 | 6,337.3 | 846.2 | 801.8 | 19.084 | SF |
| EXIST HZ WOLFPACK PC B3-63-1HN - Wellbore #1 - W | 6,650.0 | 10,966.0 | 1,783.7 | 1,633.9 | 11.908 | SF |
| EXIST HZ WOLFPACK PC B3-63-1HN - Wellbore #1 - W | 6,716.1 | 10,966.0 | 1,781.3 | 1,631.8 | 11.914 | ES |
| EXIST HZ WOLFPACK PC B3-63-1HN - Wellbore #1 - W | 6,717.1 | 10,966.0 | 1,781.3 | 1,631.8 | 11.914 | CC |
| EXIST VERT ACHZIGER #B5-16 - Wellbore #1 - Wellbor | 12,611.6 | 6,750.0 | 1,971.8 | 1,814.0 | 12.492 | CC |
| EXIST VERT ACHZIGER #B5-16 - Wellbore #1 - Wellbor | 12,700.0 | 6,750.0 | 1,973.8 | 1,813.5 | 12.312 | ES |
| EXIST VERT ACHZIGER #B5-16 - Wellbore #1 - Wellbor | 13,300.0 | 6,750.0 | 2,088.5 | 1,911.4 | 11.795 | SF |
| EXIST VERT ACHZIGER 14-4 - Wellbore #1 - Wellbore # | 11,577.5 | 6,750.0 | 1,960.5 | 1,831.7 | 15.210 | CC |
| EXIST VERT ACHZIGER 14-4 - Wellbore #1 - Wellbore # | 11,600.0 | 6,750.0 | 1,960.7 | 1,831.2 | 15.138 | ES |
| EXIST VERT ACHZIGER 14-4 - Wellbore #1 - Wellbore # | 12,400.0 | 6,750.0 | 2,126.1 | 1,974.3 | 14.007 | SF |
| EXIST VERT ACHZINGER 1 - Wellbore #1 - Wellbore #1 | 11,701.1 | 6,800.0 | 624.6 | 492.4 | 4.724 | CC, ES |
| EXIST VERT ACHZINGER 1 - Wellbore #1 - Wellbore #1 | 11,800.0 | 6,800.0 | 632.4 | 497.4 | 4.686 | SF |
| EXIST VERT BAUER 12-4 - Wellbore #1 - Design #1 | 11,375.2 | 6,819.0 | 514.7 | 256.4 | 1.993 | CC |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Summary**

| Site Name<br>Offset Well - Wellbore - Design | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|
| SE SE SEC. 4 T5N R64W 6th P.M. | | | | | | |
| EXIST VERT BAUER 12-4 - Wellbore #1 - Design #1 | 11,400.0 | 6,819.0 | 515.3 | 256.3 | 1.990 | ES, SF |
| EXIST VERT BLOSKAS 1 - Wellbore #1 - Design #1 | 11,409.5 | 6,782.0 | 3,353.2 | 3,096.5 | 13.061 | CC |
| EXIST VERT BLOSKAS 1 - Wellbore #1 - Design #1 | 11,500.0 | 6,782.0 | 3,354.4 | 3,095.2 | 12.940 | ES |
| EXIST VERT BLOSKAS 1 - Wellbore #1 - Design #1 | 12,600.0 | 6,782.0 | 3,558.3 | 3,268.4 | 12.276 | SF |
| EXIST VERT BOND 21-9 - Wellbore #1 - Design #1 | 800.0 | 771.0 | 3,287.3 | 3,272.5 | 222.808 | CC |
| EXIST VERT BOND 21-9 - Wellbore #1 - Design #1 | 10,200.0 | 6,790.0 | 3,327.0 | 3,103.6 | 14.893 | ES |
| EXIST VERT BOND 21-9 - Wellbore #1 - Design #1 | 11,500.0 | 6,790.0 | 3,610.0 | 3,350.7 | 13.921 | SF |
| EXIST VERT FLACK 5-3 - Wellbore #1 - Design #1 | 6,516.1 | 6,262.7 | 956.0 | 800.9 | 6.163 | CC, ES, SF |
| EXIST VERT FRENCH 1 - Wellbore #1 - Wellbore #1 | 7,498.1 | 6,799.6 | 582.8 | 558.6 | 24.161 | CC |
| EXIST VERT FRENCH 1 - Wellbore #1 - Wellbore #1 | 7,500.0 | 6,799.6 | 582.8 | 558.6 | 24.137 | ES |
| EXIST VERT FRENCH 1 - Wellbore #1 - Wellbore #1 | 7,800.0 | 6,797.3 | 656.3 | 627.0 | 22.360 | SF |
| EXIST VERT HECKENDORF 1 - Wellbore #1 - Design # | 12,779.1 | 6,783.0 | 3,148.6 | 2,853.7 | 10.678 | CC |
| EXIST VERT HECKENDORF 1 - Wellbore #1 - Design # | 12,900.0 | 6,783.0 | 3,150.9 | 2,852.6 | 10.565 | ES |
| EXIST VERT HECKENDORF 1 - Wellbore #1 - Design # | 13,700.0 | 6,783.0 | 3,280.5 | 2,959.9 | 10.232 | SF |
| EXIST VERT HEINRICH 41-9 - Wellbore #1 - Design #1 | 800.0 | 789.0 | 1,844.5 | 1,829.6 | 123.483 | CC |
| EXIST VERT HEINRICH 41-9 - Wellbore #1 - Design #1 | 900.0 | 889.0 | 1,846.2 | 1,829.0 | 107.520 | ES |
| EXIST VERT HEINRICH 41-9 - Wellbore #1 - Design #1 | 9,400.0 | 6,808.0 | 3,847.2 | 3,645.4 | 19.064 | SF |
| EXIST VERT MILLAGE 11-10 - Wellbore #1 - Design #1 | 800.0 | 780.0 | 1,906.8 | 1,892.0 | 128.443 | CC |
| EXIST VERT MILLAGE 11-10 - Wellbore #1 - Design #1 | 900.0 | 880.0 | 1,907.7 | 1,890.6 | 111.668 | ES |
| EXIST VERT MILLAGE 11-10 - Wellbore #1 - Design #1 | 6,516.1 | 6,255.7 | 3,010.1 | 2,858.9 | 19.898 | SF |
| EXIST VERT OGRADY 1 - Wellbore #1 - Wellbore #1 | 8,859.0 | 6,800.0 | 691.5 | 636.9 | 12.656 | CC, ES |
| EXIST VERT OGRADY 1 - Wellbore #1 - Wellbore #1 | 9,100.0 | 6,800.0 | 732.3 | 671.3 | 12.006 | SF |
| EXIST VERT OGRADY 2 - Wellbore #1 - Wellbore #1 | 253.1 | 246.1 | 499.2 | 498.5 | 722.428 | CC |
| EXIST VERT OGRADY 2 - Wellbore #1 - Wellbore #1 | 300.0 | 292.0 | 499.2 | 498.4 | 604.246 | ES |
| EXIST VERT OGRADY 2 - Wellbore #1 - Wellbore #1 | 14,720.3 | 6,700.0 | 7,504.0 | 7,287.8 | 34.706 | SF |
| EXIST VERT OGRADY 31-9 - Wellbore #1 - Design #1 | 800.0 | 781.0 | 2,037.7 | 2,022.9 | 137.169 | CC |
| EXIST VERT OGRADY 31-9 - Wellbore #1 - Design #1 | 900.0 | 881.0 | 2,039.4 | 2,022.3 | 119.351 | ES |
| EXIST VERT OGRADY 31-9 - Wellbore #1 - Design #1 | 10,100.0 | 6,800.0 | 3,443.4 | 3,222.7 | 15.599 | SF |
| EXIST VERT OGRADY 34-4 - Wellbore #1 - Wellbore #1 | 806.2 | 797.4 | 1,491.0 | 1,488.8 | 683.362 | CC, ES |
| EXIST VERT OGRADY 34-4 - Wellbore #1 - Wellbore #1 | 10,900.0 | 6,769.2 | 2,900.7 | 2,790.6 | 26.348 | SF |
| EXIST VERT OGRADY 43-4 - Wellbore #1 - Wellbore #1 | 2,982.1 | 2,883.1 | 327.9 | 314.8 | 24.975 | CC |
| EXIST VERT OGRADY 43-4 - Wellbore #1 - Wellbore #1 | 3,000.0 | 2,900.0 | 328.0 | 314.7 | 24.762 | ES |
| EXIST VERT OGRADY 43-4 - Wellbore #1 - Wellbore #1 | 3,300.0 | 3,180.0 | 346.3 | 331.4 | 23.313 | SF |
| EXIST VERT SITZMAN 1 - Wellbore #1 - Wellbore #1 | 10,139.3 | 6,700.0 | 2,195.8 | 2,106.7 | 24.646 | CC |
| EXIST VERT SITZMAN 1 - Wellbore #1 - Wellbore #1 | 10,200.0 | 6,700.0 | 2,196.6 | 2,105.9 | 24.204 | ES |
| EXIST VERT SITZMAN 1 - Wellbore #1 - Wellbore #1 | 11,600.0 | 6,700.0 | 2,637.3 | 2,507.9 | 20.378 | SF |
| EXIST VERT SITZMAN 1A - Wellbore #1 - Wellbore #1 | 10,145.9 | 6,700.0 | 717.7 | 628.2 | 8.023 | CC, ES |
| EXIST VERT SITZMAN 1A - Wellbore #1 - Wellbore #1 | 10,300.0 | 6,700.0 | 734.0 | 640.4 | 7.840 | SF |
| EXIST VERT SITZMAN 23-4 - Wellbore #1 - Wellbore #1 | 9,960.4 | 6,600.0 | 723.9 | 642.9 | 8.938 | CC, ES |
| EXIST VERT SITZMAN 23-4 - Wellbore #1 - Wellbore #1 | 10,100.0 | 6,600.0 | 737.3 | 652.6 | 8.707 | SF |
| EXIST VERT SITZMAN 32-4 - Wellbore #1 - Design #1 | 8,800.8 | 6,814.0 | 647.4 | 459.3 | 3.441 | CC, ES |
| EXIST VERT SITZMAN 32-4 - Wellbore #1 - Design #1 | 8,900.0 | 6,814.0 | 654.9 | 464.2 | 3.434 | SF |
| EXIST VERT ZEHNDER B5-23 - Wellbore #1 - Wellbore | 13,096.2 | 6,800.0 | 1,153.7 | 982.5 | 6.737 | CC |
| EXIST VERT ZEHNDER B5-23 - Wellbore #1 - Wellbore | 13,100.0 | 6,800.0 | 1,153.7 | 982.4 | 6.733 | ES |
| EXIST VERT ZEHNDER B5-23 - Wellbore #1 - Wellbore | 13,300.0 | 6,800.0 | 1,171.5 | 994.6 | 6.622 | SF |
| MCGLOTHLIN FARMS 4W-234 - ORIGINAL WELLBORI | 700.0 | 700.0 | 15.2 | 12.4 | 5.307 | CC |
| MCGLOTHLIN FARMS 4W-234 - ORIGINAL WELLBORI | 14,720.3 | 14,505.8 | 319.0 | -69.1 | 0.822 | Level 1, ES, SF |
| MCGLOTHLIN FARMS 4W-334 - ORIGINAL WELLBORI | 600.0 | 600.0 | 30.2 | 27.8 | 12.476 | CC |
| MCGLOTHLIN FARMS 4W-334 - ORIGINAL WELLBORI | 700.0 | 699.8 | 30.6 | 27.7 | 10.670 | ES |
| MCGLOTHLIN FARMS 4W-334 - ORIGINAL WELLBORI | 14,720.3 | 14,527.5 | 525.1 | 99.6 | 1.234 | Level 2, SF |
| MCGLOTHLIN FARMS 4X-204 - ORIGINAL WELLBORE | 300.0 | 300.0 | 75.1 | 74.0 | 70.052 | CC, ES |
| MCGLOTHLIN FARMS 4X-204 - ORIGINAL WELLBORE | 14,720.3 | 14,397.3 | 1,348.2 | 919.3 | 3.143 | SF |
| MCGLOTHLIN FARMS 4X-214 - ORIGINAL WELLBORE | 500.0 | 500.0 | 45.2 | 43.2 | 22.915 | CC, ES |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Summary**

| Site Name<br>Offset Well - Wellbore - Design | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|
| SE SE SEC. 4 T5N R64W 6th P.M. | | | | | | |
| MCGLOTHLIN FARMS 4X-214 - ORIGINAL WELLBORE | 14,720.3 | 14,425.4 | 865.2 | 440.5 | 2.037 | SF |
| MCGLOTHLIN FARMS 4X-234 - ORIGINAL WELLBORE | 800.0 | 800.0 | 29.8 | 26.5 | 8.984 | CC |
| MCGLOTHLIN FARMS 4X-234 - ORIGINAL WELLBORE | 900.0 | 900.0 | 30.0 | 26.2 | 7.957 | ES |
| MCGLOTHLIN FARMS 4X-234 - ORIGINAL WELLBORE | 14,720.3 | 14,418.3 | 1,812.3 | 1,383.1 | 4.222 | SF |
| MCGLOTHLIN FARMS 4X-314 - ORIGINAL WELLBORE | 400.0 | 400.0 | 60.1 | 58.6 | 39.521 | CC, ES |
| MCGLOTHLIN FARMS 4X-314 - ORIGINAL WELLBORE | 14,720.3 | 14,482.8 | 1,089.6 | 659.8 | 2.535 | SF |
| MCGLOTHLIN FARMS 4X-334 - ORIGINAL WELLBORE | 800.0 | 800.0 | 14.9 | 11.5 | 4.475 | CC |
| MCGLOTHLIN FARMS 4X-334 - ORIGINAL WELLBORE | 1,000.0 | 1,000.3 | 15.2 | 11.0 | 3.632 | ES, SF |
| MCGLOTHLIN FARMS 4Y-214 - ORIGINAL WELLBORE | 800.0 | 800.0 | 59.8 | 56.4 | 18.001 | CC |
| MCGLOTHLIN FARMS 4Y-214 - ORIGINAL WELLBORE | 900.0 | 900.0 | 59.9 | 56.1 | 15.893 | ES |
| MCGLOTHLIN FARMS 4Y-214 - ORIGINAL WELLBORE | 14,720.3 | 14,480.4 | 2,286.3 | 1,856.8 | 5.323 | SF |
| MCGLOTHLIN FARMS 4Y-304 - ORIGINAL WELLBORE | 800.0 | 800.0 | 74.9 | 71.6 | 22.556 | CC |
| MCGLOTHLIN FARMS 4Y-304 - ORIGINAL WELLBORE | 900.0 | 900.0 | 75.0 | 71.2 | 19.907 | ES |
| MCGLOTHLIN FARMS 4Y-304 - ORIGINAL WELLBORE | 14,720.3 | 14,591.2 | 2,498.8 | 2,068.6 | 5.810 | SF |
| MCGLOTHLIN FARMS 4Y-314 - ORIGINAL WELLBORE | 800.0 | 800.0 | 44.8 | 41.5 | 13.492 | CC |
| MCGLOTHLIN FARMS 4Y-314 - ORIGINAL WELLBORE | 900.0 | 900.0 | 44.9 | 41.2 | 11.923 | ES |
| MCGLOTHLIN FARMS 4Y-314 - ORIGINAL WELLBORE | 14,720.3 | 14,505.2 | 2,061.7 | 1,631.6 | 4.793 | SF |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - ABDN VERT LITTLE WILL #12 - Wellbore #1 - Design #1

**Survey Program:** 0-INC

**Offset Site Error:** 0.0 usft

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -83.55 | 774.8 | -6,855.4 | 6,899.0 | | | | |
| 100.0 | 100.0 | 83.0 | 83.0 | 0.1 | 0.0 | -83.55 | 774.8 | -6,855.4 | 6,899.0 | 6,898.9 | 0.09 | N/A | |
| 200.0 | 200.0 | 183.0 | 183.0 | 0.3 | 0.9 | -83.55 | 774.8 | -6,855.4 | 6,899.0 | 6,897.8 | 1.17 | 5,880.384 | |
| 300.0 | 300.0 | 283.0 | 283.0 | 0.5 | 3.0 | -83.55 | 774.8 | -6,855.4 | 6,899.0 | 6,895.5 | 3.51 | 1,968.058 | |
| 400.0 | 400.0 | 383.0 | 383.0 | 0.8 | 5.1 | -83.55 | 774.8 | -6,855.4 | 6,899.0 | 6,893.1 | 5.85 | 1,178.767 | |
| 500.0 | 500.0 | 483.0 | 483.0 | 1.0 | 7.1 | -83.55 | 774.8 | -6,855.4 | 6,899.0 | 6,890.9 | 8.13 | 848.937 | |
| 600.0 | 600.0 | 583.0 | 583.0 | 1.2 | 9.2 | -83.55 | 774.8 | -6,855.4 | 6,899.0 | 6,888.6 | 10.38 | 664.461 | |
| 700.0 | 700.0 | 683.0 | 683.0 | 1.4 | 11.2 | -83.55 | 774.8 | -6,855.4 | 6,899.0 | 6,886.4 | 12.63 | 546.174 | |
| 800.0 | 800.0 | 783.0 | 783.0 | 1.7 | 13.2 | -83.55 | 774.8 | -6,855.4 | 6,899.0 | 6,884.1 | 14.88 | 463.763 | |
| 900.0 | 900.0 | 883.0 | 883.0 | 1.9 | 15.2 | -104.72 | 774.8 | -6,855.4 | 6,899.4 | 6,882.3 | 17.12 | 403.110 | |
| 1,000.0 | 999.8 | 982.8 | 982.8 | 2.1 | 17.2 | -104.73 | 774.8 | -6,855.4 | 6,900.8 | 6,881.4 | 19.35 | 356.638 | |
| 1,100.0 | 1,099.5 | 1,082.5 | 1,082.5 | 2.3 | 19.3 | -104.76 | 774.8 | -6,855.4 | 6,903.0 | 6,881.4 | 21.58 | 319.830 | |
| 1,200.0 | 1,198.7 | 1,181.7 | 1,181.7 | 2.6 | 21.3 | -104.80 | 774.8 | -6,855.4 | 6,906.1 | 6,882.3 | 23.82 | 289.891 | |
| 1,300.0 | 1,297.5 | 1,280.5 | 1,280.5 | 2.9 | 23.2 | -104.84 | 774.8 | -6,855.4 | 6,910.2 | 6,884.1 | 26.08 | 265.001 | |
| 1,400.0 | 1,395.6 | 1,378.6 | 1,378.6 | 3.2 | 25.2 | -104.90 | 774.8 | -6,855.4 | 6,915.2 | 6,886.8 | 28.35 | 243.933 | |
| 1,500.0 | 1,493.1 | 1,476.1 | 1,476.1 | 3.5 | 27.2 | -104.96 | 774.8 | -6,855.4 | 6,921.1 | 6,890.4 | 30.65 | 225.823 | |
| 1,507.2 | 1,500.0 | 1,483.0 | 1,483.0 | 3.6 | 27.3 | -104.96 | 774.8 | -6,855.4 | 6,921.6 | 6,890.7 | 30.81 | 224.637 | |
| 1,572.2 | 1,563.0 | 1,546.0 | 1,546.0 | 3.8 | 28.6 | -105.09 | 774.8 | -6,855.4 | 6,925.8 | 6,893.5 | 32.32 | 214.294 | |
| 1,600.0 | 1,590.0 | 1,573.0 | 1,573.0 | 3.9 | 29.1 | -105.10 | 774.8 | -6,855.4 | 6,927.7 | 6,894.7 | 32.96 | 210.162 | |
| 1,700.0 | 1,686.3 | 1,669.3 | 1,669.3 | 4.4 | 31.1 | -105.17 | 774.8 | -6,855.4 | 6,935.0 | 6,899.7 | 35.31 | 196.385 | |
| 1,800.0 | 1,781.5 | 1,764.5 | 1,764.5 | 4.9 | 33.0 | -105.24 | 774.8 | -6,855.4 | 6,943.3 | 6,905.6 | 37.69 | 184.207 | |
| 1,817.6 | 1,798.2 | 1,781.2 | 1,781.2 | 5.0 | 33.3 | -105.25 | 774.8 | -6,855.4 | 6,944.9 | 6,906.8 | 38.12 | 182.208 | |
| 1,900.0 | 1,876.1 | 1,859.1 | 1,859.1 | 5.5 | 34.9 | -105.46 | 774.8 | -6,855.4 | 6,952.4 | 6,912.3 | 40.12 | 173.300 | |
| 2,000.0 | 1,970.6 | 1,953.6 | 1,953.6 | 6.0 | 36.8 | -105.70 | 774.8 | -6,855.4 | 6,961.6 | 6,919.1 | 42.56 | 163.561 | |
| 2,100.0 | 2,065.1 | 2,048.1 | 2,048.1 | 6.6 | 38.7 | -105.95 | 774.8 | -6,855.4 | 6,971.0 | 6,926.0 | 45.02 | 154.842 | |
| 2,200.0 | 2,159.6 | 2,142.6 | 2,142.6 | 7.2 | 40.6 | -106.19 | 774.8 | -6,855.4 | 6,980.5 | 6,933.0 | 47.49 | 147.003 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - ABDN VERT LITTLE WILL #12 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2,300.0 | 2,254.1 | 2,237.1 | 2,237.1 | 7.8 | 42.5 | -106.44 | 774.8 | -6,855.4 | 6,990.2 | 6,940.2 | 49.96 | 139.923 | |
| 2,400.0 | 2,348.7 | 2,331.7 | 2,331.7 | 8.4 | 44.4 | -106.68 | 774.8 | -6,855.4 | 7,000.0 | 6,947.5 | 52.43 | 133.502 | |
| 2,500.0 | 2,443.2 | 2,426.2 | 2,426.2 | 9.1 | 46.3 | -106.92 | 774.8 | -6,855.4 | 7,009.9 | 6,955.0 | 54.91 | 127.656 | |
| 2,600.0 | 2,537.7 | 2,520.7 | 2,520.7 | 9.7 | 48.2 | -107.16 | 774.8 | -6,855.4 | 7,020.0 | 6,962.6 | 57.39 | 122.312 | |
| 2,700.0 | 2,632.2 | 2,615.2 | 2,615.2 | 10.3 | 50.1 | -107.41 | 774.8 | -6,855.4 | 7,030.2 | 6,970.3 | 59.88 | 117.411 | |
| 2,800.0 | 2,726.8 | 2,709.8 | 2,709.8 | 10.9 | 52.0 | -107.65 | 774.8 | -6,855.4 | 7,040.5 | 6,978.2 | 62.36 | 112.900 | |
| 2,900.0 | 2,821.3 | 2,804.3 | 2,804.3 | 11.6 | 53.9 | -107.89 | 774.8 | -6,855.4 | 7,051.0 | 6,986.2 | 64.84 | 108.737 | |
| 3,000.0 | 2,915.8 | 2,898.8 | 2,898.8 | 12.2 | 55.8 | -108.13 | 774.8 | -6,855.4 | 7,061.6 | 6,994.3 | 67.33 | 104.883 | |
| 3,100.0 | 3,010.3 | 2,993.3 | 2,993.3 | 12.8 | 57.7 | -108.37 | 774.8 | -6,855.4 | 7,072.4 | 7,002.6 | 69.81 | 101.306 | |
| 3,200.0 | 3,104.8 | 3,087.8 | 3,087.8 | 13.5 | 59.6 | -108.60 | 774.8 | -6,855.4 | 7,083.3 | 7,011.0 | 72.30 | 97.977 | |
| 3,300.0 | 3,199.4 | 3,182.4 | 3,182.4 | 14.1 | 61.5 | -108.84 | 774.8 | -6,855.4 | 7,094.3 | 7,019.5 | 74.78 | 94.871 | |
| 3,400.0 | 3,293.9 | 3,276.9 | 3,276.9 | 14.8 | 63.4 | -109.08 | 774.8 | -6,855.4 | 7,105.4 | 7,028.2 | 77.26 | 91.969 | |
| 3,500.0 | 3,388.4 | 3,371.4 | 3,371.4 | 15.4 | 65.3 | -109.31 | 774.8 | -6,855.4 | 7,116.7 | 7,037.0 | 79.74 | 89.249 | |
| 3,600.0 | 3,482.9 | 3,465.9 | 3,465.9 | 16.0 | 67.2 | -109.55 | 774.8 | -6,855.4 | 7,128.1 | 7,045.9 | 82.22 | 86.697 | |
| 3,700.0 | 3,577.5 | 3,560.5 | 3,560.5 | 16.7 | 69.1 | -109.78 | 774.8 | -6,855.4 | 7,139.7 | 7,055.0 | 84.70 | 84.297 | |
| 3,800.0 | 3,672.0 | 3,655.0 | 3,655.0 | 17.3 | 71.0 | -110.02 | 774.8 | -6,855.4 | 7,151.3 | 7,064.2 | 87.17 | 82.037 | |
| 3,900.0 | 3,766.5 | 3,749.5 | 3,749.5 | 18.0 | 72.9 | -110.25 | 774.8 | -6,855.4 | 7,163.1 | 7,073.5 | 89.65 | 79.903 | |
| 4,000.0 | 3,861.0 | 3,844.0 | 3,844.0 | 18.6 | 74.8 | -110.49 | 774.8 | -6,855.4 | 7,175.1 | 7,083.0 | 92.12 | 77.888 | |
| 4,100.0 | 3,955.5 | 3,938.5 | 3,938.5 | 19.3 | 76.7 | -110.72 | 774.8 | -6,855.4 | 7,187.1 | 7,092.6 | 94.59 | 75.980 | |
| 4,200.0 | 4,050.1 | 4,033.1 | 4,033.1 | 19.9 | 78.6 | -110.95 | 774.8 | -6,855.4 | 7,199.3 | 7,102.3 | 97.06 | 74.172 | |
| 4,300.0 | 4,144.6 | 4,127.6 | 4,127.6 | 20.5 | 80.5 | -111.18 | 774.8 | -6,855.4 | 7,211.7 | 7,112.1 | 99.53 | 72.457 | |
| 4,400.0 | 4,239.1 | 4,222.1 | 4,222.1 | 21.2 | 82.4 | -111.41 | 774.8 | -6,855.4 | 7,224.1 | 7,122.1 | 102.00 | 70.827 | |
| 4,500.0 | 4,333.6 | 4,316.6 | 4,316.6 | 21.8 | 84.3 | -111.64 | 774.8 | -6,855.4 | 7,236.7 | 7,132.2 | 104.46 | 69.276 | |
| 4,600.0 | 4,428.2 | 4,411.2 | 4,411.2 | 22.5 | 86.2 | -111.87 | 774.8 | -6,855.4 | 7,249.4 | 7,142.4 | 106.92 | 67.800 | |
| 4,700.0 | 4,522.7 | 4,505.7 | 4,505.7 | 23.1 | 88.1 | -112.10 | 774.8 | -6,855.4 | 7,262.2 | 7,152.8 | 109.38 | 66.392 | |
| 4,800.0 | 4,617.2 | 4,600.2 | 4,600.2 | 23.8 | 90.0 | -112.32 | 774.8 | -6,855.4 | 7,275.1 | 7,163.3 | 111.84 | 65.048 | |
| 4,900.0 | 4,711.7 | 4,694.7 | 4,694.7 | 24.4 | 91.9 | -112.55 | 774.8 | -6,855.4 | 7,288.2 | 7,173.9 | 114.30 | 63.764 | |
| 5,000.0 | 4,806.2 | 4,789.2 | 4,789.2 | 25.1 | 93.8 | -112.77 | 774.8 | -6,855.4 | 7,301.4 | 7,184.6 | 116.75 | 62.537 | |
| 5,100.0 | 4,900.8 | 4,883.8 | 4,883.8 | 25.7 | 95.7 | -113.00 | 774.8 | -6,855.4 | 7,314.7 | 7,195.5 | 119.21 | 61.362 | |
| 5,200.0 | 4,995.3 | 4,978.3 | 4,978.3 | 26.4 | 97.6 | -113.22 | 774.8 | -6,855.4 | 7,328.1 | 7,206.5 | 121.66 | 60.237 | |
| 5,300.0 | 5,089.8 | 5,072.8 | 5,072.8 | 27.0 | 99.5 | -113.45 | 774.8 | -6,855.4 | 7,341.7 | 7,217.6 | 124.10 | 59.157 | |
| 5,400.0 | 5,184.3 | 5,167.3 | 5,167.3 | 27.7 | 101.4 | -113.67 | 774.8 | -6,855.4 | 7,355.4 | 7,228.8 | 126.55 | 58.122 | |
| 5,500.0 | 5,278.9 | 5,261.9 | 5,261.9 | 28.3 | 103.3 | -113.89 | 774.8 | -6,855.4 | 7,369.1 | 7,240.2 | 128.99 | 57.128 | |
| 5,533.5 | 5,310.5 | 5,293.5 | 5,293.5 | 28.5 | 104.0 | -113.97 | 774.8 | -6,855.4 | 7,373.8 | 7,244.0 | 129.81 | 56.803 | |
| 5,600.0 | 5,373.6 | 5,356.6 | 5,356.6 | 28.9 | 105.2 | -114.27 | 774.8 | -6,855.4 | 7,382.7 | 7,251.3 | 131.48 | 56.151 | |
| 5,700.0 | 5,469.4 | 5,452.4 | 5,452.4 | 29.3 | 107.2 | -114.70 | 774.8 | -6,855.4 | 7,395.1 | 7,261.2 | 133.91 | 55.224 | |
| 5,800.0 | 5,566.1 | 5,549.1 | 5,549.1 | 29.8 | 109.1 | -115.07 | 774.8 | -6,855.4 | 7,406.1 | 7,269.8 | 136.33 | 54.326 | |
| 5,900.0 | 5,663.6 | 5,646.6 | 5,646.6 | 30.1 | 111.1 | -115.39 | 774.8 | -6,855.4 | 7,415.7 | 7,277.0 | 138.72 | 53.459 | |
| 6,000.0 | 5,761.9 | 5,744.9 | 5,744.9 | 30.5 | 113.0 | -115.67 | 774.8 | -6,855.4 | 7,423.8 | 7,282.7 | 141.07 | 52.623 | |
| 6,100.0 | 5,860.7 | 5,843.7 | 5,843.7 | 30.7 | 115.0 | -115.89 | 774.8 | -6,855.4 | 7,430.5 | 7,287.1 | 143.39 | 51.818 | |
| 6,200.0 | 5,960.0 | 5,943.0 | 5,943.0 | 31.0 | 117.0 | -116.07 | 774.8 | -6,855.4 | 7,435.6 | 7,290.0 | 145.67 | 51.045 | |
| 6,300.0 | 6,059.7 | 6,042.7 | 6,042.7 | 31.2 | 119.0 | -116.19 | 774.8 | -6,855.4 | 7,439.3 | 7,291.4 | 147.89 | 50.302 | |
| 6,400.0 | 6,159.6 | 6,142.6 | 6,142.6 | 31.3 | 121.0 | -116.26 | 774.8 | -6,855.4 | 7,441.4 | 7,291.3 | 150.06 | 49.590 | |
| 6,486.1 | 6,245.7 | 6,228.7 | 6,228.7 | 31.4 | 122.8 | -95.12 | 774.8 | -6,855.4 | 7,441.9 | 7,298.5 | 143.46 | 51.874 | |
| 6,500.0 | 6,259.6 | 6,242.6 | 6,242.6 | 31.4 | 123.0 | -95.12 | 774.8 | -6,855.4 | 7,441.9 | 7,298.2 | 143.76 | 51.767 | |
| 6,516.1 | 6,275.7 | 6,258.7 | 6,258.7 | 31.4 | 123.4 | -95.12 | 774.8 | -6,855.4 | 7,441.9 | 7,297.8 | 144.11 | 51.642 | |
| 6,550.0 | 6,309.5 | 6,292.5 | 6,292.5 | 31.5 | 124.1 | -5.12 | 774.8 | -6,855.4 | 7,441.1 | 7,288.1 | 153.00 | 48.634 | |
| 6,600.0 | 6,359.4 | 6,342.4 | 6,342.4 | 31.5 | 125.1 | -5.16 | 774.8 | -6,855.4 | 7,437.0 | 7,283.9 | 153.11 | 48.575 | |
| 6,650.0 | 6,408.8 | 6,391.8 | 6,391.8 | 31.5 | 126.0 | -5.22 | 774.8 | -6,855.4 | 7,429.5 | 7,277.1 | 152.45 | 48.735 | |
| 6,700.0 | 6,457.5 | 6,440.5 | 6,440.5 | 31.5 | 127.0 | -5.31 | 774.8 | -6,855.4 | 7,418.6 | 7,267.5 | 151.02 | 49.122 | |
| 6,716.1 | 6,473.1 | 6,456.1 | 6,456.1 | 31.5 | 127.3 | -5.34 | 774.8 | -6,855.4 | 7,414.3 | 7,263.9 | 150.40 | 49.298 | |
| 6,725.0 | 6,481.6 | 6,464.6 | 6,464.6 | 31.5 | 127.5 | -5.37 | 774.8 | -6,855.4 | 7,411.8 | 7,262.1 | 149.74 | 49.499 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - ABDN VERT LITTLE WILL #12 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6,750.0 | 6,505.3 | 6,488.3 | 6,488.3 | 31.5 | 128.0 | -5.48 | 774.8 | -6,855.4 | 7,403.9 | 7,256.3 | 147.58 | 50.167 | |
| 6,775.0 | 6,528.5 | 6,511.5 | 6,511.5 | 31.4 | 128.5 | -5.60 | 774.8 | -6,855.4 | 7,394.7 | 7,249.7 | 145.01 | 50.994 | |
| 6,800.0 | 6,551.3 | 6,534.3 | 6,534.3 | 31.4 | 128.9 | -5.74 | 774.8 | -6,855.4 | 7,384.4 | 7,242.3 | 142.03 | 51.993 | |
| 6,825.0 | 6,573.4 | 6,556.4 | 6,556.4 | 31.4 | 129.4 | -5.91 | 774.8 | -6,855.4 | 7,372.8 | 7,234.2 | 138.64 | 53.181 | |
| 6,850.0 | 6,595.0 | 6,578.0 | 6,578.0 | 31.3 | 129.8 | -6.10 | 774.8 | -6,855.4 | 7,360.2 | 7,225.3 | 134.85 | 54.579 | |
| 6,875.0 | 6,615.8 | 6,598.8 | 6,598.8 | 31.3 | 130.2 | -6.33 | 774.8 | -6,855.4 | 7,346.4 | 7,215.7 | 130.69 | 56.214 | |
| 6,900.0 | 6,635.9 | 6,618.9 | 6,618.9 | 31.3 | 130.6 | -6.59 | 774.8 | -6,855.4 | 7,331.6 | 7,205.4 | 126.15 | 58.116 | |
| 6,925.0 | 6,655.1 | 6,638.1 | 6,638.1 | 31.2 | 131.0 | -6.89 | 774.8 | -6,855.4 | 7,315.7 | 7,194.5 | 121.28 | 60.322 | |
| 6,950.0 | 6,673.6 | 6,656.6 | 6,656.6 | 31.2 | 131.4 | -7.24 | 774.8 | -6,855.4 | 7,298.9 | 7,182.8 | 116.08 | 62.879 | |
| 6,975.0 | 6,691.1 | 6,674.1 | 6,674.1 | 31.1 | 131.7 | -7.66 | 774.8 | -6,855.4 | 7,281.1 | 7,170.5 | 110.59 | 65.840 | |
| 7,000.0 | 6,707.6 | 6,690.6 | 6,690.6 | 31.1 | 132.1 | -8.14 | 774.8 | -6,855.4 | 7,262.5 | 7,157.6 | 104.85 | 69.267 | |
| 7,025.0 | 6,723.1 | 6,706.1 | 6,706.1 | 31.0 | 132.4 | -8.71 | 774.8 | -6,855.4 | 7,243.0 | 7,144.1 | 98.91 | 73.231 | |
| 7,050.0 | 6,737.6 | 6,720.6 | 6,720.6 | 31.0 | 132.7 | -9.39 | 774.8 | -6,855.4 | 7,222.7 | 7,129.8 | 92.84 | 77.801 | |
| 7,075.0 | 6,751.0 | 6,734.0 | 6,734.0 | 30.9 | 132.9 | -10.21 | 774.8 | -6,855.4 | 7,201.7 | 7,114.9 | 86.74 | 83.028 | |
| 7,100.0 | 6,763.3 | 6,746.3 | 6,746.3 | 30.8 | 133.2 | -11.21 | 774.8 | -6,855.4 | 7,180.0 | 7,099.2 | 80.77 | 88.899 | |
| 7,125.0 | 6,774.5 | 6,757.5 | 6,757.5 | 30.8 | 133.4 | -12.46 | 774.8 | -6,855.4 | 7,157.7 | 7,082.6 | 75.16 | 95.237 | |
| 7,150.0 | 6,784.4 | 6,767.4 | 6,767.4 | 30.7 | 133.6 | -14.05 | 774.8 | -6,855.4 | 7,134.9 | 7,064.6 | 70.29 | 101.502 | |
| 7,175.0 | 6,793.1 | 6,776.1 | 6,776.1 | 30.7 | 133.8 | -16.12 | 774.8 | -6,855.4 | 7,111.6 | 7,044.8 | 66.80 | 106.468 | |
| 7,200.0 | 6,800.6 | 6,783.6 | 6,783.6 | 30.6 | 133.9 | -18.92 | 774.8 | -6,855.4 | 7,087.8 | 7,022.2 | 65.65 | 107.960 | |
| 7,225.0 | 6,806.8 | 6,789.8 | 6,789.8 | 30.6 | 134.1 | -22.87 | 774.8 | -6,855.4 | 7,063.7 | 6,995.3 | 68.37 | 103.316 | |
| 7,250.0 | 6,811.8 | 6,794.8 | 6,794.8 | 30.5 | 134.2 | -28.77 | 774.8 | -6,855.4 | 7,039.3 | 6,962.2 | 77.13 | 91.264 | |
| 7,275.0 | 6,815.5 | 6,798.5 | 6,798.5 | 30.5 | 134.2 | -38.21 | 774.8 | -6,855.4 | 7,014.7 | 6,919.8 | 94.88 | 73.936 | |
| 7,300.0 | 6,817.8 | 6,800.8 | 6,800.8 | 30.4 | 134.3 | -54.26 | 774.8 | -6,855.4 | 6,989.9 | 6,866.4 | 123.57 | 56.569 | |
| 7,325.0 | 6,818.9 | 6,801.9 | 6,801.9 | 30.4 | 134.3 | -80.31 | 774.8 | -6,855.4 | 6,965.1 | 6,813.3 | 151.75 | 45.900 | |
| 7,332.8 | 6,819.0 | 6,802.0 | 6,802.0 | 30.4 | 134.3 | -90.00 | 774.8 | -6,855.4 | 6,957.3 | 6,802.5 | 154.77 | 44.951 | |
| 7,400.0 | 6,819.0 | 6,802.0 | 6,802.0 | 30.3 | 134.3 | -90.00 | 774.8 | -6,855.4 | 6,890.4 | 6,735.0 | 155.45 | 44.326 | |
| 7,500.0 | 6,819.0 | 6,802.0 | 6,802.0 | 30.2 | 134.3 | -90.00 | 774.8 | -6,855.4 | 6,790.9 | 6,634.2 | 156.71 | 43.335 | |
| 7,600.0 | 6,819.0 | 6,802.0 | 6,802.0 | 30.3 | 134.3 | -90.00 | 774.8 | -6,855.4 | 6,691.4 | 6,533.1 | 158.23 | 42.288 | |
| 7,700.0 | 6,819.0 | 6,802.0 | 6,802.0 | 30.6 | 134.3 | -90.00 | 774.8 | -6,855.4 | 6,591.9 | 6,431.9 | 159.98 | 41.206 | |
| 7,800.0 | 6,819.0 | 6,802.0 | 6,802.0 | 31.3 | 134.3 | -90.00 | 774.8 | -6,855.4 | 6,492.4 | 6,330.5 | 161.90 | 40.102 | |
| 7,900.0 | 6,819.0 | 6,802.0 | 6,802.0 | 32.5 | 134.3 | -90.00 | 774.8 | -6,855.4 | 6,392.9 | 6,229.0 | 163.96 | 38.991 | |
| 8,000.0 | 6,819.0 | 6,802.0 | 6,802.0 | 34.2 | 134.3 | -90.00 | 774.8 | -6,855.4 | 6,293.5 | 6,127.3 | 166.14 | 37.881 | |
| 8,100.0 | 6,819.0 | 6,802.0 | 6,802.0 | 36.1 | 134.3 | -90.00 | 774.8 | -6,855.4 | 6,194.0 | 6,025.6 | 168.41 | 36.780 | |
| 8,200.0 | 6,819.0 | 6,802.0 | 6,802.0 | 38.3 | 134.3 | -90.00 | 774.8 | -6,855.4 | 6,094.6 | 5,923.9 | 170.75 | 35.693 | |
| 8,300.0 | 6,819.0 | 6,802.0 | 6,802.0 | 40.6 | 134.3 | -90.00 | 774.8 | -6,855.4 | 5,995.2 | 5,822.1 | 173.16 | 34.622 | |
| 8,400.0 | 6,819.0 | 6,802.0 | 6,802.0 | 42.9 | 134.3 | -90.00 | 774.8 | -6,855.4 | 5,895.9 | 5,720.2 | 175.62 | 33.572 | |
| 8,500.0 | 6,819.0 | 6,802.0 | 6,802.0 | 45.3 | 134.3 | -90.00 | 774.8 | -6,855.4 | 5,796.5 | 5,618.4 | 178.12 | 32.543 | |
| 8,600.0 | 6,819.0 | 6,802.0 | 6,802.0 | 47.8 | 134.3 | -90.00 | 774.8 | -6,855.4 | 5,697.2 | 5,516.5 | 180.66 | 31.536 | |
| 8,700.0 | 6,819.0 | 6,802.0 | 6,802.0 | 50.3 | 134.3 | -90.00 | 774.8 | -6,855.4 | 5,597.9 | 5,414.6 | 183.22 | 30.552 | |
| 8,800.0 | 6,819.0 | 6,802.0 | 6,802.0 | 52.8 | 134.3 | -90.00 | 774.8 | -6,855.4 | 5,498.6 | 5,312.8 | 185.82 | 29.592 | |
| 8,900.0 | 6,819.0 | 6,802.0 | 6,802.0 | 55.4 | 134.3 | -90.00 | 774.8 | -6,855.4 | 5,399.3 | 5,210.9 | 188.43 | 28.654 | |
| 9,000.0 | 6,819.0 | 6,802.0 | 6,802.0 | 58.0 | 134.3 | -90.00 | 774.8 | -6,855.4 | 5,300.1 | 5,109.0 | 191.06 | 27.740 | |
| 9,100.0 | 6,819.0 | 6,802.0 | 6,802.0 | 60.6 | 134.3 | -90.00 | 774.8 | -6,855.4 | 5,200.9 | 5,007.2 | 193.71 | 26.849 | |
| 9,200.0 | 6,819.0 | 6,802.0 | 6,802.0 | 63.2 | 134.3 | -90.00 | 774.8 | -6,855.4 | 5,101.7 | 4,905.4 | 196.38 | 25.979 | |
| 9,300.0 | 6,819.0 | 6,802.0 | 6,802.0 | 65.9 | 134.3 | -90.00 | 774.8 | -6,855.4 | 5,002.6 | 4,803.6 | 199.05 | 25.132 | |
| 9,400.0 | 6,819.0 | 6,802.0 | 6,802.0 | 68.5 | 134.3 | -90.00 | 774.8 | -6,855.4 | 4,903.5 | 4,701.8 | 201.74 | 24.306 | |
| 9,500.0 | 6,819.0 | 6,802.0 | 6,802.0 | 71.2 | 134.3 | -90.00 | 774.8 | -6,855.4 | 4,804.4 | 4,600.0 | 204.44 | 23.501 | |
| 9,600.0 | 6,819.0 | 6,802.0 | 6,802.0 | 73.9 | 134.3 | -90.00 | 774.8 | -6,855.4 | 4,705.4 | 4,498.3 | 207.14 | 22.716 | |
| 9,700.0 | 6,819.0 | 6,802.0 | 6,802.0 | 76.5 | 134.3 | -90.00 | 774.8 | -6,855.4 | 4,606.4 | 4,396.6 | 209.86 | 21.951 | |
| 9,800.0 | 6,819.0 | 6,802.0 | 6,802.0 | 79.2 | 134.3 | -90.00 | 774.8 | -6,855.4 | 4,507.5 | 4,294.9 | 212.58 | 21.204 | |
| 9,900.0 | 6,819.0 | 6,802.0 | 6,802.0 | 81.9 | 134.3 | -90.00 | 774.8 | -6,855.4 | 4,408.6 | 4,193.3 | 215.30 | 20.476 | |
| 10,000.0 | 6,819.0 | 6,802.0 | 6,802.0 | 84.6 | 134.3 | -90.00 | 774.8 | -6,855.4 | 4,309.8 | 4,091.8 | 218.03 | 19.767 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - ABDN VERT LITTLE WILL #12 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10,100.0 | 6,819.0 | 6,802.0 | 6,802.0 | 87.4 | 134.3 | -90.00 | 774.8 | -6,855.4 | 4,211.0 | 3,990.2 | 220.77 | 19.074 | |
| 10,200.0 | 6,819.0 | 6,802.0 | 6,802.0 | 90.1 | 134.3 | -90.00 | 774.8 | -6,855.4 | 4,112.3 | 3,888.8 | 223.51 | 18.398 | |
| 10,300.0 | 6,819.0 | 6,802.0 | 6,802.0 | 92.8 | 134.3 | -90.00 | 774.8 | -6,855.4 | 4,013.6 | 3,787.4 | 226.26 | 17.739 | |
| 10,400.0 | 6,819.0 | 6,802.0 | 6,802.0 | 95.5 | 134.3 | -90.00 | 774.8 | -6,855.4 | 3,915.1 | 3,686.1 | 229.01 | 17.096 | |
| 10,500.0 | 6,819.0 | 6,802.0 | 6,802.0 | 98.3 | 134.3 | -90.00 | 774.8 | -6,855.4 | 3,816.5 | 3,584.8 | 231.76 | 16.467 | |
| 10,600.0 | 6,819.0 | 6,802.0 | 6,802.0 | 101.0 | 134.3 | -90.00 | 774.8 | -6,855.4 | 3,718.1 | 3,483.6 | 234.52 | 15.854 | |
| 10,700.0 | 6,819.0 | 6,802.0 | 6,802.0 | 103.8 | 134.3 | -90.00 | 774.8 | -6,855.4 | 3,619.8 | 3,382.5 | 237.28 | 15.255 | |
| 10,800.0 | 6,819.0 | 6,802.0 | 6,802.0 | 106.5 | 134.3 | -90.00 | 774.8 | -6,855.4 | 3,521.5 | 3,281.5 | 240.04 | 14.670 | |
| 10,900.0 | 6,819.0 | 6,802.0 | 6,802.0 | 109.2 | 134.3 | -90.00 | 774.8 | -6,855.4 | 3,423.4 | 3,180.5 | 242.81 | 14.099 | |
| 11,000.0 | 6,819.0 | 6,802.0 | 6,802.0 | 112.0 | 134.3 | -90.00 | 774.8 | -6,855.4 | 3,325.3 | 3,079.7 | 245.57 | 13.541 | |
| 11,100.0 | 6,819.0 | 6,802.0 | 6,802.0 | 114.8 | 134.3 | -90.00 | 774.8 | -6,855.4 | 3,227.4 | 2,979.0 | 248.34 | 12.996 | |
| 11,200.0 | 6,819.0 | 6,802.0 | 6,802.0 | 117.5 | 134.3 | -90.00 | 774.8 | -6,855.4 | 3,129.6 | 2,878.5 | 251.11 | 12.463 | |
| 11,300.0 | 6,819.0 | 6,802.0 | 6,802.0 | 120.3 | 134.3 | -90.00 | 774.8 | -6,855.4 | 3,031.9 | 2,778.1 | 253.89 | 11.942 | |
| 11,400.0 | 6,819.0 | 6,802.0 | 6,802.0 | 123.0 | 134.3 | -90.00 | 774.8 | -6,855.4 | 2,934.4 | 2,677.8 | 256.66 | 11.433 | |
| 11,500.0 | 6,819.0 | 6,802.0 | 6,802.0 | 125.8 | 134.3 | -90.00 | 774.8 | -6,855.4 | 2,837.1 | 2,577.7 | 259.44 | 10.936 | |
| 11,600.0 | 6,819.0 | 6,802.0 | 6,802.0 | 128.6 | 134.3 | -90.00 | 774.8 | -6,855.4 | 2,740.0 | 2,477.8 | 262.22 | 10.449 | |
| 11,700.0 | 6,819.0 | 6,802.0 | 6,802.0 | 131.3 | 134.3 | -90.00 | 774.8 | -6,855.4 | 2,643.1 | 2,378.1 | 265.00 | 9.974 | |
| 11,800.0 | 6,819.0 | 6,802.0 | 6,802.0 | 134.1 | 134.3 | -90.00 | 774.8 | -6,855.4 | 2,546.4 | 2,278.7 | 267.78 | 9.510 | |
| 11,900.0 | 6,819.0 | 6,802.0 | 6,802.0 | 136.9 | 134.3 | -90.00 | 774.8 | -6,855.4 | 2,450.0 | 2,179.5 | 270.56 | 9.055 | |
| 12,000.0 | 6,819.0 | 6,802.0 | 6,802.0 | 139.6 | 134.3 | -90.00 | 774.8 | -6,855.4 | 2,353.9 | 2,080.6 | 273.34 | 8.612 | |
| 12,100.0 | 6,819.0 | 6,802.0 | 6,802.0 | 142.4 | 134.3 | -90.00 | 774.8 | -6,855.4 | 2,258.2 | 1,982.0 | 276.13 | 8.178 | |
| 12,200.0 | 6,819.0 | 6,802.0 | 6,802.0 | 145.2 | 134.3 | -90.00 | 774.8 | -6,855.4 | 2,162.8 | 1,883.9 | 278.91 | 7.754 | |
| 12,300.0 | 6,819.0 | 6,802.0 | 6,802.0 | 148.0 | 134.3 | -90.00 | 774.8 | -6,855.4 | 2,067.8 | 1,786.1 | 281.70 | 7.341 | |
| 12,400.0 | 6,819.0 | 6,802.0 | 6,802.0 | 150.8 | 134.3 | -90.00 | 774.8 | -6,855.4 | 1,973.4 | 1,688.9 | 284.49 | 6.937 | |
| 12,500.0 | 6,819.0 | 6,802.0 | 6,802.0 | 153.5 | 134.3 | -90.00 | 774.8 | -6,855.4 | 1,879.5 | 1,592.3 | 287.27 | 6.543 | |
| 12,600.0 | 6,819.0 | 6,802.0 | 6,802.0 | 156.3 | 134.3 | -90.00 | 774.8 | -6,855.4 | 1,786.3 | 1,496.3 | 290.06 | 6.158 | |
| 12,700.0 | 6,819.0 | 6,802.0 | 6,802.0 | 159.1 | 134.3 | -90.00 | 774.8 | -6,855.4 | 1,693.9 | 1,401.0 | 292.85 | 5.784 | |
| 12,800.0 | 6,819.0 | 6,802.0 | 6,802.0 | 161.9 | 134.3 | -90.00 | 774.8 | -6,855.4 | 1,602.4 | 1,306.7 | 295.64 | 5.420 | |
| 12,900.0 | 6,819.0 | 6,802.0 | 6,802.0 | 164.7 | 134.3 | -90.00 | 774.8 | -6,855.4 | 1,511.9 | 1,213.5 | 298.44 | 5.066 | |
| 13,000.0 | 6,819.0 | 6,802.0 | 6,802.0 | 167.4 | 134.3 | -90.00 | 774.8 | -6,855.4 | 1,422.8 | 1,121.5 | 301.23 | 4.723 | |
| 13,100.0 | 6,819.0 | 6,802.0 | 6,802.0 | 170.2 | 134.3 | -90.00 | 774.8 | -6,855.4 | 1,335.1 | 1,031.1 | 304.02 | 4.392 | |
| 13,200.0 | 6,819.0 | 6,802.0 | 6,802.0 | 173.0 | 134.3 | -90.00 | 774.8 | -6,855.4 | 1,249.4 | 942.6 | 306.81 | 4.072 | |
| 13,300.0 | 6,819.0 | 6,802.0 | 6,802.0 | 175.8 | 134.3 | -90.00 | 774.8 | -6,855.4 | 1,165.9 | 856.3 | 309.61 | 3.766 | |
| 13,400.0 | 6,819.0 | 6,802.0 | 6,802.0 | 178.6 | 134.3 | -90.00 | 774.8 | -6,855.4 | 1,085.2 | 772.8 | 312.40 | 3.474 | |
| 13,500.0 | 6,819.0 | 6,802.0 | 6,802.0 | 181.4 | 134.3 | -90.00 | 774.8 | -6,855.4 | 1,007.9 | 692.7 | 315.20 | 3.198 | |
| 13,600.0 | 6,819.0 | 6,802.0 | 6,802.0 | 184.2 | 134.3 | -90.00 | 774.8 | -6,855.4 | 935.0 | 617.0 | 317.99 | 2.940 | |
| 13,700.0 | 6,819.0 | 6,802.0 | 6,802.0 | 187.0 | 134.3 | -90.00 | 774.8 | -6,855.4 | 867.5 | 546.7 | 320.79 | 2.704 | |
| 13,800.0 | 6,819.0 | 6,802.0 | 6,802.0 | 189.7 | 134.3 | -90.00 | 774.8 | -6,855.4 | 806.8 | 483.2 | 323.58 | 2.493 | |
| 13,900.0 | 6,819.0 | 6,802.0 | 6,802.0 | 192.5 | 134.3 | -90.00 | 774.8 | -6,855.4 | 754.5 | 428.1 | 326.38 | 2.312 | |
| 14,000.0 | 6,819.0 | 6,802.0 | 6,802.0 | 195.3 | 134.3 | -90.00 | 774.8 | -6,855.4 | 712.4 | 383.3 | 329.18 | 2.164 | |
| 14,100.0 | 6,819.0 | 6,802.0 | 6,802.0 | 198.1 | 134.3 | -90.00 | 774.8 | -6,855.4 | 682.6 | 350.6 | 331.98 | 2.056 | |
| 14,200.0 | 6,819.0 | 6,802.0 | 6,802.0 | 200.9 | 134.3 | -90.00 | 774.8 | -6,855.4 | 666.5 | 331.7 | 334.77 | 1.991 | |
| 14,258.4 | 6,819.0 | 6,802.0 | 6,802.0 | 202.5 | 134.3 | -90.00 | 774.8 | -6,855.4 | 663.9 | 327.5 | 336.41 | 1.974 | CC, ES |
| 14,300.0 | 6,819.0 | 6,802.0 | 6,802.0 | 203.7 | 134.3 | -90.00 | 774.8 | -6,855.4 | 665.3 | 327.7 | 337.57 | 1.971 | SF |
| 14,400.0 | 6,819.0 | 6,802.0 | 6,802.0 | 206.5 | 134.3 | -90.00 | 774.8 | -6,855.4 | 678.9 | 338.5 | 340.37 | 1.995 | |
| 14,500.0 | 6,819.0 | 6,802.0 | 6,802.0 | 209.3 | 134.3 | -90.00 | 774.8 | -6,855.4 | 706.6 | 363.4 | 343.17 | 2.059 | |
| 14,600.0 | 6,819.0 | 6,802.0 | 6,802.0 | 212.1 | 134.3 | -90.00 | 774.8 | -6,855.4 | 746.7 | 400.7 | 345.97 | 2.158 | |
| 14,700.0 | 6,819.0 | 6,802.0 | 6,802.0 | 214.9 | 134.3 | -90.00 | 774.8 | -6,855.4 | 797.4 | 448.7 | 348.77 | 2.286 | |
| 14,720.3 | 6,819.0 | 6,802.0 | 6,802.0 | 215.4 | 134.3 | -90.00 | 774.8 | -6,855.4 | 808.8 | 459.5 | 349.34 | 2.315 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - ABDN VERT NOFFSINGER #1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -75.19 | 2,108.5 | -7,975.5 | 8,249.5 | | | | |
| 100.0 | 100.0 | 79.6 | 79.6 | 0.1 | 0.0 | -75.19 | 2,108.6 | -7,975.6 | 8,249.6 | 8,249.5 | 0.09 | N/A | |
| 200.0 | 200.0 | 158.1 | 158.1 | 0.3 | 0.0 | -75.19 | 2,108.8 | -7,975.6 | 8,249.8 | 8,249.4 | 0.36 | N/A | |
| 300.0 | 300.0 | 337.2 | 337.2 | 0.5 | 0.2 | -75.18 | 2,109.9 | -7,975.2 | 8,249.8 | 8,249.0 | 0.75 | N/A | |
| 400.0 | 400.0 | 434.8 | 434.8 | 0.8 | 0.3 | -75.18 | 2,110.3 | -7,974.6 | 8,249.2 | 8,248.1 | 1.06 | 7,750.589 | |
| 500.0 | 500.0 | 527.1 | 527.1 | 1.0 | 0.4 | -75.17 | 2,110.6 | -7,973.9 | 8,248.6 | 8,247.3 | 1.35 | 6,097.034 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 0.4 | -75.17 | 2,111.2 | -7,973.5 | 8,248.3 | 8,246.7 | 1.62 | 5,095.657 | |
| 658.7 | 658.7 | 645.7 | 645.7 | 1.3 | 0.4 | -75.17 | 2,111.6 | -7,973.4 | 8,248.2 | 8,246.5 | 1.76 | 4,687.441 | |
| 700.0 | 700.0 | 675.8 | 675.8 | 1.4 | 0.4 | -75.17 | 2,111.8 | -7,973.3 | 8,248.3 | 8,246.4 | 1.86 | 4,438.565 | |
| 800.0 | 800.0 | 756.8 | 756.8 | 1.7 | 0.5 | -75.17 | 2,111.8 | -7,973.5 | 8,248.5 | 8,246.4 | 2.11 | 3,904.414 | |
| 900.0 | 900.0 | 880.8 | 880.8 | 1.9 | 0.5 | -96.33 | 2,112.2 | -7,973.9 | 8,249.1 | 8,246.7 | 2.37 | 3,486.282 | |
| 1,000.0 | 999.8 | 968.0 | 967.9 | 2.1 | 0.5 | -96.34 | 2,113.2 | -7,973.7 | 8,249.7 | 8,247.1 | 2.62 | 3,146.428 | |
| 1,100.0 | 1,099.5 | 1,086.5 | 1,086.5 | 2.3 | 0.6 | -96.38 | 2,114.2 | -7,973.7 | 8,250.9 | 8,248.0 | 2.90 | 2,845.041 | |
| 1,200.0 | 1,198.7 | 1,155.8 | 1,155.7 | 2.6 | 0.6 | -96.41 | 2,114.5 | -7,973.7 | 8,252.4 | 8,249.3 | 3.17 | 2,600.806 | |
| 1,300.0 | 1,297.5 | 1,244.4 | 1,244.4 | 2.9 | 0.7 | -96.46 | 2,115.4 | -7,974.0 | 8,254.8 | 8,251.3 | 3.48 | 2,373.361 | |
| 1,400.0 | 1,395.6 | 1,358.6 | 1,358.6 | 3.2 | 0.7 | -96.55 | 2,115.7 | -7,974.2 | 8,257.3 | 8,253.4 | 3.82 | 2,159.392 | |
| 1,500.0 | 1,493.1 | 1,453.5 | 1,453.4 | 3.5 | 0.7 | -96.63 | 2,116.6 | -7,974.3 | 8,260.2 | 8,256.0 | 4.22 | 1,959.623 | |
| 1,507.2 | 1,500.0 | 1,460.5 | 1,460.5 | 3.6 | 0.7 | -96.64 | 2,116.7 | -7,974.3 | 8,260.5 | 8,256.2 | 4.24 | 1,946.467 | |
| 1,572.2 | 1,563.0 | 1,529.0 | 1,529.0 | 3.8 | 0.8 | -96.75 | 2,117.4 | -7,974.4 | 8,262.6 | 8,258.1 | 4.51 | 1,830.514 | |
| 1,600.0 | 1,590.0 | 1,561.1 | 1,561.1 | 3.9 | 0.8 | -96.79 | 2,117.7 | -7,974.4 | 8,263.5 | 8,258.9 | 4.63 | 1,783.080 | |
| 1,700.0 | 1,686.3 | 1,689.5 | 1,689.5 | 4.4 | 0.8 | -96.95 | 2,118.6 | -7,974.1 | 8,266.9 | 8,261.8 | 5.12 | 1,614.748 | |
| 1,800.0 | 1,781.5 | 1,772.6 | 1,772.5 | 4.9 | 0.9 | -97.05 | 2,119.1 | -7,973.9 | 8,270.6 | 8,265.0 | 5.65 | 1,464.272 | |
| 1,817.6 | 1,798.2 | 1,786.4 | 1,786.3 | 5.0 | 0.9 | -97.06 | 2,119.2 | -7,973.9 | 8,271.3 | 8,265.6 | 5.75 | 1,439.156 | |
| 1,900.0 | 1,876.1 | 1,907.7 | 1,907.6 | 5.5 | 0.9 | -97.33 | 2,120.0 | -7,973.4 | 8,274.7 | 8,268.5 | 6.23 | 1,328.147 | |
| 2,000.0 | 1,970.6 | 1,991.7 | 1,991.7 | 6.0 | 0.9 | -97.52 | 2,120.1 | -7,972.9 | 8,278.7 | 8,271.8 | 6.82 | 1,213.806 | |
| 2,100.0 | 2,065.1 | 2,069.8 | 2,069.7 | 6.6 | 0.9 | -97.69 | 2,120.0 | -7,972.7 | 8,282.9 | 8,275.5 | 7.42 | 1,115.960 | |
| 2,200.0 | 2,159.6 | 2,131.9 | 2,131.9 | 7.2 | 0.9 | -97.83 | 2,119.9 | -7,972.7 | 8,287.5 | 8,279.5 | 8.03 | 1,032.688 | |
| 2,300.0 | 2,254.1 | 2,200.0 | 2,199.9 | 7.8 | 0.9 | -97.99 | 2,120.0 | -7,973.0 | 8,292.7 | 8,284.1 | 8.63 | 960.855 | |
| 2,400.0 | 2,348.7 | 2,254.5 | 2,254.5 | 8.4 | 0.9 | -98.11 | 2,120.1 | -7,973.5 | 8,298.4 | 8,289.2 | 9.25 | 896.709 | |
| 2,500.0 | 2,443.2 | 2,340.2 | 2,340.2 | 9.1 | 1.0 | -98.30 | 2,120.2 | -7,974.4 | 8,304.4 | 8,294.6 | 9.89 | 839.712 | |
| 2,600.0 | 2,537.7 | 2,436.0 | 2,435.9 | 9.7 | 1.0 | -98.52 | 2,119.9 | -7,975.5 | 8,310.6 | 8,300.1 | 10.53 | 789.206 | |
| 2,700.0 | 2,632.2 | 2,534.6 | 2,534.5 | 10.3 | 1.0 | -98.74 | 2,119.8 | -7,976.6 | 8,316.9 | 8,305.7 | 11.17 | 744.373 | |
| 2,800.0 | 2,726.8 | 2,635.5 | 2,635.4 | 10.9 | 1.0 | -98.96 | 2,119.8 | -7,977.6 | 8,323.2 | 8,311.4 | 11.82 | 704.152 | |
| 2,900.0 | 2,821.3 | 2,732.0 | 2,731.9 | 11.6 | 1.0 | -99.18 | 2,119.9 | -7,978.5 | 8,329.7 | 8,317.2 | 12.47 | 668.138 | |
| 3,000.0 | 2,915.8 | 2,863.2 | 2,863.1 | 12.2 | 1.1 | -99.48 | 2,119.3 | -7,979.6 | 8,336.1 | 8,322.9 | 13.12 | 635.424 | |
| 3,100.0 | 3,010.3 | 2,962.4 | 2,962.3 | 12.8 | 1.1 | -99.70 | 2,119.2 | -7,980.0 | 8,342.2 | 8,328.4 | 13.77 | 605.907 | |
| 3,200.0 | 3,104.8 | 3,055.6 | 3,055.5 | 13.5 | 1.1 | -99.90 | 2,119.2 | -7,980.5 | 8,348.6 | 8,334.1 | 14.42 | 579.070 | |
| 3,300.0 | 3,199.4 | 3,156.4 | 3,156.3 | 14.1 | 1.1 | -100.13 | 2,119.4 | -7,980.8 | 8,355.0 | 8,339.9 | 15.07 | 554.531 | |
| 3,400.0 | 3,293.9 | 3,297.4 | 3,297.3 | 14.8 | 1.2 | -100.43 | 2,120.0 | -7,980.9 | 8,361.3 | 8,345.6 | 15.71 | 532.179 | |
| 3,500.0 | 3,388.4 | 3,363.0 | 3,362.9 | 15.4 | 1.2 | -100.58 | 2,120.3 | -7,980.8 | 8,367.6 | 8,351.2 | 16.35 | 511.841 | |
| 3,600.0 | 3,482.9 | 3,463.3 | 3,463.2 | 16.0 | 1.2 | -100.79 | 2,121.3 | -7,980.9 | 8,374.2 | 8,357.2 | 16.99 | 492.861 | |
| 3,700.0 | 3,577.5 | 3,569.6 | 3,569.5 | 16.7 | 1.2 | -101.02 | 2,121.9 | -7,980.8 | 8,380.6 | 8,363.0 | 17.63 | 475.477 | |
| 3,800.0 | 3,672.0 | 3,671.2 | 3,671.1 | 17.3 | 1.2 | -101.24 | 2,121.9 | -7,980.7 | 8,387.2 | 8,368.9 | 18.26 | 459.330 | |
| 3,900.0 | 3,766.5 | 3,762.1 | 3,762.0 | 18.0 | 1.3 | -101.44 | 2,121.9 | -7,980.5 | 8,393.8 | 8,374.9 | 18.90 | 444.203 | |
| 4,000.0 | 3,861.0 | 3,839.2 | 3,839.1 | 18.6 | 1.3 | -101.61 | 2,121.9 | -7,980.5 | 8,400.7 | 8,381.2 | 19.53 | 430.176 | |
| 4,100.0 | 3,955.5 | 3,914.2 | 3,914.1 | 19.3 | 1.3 | -101.77 | 2,121.8 | -7,980.7 | 8,407.9 | 8,387.8 | 20.16 | 417.068 | |
| 4,200.0 | 4,050.1 | 4,000.0 | 3,999.9 | 19.9 | 1.3 | -101.96 | 2,121.7 | -7,981.0 | 8,415.4 | 8,394.5 | 20.81 | 404.481 | |
| 4,300.0 | 4,144.6 | 4,084.1 | 4,084.0 | 20.5 | 1.3 | -102.15 | 2,121.5 | -7,981.4 | 8,423.0 | 8,401.6 | 21.45 | 392.671 | |
| 4,400.0 | 4,239.1 | 4,178.0 | 4,177.9 | 21.2 | 1.3 | -102.35 | 2,121.4 | -7,982.0 | 8,430.9 | 8,408.8 | 22.10 | 381.538 | |
| 4,500.0 | 4,333.6 | 4,301.1 | 4,300.9 | 21.8 | 1.3 | -102.62 | 2,121.1 | -7,982.5 | 8,438.8 | 8,416.1 | 22.74 | 371.061 | |
| 4,600.0 | 4,428.2 | 4,399.7 | 4,399.6 | 22.5 | 1.3 | -102.84 | 2,120.7 | -7,982.8 | 8,446.6 | 8,423.3 | 23.38 | 361.216 | |
| 4,700.0 | 4,522.7 | 4,514.5 | 4,514.3 | 23.1 | 1.3 | -103.09 | 2,120.1 | -7,983.0 | 8,454.5 | 8,430.4 | 24.02 | 351.940 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - ABDN VERT NOFFSINGER #1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,600.0 | 4,599.9 | 23.8 | 1.3 | -103.28 | 2,119.6 | -7,982.8 | 8,462.1 | 8,437.4 | 24.65 | 343.228 | |
| 4,900.0 | 4,711.7 | 4,667.1 | 4,667.0 | 24.4 | 1.3 | -103.43 | 2,119.4 | -7,982.8 | 8,470.1 | 8,444.8 | 25.28 | 335.012 | |
| 5,000.0 | 4,806.2 | 4,742.3 | 4,742.2 | 25.1 | 1.4 | -103.59 | 2,119.3 | -7,983.3 | 8,478.8 | 8,452.9 | 25.92 | 327.131 | |
| 5,100.0 | 4,900.8 | 4,900.0 | 4,899.9 | 25.7 | 1.4 | -103.93 | 2,118.8 | -7,983.6 | 8,487.1 | 8,460.5 | 26.55 | 319.658 | |
| 5,200.0 | 4,995.3 | 4,967.1 | 4,967.0 | 26.4 | 1.4 | -104.08 | 2,118.6 | -7,983.5 | 8,495.3 | 8,468.1 | 27.18 | 312.605 | |
| 5,300.0 | 5,089.8 | 5,040.1 | 5,040.0 | 27.0 | 1.4 | -104.23 | 2,118.7 | -7,983.8 | 8,504.1 | 8,476.3 | 27.81 | 305.825 | |
| 5,400.0 | 5,184.3 | 5,135.3 | 5,135.2 | 27.7 | 1.4 | -104.43 | 2,119.2 | -7,984.1 | 8,513.1 | 8,484.6 | 28.45 | 299.277 | |
| 5,500.0 | 5,278.9 | 5,212.8 | 5,212.7 | 28.3 | 1.4 | -104.59 | 2,119.7 | -7,984.5 | 8,522.2 | 8,493.1 | 29.08 | 293.047 | |
| 5,533.5 | 5,310.5 | 5,239.8 | 5,239.6 | 28.5 | 1.4 | -104.65 | 2,119.8 | -7,984.7 | 8,525.4 | 8,496.1 | 29.29 | 291.022 | |
| 5,600.0 | 5,373.6 | 5,413.0 | 5,412.9 | 28.9 | 1.4 | -105.12 | 2,119.3 | -7,985.2 | 8,531.5 | 8,501.8 | 29.63 | 287.923 | |
| 5,700.0 | 5,469.4 | 5,508.4 | 5,508.3 | 29.3 | 1.4 | -105.44 | 2,118.8 | -7,984.6 | 8,538.7 | 8,508.7 | 30.04 | 284.222 | |
| 5,800.0 | 5,566.1 | 5,600.0 | 5,599.9 | 29.8 | 1.4 | -105.72 | 2,118.9 | -7,984.1 | 8,545.2 | 8,514.8 | 30.41 | 280.967 | |
| 5,900.0 | 5,663.6 | 5,678.1 | 5,677.9 | 30.1 | 1.5 | -105.93 | 2,119.5 | -7,983.7 | 8,550.9 | 8,520.1 | 30.75 | 278.044 | |
| 6,000.0 | 5,761.9 | 5,764.5 | 5,764.4 | 30.5 | 1.5 | -106.13 | 2,120.2 | -7,983.5 | 8,555.9 | 8,524.8 | 31.06 | 275.500 | |
| 6,100.0 | 5,860.7 | 5,851.1 | 5,851.0 | 30.7 | 1.5 | -106.29 | 2,120.9 | -7,983.3 | 8,560.0 | 8,528.7 | 31.32 | 273.319 | |
| 6,200.0 | 5,960.0 | 5,967.6 | 5,967.4 | 31.0 | 1.5 | -106.43 | 2,122.0 | -7,983.2 | 8,563.3 | 8,531.8 | 31.54 | 271.476 | |
| 6,300.0 | 6,059.7 | 6,068.2 | 6,068.0 | 31.2 | 1.5 | -106.52 | 2,122.8 | -7,982.8 | 8,565.3 | 8,533.6 | 31.73 | 269.971 | |
| 6,400.0 | 6,159.6 | 6,146.4 | 6,146.2 | 31.3 | 1.6 | -106.56 | 2,123.6 | -7,982.6 | 8,566.5 | 8,534.7 | 31.87 | 268.796 | |
| 6,486.1 | 6,245.7 | 6,211.6 | 6,211.4 | 31.4 | 1.6 | -85.41 | 2,124.3 | -7,982.6 | 8,567.0 | 8,546.8 | 20.19 | 424.413 | |
| 6,500.0 | 6,259.6 | 6,223.5 | 6,223.4 | 31.4 | 1.6 | -85.41 | 2,124.4 | -7,982.7 | 8,567.1 | 8,546.9 | 20.21 | 423.951 | |
| 6,516.1 | 6,275.7 | 6,237.4 | 6,237.3 | 31.4 | 1.6 | -85.41 | 2,124.5 | -7,982.7 | 8,567.1 | 8,546.9 | 20.24 | 423.365 | |
| 6,550.0 | 6,309.5 | 6,266.6 | 6,266.5 | 31.5 | 1.6 | 4.60 | 2,124.7 | -7,982.8 | 8,566.4 | 8,534.4 | 32.00 | 267.737 | |
| 6,600.0 | 6,359.4 | 6,326.4 | 6,326.2 | 31.5 | 1.6 | 4.63 | 2,125.0 | -7,982.9 | 8,562.5 | 8,530.5 | 31.98 | 267.716 | |
| 6,650.0 | 6,408.8 | 6,650.0 | 6,389.3 | 31.5 | 1.7 | 4.68 | 2,125.2 | -7,982.9 | 8,554.9 | 8,522.9 | 32.00 | 267.301 | |
| 6,700.0 | 6,457.5 | 6,400.0 | 6,399.8 | 31.5 | 1.6 | 4.76 | 2,125.3 | -7,982.9 | 8,544.1 | 8,512.3 | 31.81 | 268.614 | |
| 6,716.1 | 6,473.1 | 6,400.0 | 6,399.8 | 31.5 | 1.6 | 4.79 | 2,125.3 | -7,982.9 | 8,539.9 | 8,508.2 | 31.75 | 269.005 | |
| 6,725.0 | 6,481.6 | 6,400.0 | 6,399.8 | 31.5 | 1.6 | 4.81 | 2,125.3 | -7,982.9 | 8,537.5 | 8,505.8 | 31.69 | 269.442 | |
| 6,750.0 | 6,505.3 | 6,400.0 | 6,399.8 | 31.5 | 1.6 | 4.89 | 2,125.3 | -7,982.9 | 8,529.8 | 8,498.3 | 31.48 | 270.999 | |
| 6,775.0 | 6,528.5 | 6,400.0 | 6,399.8 | 31.4 | 1.6 | 4.99 | 2,125.3 | -7,982.9 | 8,520.9 | 8,489.7 | 31.20 | 273.071 | |
| 6,800.0 | 6,551.3 | 6,400.0 | 6,399.8 | 31.4 | 1.6 | 5.11 | 2,125.3 | -7,982.9 | 8,510.9 | 8,480.0 | 30.87 | 275.701 | |
| 6,825.0 | 6,573.4 | 6,400.0 | 6,399.8 | 31.4 | 1.6 | 5.24 | 2,125.3 | -7,982.9 | 8,499.7 | 8,469.3 | 30.47 | 278.927 | |
| 6,850.0 | 6,595.0 | 6,400.0 | 6,399.8 | 31.3 | 1.6 | 5.40 | 2,125.3 | -7,982.9 | 8,487.5 | 8,457.5 | 30.01 | 282.783 | |
| 6,875.0 | 6,615.8 | 6,400.0 | 6,399.8 | 31.3 | 1.6 | 5.58 | 2,125.3 | -7,982.9 | 8,474.2 | 8,444.7 | 29.50 | 287.304 | |
| 6,900.0 | 6,635.9 | 6,400.0 | 6,399.8 | 31.3 | 1.6 | 5.79 | 2,125.3 | -7,982.9 | 8,459.9 | 8,431.0 | 28.92 | 292.527 | |
| 6,925.0 | 6,655.1 | 6,400.0 | 6,399.8 | 31.2 | 1.6 | 6.03 | 2,125.3 | -7,982.9 | 8,444.5 | 8,416.3 | 28.29 | 298.484 | |
| 6,950.0 | 6,673.6 | 6,400.0 | 6,399.8 | 31.2 | 1.6 | 6.30 | 2,125.3 | -7,982.9 | 8,428.3 | 8,400.6 | 27.61 | 305.206 | |
| 6,975.0 | 6,691.1 | 6,400.0 | 6,399.8 | 31.1 | 1.6 | 6.63 | 2,125.3 | -7,982.9 | 8,411.0 | 8,384.1 | 26.90 | 312.718 | |
| 7,000.0 | 6,707.6 | 6,400.0 | 6,399.8 | 31.1 | 1.6 | 7.00 | 2,125.3 | -7,982.9 | 8,392.9 | 8,366.8 | 26.14 | 321.028 | |
| 7,025.0 | 6,723.1 | 6,400.0 | 6,399.8 | 31.0 | 1.6 | 7.44 | 2,125.3 | -7,982.9 | 8,374.0 | 8,348.6 | 25.37 | 330.121 | |
| 7,050.0 | 6,737.6 | 6,400.0 | 6,399.8 | 31.0 | 1.6 | 7.95 | 2,125.3 | -7,982.9 | 8,354.3 | 8,329.7 | 24.58 | 339.935 | |
| 7,075.0 | 6,751.0 | 6,400.0 | 6,399.8 | 30.9 | 1.6 | 8.57 | 2,125.3 | -7,982.9 | 8,333.8 | 8,310.0 | 23.79 | 350.344 | |
| 7,100.0 | 6,763.3 | 6,400.0 | 6,399.8 | 30.8 | 1.6 | 9.31 | 2,125.3 | -7,982.9 | 8,312.6 | 8,289.6 | 23.02 | 361.110 | |
| 7,125.0 | 6,774.5 | 6,400.0 | 6,399.8 | 30.8 | 1.6 | 10.22 | 2,125.3 | -7,982.9 | 8,290.8 | 8,268.5 | 22.30 | 371.836 | |
| 7,150.0 | 6,784.4 | 6,400.0 | 6,399.8 | 30.7 | 1.6 | 11.35 | 2,125.3 | -7,982.9 | 8,268.4 | 8,246.8 | 21.65 | 381.892 | |
| 7,175.0 | 6,793.1 | 6,400.0 | 6,399.8 | 30.7 | 1.6 | 12.79 | 2,125.3 | -7,982.9 | 8,245.5 | 8,224.4 | 21.12 | 390.342 | |
| 7,200.0 | 6,800.6 | 6,400.0 | 6,399.8 | 30.6 | 1.6 | 14.68 | 2,125.3 | -7,982.9 | 8,222.1 | 8,201.3 | 20.77 | 395.889 | |
| 7,225.0 | 6,806.8 | 6,400.0 | 6,399.8 | 30.6 | 1.6 | 17.25 | 2,125.3 | -7,982.9 | 8,198.3 | 8,177.6 | 20.66 | 396.888 | |
| 7,250.0 | 6,811.8 | 6,400.0 | 6,399.8 | 30.5 | 1.6 | 20.91 | 2,125.3 | -7,982.9 | 8,174.2 | 8,153.3 | 20.88 | 391.519 | |
| 7,275.0 | 6,815.5 | 6,400.0 | 6,399.8 | 30.5 | 1.6 | 26.46 | 2,125.3 | -7,982.9 | 8,149.7 | 8,128.2 | 21.54 | 378.275 | |
| 7,300.0 | 6,817.8 | 6,400.0 | 6,399.8 | 30.4 | 1.6 | 35.60 | 2,125.3 | -7,982.9 | 8,125.1 | 8,102.3 | 22.73 | 357.388 | |
| 7,325.0 | 6,818.9 | 6,400.0 | 6,399.8 | 30.4 | 1.6 | 51.93 | 2,125.3 | -7,982.9 | 8,100.3 | 8,076.2 | 24.07 | 336.573 | |
| 7,332.8 | 6,819.0 | 6,400.0 | 6,399.8 | 30.4 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 8,092.5 | 8,068.3 | 24.20 | 334.360 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - ABDN VERT NOFFSINGER #1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,400.0 | 6,399.8 | 30.3 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 8,025.7 | 8,000.8 | 24.85 | 323.012 | |
| 7,500.0 | 6,819.0 | 6,400.0 | 6,399.8 | 30.2 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 7,926.2 | 7,900.2 | 26.00 | 304.910 | |
| 7,600.0 | 6,819.0 | 6,400.0 | 6,399.8 | 30.3 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 7,826.7 | 7,799.3 | 27.34 | 286.244 | |
| 7,700.0 | 6,819.0 | 6,400.0 | 6,399.8 | 30.6 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 7,727.2 | 7,698.3 | 28.86 | 267.773 | |
| 7,800.0 | 6,819.0 | 6,400.0 | 6,399.8 | 31.3 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 7,627.7 | 7,597.2 | 30.51 | 250.004 | |
| 7,900.0 | 6,819.0 | 6,400.0 | 6,399.8 | 32.5 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 7,528.3 | 7,496.0 | 32.28 | 233.230 | |
| 8,000.0 | 6,819.0 | 6,400.0 | 6,399.8 | 34.2 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 7,428.9 | 7,394.7 | 34.14 | 217.593 | |
| 8,100.0 | 6,819.0 | 6,400.0 | 6,399.8 | 36.1 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 7,329.4 | 7,293.4 | 36.08 | 203.132 | |
| 8,200.0 | 6,819.0 | 6,400.0 | 6,399.8 | 38.3 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 7,230.0 | 7,192.0 | 38.09 | 189.822 | |
| 8,300.0 | 6,819.0 | 6,400.0 | 6,399.8 | 40.6 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 7,130.7 | 7,090.5 | 40.15 | 177.605 | |
| 8,400.0 | 6,819.0 | 6,400.0 | 6,399.8 | 42.9 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 7,031.3 | 6,989.0 | 42.26 | 166.400 | |
| 8,500.0 | 6,819.0 | 6,400.0 | 6,399.8 | 45.3 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 6,932.0 | 6,887.6 | 44.40 | 156.124 | |
| 8,600.0 | 6,819.0 | 6,400.0 | 6,399.8 | 47.8 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 6,832.6 | 6,786.1 | 46.58 | 146.692 | |
| 8,700.0 | 6,819.0 | 6,400.0 | 6,399.8 | 50.3 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 6,733.3 | 6,684.5 | 48.78 | 138.023 | |
| 8,800.0 | 6,819.0 | 6,400.0 | 6,399.8 | 52.8 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 6,634.0 | 6,583.0 | 51.01 | 130.044 | |
| 8,900.0 | 6,819.0 | 6,400.0 | 6,399.8 | 55.4 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 6,534.8 | 6,481.5 | 53.26 | 122.685 | |
| 9,000.0 | 6,819.0 | 6,400.0 | 6,399.8 | 58.0 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 6,435.5 | 6,380.0 | 55.53 | 115.885 | |
| 9,100.0 | 6,819.0 | 6,400.0 | 6,399.8 | 60.6 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 6,336.3 | 6,278.5 | 57.82 | 109.590 | |
| 9,200.0 | 6,819.0 | 6,400.0 | 6,399.8 | 63.2 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 6,237.1 | 6,177.0 | 60.12 | 103.749 | |
| 9,300.0 | 6,819.0 | 6,400.0 | 6,399.8 | 65.9 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 6,138.0 | 6,075.5 | 62.43 | 98.320 | |
| 9,400.0 | 6,819.0 | 6,400.0 | 6,399.8 | 68.5 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 6,038.8 | 5,974.1 | 64.75 | 93.263 | |
| 9,500.0 | 6,819.0 | 6,400.0 | 6,399.8 | 71.2 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 5,939.7 | 5,872.6 | 67.08 | 88.543 | |
| 9,600.0 | 6,819.0 | 6,400.0 | 6,399.8 | 73.9 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 5,840.6 | 5,771.2 | 69.42 | 84.131 | |
| 9,700.0 | 6,819.0 | 6,400.0 | 6,399.8 | 76.5 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 5,741.6 | 5,669.8 | 71.77 | 79.998 | |
| 9,800.0 | 6,819.0 | 6,400.0 | 6,399.8 | 79.2 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 5,642.6 | 5,568.5 | 74.13 | 76.121 | |
| 9,900.0 | 6,819.0 | 6,400.0 | 6,399.8 | 81.9 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 5,543.6 | 5,467.1 | 76.49 | 72.477 | |
| 10,000.0 | 6,819.0 | 6,400.0 | 6,399.8 | 84.6 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 5,444.7 | 5,365.8 | 78.86 | 69.046 | |
| 10,100.0 | 6,819.0 | 6,400.0 | 6,399.8 | 87.4 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 5,345.8 | 5,264.5 | 81.23 | 65.812 | |
| 10,200.0 | 6,819.0 | 6,400.0 | 6,399.8 | 90.1 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 5,246.9 | 5,163.3 | 83.61 | 62.758 | |
| 10,300.0 | 6,819.0 | 6,400.0 | 6,399.8 | 92.8 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 5,148.1 | 5,062.1 | 85.99 | 59.871 | |
| 10,400.0 | 6,819.0 | 6,400.0 | 6,399.8 | 95.5 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 5,049.3 | 4,960.9 | 88.37 | 57.137 | |
| 10,500.0 | 6,819.0 | 6,400.0 | 6,399.8 | 98.3 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 4,950.6 | 4,859.8 | 90.76 | 54.545 | |
| 10,600.0 | 6,819.0 | 6,400.0 | 6,399.8 | 101.0 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 4,851.9 | 4,758.8 | 93.15 | 52.085 | |
| 10,700.0 | 6,819.0 | 6,400.0 | 6,399.8 | 103.8 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 4,753.3 | 4,657.8 | 95.55 | 49.747 | |
| 10,800.0 | 6,819.0 | 6,400.0 | 6,399.8 | 106.5 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 4,654.8 | 4,556.8 | 97.95 | 47.523 | |
| 10,900.0 | 6,819.0 | 6,400.0 | 6,399.8 | 109.2 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 4,556.3 | 4,455.9 | 100.35 | 45.404 | |
| 11,000.0 | 6,819.0 | 6,400.0 | 6,399.8 | 112.0 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 4,457.9 | 4,355.1 | 102.75 | 43.384 | |
| 11,100.0 | 6,819.0 | 6,400.0 | 6,399.8 | 114.8 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 4,359.5 | 4,254.4 | 105.16 | 41.456 | |
| 11,200.0 | 6,819.0 | 6,400.0 | 6,399.8 | 117.5 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 4,261.2 | 4,153.7 | 107.57 | 39.615 | |
| 11,300.0 | 6,819.0 | 6,400.0 | 6,399.8 | 120.3 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 4,163.1 | 4,053.1 | 109.98 | 37.854 | |
| 11,400.0 | 6,819.0 | 6,400.0 | 6,399.8 | 123.0 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 4,064.9 | 3,952.6 | 112.39 | 36.168 | |
| 11,500.0 | 6,819.0 | 6,400.0 | 6,399.8 | 125.8 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 3,966.9 | 3,852.1 | 114.80 | 34.554 | |
| 11,600.0 | 6,819.0 | 6,400.0 | 6,399.8 | 128.6 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 3,869.0 | 3,751.8 | 117.22 | 33.007 | |
| 11,700.0 | 6,819.0 | 6,400.0 | 6,399.8 | 131.3 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 3,771.2 | 3,651.6 | 119.63 | 31.523 | |
| 11,800.0 | 6,819.0 | 6,400.0 | 6,399.8 | 134.1 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 3,673.6 | 3,551.5 | 122.05 | 30.098 | |
| 11,900.0 | 6,819.0 | 6,400.0 | 6,399.8 | 136.9 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 3,576.0 | 3,451.5 | 124.47 | 28.729 | |
| 12,000.0 | 6,819.0 | 6,400.0 | 6,399.8 | 139.6 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 3,478.6 | 3,351.7 | 126.89 | 27.414 | |
| 12,100.0 | 6,819.0 | 6,400.0 | 6,399.8 | 142.4 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 3,381.4 | 3,252.0 | 129.31 | 26.148 | |
| 12,200.0 | 6,819.0 | 6,400.0 | 6,399.8 | 145.2 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 3,284.3 | 3,152.5 | 131.74 | 24.930 | |
| 12,300.0 | 6,819.0 | 6,400.0 | 6,399.8 | 148.0 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 3,187.3 | 3,053.2 | 134.16 | 23.757 | |
| 12,400.0 | 6,819.0 | 6,400.0 | 6,399.8 | 150.8 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 3,090.6 | 2,954.0 | 136.59 | 22.628 | |
| 12,500.0 | 6,819.0 | 6,400.0 | 6,399.8 | 153.5 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 2,994.1 | 2,855.1 | 139.01 | 21.538 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - ABDN VERT NOFFSINGER #1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,400.0 | 6,399.8 | 156.3 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 2,897.9 | 2,756.4 | 141.44 | 20.488 | |
| 12,700.0 | 6,819.0 | 6,400.0 | 6,399.8 | 159.1 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 2,801.9 | 2,658.0 | 143.87 | 19.475 | |
| 12,800.0 | 6,819.0 | 6,400.0 | 6,399.8 | 161.9 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 2,706.2 | 2,559.9 | 146.30 | 18.498 | |
| 12,900.0 | 6,819.0 | 6,400.0 | 6,399.8 | 164.7 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 2,610.8 | 2,462.0 | 148.73 | 17.554 | |
| 13,000.0 | 6,819.0 | 6,400.0 | 6,399.8 | 167.4 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 2,515.7 | 2,364.6 | 151.16 | 16.643 | |
| 13,100.0 | 6,819.0 | 6,400.0 | 6,399.8 | 170.2 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 2,421.1 | 2,267.5 | 153.59 | 15.764 | |
| 13,200.0 | 6,819.0 | 6,400.0 | 6,399.8 | 173.0 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 2,326.9 | 2,170.9 | 156.02 | 14.914 | |
| 13,300.0 | 6,819.0 | 6,400.0 | 6,399.8 | 175.8 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 2,233.2 | 2,074.8 | 158.45 | 14.094 | |
| 13,400.0 | 6,819.0 | 6,400.0 | 6,399.8 | 178.6 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 2,140.1 | 1,979.3 | 160.88 | 13.303 | |
| 13,500.0 | 6,819.0 | 6,400.0 | 6,399.8 | 181.4 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 2,047.7 | 1,884.4 | 163.32 | 12.538 | |
| 13,600.0 | 6,819.0 | 6,400.0 | 6,399.8 | 184.2 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,956.0 | 1,790.2 | 165.75 | 11.801 | |
| 13,700.0 | 6,819.0 | 6,400.0 | 6,399.8 | 187.0 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,865.1 | 1,696.9 | 168.18 | 11.090 | |
| 13,800.0 | 6,819.0 | 6,400.0 | 6,399.8 | 189.7 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,775.2 | 1,604.6 | 170.62 | 10.405 | |
| 13,900.0 | 6,819.0 | 6,400.0 | 6,399.8 | 192.5 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,686.5 | 1,513.4 | 173.05 | 9.746 | |
| 14,000.0 | 6,819.0 | 6,400.0 | 6,399.8 | 195.3 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,599.1 | 1,423.6 | 175.49 | 9.112 | |
| 14,100.0 | 6,819.0 | 6,400.0 | 6,399.8 | 198.1 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,513.2 | 1,335.3 | 177.92 | 8.505 | |
| 14,200.0 | 6,819.0 | 6,400.0 | 6,399.8 | 200.9 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,429.2 | 1,248.9 | 180.36 | 7.924 | |
| 14,300.0 | 6,819.0 | 6,400.0 | 6,399.8 | 203.7 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,347.4 | 1,164.6 | 182.80 | 7.371 | |
| 14,400.0 | 6,819.0 | 6,400.0 | 6,399.8 | 206.5 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,268.2 | 1,083.0 | 185.24 | 6.846 | |
| 14,500.0 | 6,819.0 | 6,400.0 | 6,399.8 | 209.3 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,192.1 | 1,004.5 | 187.67 | 6.352 | |
| 14,600.0 | 6,819.0 | 6,400.0 | 6,399.8 | 212.1 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,119.8 | 929.7 | 190.11 | 5.890 | |
| 14,700.0 | 6,819.0 | 6,400.0 | 6,399.8 | 214.9 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,052.1 | 859.5 | 192.55 | 5.464 | |
| 14,720.3 | 6,819.0 | 6,400.0 | 6,399.8 | 215.4 | 1.6 | 59.39 | 2,125.3 | -7,982.9 | 1,039.0 | 845.9 | 193.04 | 5.382 | CC, ES, SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EHRLICH 5M-243 - ORIGINAL WELLBORE - PROPOSAL #1 — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 25.0 | 25.0 | 0.0 | 0.0 | -67.74 | 3,609.4 | -8,819.1 | 9,529.1 | | | | |
| 100.0 | 100.0 | 125.0 | 125.0 | 0.1 | 0.1 | -67.74 | 3,609.4 | -8,819.1 | 9,529.1 | 9,528.9 | 0.23 | N/A | |
| 200.0 | 200.0 | 225.0 | 225.0 | 0.3 | 0.4 | -67.74 | 3,609.4 | -8,819.1 | 9,529.1 | 9,528.4 | 0.68 | N/A | |
| 300.0 | 300.0 | 325.0 | 325.0 | 0.5 | 0.6 | -67.74 | 3,609.4 | -8,819.1 | 9,529.1 | 9,528.0 | 1.13 | 8,445.364 | |
| 400.0 | 400.0 | 425.0 | 425.0 | 0.8 | 0.8 | -67.74 | 3,609.4 | -8,819.1 | 9,529.1 | 9,527.5 | 1.58 | 6,039.277 | |
| 500.0 | 500.0 | 525.0 | 525.0 | 1.0 | 1.0 | -67.74 | 3,609.4 | -8,819.1 | 9,529.1 | 9,527.1 | 2.03 | 4,700.192 | |
| 600.0 | 600.0 | 625.0 | 625.0 | 1.2 | 1.3 | -67.74 | 3,609.4 | -8,819.1 | 9,529.1 | 9,526.6 | 2.48 | 3,847.162 | |
| 700.0 | 700.0 | 725.0 | 725.0 | 1.4 | 1.5 | -67.74 | 3,609.4 | -8,819.1 | 9,529.1 | 9,526.2 | 2.93 | 3,256.200 | |
| 800.0 | 800.0 | 825.0 | 825.0 | 1.7 | 1.7 | -67.74 | 3,609.4 | -8,819.1 | 9,529.1 | 9,525.7 | 3.38 | 2,822.619 | |
| 900.0 | 900.0 | 925.0 | 925.0 | 1.9 | 1.9 | -88.91 | 3,609.4 | -8,819.1 | 9,529.1 | 9,525.3 | 3.82 | 2,492.076 | |
| 1,000.0 | 999.8 | 10,724.7 | 6,717.5 | 2.1 | 75.2 | -114.11 | -29.5 | -7,624.4 | 9,517.2 | 9,441.6 | 75.59 | 125.906 | |
| 1,100.0 | 1,099.5 | 10,715.9 | 6,717.5 | 2.3 | 75.0 | -115.29 | -20.7 | -7,624.4 | 9,460.5 | 9,384.6 | 75.97 | 124.527 | |
| 1,200.0 | 1,198.7 | 10,703.8 | 6,717.6 | 2.6 | 74.8 | -116.38 | -8.7 | -7,624.4 | 9,405.8 | 9,329.6 | 76.24 | 123.376 | |
| 1,300.0 | 1,297.5 | 10,688.6 | 6,717.7 | 2.9 | 74.5 | -117.38 | 6.6 | -7,624.4 | 9,353.1 | 9,276.7 | 76.40 | 122.425 | |
| 1,400.0 | 1,395.6 | 10,670.1 | 6,717.8 | 3.2 | 74.2 | -118.29 | 25.1 | -7,624.4 | 9,302.6 | 9,226.1 | 76.47 | 121.648 | |
| 1,500.0 | 1,493.1 | 10,648.5 | 6,718.0 | 3.5 | 73.8 | -119.11 | 46.7 | -7,624.4 | 9,254.2 | 9,177.8 | 76.47 | 121.021 | |
| 1,507.2 | 1,500.0 | 10,646.8 | 6,718.0 | 3.6 | 73.8 | -119.17 | 48.4 | -7,624.4 | 9,250.9 | 9,174.4 | 76.46 | 120.985 | |
| 1,572.2 | 1,563.0 | 10,631.5 | 6,718.1 | 3.8 | 73.5 | -119.06 | 63.6 | -7,624.4 | 9,220.4 | 9,144.0 | 76.39 | 120.701 | |
| 1,600.0 | 1,590.0 | 10,624.9 | 6,718.1 | 3.9 | 73.4 | -119.27 | 70.3 | -7,624.4 | 9,207.6 | 9,131.2 | 76.37 | 120.559 | |
| 1,700.0 | 1,686.3 | 10,599.0 | 6,718.3 | 4.4 | 72.9 | -119.97 | 96.2 | -7,624.4 | 9,162.8 | 9,086.5 | 76.29 | 120.101 | |
| 1,800.0 | 1,781.5 | 10,570.0 | 6,718.5 | 4.9 | 72.4 | -120.59 | 125.2 | -7,624.3 | 9,120.5 | 9,044.3 | 76.16 | 119.761 | |
| 1,817.6 | 1,798.2 | 10,564.6 | 6,718.6 | 5.0 | 72.3 | -120.69 | 130.6 | -7,624.3 | 9,113.3 | 9,037.1 | 76.13 | 119.713 | |
| 1,900.0 | 1,876.1 | 10,539.0 | 6,718.7 | 5.5 | 71.8 | -120.52 | 156.2 | -7,624.3 | 9,080.0 | 9,003.9 | 76.05 | 119.401 | |
| 2,000.0 | 1,970.6 | 10,507.9 | 6,718.9 | 6.0 | 71.3 | -120.32 | 187.3 | -7,624.3 | 9,040.3 | 8,964.4 | 75.96 | 119.008 | |
| 2,100.0 | 2,065.1 | 10,476.8 | 6,719.2 | 6.6 | 70.7 | -120.12 | 218.4 | -7,624.3 | 9,001.5 | 8,925.6 | 75.90 | 118.605 | |
| 2,200.0 | 2,159.6 | 10,445.7 | 6,719.4 | 7.2 | 70.1 | -119.92 | 249.5 | -7,624.3 | 8,963.5 | 8,887.7 | 75.84 | 118.195 | |
| 2,300.0 | 2,254.1 | 10,414.6 | 6,719.6 | 7.8 | 69.6 | -119.72 | 280.5 | -7,624.3 | 8,926.4 | 8,850.6 | 75.79 | 117.784 | |
| 2,400.0 | 2,348.7 | 10,383.5 | 6,719.8 | 8.4 | 69.0 | -119.51 | 311.6 | -7,624.3 | 8,890.1 | 8,814.4 | 75.74 | 117.373 | |
| 2,500.0 | 2,443.2 | 10,352.4 | 6,720.0 | 9.1 | 68.5 | -119.31 | 342.7 | -7,624.3 | 8,854.7 | 8,779.0 | 75.70 | 116.965 | |
| 2,600.0 | 2,537.7 | 10,321.3 | 6,720.2 | 9.7 | 67.9 | -119.11 | 373.8 | -7,624.3 | 8,820.2 | 8,744.5 | 75.67 | 116.562 | |
| 2,700.0 | 2,632.2 | 10,290.3 | 6,720.4 | 10.3 | 67.4 | -118.90 | 404.9 | -7,624.2 | 8,786.6 | 8,710.9 | 75.64 | 116.163 | |
| 2,800.0 | 2,726.8 | 10,259.2 | 6,720.6 | 10.9 | 66.8 | -118.70 | 436.0 | -7,624.2 | 8,753.8 | 8,678.2 | 75.61 | 115.772 | |
| 2,900.0 | 2,821.3 | 10,228.1 | 6,720.8 | 11.6 | 66.3 | -118.50 | 467.1 | -7,624.2 | 8,722.0 | 8,646.4 | 75.59 | 115.387 | |
| 3,000.0 | 2,915.8 | 10,197.0 | 6,721.1 | 12.2 | 65.7 | -118.30 | 498.2 | -7,624.2 | 8,691.1 | 8,615.6 | 75.57 | 115.011 | |
| 3,100.0 | 3,010.3 | 10,165.9 | 6,721.3 | 12.8 | 65.2 | -118.09 | 529.3 | -7,624.2 | 8,661.2 | 8,585.6 | 75.55 | 114.643 | |
| 3,200.0 | 3,104.8 | 10,134.8 | 6,721.5 | 13.5 | 64.6 | -117.89 | 560.3 | -7,624.2 | 8,632.2 | 8,556.6 | 75.53 | 114.285 | |
| 3,300.0 | 3,199.4 | 10,103.7 | 6,721.7 | 14.1 | 64.1 | -117.68 | 591.4 | -7,624.2 | 8,604.1 | 8,528.6 | 75.52 | 113.936 | |
| 3,400.0 | 3,293.9 | 10,072.6 | 6,721.9 | 14.8 | 63.5 | -117.48 | 622.5 | -7,624.2 | 8,577.0 | 8,501.5 | 75.50 | 113.596 | |
| 3,500.0 | 3,388.4 | 10,041.5 | 6,722.1 | 15.4 | 63.0 | -117.28 | 653.6 | -7,624.2 | 8,550.9 | 8,475.4 | 75.49 | 113.267 | |
| 3,600.0 | 3,482.9 | 10,010.5 | 6,722.3 | 16.0 | 62.4 | -117.07 | 684.7 | -7,624.1 | 8,525.7 | 8,450.3 | 75.48 | 112.949 | |
| 3,700.0 | 3,577.5 | 9,979.4 | 6,722.5 | 16.7 | 61.9 | -116.87 | 715.8 | -7,624.1 | 8,501.6 | 8,426.1 | 75.48 | 112.640 | |
| 3,800.0 | 3,672.0 | 9,948.3 | 6,722.7 | 17.3 | 61.3 | -116.66 | 746.9 | -7,624.1 | 8,478.4 | 8,403.0 | 75.47 | 112.343 | |
| 3,900.0 | 3,766.5 | 9,917.2 | 6,723.0 | 18.0 | 60.8 | -116.46 | 778.0 | -7,624.1 | 8,456.3 | 8,380.8 | 75.46 | 112.057 | |
| 4,000.0 | 3,861.0 | 9,886.1 | 6,723.2 | 18.6 | 60.2 | -116.26 | 809.0 | -7,624.1 | 8,435.1 | 8,359.7 | 75.46 | 111.782 | |
| 4,100.0 | 3,955.5 | 9,855.0 | 6,723.4 | 19.3 | 59.7 | -116.05 | 840.1 | -7,624.1 | 8,415.0 | 8,339.5 | 75.46 | 111.518 | |
| 4,200.0 | 4,050.1 | 9,823.9 | 6,723.6 | 19.9 | 59.2 | -115.85 | 871.2 | -7,624.1 | 8,395.9 | 8,320.4 | 75.46 | 111.267 | |
| 4,300.0 | 4,144.6 | 9,792.8 | 6,723.8 | 20.5 | 58.6 | -115.64 | 902.3 | -7,624.1 | 8,377.8 | 8,302.4 | 75.46 | 111.027 | |
| 4,400.0 | 4,239.1 | 9,761.7 | 6,724.0 | 21.2 | 58.1 | -115.44 | 933.4 | -7,624.1 | 8,360.8 | 8,285.4 | 75.46 | 110.798 | |
| 4,500.0 | 4,333.6 | 9,730.7 | 6,724.2 | 21.8 | 57.5 | -115.23 | 964.5 | -7,624.0 | 8,344.8 | 8,269.4 | 75.46 | 110.581 | |
| 4,600.0 | 4,428.2 | 9,699.6 | 6,724.4 | 22.5 | 57.0 | -115.03 | 995.6 | -7,624.0 | 8,329.9 | 8,254.5 | 75.47 | 110.378 | |
| 4,700.0 | 4,522.7 | 9,668.5 | 6,724.7 | 23.1 | 56.5 | -114.82 | 1,026.7 | -7,624.0 | 8,316.1 | 8,240.6 | 75.47 | 110.184 | |
| 4,800.0 | 4,617.2 | 9,637.4 | 6,724.9 | 23.8 | 55.9 | -114.62 | 1,057.7 | -7,624.0 | 8,303.3 | 8,227.8 | 75.48 | 110.003 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EHRLICH 5M-243 - ORIGINAL WELLBORE - PROPOSAL #1 — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 9,606.3 | 6,725.1 | 24.4 | 55.4 | -114.41 | 1,088.8 | -7,624.0 | 8,291.5 | 8,216.1 | 75.49 | 109.836 | |
| 5,000.0 | 4,806.2 | 9,575.2 | 6,725.3 | 25.1 | 54.9 | -114.20 | 1,119.9 | -7,624.0 | 8,280.9 | 8,205.4 | 75.50 | 109.679 | |
| 5,100.0 | 4,900.8 | 9,544.1 | 6,725.5 | 25.7 | 54.3 | -114.00 | 1,151.0 | -7,624.0 | 8,271.3 | 8,195.8 | 75.51 | 109.534 | |
| 5,200.0 | 4,995.3 | 9,513.0 | 6,725.7 | 26.4 | 53.8 | -113.79 | 1,182.1 | -7,624.0 | 8,262.8 | 8,187.3 | 75.53 | 109.403 | |
| 5,300.0 | 5,089.8 | 9,481.9 | 6,725.9 | 27.0 | 53.3 | -113.59 | 1,213.2 | -7,624.0 | 8,255.4 | 8,179.9 | 75.54 | 109.283 | |
| 5,400.0 | 5,184.3 | 9,450.9 | 6,726.1 | 27.7 | 52.8 | -113.38 | 1,244.3 | -7,623.9 | 8,249.1 | 8,173.6 | 75.56 | 109.175 | |
| 5,500.0 | 5,278.9 | 9,419.8 | 6,726.3 | 28.3 | 52.2 | -113.18 | 1,275.4 | -7,623.9 | 8,243.9 | 8,168.3 | 75.58 | 109.080 | |
| 5,533.5 | 5,310.5 | 9,409.3 | 6,726.4 | 28.5 | 52.1 | -113.11 | 1,285.8 | -7,623.9 | 8,242.4 | 8,166.8 | 75.58 | 109.051 | |
| 5,600.0 | 5,373.6 | 9,389.4 | 6,726.6 | 28.9 | 51.7 | -112.92 | 1,305.8 | -7,623.9 | 8,239.5 | 8,163.9 | 75.60 | 108.989 | |
| 5,700.0 | 5,469.4 | 9,361.9 | 6,726.7 | 29.3 | 51.3 | -112.65 | 1,333.3 | -7,623.9 | 8,234.9 | 8,159.3 | 75.56 | 108.986 | |
| 5,800.0 | 5,566.1 | 9,337.5 | 6,726.9 | 29.8 | 50.9 | -112.40 | 1,357.6 | -7,623.9 | 8,230.0 | 8,154.5 | 75.52 | 108.976 | |
| 5,900.0 | 5,663.6 | 9,316.3 | 6,727.0 | 30.1 | 50.5 | -112.16 | 1,378.8 | -7,623.9 | 8,225.0 | 8,149.6 | 75.49 | 108.960 | |
| 6,000.0 | 5,761.9 | 9,298.3 | 6,727.2 | 30.5 | 50.2 | -111.94 | 1,396.8 | -7,623.9 | 8,219.9 | 8,144.4 | 75.46 | 108.937 | |
| 6,100.0 | 5,860.7 | 9,283.5 | 6,727.3 | 30.7 | 50.0 | -111.74 | 1,411.7 | -7,623.9 | 8,214.6 | 8,139.2 | 75.43 | 108.906 | |
| 6,200.0 | 5,960.0 | 9,271.9 | 6,727.4 | 31.0 | 49.8 | -111.56 | 1,423.3 | -7,623.9 | 8,209.3 | 8,133.9 | 75.41 | 108.869 | |
| 6,300.0 | 6,059.7 | 9,263.5 | 6,727.4 | 31.2 | 49.7 | -111.40 | 1,431.6 | -7,623.9 | 8,203.8 | 8,128.4 | 75.39 | 108.825 | |
| 6,400.0 | 6,159.6 | 9,258.4 | 6,727.4 | 31.3 | 49.6 | -111.26 | 1,436.7 | -7,623.9 | 8,198.3 | 8,122.9 | 75.37 | 108.773 | |
| 6,486.1 | 6,245.7 | 9,256.6 | 6,727.5 | 31.4 | 49.5 | -90.00 | 1,438.5 | -7,623.9 | 8,193.5 | 8,146.4 | 47.12 | 173.870 | |
| 6,500.0 | 6,259.6 | 9,256.5 | 6,727.5 | 31.4 | 49.5 | -90.00 | 1,438.6 | -7,623.9 | 8,192.8 | 8,145.6 | 47.14 | 173.785 | |
| 6,516.1 | 6,275.7 | 9,256.4 | 6,727.5 | 31.4 | 49.5 | -90.00 | 1,438.7 | -7,623.9 | 8,191.9 | 8,144.7 | 47.17 | 173.677 | |
| 6,550.0 | 6,309.5 | 9,256.2 | 6,727.5 | 31.5 | 49.5 | 0.00 | 1,438.9 | -7,623.9 | 8,189.4 | 8,114.3 | 75.10 | 109.045 | |
| 6,600.0 | 6,359.4 | 9,255.8 | 6,727.5 | 31.5 | 49.5 | 0.00 | 1,439.3 | -7,623.9 | 8,183.1 | 8,108.6 | 74.42 | 109.951 | |
| 6,650.0 | 6,408.8 | 9,255.5 | 6,727.5 | 31.5 | 49.5 | 0.01 | 1,439.6 | -7,623.9 | 8,173.6 | 8,100.1 | 73.45 | 111.282 | |
| 6,700.0 | 6,457.5 | 9,255.2 | 6,727.5 | 31.5 | 49.5 | 0.01 | 1,439.9 | -7,623.9 | 8,161.0 | 8,088.8 | 72.18 | 113.061 | |
| 6,716.1 | 6,473.1 | 9,255.1 | 6,727.5 | 31.5 | 49.5 | 0.01 | 1,440.1 | -7,623.9 | 8,156.3 | 8,084.5 | 71.71 | 113.735 | |
| 6,725.0 | 6,481.6 | 9,255.0 | 6,727.5 | 31.5 | 49.5 | 0.01 | 1,440.1 | -7,623.9 | 8,153.5 | 8,082.2 | 71.30 | 114.351 | |
| 6,750.0 | 6,505.3 | 9,254.9 | 6,727.5 | 31.5 | 49.5 | 0.01 | 1,440.3 | -7,623.9 | 8,144.9 | 8,074.9 | 70.04 | 116.288 | |
| 6,775.0 | 6,528.5 | 9,254.7 | 6,727.5 | 31.4 | 49.5 | 0.01 | 1,440.4 | -7,623.9 | 8,135.2 | 8,066.6 | 68.63 | 118.533 | |
| 6,800.0 | 6,551.3 | 9,254.6 | 6,727.5 | 31.4 | 49.5 | 0.01 | 1,440.6 | -7,623.9 | 8,124.4 | 8,057.3 | 67.08 | 121.107 | |
| 6,825.0 | 6,573.4 | 9,254.4 | 6,727.5 | 31.4 | 49.5 | 0.02 | 1,440.7 | -7,623.9 | 8,112.4 | 8,047.0 | 65.40 | 124.036 | |
| 6,850.0 | 6,595.0 | 9,254.3 | 6,727.5 | 31.3 | 49.5 | 0.02 | 1,440.9 | -7,623.9 | 8,099.4 | 8,035.8 | 63.60 | 127.348 | |
| 6,875.0 | 6,615.8 | 9,254.1 | 6,727.5 | 31.3 | 49.5 | 0.02 | 1,441.0 | -7,623.9 | 8,085.3 | 8,023.7 | 61.68 | 131.075 | |
| 6,900.0 | 6,635.9 | 9,254.0 | 6,727.5 | 31.3 | 49.5 | 0.02 | 1,441.1 | -7,623.9 | 8,070.3 | 8,010.6 | 59.67 | 135.253 | |
| 6,925.0 | 6,655.1 | 9,253.9 | 6,727.5 | 31.2 | 49.5 | 0.02 | 1,441.3 | -7,623.9 | 8,054.2 | 7,996.6 | 57.56 | 139.919 | |
| 6,950.0 | 6,673.6 | 9,253.8 | 6,727.5 | 31.2 | 49.5 | 0.03 | 1,441.4 | -7,623.9 | 8,037.2 | 7,981.8 | 55.38 | 145.116 | |
| 6,975.0 | 6,691.1 | 9,253.6 | 6,727.5 | 31.1 | 49.5 | 0.03 | 1,441.5 | -7,623.9 | 8,019.3 | 7,966.2 | 53.15 | 150.883 | |
| 7,000.0 | 6,707.6 | 9,253.5 | 6,727.5 | 31.1 | 49.5 | 0.03 | 1,441.6 | -7,623.9 | 8,000.6 | 7,949.7 | 50.88 | 157.259 | |
| 7,025.0 | 6,723.1 | 9,253.4 | 6,727.5 | 31.0 | 49.5 | 0.04 | 1,441.7 | -7,623.9 | 7,981.0 | 7,932.4 | 48.58 | 164.273 | |
| 7,050.0 | 6,737.6 | 9,253.3 | 6,727.5 | 31.0 | 49.5 | 0.04 | 1,441.8 | -7,623.9 | 7,960.7 | 7,914.4 | 46.30 | 171.941 | |
| 7,075.0 | 6,751.0 | 9,253.3 | 6,727.5 | 30.9 | 49.5 | 0.04 | 1,441.9 | -7,623.9 | 7,939.7 | 7,895.6 | 44.05 | 180.249 | |
| 7,100.0 | 6,763.3 | 9,253.2 | 6,727.5 | 30.8 | 49.5 | 0.05 | 1,441.9 | -7,623.9 | 7,918.0 | 7,876.1 | 41.86 | 189.139 | |
| 7,125.0 | 6,774.5 | 9,253.1 | 6,727.5 | 30.8 | 49.5 | 0.06 | 1,442.0 | -7,623.9 | 7,895.7 | 7,855.9 | 39.78 | 198.488 | |
| 7,150.0 | 6,784.4 | 9,253.1 | 6,727.5 | 30.7 | 49.5 | 0.06 | 1,442.1 | -7,623.9 | 7,872.9 | 7,835.0 | 37.84 | 208.075 | |
| 7,175.0 | 6,793.1 | 9,253.0 | 6,727.5 | 30.7 | 49.5 | 0.07 | 1,442.1 | -7,623.9 | 7,849.5 | 7,813.5 | 36.08 | 217.554 | |
| 7,200.0 | 6,800.6 | 9,253.0 | 6,727.5 | 30.6 | 49.5 | 0.09 | 1,442.2 | -7,623.9 | 7,825.8 | 7,791.2 | 34.56 | 226.431 | |
| 7,225.0 | 6,806.8 | 9,252.9 | 6,727.5 | 30.6 | 49.5 | 0.11 | 1,442.2 | -7,623.9 | 7,801.7 | 7,768.3 | 33.33 | 234.067 | |
| 7,250.0 | 6,811.8 | 9,252.9 | 6,727.5 | 30.5 | 49.5 | 0.14 | 1,442.2 | -7,623.9 | 7,777.2 | 7,744.8 | 32.44 | 239.725 | |
| 7,275.0 | 6,815.5 | 9,252.9 | 6,727.5 | 30.5 | 49.5 | 0.19 | 1,442.2 | -7,623.9 | 7,752.6 | 7,720.6 | 31.94 | 242.690 | |
| 7,300.0 | 6,817.8 | 9,252.9 | 6,727.5 | 30.4 | 49.5 | 0.31 | 1,442.2 | -7,623.9 | 7,727.7 | 7,695.8 | 31.88 | 242.412 | |
| 7,325.0 | 6,818.9 | 9,252.9 | 6,727.5 | 30.4 | 49.5 | 0.84 | 1,442.2 | -7,623.9 | 7,702.8 | 7,670.4 | 32.32 | 238.294 | |
| 7,332.8 | 6,819.0 | 9,252.9 | 6,727.5 | 30.4 | 49.5 | 1.74 | 1,442.2 | -7,623.9 | 7,694.9 | 7,662.2 | 32.71 | 235.268 | |
| 7,400.0 | 6,819.0 | 9,252.9 | 6,727.5 | 30.3 | 49.5 | 1.73 | 1,442.2 | -7,623.9 | 7,627.8 | 7,594.7 | 33.03 | 230.951 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EHRLICH 5M-243 - ORIGINAL WELLBORE - PROPOSAL #1 — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 9,252.9 | 6,727.5 | 30.2 | 49.5 | 1.71 | 1,442.2 | -7,623.9 | 7,527.8 | 7,494.2 | 33.53 | 224.520 | |
| 7,600.0 | 6,819.0 | 9,253.0 | 6,727.5 | 30.3 | 49.5 | 1.69 | 1,442.1 | -7,623.9 | 7,427.8 | 7,393.7 | 34.05 | 218.118 | |
| 7,700.0 | 6,819.0 | 9,253.0 | 6,727.5 | 30.6 | 49.5 | 1.68 | 1,442.1 | -7,623.9 | 7,327.8 | 7,293.2 | 34.60 | 211.777 | |
| 7,800.0 | 6,819.0 | 9,253.1 | 6,727.5 | 31.3 | 49.5 | 1.66 | 1,442.1 | -7,623.9 | 7,227.8 | 7,192.6 | 35.17 | 205.523 | |
| 7,900.0 | 6,819.0 | 9,253.1 | 6,727.5 | 32.5 | 49.5 | 1.64 | 1,442.0 | -7,623.9 | 7,127.8 | 7,092.1 | 35.75 | 199.375 | |
| 8,000.0 | 6,819.0 | 9,253.1 | 6,727.5 | 34.2 | 49.5 | 1.62 | 1,442.0 | -7,623.9 | 7,027.8 | 6,991.5 | 36.35 | 193.349 | |
| 8,100.0 | 6,819.0 | 9,253.2 | 6,727.5 | 36.1 | 49.5 | 1.61 | 1,442.0 | -7,623.9 | 6,927.9 | 6,890.9 | 36.96 | 187.453 | |
| 8,200.0 | 6,819.0 | 9,253.2 | 6,727.5 | 38.3 | 49.5 | 1.59 | 1,441.9 | -7,623.9 | 6,827.9 | 6,790.3 | 37.58 | 181.696 | |
| 8,300.0 | 6,819.0 | 9,253.2 | 6,727.5 | 40.6 | 49.5 | 1.57 | 1,441.9 | -7,623.9 | 6,727.9 | 6,689.7 | 38.21 | 176.082 | |
| 8,400.0 | 6,819.0 | 9,253.3 | 6,727.5 | 42.9 | 49.5 | 1.55 | 1,441.9 | -7,623.9 | 6,627.9 | 6,589.0 | 38.85 | 170.612 | |
| 8,500.0 | 6,819.0 | 9,253.3 | 6,727.5 | 45.3 | 49.5 | 1.54 | 1,441.8 | -7,623.9 | 6,527.9 | 6,488.4 | 39.49 | 165.288 | |
| 8,600.0 | 6,819.0 | 9,253.3 | 6,727.5 | 47.8 | 49.5 | 1.52 | 1,441.8 | -7,623.9 | 6,427.9 | 6,387.8 | 40.15 | 160.108 | |
| 8,700.0 | 6,819.0 | 9,253.4 | 6,727.5 | 50.3 | 49.5 | 1.50 | 1,441.8 | -7,623.9 | 6,327.9 | 6,287.1 | 40.81 | 155.072 | |
| 8,800.0 | 6,819.0 | 9,253.4 | 6,727.5 | 52.8 | 49.5 | 1.48 | 1,441.7 | -7,623.9 | 6,228.0 | 6,186.5 | 41.47 | 150.177 | |
| 8,900.0 | 6,819.0 | 9,253.4 | 6,727.5 | 55.4 | 49.5 | 1.47 | 1,441.7 | -7,623.9 | 6,128.0 | 6,085.8 | 42.14 | 145.419 | |
| 9,000.0 | 6,819.0 | 9,253.5 | 6,727.5 | 58.0 | 49.5 | 1.45 | 1,441.6 | -7,623.9 | 6,028.0 | 5,985.2 | 42.81 | 140.796 | |
| 9,100.0 | 6,819.0 | 9,253.5 | 6,727.5 | 60.6 | 49.5 | 1.43 | 1,441.6 | -7,623.9 | 5,928.0 | 5,884.5 | 43.49 | 136.305 | |
| 9,200.0 | 6,819.0 | 9,253.6 | 6,727.5 | 63.2 | 49.5 | 1.41 | 1,441.6 | -7,623.9 | 5,828.0 | 5,783.9 | 44.17 | 131.941 | |
| 9,300.0 | 6,819.0 | 9,253.6 | 6,727.5 | 65.9 | 49.5 | 1.40 | 1,441.5 | -7,623.9 | 5,728.1 | 5,683.2 | 44.86 | 127.700 | |
| 9,400.0 | 6,819.0 | 9,253.6 | 6,727.5 | 68.5 | 49.5 | 1.38 | 1,441.5 | -7,623.9 | 5,628.1 | 5,582.5 | 45.54 | 123.579 | |
| 9,500.0 | 6,819.0 | 9,253.7 | 6,727.5 | 71.2 | 49.5 | 1.36 | 1,441.5 | -7,623.9 | 5,528.1 | 5,481.9 | 46.23 | 119.574 | |
| 9,600.0 | 6,819.0 | 9,253.7 | 6,727.5 | 73.9 | 49.5 | 1.34 | 1,441.4 | -7,623.9 | 5,428.1 | 5,381.2 | 46.92 | 115.680 | |
| 9,700.0 | 6,819.0 | 9,253.7 | 6,727.5 | 76.5 | 49.5 | 1.33 | 1,441.4 | -7,623.9 | 5,328.1 | 5,280.5 | 47.62 | 111.895 | |
| 9,800.0 | 6,819.0 | 9,253.8 | 6,727.5 | 79.2 | 49.5 | 1.31 | 1,441.4 | -7,623.9 | 5,228.2 | 5,179.9 | 48.31 | 108.214 | |
| 9,900.0 | 6,819.0 | 9,253.8 | 6,727.5 | 81.9 | 49.5 | 1.29 | 1,441.3 | -7,623.9 | 5,128.2 | 5,079.2 | 49.01 | 104.634 | |
| 10,000.0 | 6,819.0 | 9,253.8 | 6,727.5 | 84.6 | 49.5 | 1.27 | 1,441.3 | -7,623.9 | 5,028.2 | 4,978.5 | 49.71 | 101.150 | |
| 10,100.0 | 6,819.0 | 9,253.9 | 6,727.5 | 87.4 | 49.5 | 1.26 | 1,441.3 | -7,623.9 | 4,928.2 | 4,877.8 | 50.41 | 97.761 | |
| 10,200.0 | 6,819.0 | 9,253.9 | 6,727.5 | 90.1 | 49.5 | 1.24 | 1,441.2 | -7,623.9 | 4,828.3 | 4,777.2 | 51.11 | 94.462 | |
| 10,300.0 | 6,819.0 | 9,253.9 | 6,727.5 | 92.8 | 49.5 | 1.22 | 1,441.2 | -7,623.9 | 4,728.3 | 4,676.5 | 51.82 | 91.250 | |
| 10,400.0 | 6,819.0 | 9,254.0 | 6,727.5 | 95.5 | 49.5 | 1.20 | 1,441.1 | -7,623.9 | 4,628.3 | 4,575.8 | 52.52 | 88.122 | |
| 10,500.0 | 6,819.0 | 9,254.0 | 6,727.5 | 98.3 | 49.5 | 1.19 | 1,441.1 | -7,623.9 | 4,528.4 | 4,475.1 | 53.23 | 85.075 | |
| 10,600.0 | 6,819.0 | 9,254.1 | 6,727.5 | 101.0 | 49.5 | 1.17 | 1,441.1 | -7,623.9 | 4,428.4 | 4,374.5 | 53.93 | 82.107 | |
| 10,700.0 | 6,819.0 | 9,254.1 | 6,727.5 | 103.8 | 49.5 | 1.15 | 1,441.0 | -7,623.9 | 4,328.4 | 4,273.8 | 54.64 | 79.213 | |
| 10,800.0 | 6,819.0 | 9,254.1 | 6,727.5 | 106.5 | 49.5 | 1.13 | 1,441.0 | -7,623.9 | 4,228.5 | 4,173.1 | 55.35 | 76.393 | |
| 10,900.0 | 6,819.0 | 9,254.2 | 6,727.5 | 109.2 | 49.5 | 1.11 | 1,441.0 | -7,623.9 | 4,128.5 | 4,072.5 | 56.06 | 73.643 | |
| 11,000.0 | 6,819.0 | 9,254.2 | 6,727.5 | 112.0 | 49.5 | 1.10 | 1,440.9 | -7,623.9 | 4,028.6 | 3,971.8 | 56.77 | 70.961 | |
| 11,100.0 | 6,819.0 | 9,254.2 | 6,727.5 | 114.8 | 49.5 | 1.08 | 1,440.9 | -7,623.9 | 3,928.6 | 3,871.1 | 57.48 | 68.344 | |
| 11,200.0 | 6,819.0 | 9,254.3 | 6,727.5 | 117.5 | 49.5 | 1.06 | 1,440.9 | -7,623.9 | 3,828.6 | 3,770.4 | 58.19 | 65.790 | |
| 11,300.0 | 6,819.0 | 9,254.3 | 6,727.5 | 120.3 | 49.5 | 1.04 | 1,440.8 | -7,623.9 | 3,728.7 | 3,669.8 | 58.91 | 63.298 | |
| 11,400.0 | 6,819.0 | 9,254.3 | 6,727.5 | 123.0 | 49.5 | 1.03 | 1,440.8 | -7,623.9 | 3,628.7 | 3,569.1 | 59.62 | 60.864 | |
| 11,500.0 | 6,819.0 | 9,254.4 | 6,727.5 | 125.8 | 49.5 | 1.01 | 1,440.8 | -7,623.9 | 3,528.8 | 3,468.5 | 60.33 | 58.488 | |
| 11,600.0 | 6,819.0 | 9,254.4 | 6,727.5 | 128.6 | 49.5 | 0.99 | 1,440.7 | -7,623.9 | 3,428.9 | 3,367.8 | 61.05 | 56.166 | |
| 11,700.0 | 6,819.0 | 9,254.4 | 6,727.5 | 131.3 | 49.5 | 0.97 | 1,440.7 | -7,623.9 | 3,328.9 | 3,267.1 | 61.76 | 53.898 | |
| 11,800.0 | 6,819.0 | 9,254.5 | 6,727.5 | 134.1 | 49.5 | 0.96 | 1,440.6 | -7,623.9 | 3,229.0 | 3,166.5 | 62.48 | 51.682 | |
| 11,900.0 | 6,819.0 | 9,254.5 | 6,727.5 | 136.9 | 49.5 | 0.94 | 1,440.6 | -7,623.9 | 3,129.0 | 3,065.8 | 63.19 | 49.515 | |
| 12,000.0 | 6,819.0 | 9,254.6 | 6,727.5 | 139.6 | 49.5 | 0.92 | 1,440.6 | -7,623.9 | 3,029.1 | 2,965.2 | 63.91 | 47.397 | |
| 12,100.0 | 6,819.0 | 9,254.6 | 6,727.5 | 142.4 | 49.5 | 0.90 | 1,440.5 | -7,623.9 | 2,929.2 | 2,864.6 | 64.63 | 45.325 | |
| 12,200.0 | 6,819.0 | 9,254.6 | 6,727.5 | 145.2 | 49.5 | 0.89 | 1,440.5 | -7,623.9 | 2,829.3 | 2,763.9 | 65.34 | 43.299 | |
| 12,300.0 | 6,819.0 | 9,254.7 | 6,727.5 | 148.0 | 49.5 | 0.87 | 1,440.5 | -7,623.9 | 2,729.4 | 2,663.3 | 66.06 | 41.317 | |
| 12,400.0 | 6,819.0 | 9,254.7 | 6,727.5 | 150.8 | 49.5 | 0.85 | 1,440.4 | -7,623.9 | 2,629.5 | 2,562.7 | 66.78 | 39.377 | |
| 12,500.0 | 6,819.0 | 9,254.7 | 6,727.5 | 153.5 | 49.5 | 0.83 | 1,440.4 | -7,623.9 | 2,529.6 | 2,462.1 | 67.49 | 37.478 | |
| 12,600.0 | 6,819.0 | 9,254.8 | 6,727.5 | 156.3 | 49.5 | 0.82 | 1,440.4 | -7,623.9 | 2,429.7 | 2,361.5 | 68.21 | 35.619 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EHRLICH 5M-243 - ORIGINAL WELLBORE - PROPOSAL #1 — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 6,819.0 | 9,254.8 | 6,727.5 | 159.1 | 49.5 | 0.80 | 1,440.3 | -7,623.9 | 2,329.8 | 2,260.9 | 68.93 | 33.799 | |
| 12,800.0 | 6,819.0 | 9,254.8 | 6,727.5 | 161.9 | 49.5 | 0.78 | 1,440.3 | -7,623.9 | 2,229.9 | 2,160.3 | 69.65 | 32.016 | |
| 12,900.0 | 6,819.0 | 9,254.9 | 6,727.5 | 164.7 | 49.5 | 0.76 | 1,440.3 | -7,623.9 | 2,130.1 | 2,059.7 | 70.37 | 30.270 | |
| 13,000.0 | 6,819.0 | 9,254.9 | 6,727.5 | 167.4 | 49.5 | 0.75 | 1,440.2 | -7,623.9 | 2,030.2 | 1,959.1 | 71.09 | 28.559 | |
| 13,100.0 | 6,819.0 | 9,254.9 | 6,727.5 | 170.2 | 49.5 | 0.73 | 1,440.2 | -7,623.9 | 1,930.4 | 1,858.6 | 71.81 | 26.883 | |
| 13,200.0 | 6,819.0 | 9,255.0 | 6,727.5 | 173.0 | 49.5 | 0.71 | 1,440.1 | -7,623.9 | 1,830.6 | 1,758.1 | 72.53 | 25.240 | |
| 13,300.0 | 6,819.0 | 9,255.0 | 6,727.5 | 175.8 | 49.5 | 0.69 | 1,440.1 | -7,623.9 | 1,730.8 | 1,657.6 | 73.25 | 23.630 | |
| 13,400.0 | 6,819.0 | 9,255.1 | 6,727.5 | 178.6 | 49.5 | 0.68 | 1,440.1 | -7,623.9 | 1,631.0 | 1,557.1 | 73.97 | 22.051 | |
| 13,500.0 | 6,819.0 | 9,255.1 | 6,727.5 | 181.4 | 49.5 | 0.66 | 1,440.0 | -7,623.9 | 1,531.3 | 1,456.6 | 74.69 | 20.503 | |
| 13,600.0 | 6,819.0 | 9,255.1 | 6,727.5 | 184.2 | 49.5 | 0.64 | 1,440.0 | -7,623.9 | 1,431.6 | 1,356.2 | 75.41 | 18.985 | |
| 13,700.0 | 6,819.0 | 9,255.2 | 6,727.5 | 187.0 | 49.5 | 0.62 | 1,440.0 | -7,623.9 | 1,332.0 | 1,255.8 | 76.13 | 17.496 | |
| 13,800.0 | 6,819.0 | 9,255.2 | 6,727.5 | 189.7 | 49.5 | 0.61 | 1,439.9 | -7,623.9 | 1,232.4 | 1,155.5 | 76.85 | 16.036 | |
| 13,900.0 | 6,819.0 | 9,255.2 | 6,727.5 | 192.5 | 49.5 | 0.59 | 1,439.9 | -7,623.9 | 1,132.9 | 1,055.3 | 77.57 | 14.604 | |
| 14,000.0 | 6,819.0 | 9,255.3 | 6,727.5 | 195.3 | 49.5 | 0.57 | 1,439.9 | -7,623.9 | 1,033.5 | 955.2 | 78.29 | 13.200 | |
| 14,100.0 | 6,819.0 | 9,255.3 | 6,727.5 | 198.1 | 49.5 | 0.55 | 1,439.8 | -7,623.9 | 934.2 | 855.2 | 79.01 | 11.823 | |
| 14,200.0 | 6,819.0 | 9,255.3 | 6,727.5 | 200.9 | 49.5 | 0.54 | 1,439.8 | -7,623.9 | 835.0 | 755.3 | 79.73 | 10.473 | |
| 14,300.0 | 6,819.0 | 9,255.4 | 6,727.5 | 203.7 | 49.5 | 0.52 | 1,439.8 | -7,623.9 | 736.1 | 655.7 | 80.46 | 9.150 | |
| 14,400.0 | 6,819.0 | 9,255.4 | 6,727.5 | 206.5 | 49.5 | 0.50 | 1,439.7 | -7,623.9 | 637.6 | 556.4 | 81.18 | 7.854 | |
| 14,500.0 | 6,819.0 | 9,255.4 | 6,727.5 | 209.3 | 49.5 | 0.48 | 1,439.7 | -7,623.9 | 539.6 | 457.7 | 81.90 | 6.588 | |
| 14,600.0 | 6,819.0 | 9,255.5 | 6,727.5 | 212.1 | 49.5 | 0.46 | 1,439.6 | -7,623.9 | 442.5 | 359.9 | 82.62 | 5.355 | |
| 14,700.0 | 6,819.0 | 9,255.5 | 6,727.5 | 214.9 | 49.5 | 0.45 | 1,439.6 | -7,623.9 | 347.0 | 263.7 | 83.35 | 4.164 | |
| 14,720.3 | 6,819.0 | 9,255.6 | 6,727.5 | 215.4 | 49.5 | 0.44 | 1,439.6 | -7,623.9 | 328.0 | 244.5 | 83.49 | 3.928 | CC, ES, SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EHRLICH 5M-343 - ORIGINAL WELLBORE - PROPOSAL #1 — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 25.0 | 25.0 | 0.0 | 0.0 | -67.66 | 3,624.3 | -8,818.8 | 9,534.5 | | | | |
| 100.0 | 100.0 | 125.0 | 125.0 | 0.1 | 0.1 | -67.66 | 3,624.3 | -8,818.8 | 9,534.5 | 9,534.3 | 0.23 | N/A | |
| 200.0 | 200.0 | 225.0 | 225.0 | 0.3 | 0.4 | -67.66 | 3,624.3 | -8,818.8 | 9,534.5 | 9,533.8 | 0.68 | N/A | |
| 300.0 | 300.0 | 325.0 | 325.0 | 0.5 | 0.6 | -67.66 | 3,624.3 | -8,818.8 | 9,534.5 | 9,533.4 | 1.13 | 8,450.154 | |
| 400.0 | 400.0 | 425.0 | 425.0 | 0.8 | 0.8 | -67.66 | 3,624.3 | -8,818.8 | 9,534.5 | 9,532.9 | 1.58 | 6,042.703 | |
| 500.0 | 500.0 | 525.0 | 525.0 | 1.0 | 1.0 | -67.66 | 3,624.3 | -8,818.8 | 9,534.5 | 9,532.5 | 2.03 | 4,702.858 | |
| 600.0 | 600.0 | 625.0 | 625.0 | 1.2 | 1.3 | -67.66 | 3,624.3 | -8,818.8 | 9,534.5 | 9,532.0 | 2.48 | 3,849.345 | |
| 700.0 | 700.0 | 725.0 | 725.0 | 1.4 | 1.5 | -67.66 | 3,624.3 | -8,818.8 | 9,534.5 | 9,531.6 | 2.93 | 3,258.048 | |
| 800.0 | 800.0 | 825.0 | 825.0 | 1.7 | 1.7 | -67.66 | 3,624.3 | -8,818.8 | 9,534.5 | 9,531.1 | 3.38 | 2,824.220 | |
| 900.0 | 900.0 | 925.0 | 925.0 | 1.9 | 1.9 | -88.83 | 3,624.3 | -8,818.8 | 9,534.5 | 9,530.7 | 3.82 | 2,493.488 | |
| 1,000.0 | 999.8 | 1,024.8 | 1,024.8 | 2.1 | 2.2 | -88.86 | 3,624.3 | -8,818.8 | 9,534.4 | 9,530.1 | 4.27 | 2,231.911 | |
| 1,100.0 | 1,099.5 | 1,124.5 | 1,124.5 | 2.3 | 2.4 | -88.92 | 3,624.3 | -8,818.8 | 9,534.2 | 9,529.5 | 4.73 | 2,016.542 | |
| 1,200.0 | 1,198.7 | 1,223.7 | 1,223.7 | 2.6 | 2.6 | -89.00 | 3,624.3 | -8,818.8 | 9,534.0 | 9,528.8 | 5.20 | 1,833.004 | |
| 1,300.0 | 1,297.5 | 1,322.5 | 1,322.5 | 2.9 | 2.8 | -89.09 | 3,624.3 | -8,818.8 | 9,533.7 | 9,528.0 | 5.70 | 1,672.086 | |
| 1,400.0 | 1,395.6 | 1,420.6 | 1,420.6 | 3.2 | 3.1 | -89.21 | 3,624.3 | -8,818.8 | 9,533.4 | 9,527.2 | 6.24 | 1,528.059 | |
| 1,500.0 | 1,493.1 | 10,617.4 | 6,793.3 | 3.5 | 73.2 | -119.02 | 38.3 | -7,880.3 | 9,508.6 | 9,432.3 | 76.36 | 124.532 | |
| 1,507.2 | 1,500.0 | 10,615.7 | 6,793.3 | 3.6 | 73.2 | -119.07 | 40.0 | -7,880.3 | 9,505.3 | 9,428.9 | 76.35 | 124.503 | |
| 1,572.2 | 1,563.0 | 10,600.3 | 6,793.4 | 3.8 | 72.9 | -118.97 | 55.4 | -7,880.3 | 9,475.4 | 9,399.1 | 76.28 | 124.218 | |
| 1,600.0 | 1,590.0 | 10,593.6 | 6,793.5 | 3.9 | 72.8 | -119.18 | 62.1 | -7,880.3 | 9,462.7 | 9,386.4 | 76.25 | 124.108 | |
| 1,700.0 | 1,686.3 | 10,567.6 | 6,793.7 | 4.4 | 72.3 | -119.86 | 88.1 | -7,880.3 | 9,418.7 | 9,342.6 | 76.11 | 123.754 | |
| 1,800.0 | 1,781.5 | 10,538.4 | 6,793.9 | 4.9 | 71.7 | -120.47 | 117.2 | -7,880.3 | 9,377.0 | 9,301.1 | 75.92 | 123.506 | |
| 1,817.6 | 1,798.2 | 10,533.0 | 6,794.0 | 5.0 | 71.6 | -120.57 | 122.7 | -7,880.3 | 9,369.9 | 9,294.1 | 75.89 | 123.472 | |
| 1,900.0 | 1,876.1 | 10,507.3 | 6,794.2 | 5.5 | 71.2 | -120.41 | 148.4 | -7,880.3 | 9,337.2 | 9,261.4 | 75.82 | 123.153 | |
| 2,000.0 | 1,970.6 | 10,476.0 | 6,794.4 | 6.0 | 70.6 | -120.21 | 179.7 | -7,880.3 | 9,298.3 | 9,222.5 | 75.75 | 122.750 | |
| 2,100.0 | 2,065.1 | 10,444.8 | 6,794.7 | 6.6 | 70.0 | -120.01 | 210.9 | -7,880.2 | 9,260.1 | 9,184.4 | 75.69 | 122.336 | |
| 2,200.0 | 2,159.6 | 10,413.6 | 6,795.0 | 7.2 | 69.5 | -119.82 | 242.1 | -7,880.2 | 9,222.8 | 9,147.1 | 75.65 | 121.915 | |
| 2,300.0 | 2,254.1 | 10,382.3 | 6,795.2 | 7.8 | 68.9 | -119.62 | 273.4 | -7,880.2 | 9,186.2 | 9,110.6 | 75.61 | 121.492 | |
| 2,400.0 | 2,348.7 | 10,351.1 | 6,795.5 | 8.4 | 68.3 | -119.42 | 304.6 | -7,880.2 | 9,150.6 | 9,075.0 | 75.58 | 121.069 | |
| 2,500.0 | 2,443.2 | 10,319.9 | 6,795.7 | 9.1 | 67.8 | -119.23 | 335.8 | -7,880.2 | 9,115.8 | 9,040.2 | 75.56 | 120.648 | |
| 2,600.0 | 2,537.7 | 10,288.6 | 6,796.0 | 9.7 | 67.2 | -119.03 | 367.1 | -7,880.2 | 9,081.8 | 9,006.3 | 75.54 | 120.231 | |
| 2,700.0 | 2,632.2 | 10,257.4 | 6,796.2 | 10.3 | 66.6 | -118.83 | 398.3 | -7,880.2 | 9,048.7 | 8,973.2 | 75.52 | 119.819 | |
| 2,800.0 | 2,726.8 | 10,226.2 | 6,796.5 | 10.9 | 66.0 | -118.63 | 429.5 | -7,880.2 | 9,016.5 | 8,941.0 | 75.51 | 119.414 | |
| 2,900.0 | 2,821.3 | 10,194.9 | 6,796.8 | 11.6 | 65.5 | -118.44 | 460.8 | -7,880.2 | 8,985.2 | 8,909.7 | 75.50 | 119.016 | |
| 3,000.0 | 2,915.8 | 10,163.7 | 6,797.0 | 12.2 | 64.9 | -118.24 | 492.0 | -7,880.1 | 8,954.8 | 8,879.3 | 75.49 | 118.625 | |
| 3,100.0 | 3,010.3 | 10,132.5 | 6,797.3 | 12.8 | 64.3 | -118.04 | 523.2 | -7,880.1 | 8,925.2 | 8,849.8 | 75.48 | 118.243 | |
| 3,200.0 | 3,104.8 | 10,101.2 | 6,797.5 | 13.5 | 63.8 | -117.84 | 554.5 | -7,880.1 | 8,896.6 | 8,821.2 | 75.48 | 117.869 | |
| 3,300.0 | 3,199.4 | 10,070.0 | 6,797.8 | 14.1 | 63.2 | -117.64 | 585.7 | -7,880.1 | 8,869.0 | 8,793.5 | 75.48 | 117.505 | |
| 3,400.0 | 3,293.9 | 10,038.8 | 6,798.1 | 14.8 | 62.7 | -117.45 | 616.9 | -7,880.1 | 8,842.2 | 8,766.7 | 75.48 | 117.150 | |
| 3,500.0 | 3,388.4 | 10,007.5 | 6,798.3 | 15.4 | 62.1 | -117.25 | 648.2 | -7,880.1 | 8,816.4 | 8,740.9 | 75.48 | 116.806 | |
| 3,600.0 | 3,482.9 | 9,976.3 | 6,798.6 | 16.0 | 61.5 | -117.05 | 679.4 | -7,880.1 | 8,791.6 | 8,716.1 | 75.48 | 116.471 | |
| 3,700.0 | 3,577.5 | 9,945.1 | 6,798.8 | 16.7 | 61.0 | -116.85 | 710.6 | -7,880.1 | 8,767.7 | 8,692.2 | 75.49 | 116.146 | |
| 3,800.0 | 3,672.0 | 9,913.8 | 6,799.1 | 17.3 | 60.4 | -116.65 | 741.8 | -7,880.0 | 8,744.8 | 8,669.3 | 75.49 | 115.833 | |
| 3,900.0 | 3,766.5 | 9,882.6 | 6,799.4 | 18.0 | 59.8 | -116.45 | 773.1 | -7,880.0 | 8,722.8 | 8,647.3 | 75.50 | 115.530 | |
| 4,000.0 | 3,861.0 | 9,851.4 | 6,799.6 | 18.6 | 59.3 | -116.25 | 804.3 | -7,880.0 | 8,701.9 | 8,626.4 | 75.51 | 115.238 | |
| 4,100.0 | 3,955.5 | 9,820.1 | 6,799.9 | 19.3 | 58.7 | -116.05 | 835.5 | -7,880.0 | 8,681.9 | 8,606.4 | 75.52 | 114.957 | |
| 4,200.0 | 4,050.1 | 9,788.9 | 6,800.1 | 19.9 | 58.2 | -115.85 | 866.8 | -7,880.0 | 8,662.9 | 8,587.4 | 75.53 | 114.688 | |
| 4,300.0 | 4,144.6 | 9,757.7 | 6,800.4 | 20.5 | 57.6 | -115.65 | 898.0 | -7,880.0 | 8,644.9 | 8,569.4 | 75.55 | 114.429 | |
| 4,400.0 | 4,239.1 | 9,726.4 | 6,800.7 | 21.2 | 57.1 | -115.46 | 929.2 | -7,880.0 | 8,628.0 | 8,552.4 | 75.56 | 114.182 | |
| 4,500.0 | 4,333.6 | 9,695.2 | 6,800.9 | 21.8 | 56.5 | -115.26 | 960.5 | -7,880.0 | 8,612.0 | 8,536.4 | 75.58 | 113.947 | |
| 4,600.0 | 4,428.2 | 9,664.0 | 6,801.2 | 22.5 | 55.9 | -115.06 | 991.7 | -7,880.0 | 8,597.1 | 8,521.5 | 75.60 | 113.723 | |
| 4,700.0 | 4,522.7 | 9,632.8 | 6,801.4 | 23.1 | 55.4 | -114.86 | 1,022.9 | -7,879.9 | 8,583.2 | 8,507.6 | 75.62 | 113.511 | |
| 4,800.0 | 4,617.2 | 9,601.5 | 6,801.7 | 23.8 | 54.8 | -114.66 | 1,054.1 | -7,879.9 | 8,570.3 | 8,494.7 | 75.63 | 113.311 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EHRLICH 5M-343 - ORIGINAL WELLBORE - PROPOSAL #1 — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 9,570.3 | 6,801.9 | 24.4 | 54.3 | -114.46 | 1,085.4 | -7,879.9 | 8,558.5 | 8,482.8 | 75.66 | 113.122 | |
| 5,000.0 | 4,806.2 | 9,539.1 | 6,802.2 | 25.1 | 53.7 | -114.26 | 1,116.6 | -7,879.9 | 8,547.6 | 8,472.0 | 75.68 | 112.945 | |
| 5,100.0 | 4,900.8 | 9,507.8 | 6,802.5 | 25.7 | 53.2 | -114.06 | 1,147.8 | -7,879.9 | 8,537.9 | 8,462.2 | 75.70 | 112.781 | |
| 5,200.0 | 4,995.3 | 9,476.6 | 6,802.7 | 26.4 | 52.6 | -113.86 | 1,179.1 | -7,879.9 | 8,529.2 | 8,453.4 | 75.73 | 112.627 | |
| 5,300.0 | 5,089.8 | 9,445.4 | 6,803.0 | 27.0 | 52.1 | -113.66 | 1,210.3 | -7,879.9 | 8,521.5 | 8,445.8 | 75.76 | 112.486 | |
| 5,400.0 | 5,184.3 | 9,414.1 | 6,803.2 | 27.7 | 51.5 | -113.46 | 1,241.5 | -7,879.9 | 8,514.9 | 8,439.1 | 75.78 | 112.357 | |
| 5,500.0 | 5,278.9 | 9,382.9 | 6,803.5 | 28.3 | 51.0 | -113.26 | 1,272.7 | -7,879.9 | 8,509.4 | 8,433.5 | 75.81 | 112.239 | |
| 5,533.5 | 5,310.5 | 9,372.4 | 6,803.6 | 28.5 | 50.8 | -113.19 | 1,283.2 | -7,879.9 | 8,507.7 | 8,431.9 | 75.82 | 112.202 | |
| 5,600.0 | 5,373.6 | 9,352.4 | 6,803.7 | 28.9 | 50.5 | -113.00 | 1,303.3 | -7,879.8 | 8,504.6 | 8,428.7 | 75.85 | 112.122 | |
| 5,700.0 | 5,469.4 | 9,324.7 | 6,804.0 | 29.3 | 50.0 | -112.73 | 1,330.9 | -7,879.8 | 8,499.5 | 8,423.7 | 75.83 | 112.094 | |
| 5,800.0 | 5,566.1 | 9,300.2 | 6,804.2 | 29.8 | 49.6 | -112.47 | 1,355.4 | -7,879.8 | 8,494.3 | 8,418.5 | 75.80 | 112.057 | |
| 5,900.0 | 5,663.6 | 9,278.9 | 6,804.4 | 30.1 | 49.2 | -112.23 | 1,376.8 | -7,879.8 | 8,488.8 | 8,413.0 | 75.79 | 112.010 | |
| 6,000.0 | 5,761.9 | 9,260.7 | 6,804.5 | 30.5 | 48.9 | -112.01 | 1,394.9 | -7,879.8 | 8,483.1 | 8,407.3 | 75.77 | 111.956 | |
| 6,100.0 | 5,860.7 | 9,245.8 | 6,804.6 | 30.7 | 48.6 | -111.80 | 1,409.9 | -7,879.8 | 8,477.3 | 8,401.5 | 75.76 | 111.895 | |
| 6,200.0 | 5,960.0 | 9,234.0 | 6,804.7 | 31.0 | 48.4 | -111.61 | 1,421.6 | -7,879.8 | 8,471.3 | 8,395.5 | 75.75 | 111.827 | |
| 6,300.0 | 6,059.7 | 9,225.5 | 6,804.8 | 31.2 | 48.3 | -111.44 | 1,430.1 | -7,879.8 | 8,465.2 | 8,389.5 | 75.75 | 111.752 | |
| 6,400.0 | 6,159.6 | 9,220.3 | 6,804.8 | 31.3 | 48.2 | -111.28 | 1,435.4 | -7,879.8 | 8,459.0 | 8,383.3 | 75.75 | 111.668 | |
| 6,486.1 | 6,245.7 | 9,218.4 | 6,804.9 | 31.4 | 48.1 | -90.01 | 1,437.3 | -7,879.8 | 8,453.6 | 8,410.8 | 42.76 | 197.692 | |
| 6,500.0 | 6,259.6 | 9,218.2 | 6,804.9 | 31.4 | 48.1 | -90.01 | 1,437.4 | -7,879.8 | 8,452.7 | 8,409.9 | 42.78 | 197.585 | |
| 6,516.1 | 6,275.7 | 9,218.1 | 6,804.9 | 31.4 | 48.1 | -90.01 | 1,437.5 | -7,879.8 | 8,451.8 | 8,408.9 | 42.80 | 197.450 | |
| 6,550.0 | 6,309.5 | 9,217.8 | 6,804.9 | 31.5 | 48.1 | -0.01 | 1,437.8 | -7,879.8 | 8,449.0 | 8,373.5 | 75.54 | 111.852 | |
| 6,600.0 | 6,359.4 | 9,217.4 | 6,804.9 | 31.5 | 48.1 | 0.00 | 1,438.2 | -7,879.8 | 8,442.3 | 8,367.4 | 74.92 | 112.689 | |
| 6,650.0 | 6,408.8 | 9,217.0 | 6,804.9 | 31.5 | 48.1 | 0.00 | 1,438.6 | -7,879.8 | 8,432.4 | 8,358.4 | 73.99 | 113.972 | |
| 6,700.0 | 6,457.5 | 9,216.6 | 6,804.9 | 31.5 | 48.1 | 0.00 | 1,439.0 | -7,879.8 | 8,419.4 | 8,346.6 | 72.76 | 115.722 | |
| 6,716.1 | 6,473.1 | 9,216.5 | 6,804.9 | 31.5 | 48.1 | 0.00 | 1,439.2 | -7,879.8 | 8,414.5 | 8,342.3 | 72.30 | 116.392 | |
| 6,725.0 | 6,481.6 | 9,216.4 | 6,804.9 | 31.5 | 48.1 | 0.00 | 1,439.2 | -7,879.8 | 8,411.7 | 8,339.8 | 71.89 | 117.006 | |
| 6,750.0 | 6,505.3 | 9,216.2 | 6,804.9 | 31.5 | 48.1 | 0.01 | 1,439.4 | -7,879.8 | 8,403.0 | 8,332.3 | 70.64 | 118.947 | |
| 6,775.0 | 6,528.5 | 9,216.0 | 6,804.9 | 31.4 | 48.1 | 0.01 | 1,439.6 | -7,879.8 | 8,393.1 | 8,323.8 | 69.24 | 121.210 | |
| 6,800.0 | 6,551.3 | 9,215.8 | 6,804.9 | 31.4 | 48.1 | 0.01 | 1,439.8 | -7,879.8 | 8,382.0 | 8,314.3 | 67.70 | 123.818 | |
| 6,825.0 | 6,573.4 | 9,215.7 | 6,804.9 | 31.4 | 48.1 | 0.01 | 1,440.0 | -7,879.8 | 8,369.9 | 8,303.9 | 66.01 | 126.800 | |
| 6,850.0 | 6,595.0 | 9,215.5 | 6,804.9 | 31.3 | 48.1 | 0.01 | 1,440.2 | -7,879.8 | 8,356.7 | 8,292.5 | 64.19 | 130.186 | |
| 6,875.0 | 6,615.8 | 9,215.3 | 6,804.9 | 31.3 | 48.1 | 0.01 | 1,440.3 | -7,879.8 | 8,342.4 | 8,280.2 | 62.25 | 134.013 | |
| 6,900.0 | 6,635.9 | 9,215.2 | 6,804.9 | 31.3 | 48.1 | 0.02 | 1,440.5 | -7,879.8 | 8,327.2 | 8,267.0 | 60.20 | 138.322 | |
| 6,925.0 | 6,655.1 | 9,215.0 | 6,804.9 | 31.2 | 48.1 | 0.02 | 1,440.6 | -7,879.8 | 8,310.9 | 8,252.9 | 58.05 | 143.160 | |
| 6,950.0 | 6,673.6 | 9,214.9 | 6,804.9 | 31.2 | 48.1 | 0.02 | 1,440.8 | -7,879.8 | 8,293.8 | 8,237.9 | 55.82 | 148.576 | |
| 6,975.0 | 6,691.1 | 9,214.7 | 6,804.9 | 31.1 | 48.1 | 0.02 | 1,440.9 | -7,879.8 | 8,275.7 | 8,222.2 | 53.52 | 154.624 | |
| 7,000.0 | 6,707.6 | 9,214.6 | 6,804.9 | 31.1 | 48.1 | 0.03 | 1,441.1 | -7,879.8 | 8,256.8 | 8,205.6 | 51.17 | 161.357 | |
| 7,025.0 | 6,723.1 | 9,214.5 | 6,804.9 | 31.0 | 48.1 | 0.03 | 1,441.2 | -7,879.8 | 8,237.1 | 8,188.3 | 48.79 | 168.826 | |
| 7,050.0 | 6,737.6 | 9,214.4 | 6,804.9 | 31.0 | 48.1 | 0.03 | 1,441.3 | -7,879.8 | 8,216.7 | 8,170.2 | 46.40 | 177.069 | |
| 7,075.0 | 6,751.0 | 9,214.3 | 6,804.9 | 30.9 | 48.1 | 0.04 | 1,441.4 | -7,879.8 | 8,195.5 | 8,151.5 | 44.04 | 186.103 | |
| 7,100.0 | 6,763.3 | 9,214.2 | 6,804.9 | 30.8 | 48.1 | 0.04 | 1,441.5 | -7,879.8 | 8,173.7 | 8,132.0 | 41.72 | 195.903 | |
| 7,125.0 | 6,774.5 | 9,214.1 | 6,804.9 | 30.8 | 48.1 | 0.05 | 1,441.6 | -7,879.8 | 8,151.3 | 8,111.8 | 39.50 | 206.376 | |
| 7,150.0 | 6,784.4 | 9,214.0 | 6,804.9 | 30.7 | 48.1 | 0.06 | 1,441.6 | -7,879.8 | 8,128.4 | 8,091.0 | 37.40 | 217.328 | |
| 7,175.0 | 6,793.1 | 9,213.9 | 6,804.9 | 30.7 | 48.1 | 0.07 | 1,441.7 | -7,879.8 | 8,104.9 | 8,069.5 | 35.48 | 228.414 | |
| 7,200.0 | 6,800.6 | 9,213.9 | 6,804.9 | 30.6 | 48.1 | 0.08 | 1,441.8 | -7,879.8 | 8,081.1 | 8,047.3 | 33.80 | 239.103 | |
| 7,225.0 | 6,806.8 | 9,213.8 | 6,804.9 | 30.6 | 48.1 | 0.10 | 1,441.8 | -7,879.8 | 8,056.9 | 8,024.5 | 32.40 | 248.659 | |
| 7,250.0 | 6,811.8 | 9,213.8 | 6,804.9 | 30.5 | 48.1 | 0.13 | 1,441.8 | -7,879.8 | 8,032.4 | 8,001.1 | 31.35 | 256.178 | |
| 7,275.0 | 6,815.5 | 9,213.8 | 6,804.9 | 30.5 | 48.1 | 0.18 | 1,441.9 | -7,879.8 | 8,007.7 | 7,977.0 | 30.71 | 260.723 | |
| 7,300.0 | 6,817.8 | 9,213.8 | 6,804.9 | 30.4 | 48.1 | 0.31 | 1,441.9 | -7,879.8 | 7,982.9 | 7,952.3 | 30.53 | 261.506 | |
| 7,325.0 | 6,818.9 | 9,213.8 | 6,804.9 | 30.4 | 48.1 | 1.07 | 1,441.9 | -7,879.8 | 7,957.9 | 7,927.0 | 30.92 | 257.356 | |
| 7,332.8 | 6,819.0 | 9,213.8 | 6,804.9 | 30.4 | 48.1 | 4.63 | 1,441.9 | -7,879.8 | 7,950.1 | 7,918.2 | 31.85 | 249.592 | |
| 7,400.0 | 6,819.0 | 9,213.8 | 6,804.9 | 30.3 | 48.1 | 4.59 | 1,441.8 | -7,879.8 | 7,882.9 | 7,850.7 | 32.18 | 244.966 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EHRLICH 5M-343 - ORIGINAL WELLBORE - PROPOSAL #1 — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 9,213.8 | 6,804.9 | 30.2 | 48.1 | 4.54 | 1,441.8 | -7,879.8 | 7,782.9 | 7,750.2 | 32.69 | 238.079 | |
| 7,600.0 | 6,819.0 | 9,213.9 | 6,804.9 | 30.3 | 48.1 | 4.49 | 1,441.8 | -7,879.8 | 7,682.9 | 7,649.7 | 33.23 | 231.229 | |
| 7,700.0 | 6,819.0 | 9,213.9 | 6,804.9 | 30.6 | 48.1 | 4.44 | 1,441.7 | -7,879.8 | 7,582.9 | 7,549.1 | 33.78 | 224.453 | |
| 7,800.0 | 6,819.0 | 9,214.0 | 6,804.9 | 31.3 | 48.1 | 4.39 | 1,441.7 | -7,879.8 | 7,482.9 | 7,448.5 | 34.36 | 217.779 | |
| 7,900.0 | 6,819.0 | 9,214.0 | 6,804.9 | 32.5 | 48.1 | 4.33 | 1,441.7 | -7,879.8 | 7,382.9 | 7,347.9 | 34.95 | 211.227 | |
| 8,000.0 | 6,819.0 | 9,214.0 | 6,804.9 | 34.2 | 48.1 | 4.28 | 1,441.6 | -7,879.8 | 7,282.9 | 7,247.3 | 35.56 | 204.813 | |
| 8,100.0 | 6,819.0 | 9,214.1 | 6,804.9 | 36.1 | 48.1 | 4.23 | 1,441.6 | -7,879.8 | 7,182.9 | 7,146.7 | 36.18 | 198.548 | |
| 8,200.0 | 6,819.0 | 9,214.1 | 6,804.9 | 38.3 | 48.1 | 4.18 | 1,441.6 | -7,879.8 | 7,082.9 | 7,046.1 | 36.81 | 192.439 | |
| 8,300.0 | 6,819.0 | 9,214.1 | 6,804.9 | 40.6 | 48.1 | 4.12 | 1,441.5 | -7,879.8 | 6,982.9 | 6,945.5 | 37.44 | 186.489 | |
| 8,400.0 | 6,819.0 | 9,214.2 | 6,804.9 | 42.9 | 48.1 | 4.07 | 1,441.5 | -7,879.8 | 6,882.9 | 6,844.8 | 38.09 | 180.701 | |
| 8,500.0 | 6,819.0 | 9,214.2 | 6,804.9 | 45.3 | 48.1 | 4.02 | 1,441.4 | -7,879.8 | 6,782.9 | 6,744.2 | 38.74 | 175.075 | |
| 8,600.0 | 6,819.0 | 9,214.2 | 6,804.9 | 47.8 | 48.1 | 3.97 | 1,441.4 | -7,879.8 | 6,682.9 | 6,643.5 | 39.40 | 169.610 | |
| 8,700.0 | 6,819.0 | 9,214.3 | 6,804.9 | 50.3 | 48.1 | 3.92 | 1,441.4 | -7,879.8 | 6,582.9 | 6,542.8 | 40.07 | 164.303 | |
| 8,800.0 | 6,819.0 | 9,214.3 | 6,804.9 | 52.8 | 48.1 | 3.86 | 1,441.3 | -7,879.8 | 6,482.9 | 6,442.2 | 40.73 | 159.150 | |
| 8,900.0 | 6,819.0 | 9,214.3 | 6,804.9 | 55.4 | 48.1 | 3.81 | 1,441.3 | -7,879.8 | 6,382.9 | 6,341.5 | 41.41 | 154.149 | |
| 9,000.0 | 6,819.0 | 9,214.4 | 6,804.9 | 58.0 | 48.1 | 3.76 | 1,441.3 | -7,879.8 | 6,282.9 | 6,240.8 | 42.08 | 149.296 | |
| 9,100.0 | 6,819.0 | 9,214.4 | 6,804.9 | 60.6 | 48.1 | 3.71 | 1,441.2 | -7,879.8 | 6,182.9 | 6,140.2 | 42.76 | 144.585 | |
| 9,200.0 | 6,819.0 | 9,214.5 | 6,804.9 | 63.2 | 48.1 | 3.65 | 1,441.2 | -7,879.8 | 6,082.9 | 6,039.5 | 43.45 | 140.012 | |
| 9,300.0 | 6,819.0 | 9,214.5 | 6,804.9 | 65.9 | 48.1 | 3.60 | 1,441.2 | -7,879.8 | 5,982.9 | 5,938.8 | 44.13 | 135.574 | |
| 9,400.0 | 6,819.0 | 9,214.5 | 6,804.9 | 68.5 | 48.1 | 3.55 | 1,441.1 | -7,879.8 | 5,882.9 | 5,838.1 | 44.82 | 131.265 | |
| 9,500.0 | 6,819.0 | 9,214.6 | 6,804.9 | 71.2 | 48.1 | 3.50 | 1,441.1 | -7,879.8 | 5,782.9 | 5,737.4 | 45.51 | 127.081 | |
| 9,600.0 | 6,819.0 | 9,214.6 | 6,804.9 | 73.9 | 48.1 | 3.45 | 1,441.1 | -7,879.8 | 5,682.9 | 5,636.7 | 46.20 | 123.017 | |
| 9,700.0 | 6,819.0 | 9,214.6 | 6,804.9 | 76.5 | 48.1 | 3.39 | 1,441.0 | -7,879.8 | 5,582.9 | 5,536.0 | 46.89 | 119.069 | |
| 9,800.0 | 6,819.0 | 9,214.7 | 6,804.9 | 79.2 | 48.1 | 3.34 | 1,441.0 | -7,879.8 | 5,482.9 | 5,435.4 | 47.58 | 115.233 | |
| 9,900.0 | 6,819.0 | 9,214.7 | 6,804.9 | 81.9 | 48.1 | 3.29 | 1,440.9 | -7,879.8 | 5,382.9 | 5,334.7 | 48.28 | 111.504 | |
| 10,000.0 | 6,819.0 | 9,214.7 | 6,804.9 | 84.6 | 48.1 | 3.24 | 1,440.9 | -7,879.8 | 5,282.9 | 5,234.0 | 48.97 | 107.879 | |
| 10,100.0 | 6,819.0 | 9,214.8 | 6,804.9 | 87.4 | 48.1 | 3.19 | 1,440.9 | -7,879.8 | 5,182.9 | 5,133.3 | 49.67 | 104.353 | |
| 10,200.0 | 6,819.0 | 9,214.8 | 6,804.9 | 90.1 | 48.1 | 3.13 | 1,440.8 | -7,879.8 | 5,082.9 | 5,032.6 | 50.36 | 100.924 | |
| 10,300.0 | 6,819.0 | 9,214.8 | 6,804.9 | 92.8 | 48.1 | 3.08 | 1,440.8 | -7,879.8 | 4,982.9 | 4,931.9 | 51.06 | 97.587 | |
| 10,400.0 | 6,819.0 | 9,214.9 | 6,804.9 | 95.5 | 48.1 | 3.03 | 1,440.8 | -7,879.8 | 4,882.9 | 4,831.2 | 51.76 | 94.338 | |
| 10,500.0 | 6,819.0 | 9,214.9 | 6,804.9 | 98.3 | 48.1 | 2.98 | 1,440.7 | -7,879.8 | 4,783.0 | 4,730.5 | 52.46 | 91.175 | |
| 10,600.0 | 6,819.0 | 9,215.0 | 6,804.9 | 101.0 | 48.1 | 2.92 | 1,440.7 | -7,879.8 | 4,683.0 | 4,629.8 | 53.16 | 88.095 | |
| 10,700.0 | 6,819.0 | 9,215.0 | 6,804.9 | 103.8 | 48.1 | 2.87 | 1,440.7 | -7,879.8 | 4,583.0 | 4,529.1 | 53.86 | 85.094 | |
| 10,800.0 | 6,819.0 | 9,215.0 | 6,804.9 | 106.5 | 48.1 | 2.82 | 1,440.6 | -7,879.8 | 4,483.0 | 4,428.4 | 54.56 | 82.169 | |
| 10,900.0 | 6,819.0 | 9,215.1 | 6,804.9 | 109.2 | 48.1 | 2.77 | 1,440.6 | -7,879.8 | 4,383.0 | 4,327.7 | 55.26 | 79.318 | |
| 11,000.0 | 6,819.0 | 9,215.1 | 6,804.9 | 112.0 | 48.1 | 2.71 | 1,440.6 | -7,879.8 | 4,283.0 | 4,227.0 | 55.96 | 76.538 | |
| 11,100.0 | 6,819.0 | 9,215.1 | 6,804.9 | 114.8 | 48.1 | 2.66 | 1,440.5 | -7,879.8 | 4,183.0 | 4,126.3 | 56.66 | 73.827 | |
| 11,200.0 | 6,819.0 | 9,215.2 | 6,804.9 | 117.5 | 48.1 | 2.61 | 1,440.5 | -7,879.8 | 4,083.0 | 4,025.6 | 57.36 | 71.181 | |
| 11,300.0 | 6,819.0 | 9,215.2 | 6,804.9 | 120.3 | 48.1 | 2.56 | 1,440.4 | -7,879.8 | 3,983.0 | 3,924.9 | 58.06 | 68.600 | |
| 11,400.0 | 6,819.0 | 9,215.2 | 6,804.9 | 123.0 | 48.1 | 2.51 | 1,440.4 | -7,879.8 | 3,883.0 | 3,824.2 | 58.76 | 66.079 | |
| 11,500.0 | 6,819.0 | 9,215.3 | 6,804.9 | 125.8 | 48.1 | 2.45 | 1,440.4 | -7,879.8 | 3,783.0 | 3,723.5 | 59.46 | 63.618 | |
| 11,600.0 | 6,819.0 | 9,215.3 | 6,804.9 | 128.6 | 48.1 | 2.40 | 1,440.3 | -7,879.8 | 3,683.0 | 3,622.8 | 60.17 | 61.214 | |
| 11,700.0 | 6,819.0 | 9,215.3 | 6,804.9 | 131.3 | 48.1 | 2.35 | 1,440.3 | -7,879.8 | 3,583.0 | 3,522.1 | 60.87 | 58.866 | |
| 11,800.0 | 6,819.0 | 9,215.4 | 6,804.9 | 134.1 | 48.1 | 2.30 | 1,440.3 | -7,879.8 | 3,483.0 | 3,421.4 | 61.57 | 56.570 | |
| 11,900.0 | 6,819.0 | 9,215.4 | 6,804.9 | 136.9 | 48.1 | 2.24 | 1,440.2 | -7,879.8 | 3,383.0 | 3,320.7 | 62.27 | 54.327 | |
| 12,000.0 | 6,819.0 | 9,215.5 | 6,804.9 | 139.6 | 48.1 | 2.19 | 1,440.2 | -7,879.8 | 3,283.0 | 3,220.1 | 62.97 | 52.134 | |
| 12,100.0 | 6,819.0 | 9,215.5 | 6,804.9 | 142.4 | 48.1 | 2.14 | 1,440.2 | -7,879.8 | 3,183.0 | 3,119.4 | 63.68 | 49.988 | |
| 12,200.0 | 6,819.0 | 9,215.5 | 6,804.9 | 145.2 | 48.1 | 2.09 | 1,440.1 | -7,879.8 | 3,083.0 | 3,018.7 | 64.38 | 47.890 | |
| 12,300.0 | 6,819.0 | 9,215.6 | 6,804.9 | 148.0 | 48.1 | 2.03 | 1,440.1 | -7,879.8 | 2,983.0 | 2,918.0 | 65.08 | 45.837 | |
| 12,400.0 | 6,819.0 | 9,215.6 | 6,804.9 | 150.8 | 48.1 | 1.98 | 1,440.1 | -7,879.8 | 2,883.1 | 2,817.3 | 65.78 | 43.827 | |
| 12,500.0 | 6,819.0 | 9,215.6 | 6,804.9 | 153.5 | 48.1 | 1.93 | 1,440.0 | -7,879.8 | 2,783.1 | 2,716.6 | 66.49 | 41.860 | |
| 12,600.0 | 6,819.0 | 9,215.7 | 6,804.9 | 156.3 | 48.1 | 1.88 | 1,440.0 | -7,879.8 | 2,683.1 | 2,615.9 | 67.19 | 39.934 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EHRLICH 5M-343 - ORIGINAL WELLBORE - PROPOSAL #1 — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 6,819.0 | 9,215.7 | 6,804.9 | 159.1 | 48.1 | 1.83 | 1,439.9 | -7,879.8 | 2,583.1 | 2,515.2 | 67.89 | 38.048 | |
| 12,800.0 | 6,819.0 | 9,215.7 | 6,804.9 | 161.9 | 48.1 | 1.77 | 1,439.9 | -7,879.8 | 2,483.1 | 2,414.5 | 68.59 | 36.200 | |
| 12,900.0 | 6,819.0 | 9,215.8 | 6,804.9 | 164.7 | 48.1 | 1.72 | 1,439.9 | -7,879.8 | 2,383.1 | 2,313.8 | 69.30 | 34.390 | |
| 13,000.0 | 6,819.0 | 9,215.8 | 6,804.9 | 167.4 | 48.1 | 1.67 | 1,439.8 | -7,879.8 | 2,283.1 | 2,213.1 | 70.00 | 32.616 | |
| 13,100.0 | 6,819.0 | 9,215.8 | 6,804.9 | 170.2 | 48.1 | 1.62 | 1,439.8 | -7,879.8 | 2,183.1 | 2,112.4 | 70.70 | 30.878 | |
| 13,200.0 | 6,819.0 | 9,215.9 | 6,804.9 | 173.0 | 48.1 | 1.56 | 1,439.8 | -7,879.8 | 2,083.2 | 2,011.8 | 71.41 | 29.173 | |
| 13,300.0 | 6,819.0 | 9,215.9 | 6,804.9 | 175.8 | 48.1 | 1.51 | 1,439.7 | -7,879.8 | 1,983.2 | 1,911.1 | 72.11 | 27.502 | |
| 13,400.0 | 6,819.0 | 9,216.0 | 6,804.9 | 178.6 | 48.1 | 1.46 | 1,439.7 | -7,879.8 | 1,883.2 | 1,810.4 | 72.81 | 25.863 | |
| 13,500.0 | 6,819.0 | 9,216.0 | 6,804.9 | 181.4 | 48.1 | 1.41 | 1,439.7 | -7,879.8 | 1,783.2 | 1,709.7 | 73.52 | 24.255 | |
| 13,600.0 | 6,819.0 | 9,216.0 | 6,804.9 | 184.2 | 48.1 | 1.35 | 1,439.6 | -7,879.8 | 1,683.2 | 1,609.0 | 74.22 | 22.678 | |
| 13,700.0 | 6,819.0 | 9,216.1 | 6,804.9 | 187.0 | 48.1 | 1.30 | 1,439.6 | -7,879.8 | 1,583.3 | 1,508.3 | 74.93 | 21.131 | |
| 13,800.0 | 6,819.0 | 9,216.1 | 6,804.9 | 189.7 | 48.1 | 1.25 | 1,439.6 | -7,879.8 | 1,483.3 | 1,407.7 | 75.63 | 19.612 | |
| 13,900.0 | 6,819.0 | 9,216.1 | 6,804.9 | 192.5 | 48.1 | 1.20 | 1,439.5 | -7,879.8 | 1,383.3 | 1,307.0 | 76.34 | 18.121 | |
| 14,000.0 | 6,819.0 | 9,216.2 | 6,804.9 | 195.3 | 48.1 | 1.15 | 1,439.5 | -7,879.8 | 1,283.4 | 1,206.3 | 77.04 | 16.658 | |
| 14,100.0 | 6,819.0 | 9,216.2 | 6,804.9 | 198.1 | 48.1 | 1.09 | 1,439.4 | -7,879.8 | 1,183.4 | 1,105.7 | 77.75 | 15.221 | |
| 14,200.0 | 6,819.0 | 9,216.2 | 6,804.9 | 200.9 | 48.1 | 1.04 | 1,439.4 | -7,879.8 | 1,083.5 | 1,005.0 | 78.45 | 13.811 | |
| 14,300.0 | 6,819.0 | 9,216.3 | 6,804.9 | 203.7 | 48.1 | 0.99 | 1,439.4 | -7,879.8 | 983.6 | 904.4 | 79.16 | 12.425 | |
| 14,400.0 | 6,819.0 | 9,216.3 | 6,804.9 | 206.5 | 48.1 | 0.94 | 1,439.3 | -7,879.8 | 883.7 | 803.8 | 79.87 | 11.064 | |
| 14,500.0 | 6,819.0 | 9,216.3 | 6,804.9 | 209.3 | 48.1 | 0.88 | 1,439.3 | -7,879.8 | 783.8 | 703.2 | 80.57 | 9.727 | |
| 14,600.0 | 6,819.0 | 9,216.4 | 6,804.9 | 212.1 | 48.1 | 0.83 | 1,439.3 | -7,879.8 | 683.9 | 602.6 | 81.28 | 8.414 | |
| 14,700.0 | 6,819.0 | 9,216.4 | 6,804.9 | 214.9 | 48.1 | 0.78 | 1,439.2 | -7,879.8 | 584.1 | 502.1 | 81.99 | 7.124 | |
| 14,720.3 | 6,819.0 | 9,216.5 | 6,804.9 | 215.4 | 48.1 | 0.77 | 1,439.2 | -7,879.8 | 563.8 | 481.7 | 82.13 | 6.865 | CC, ES, SF |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT NOFFSINGER #21-5 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -67.05 | 3,366.8 | -7,952.9 | 8,636.2 | | | | |
| 100.0 | 100.0 | 79.7 | 79.7 | 0.1 | 0.1 | -67.06 | 3,366.7 | -7,953.0 | 8,636.3 | 8,636.1 | 0.14 | N/A | |
| 200.0 | 200.0 | 197.7 | 197.7 | 0.3 | 0.2 | -67.06 | 3,366.4 | -7,953.4 | 8,636.5 | 8,635.9 | 0.53 | N/A | |
| 300.0 | 300.0 | 290.3 | 290.3 | 0.5 | 0.2 | -67.06 | 3,366.4 | -7,953.4 | 8,636.5 | 8,635.8 | 0.78 | N/A | |
| 400.0 | 400.0 | 387.3 | 387.3 | 0.8 | 0.3 | -67.06 | 3,366.6 | -7,953.5 | 8,636.7 | 8,635.6 | 1.08 | 8,027.537 | |
| 500.0 | 500.0 | 475.7 | 475.7 | 1.0 | 0.4 | -67.06 | 3,366.9 | -7,953.6 | 8,636.9 | 8,635.5 | 1.36 | 6,368.156 | |
| 600.0 | 600.0 | 568.3 | 568.3 | 1.2 | 0.4 | -67.05 | 3,367.2 | -7,953.8 | 8,637.2 | 8,635.6 | 1.63 | 5,283.621 | |
| 700.0 | 700.0 | 664.9 | 664.9 | 1.4 | 0.5 | -67.05 | 3,367.5 | -7,954.1 | 8,637.6 | 8,635.7 | 1.91 | 4,518.948 | |
| 800.0 | 800.0 | 750.6 | 750.6 | 1.7 | 0.5 | -67.05 | 3,367.8 | -7,954.4 | 8,638.1 | 8,635.9 | 2.18 | 3,964.218 | |
| 900.0 | 900.0 | 827.8 | 827.8 | 1.9 | 0.6 | -88.21 | 3,368.1 | -7,954.8 | 8,638.7 | 8,636.3 | 2.45 | 3,530.682 | |
| 1,000.0 | 999.8 | 902.2 | 902.1 | 2.1 | 0.6 | -88.22 | 3,368.3 | -7,955.5 | 8,639.5 | 8,636.8 | 2.71 | 3,192.341 | |
| 1,100.0 | 1,099.5 | 1,000.0 | 1,000.0 | 2.3 | 0.6 | -88.26 | 3,368.7 | -7,956.6 | 8,640.4 | 8,637.4 | 2.98 | 2,895.097 | |
| 1,200.0 | 1,198.7 | 1,095.1 | 1,095.1 | 2.6 | 0.7 | -88.32 | 3,369.0 | -7,957.6 | 8,641.2 | 8,637.9 | 3.28 | 2,636.526 | |
| 1,300.0 | 1,297.5 | 1,207.7 | 1,207.7 | 2.9 | 0.7 | -88.42 | 3,369.6 | -7,958.7 | 8,641.9 | 8,638.3 | 3.61 | 2,397.056 | |
| 1,400.0 | 1,395.6 | 1,322.2 | 1,322.2 | 3.2 | 0.8 | -88.55 | 3,370.3 | -7,959.6 | 8,642.3 | 8,638.4 | 3.97 | 2,176.820 | |
| 1,500.0 | 1,493.1 | 1,427.6 | 1,427.6 | 3.5 | 0.8 | -88.70 | 3,370.8 | -7,960.3 | 8,642.6 | 8,638.2 | 4.38 | 1,973.775 | |
| 1,507.2 | 1,500.0 | 1,434.6 | 1,434.6 | 3.6 | 0.8 | -88.72 | 3,370.9 | -7,960.3 | 8,642.6 | 8,638.2 | 4.41 | 1,960.707 | |
| 1,572.2 | 1,563.0 | 1,498.4 | 1,498.3 | 3.8 | 0.9 | -88.82 | 3,371.2 | -7,960.7 | 8,642.8 | 8,638.1 | 4.68 | 1,845.600 | |
| 1,600.0 | 1,590.0 | 1,523.9 | 1,523.9 | 3.9 | 0.9 | -88.86 | 3,371.3 | -7,960.9 | 8,642.8 | 8,638.0 | 4.80 | 1,799.068 | |
| 1,700.0 | 1,686.3 | 1,612.9 | 1,612.9 | 4.4 | 0.9 | -89.01 | 3,371.8 | -7,961.4 | 8,643.1 | 8,637.9 | 5.29 | 1,633.788 | |
| 1,800.0 | 1,781.5 | 1,700.0 | 1,700.0 | 4.9 | 0.9 | -89.18 | 3,372.3 | -7,962.2 | 8,643.6 | 8,637.8 | 5.83 | 1,481.745 | |
| 1,817.6 | 1,798.2 | 1,706.2 | 1,706.2 | 5.0 | 0.9 | -89.19 | 3,372.3 | -7,962.2 | 8,643.7 | 8,637.8 | 5.93 | 1,457.180 | |
| 1,900.0 | 1,876.1 | 1,780.7 | 1,780.7 | 5.5 | 1.0 | -89.35 | 3,372.6 | -7,963.0 | 8,644.3 | 8,637.9 | 6.42 | 1,346.044 | |
| 2,000.0 | 1,970.6 | 1,870.0 | 1,869.9 | 6.0 | 1.0 | -89.54 | 3,372.9 | -7,963.9 | 8,645.2 | 8,638.1 | 7.03 | 1,229.244 | |
| 2,100.0 | 2,065.1 | 1,949.6 | 1,949.6 | 6.6 | 1.0 | -89.72 | 3,373.2 | -7,964.9 | 8,646.3 | 8,638.6 | 7.65 | 1,129.823 | |
| 2,200.0 | 2,159.6 | 2,024.6 | 2,024.5 | 7.2 | 1.1 | -89.88 | 3,373.2 | -7,966.1 | 8,647.7 | 8,639.4 | 8.28 | 1,044.330 | |
| 2,300.0 | 2,254.1 | 2,100.0 | 2,099.9 | 7.8 | 1.1 | -90.05 | 3,373.1 | -7,967.4 | 8,649.4 | 8,640.5 | 8.92 | 970.035 | |
| 2,400.0 | 2,348.7 | 2,207.1 | 2,207.0 | 8.4 | 1.1 | -90.28 | 3,373.3 | -7,969.3 | 8,651.3 | 8,641.8 | 9.57 | 903.981 | |
| 2,500.0 | 2,443.2 | 2,324.9 | 2,324.8 | 9.1 | 1.2 | -90.54 | 3,373.8 | -7,971.0 | 8,653.2 | 8,642.9 | 10.23 | 845.585 | |
| 2,600.0 | 2,537.7 | 2,423.9 | 2,423.8 | 9.7 | 1.2 | -90.75 | 3,374.0 | -7,972.3 | 8,655.0 | 8,644.1 | 10.89 | 794.551 | |
| 2,700.0 | 2,632.2 | 2,514.4 | 2,514.3 | 10.3 | 1.2 | -90.95 | 3,374.1 | -7,973.6 | 8,656.9 | 8,645.3 | 11.55 | 749.387 | |
| 2,800.0 | 2,726.8 | 2,600.0 | 2,599.9 | 10.9 | 1.3 | -91.14 | 3,373.9 | -7,975.0 | 8,659.0 | 8,646.8 | 12.21 | 709.133 | |
| 2,900.0 | 2,821.3 | 2,688.1 | 2,688.0 | 11.6 | 1.3 | -91.33 | 3,373.6 | -7,976.5 | 8,661.4 | 8,648.5 | 12.87 | 672.910 | |
| 3,000.0 | 2,915.8 | 2,773.4 | 2,773.3 | 12.2 | 1.3 | -91.52 | 3,373.3 | -7,978.1 | 8,663.9 | 8,650.4 | 13.53 | 640.195 | |
| 3,100.0 | 3,010.3 | 2,862.7 | 2,862.5 | 12.8 | 1.4 | -91.72 | 3,373.0 | -7,979.8 | 8,666.7 | 8,652.5 | 14.20 | 610.416 | |
| 3,200.0 | 3,104.8 | 2,953.0 | 2,952.8 | 13.5 | 1.4 | -91.92 | 3,372.7 | -7,981.5 | 8,669.6 | 8,654.8 | 14.86 | 583.249 | |
| 3,300.0 | 3,199.4 | 3,168.6 | 3,168.3 | 14.1 | 1.4 | -92.40 | 3,371.3 | -7,984.6 | 8,672.2 | 8,656.7 | 15.56 | 557.436 | |
| 3,400.0 | 3,293.9 | 3,276.1 | 3,275.9 | 14.8 | 1.5 | -92.64 | 3,370.1 | -7,985.2 | 8,674.0 | 8,657.8 | 16.21 | 534.954 | |
| 3,500.0 | 3,388.4 | 3,386.6 | 3,386.3 | 15.4 | 1.5 | -92.89 | 3,368.8 | -7,985.8 | 8,675.8 | 8,658.9 | 16.87 | 514.265 | |
| 3,600.0 | 3,482.9 | 3,525.4 | 3,525.2 | 16.0 | 1.5 | -93.20 | 3,367.4 | -7,985.9 | 8,677.4 | 8,659.9 | 17.52 | 495.285 | |
| 3,700.0 | 3,577.5 | 3,636.4 | 3,636.1 | 16.7 | 1.5 | -93.44 | 3,366.3 | -7,985.6 | 8,678.7 | 8,660.6 | 18.16 | 477.860 | |
| 3,800.0 | 3,672.0 | 3,731.5 | 3,731.2 | 17.3 | 1.5 | -93.65 | 3,365.4 | -7,985.2 | 8,680.2 | 8,661.4 | 18.80 | 461.637 | |
| 3,900.0 | 3,766.5 | 3,829.7 | 3,829.4 | 18.0 | 1.5 | -93.87 | 3,364.4 | -7,984.8 | 8,681.7 | 8,662.2 | 19.44 | 446.476 | |
| 4,000.0 | 3,861.0 | 3,923.0 | 3,922.8 | 18.6 | 1.5 | -94.07 | 3,363.4 | -7,984.4 | 8,683.3 | 8,663.2 | 20.09 | 432.298 | |
| 4,100.0 | 3,955.5 | 4,020.5 | 4,020.2 | 19.3 | 1.5 | -94.29 | 3,362.3 | -7,984.0 | 8,685.1 | 8,664.3 | 20.73 | 418.939 | |
| 4,200.0 | 4,050.1 | 4,123.2 | 4,122.9 | 19.9 | 1.5 | -94.52 | 3,360.7 | -7,983.6 | 8,686.9 | 8,665.5 | 21.38 | 406.390 | |
| 4,300.0 | 4,144.6 | 4,226.5 | 4,226.2 | 20.5 | 1.6 | -94.75 | 3,358.9 | -7,983.2 | 8,688.7 | 8,666.7 | 22.02 | 394.563 | |
| 4,400.0 | 4,239.1 | 4,326.6 | 4,326.3 | 21.2 | 1.6 | -94.97 | 3,357.0 | -7,982.7 | 8,690.6 | 8,667.9 | 22.67 | 383.419 | |
| 4,500.0 | 4,333.6 | 4,422.0 | 4,421.7 | 21.8 | 1.6 | -95.19 | 3,355.4 | -7,982.2 | 8,692.6 | 8,669.3 | 23.31 | 372.920 | |
| 4,600.0 | 4,428.2 | 4,517.9 | 4,517.6 | 22.5 | 1.6 | -95.40 | 3,354.4 | -7,981.4 | 8,694.7 | 8,670.8 | 23.95 | 363.027 | |
| 4,700.0 | 4,522.7 | 4,636.1 | 4,635.8 | 23.1 | 1.6 | -95.65 | 3,353.8 | -7,980.3 | 8,696.9 | 8,672.3 | 24.59 | 353.705 | |
| 4,800.0 | 4,617.2 | 4,755.8 | 4,755.4 | 23.8 | 1.6 | -95.90 | 3,354.1 | -7,978.3 | 8,698.7 | 8,673.5 | 25.23 | 344.830 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT NOFFSINGER #21-5 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,852.2 | 4,851.7 | 24.4 | 1.6 | -96.10 | 3,354.6 | -7,976.6 | 8,700.6 | 8,674.8 | 25.87 | 336.363 | |
| 5,000.0 | 4,806.2 | 4,951.3 | 4,950.8 | 25.1 | 1.6 | -96.31 | 3,355.2 | -7,974.7 | 8,702.6 | 8,676.1 | 26.51 | 328.304 | |
| 5,100.0 | 4,900.8 | 5,045.4 | 5,044.9 | 25.7 | 1.6 | -96.50 | 3,355.8 | -7,972.9 | 8,704.7 | 8,677.6 | 27.15 | 320.627 | |
| 5,200.0 | 4,995.3 | 5,130.1 | 5,129.6 | 26.4 | 1.6 | -96.68 | 3,356.2 | -7,971.4 | 8,707.0 | 8,679.2 | 27.79 | 313.308 | |
| 5,300.0 | 5,089.8 | 5,203.9 | 5,203.4 | 27.0 | 1.6 | -96.83 | 3,356.5 | -7,970.2 | 8,709.5 | 8,681.1 | 28.43 | 306.328 | |
| 5,400.0 | 5,184.3 | 5,326.0 | 5,325.6 | 27.7 | 1.6 | -97.09 | 3,357.1 | -7,968.3 | 8,712.2 | 8,683.1 | 29.07 | 299.671 | |
| 5,500.0 | 5,278.9 | 5,566.7 | 5,566.2 | 28.3 | 1.6 | -97.58 | 3,358.1 | -7,962.1 | 8,714.2 | 8,684.5 | 29.71 | 293.328 | |
| 5,533.5 | 5,310.5 | 5,600.0 | 5,599.4 | 28.5 | 1.6 | -97.65 | 3,358.1 | -7,961.0 | 8,714.5 | 8,684.6 | 29.92 | 291.237 | |
| 5,600.0 | 5,373.6 | 5,632.4 | 5,631.8 | 28.9 | 1.6 | -97.73 | 3,358.1 | -7,959.9 | 8,715.2 | 8,684.9 | 30.29 | 287.734 | |
| 5,700.0 | 5,469.4 | 5,667.8 | 5,667.2 | 29.3 | 1.6 | -97.82 | 3,358.0 | -7,958.9 | 8,716.6 | 8,685.8 | 30.74 | 283.591 | |
| 5,800.0 | 5,566.1 | 5,700.0 | 5,699.4 | 29.8 | 1.6 | -97.91 | 3,357.8 | -7,958.3 | 8,718.2 | 8,687.0 | 31.14 | 279.937 | |
| 5,900.0 | 5,663.6 | 5,753.5 | 5,752.9 | 30.1 | 1.6 | -98.02 | 3,357.6 | -7,957.7 | 8,720.0 | 8,688.5 | 31.51 | 276.746 | |
| 6,000.0 | 5,761.9 | 5,800.0 | 5,799.4 | 30.5 | 1.6 | -98.12 | 3,357.3 | -7,957.4 | 8,721.9 | 8,690.0 | 31.83 | 274.004 | |
| 6,100.0 | 5,860.7 | 5,875.2 | 5,874.6 | 30.7 | 1.6 | -98.23 | 3,356.9 | -7,957.2 | 8,723.7 | 8,691.6 | 32.11 | 271.663 | |
| 6,200.0 | 5,960.0 | 5,961.1 | 5,960.4 | 31.0 | 1.6 | -98.33 | 3,356.5 | -7,957.3 | 8,725.4 | 8,693.0 | 32.35 | 269.697 | |
| 6,300.0 | 6,059.7 | 6,069.4 | 6,068.8 | 31.2 | 1.7 | -98.42 | 3,355.9 | -7,957.4 | 8,726.6 | 8,694.0 | 32.55 | 268.090 | |
| 6,400.0 | 6,159.6 | 6,176.8 | 6,176.2 | 31.3 | 1.7 | -98.46 | 3,355.5 | -7,957.3 | 8,727.1 | 8,694.4 | 32.70 | 266.872 | |
| 6,486.1 | 6,245.7 | 6,255.0 | 6,254.3 | 31.4 | 1.7 | -77.31 | 3,355.4 | -7,957.2 | 8,727.2 | 8,708.0 | 19.12 | 456.364 | |
| 6,500.0 | 6,259.6 | 6,266.9 | 6,266.3 | 31.4 | 1.7 | -77.31 | 3,355.4 | -7,957.2 | 8,727.1 | 8,708.0 | 19.15 | 455.829 | |
| 6,516.1 | 6,275.7 | 6,280.9 | 6,280.2 | 31.4 | 1.7 | -77.31 | 3,355.3 | -7,957.2 | 8,727.1 | 8,708.0 | 19.17 | 455.149 | |
| 6,550.0 | 6,309.5 | 6,311.6 | 6,310.9 | 31.5 | 1.7 | 12.70 | 3,355.3 | -7,957.2 | 8,726.3 | 8,693.5 | 32.84 | 265.735 | |
| 6,600.0 | 6,359.4 | 6,360.9 | 6,360.3 | 31.5 | 1.7 | 12.78 | 3,355.1 | -7,957.2 | 8,722.3 | 8,689.5 | 32.84 | 265.617 | |
| 6,650.0 | 6,408.8 | 6,410.7 | 6,410.1 | 31.5 | 1.7 | 12.92 | 3,354.9 | -7,957.2 | 8,714.9 | 8,682.1 | 32.79 | 265.765 | |
| 6,700.0 | 6,457.5 | 6,463.0 | 6,462.3 | 31.5 | 1.7 | 13.13 | 3,354.6 | -7,957.3 | 8,704.2 | 8,671.5 | 32.68 | 266.336 | |
| 6,716.1 | 6,473.1 | 6,479.7 | 6,479.0 | 31.5 | 1.7 | 13.22 | 3,354.5 | -7,957.3 | 8,700.0 | 8,667.4 | 32.63 | 266.639 | |
| 6,725.0 | 6,481.6 | 6,488.8 | 6,488.1 | 31.5 | 1.7 | 13.29 | 3,354.4 | -7,957.3 | 8,697.6 | 8,665.0 | 32.58 | 266.990 | |
| 6,750.0 | 6,505.3 | 6,513.2 | 6,512.5 | 31.5 | 1.7 | 13.53 | 3,354.3 | -7,957.3 | 8,689.8 | 8,657.4 | 32.39 | 268.256 | |
| 6,775.0 | 6,528.5 | 6,536.4 | 6,535.8 | 31.4 | 1.7 | 13.82 | 3,354.1 | -7,957.3 | 8,680.8 | 8,648.6 | 32.16 | 269.955 | |
| 6,800.0 | 6,551.3 | 6,559.1 | 6,558.4 | 31.4 | 1.7 | 14.16 | 3,354.0 | -7,957.4 | 8,670.6 | 8,638.8 | 31.86 | 272.117 | |
| 6,825.0 | 6,573.4 | 6,581.2 | 6,580.6 | 31.4 | 1.7 | 14.55 | 3,353.9 | -7,957.4 | 8,659.3 | 8,627.8 | 31.52 | 274.766 | |
| 6,850.0 | 6,595.0 | 6,602.9 | 6,602.2 | 31.3 | 1.7 | 15.01 | 3,353.8 | -7,957.4 | 8,646.9 | 8,615.8 | 31.11 | 277.919 | |
| 6,875.0 | 6,615.8 | 6,624.9 | 6,624.3 | 31.3 | 1.7 | 15.54 | 3,353.6 | -7,957.4 | 8,633.4 | 8,602.8 | 30.66 | 281.580 | |
| 6,900.0 | 6,635.9 | 6,646.2 | 6,645.6 | 31.3 | 1.8 | 16.15 | 3,353.5 | -7,957.4 | 8,618.9 | 8,588.7 | 30.16 | 285.765 | |
| 6,925.0 | 6,655.1 | 6,666.6 | 6,666.0 | 31.2 | 1.8 | 16.86 | 3,353.4 | -7,957.4 | 8,603.3 | 8,573.7 | 29.62 | 290.473 | |
| 6,950.0 | 6,673.6 | 6,686.2 | 6,685.5 | 31.2 | 1.8 | 17.68 | 3,353.3 | -7,957.4 | 8,586.8 | 8,557.8 | 29.04 | 295.686 | |
| 6,975.0 | 6,691.1 | 6,704.7 | 6,704.0 | 31.1 | 1.8 | 18.63 | 3,353.2 | -7,957.4 | 8,569.4 | 8,541.0 | 28.44 | 301.368 | |
| 7,000.0 | 6,707.6 | 6,722.1 | 6,721.5 | 31.1 | 1.8 | 19.73 | 3,353.1 | -7,957.4 | 8,551.1 | 8,523.3 | 27.81 | 307.446 | |
| 7,025.0 | 6,723.1 | 6,738.5 | 6,737.8 | 31.0 | 1.8 | 21.01 | 3,353.0 | -7,957.4 | 8,532.0 | 8,504.8 | 27.19 | 313.812 | |
| 7,050.0 | 6,737.6 | 6,753.8 | 6,753.1 | 31.0 | 1.8 | 22.52 | 3,352.9 | -7,957.4 | 8,512.1 | 8,485.6 | 26.58 | 320.291 | |
| 7,075.0 | 6,751.0 | 6,767.9 | 6,767.2 | 30.9 | 1.8 | 24.30 | 3,352.8 | -7,957.4 | 8,491.6 | 8,465.6 | 26.00 | 326.633 | |
| 7,100.0 | 6,763.3 | 6,780.8 | 6,780.2 | 30.8 | 1.8 | 26.43 | 3,352.7 | -7,957.3 | 8,470.3 | 8,444.9 | 25.47 | 332.497 | |
| 7,125.0 | 6,774.5 | 6,792.6 | 6,791.9 | 30.8 | 1.8 | 28.99 | 3,352.6 | -7,957.3 | 8,448.5 | 8,423.5 | 25.04 | 337.457 | |
| 7,150.0 | 6,784.4 | 6,804.5 | 6,803.8 | 30.7 | 1.8 | 32.13 | 3,352.6 | -7,957.3 | 8,426.1 | 8,401.4 | 24.71 | 341.007 | |
| 7,175.0 | 6,793.1 | 6,818.1 | 6,817.5 | 30.7 | 1.8 | 36.02 | 3,352.5 | -7,957.3 | 8,403.3 | 8,378.8 | 24.52 | 342.716 | |
| 7,200.0 | 6,800.6 | 6,829.8 | 6,829.1 | 30.6 | 1.8 | 40.85 | 3,352.4 | -7,957.3 | 8,380.1 | 8,355.6 | 24.46 | 342.612 | |
| 7,225.0 | 6,806.8 | 6,839.4 | 6,838.8 | 30.6 | 1.8 | 46.91 | 3,352.3 | -7,957.3 | 8,356.5 | 8,332.0 | 24.49 | 341.280 | |
| 7,250.0 | 6,811.8 | 6,847.0 | 6,846.4 | 30.5 | 1.8 | 54.49 | 3,352.3 | -7,957.3 | 8,332.6 | 8,308.1 | 24.48 | 340.361 | |
| 7,275.0 | 6,815.5 | 6,852.6 | 6,852.0 | 30.5 | 1.8 | 63.83 | 3,352.2 | -7,957.2 | 8,308.5 | 8,284.3 | 24.23 | 342.832 | |
| 7,300.0 | 6,817.8 | 6,856.2 | 6,855.5 | 30.4 | 1.8 | 74.92 | 3,352.2 | -7,957.2 | 8,284.3 | 8,260.8 | 23.51 | 352.391 | |
| 7,325.0 | 6,818.9 | 6,857.7 | 6,857.1 | 30.4 | 1.8 | 87.21 | 3,352.2 | -7,957.2 | 8,260.0 | 8,237.6 | 22.42 | 368.451 | |
| 7,332.8 | 6,819.0 | 6,857.8 | 6,857.1 | 30.4 | 1.8 | 91.14 | 3,352.2 | -7,957.2 | 8,252.4 | 8,230.3 | 22.14 | 372.794 | |
| 7,400.0 | 6,819.0 | 6,857.4 | 6,856.8 | 30.3 | 1.8 | 91.13 | 3,352.2 | -7,957.2 | 8,187.1 | 8,164.3 | 22.81 | 358.954 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT NOFFSINGER #21-5 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,857.0 | 6,856.3 | 30.2 | 1.8 | 91.12 | 3,352.2 | -7,957.2 | 8,089.9 | 8,065.8 | 24.07 | 336.131 | |
| 7,600.0 | 6,819.0 | 6,856.5 | 6,855.8 | 30.3 | 1.8 | 91.10 | 3,352.2 | -7,957.2 | 7,992.7 | 7,967.1 | 25.59 | 312.294 | |
| 7,700.0 | 6,819.0 | 6,856.0 | 6,855.4 | 30.6 | 1.8 | 91.09 | 3,352.2 | -7,957.2 | 7,895.7 | 7,868.4 | 27.34 | 288.811 | |
| 7,800.0 | 6,819.0 | 6,855.5 | 6,854.9 | 31.3 | 1.8 | 91.08 | 3,352.2 | -7,957.2 | 7,798.7 | 7,769.4 | 29.26 | 266.523 | |
| 7,900.0 | 6,819.0 | 6,855.1 | 6,854.4 | 32.5 | 1.8 | 91.06 | 3,352.2 | -7,957.2 | 7,701.8 | 7,670.5 | 31.33 | 245.861 | |
| 8,000.0 | 6,819.0 | 6,854.6 | 6,854.0 | 34.2 | 1.8 | 91.05 | 3,352.2 | -7,957.2 | 7,605.0 | 7,571.5 | 33.51 | 226.976 | |
| 8,100.0 | 6,819.0 | 6,854.2 | 6,853.5 | 36.1 | 1.8 | 91.03 | 3,352.2 | -7,957.2 | 7,508.2 | 7,472.5 | 35.78 | 209.854 | |
| 8,200.0 | 6,819.0 | 6,853.7 | 6,853.1 | 38.3 | 1.8 | 91.02 | 3,352.2 | -7,957.2 | 7,411.6 | 7,373.5 | 38.13 | 194.395 | |
| 8,300.0 | 6,819.0 | 6,853.3 | 6,852.6 | 40.6 | 1.8 | 91.01 | 3,352.2 | -7,957.2 | 7,315.0 | 7,274.5 | 40.54 | 180.457 | |
| 8,400.0 | 6,819.0 | 6,852.9 | 6,852.2 | 42.9 | 1.8 | 91.00 | 3,352.2 | -7,957.2 | 7,218.6 | 7,175.6 | 43.00 | 167.886 | |
| 8,500.0 | 6,819.0 | 6,852.4 | 6,851.8 | 45.3 | 1.8 | 90.98 | 3,352.2 | -7,957.2 | 7,122.2 | 7,076.7 | 45.50 | 156.532 | |
| 8,600.0 | 6,819.0 | 6,852.0 | 6,851.4 | 47.8 | 1.8 | 90.97 | 3,352.2 | -7,957.2 | 7,025.9 | 6,977.9 | 48.04 | 146.256 | |
| 8,700.0 | 6,819.0 | 6,851.6 | 6,851.0 | 50.3 | 1.8 | 90.96 | 3,352.2 | -7,957.2 | 6,929.8 | 6,879.1 | 50.61 | 136.933 | |
| 8,800.0 | 6,819.0 | 6,851.2 | 6,850.5 | 52.8 | 1.8 | 90.95 | 3,352.2 | -7,957.2 | 6,833.7 | 6,780.5 | 53.20 | 128.451 | |
| 8,900.0 | 6,819.0 | 6,850.8 | 6,850.1 | 55.4 | 1.8 | 90.93 | 3,352.3 | -7,957.2 | 6,737.8 | 6,681.9 | 55.82 | 120.713 | |
| 9,000.0 | 6,819.0 | 6,850.4 | 6,849.7 | 58.0 | 1.8 | 90.92 | 3,352.3 | -7,957.2 | 6,641.9 | 6,583.5 | 58.45 | 113.633 | |
| 9,100.0 | 6,819.0 | 6,850.0 | 6,849.3 | 60.6 | 1.8 | 90.91 | 3,352.3 | -7,957.2 | 6,546.2 | 6,485.1 | 61.10 | 107.137 | |
| 9,200.0 | 6,819.0 | 6,849.6 | 6,849.0 | 63.2 | 1.8 | 90.90 | 3,352.3 | -7,957.3 | 6,450.7 | 6,386.9 | 63.77 | 101.161 | |
| 9,300.0 | 6,819.0 | 6,849.2 | 6,848.6 | 65.9 | 1.8 | 90.89 | 3,352.3 | -7,957.3 | 6,355.2 | 6,288.8 | 66.44 | 95.649 | |
| 9,400.0 | 6,819.0 | 6,848.8 | 6,848.2 | 68.5 | 1.8 | 90.87 | 3,352.3 | -7,957.3 | 6,260.0 | 6,190.8 | 69.13 | 90.551 | |
| 9,500.0 | 6,819.0 | 6,848.5 | 6,847.8 | 71.2 | 1.8 | 90.86 | 3,352.3 | -7,957.3 | 6,164.8 | 6,093.0 | 71.83 | 85.826 | |
| 9,600.0 | 6,819.0 | 6,848.1 | 6,847.4 | 73.9 | 1.8 | 90.85 | 3,352.3 | -7,957.3 | 6,069.8 | 5,995.3 | 74.54 | 81.435 | |
| 9,700.0 | 6,819.0 | 6,847.7 | 6,847.1 | 76.5 | 1.8 | 90.84 | 3,352.3 | -7,957.3 | 5,975.0 | 5,897.8 | 77.25 | 77.346 | |
| 9,800.0 | 6,819.0 | 6,847.4 | 6,846.7 | 79.2 | 1.8 | 90.83 | 3,352.3 | -7,957.3 | 5,880.4 | 5,800.4 | 79.97 | 73.531 | |
| 9,900.0 | 6,819.0 | 6,847.0 | 6,846.4 | 81.9 | 1.8 | 90.82 | 3,352.3 | -7,957.3 | 5,785.9 | 5,703.2 | 82.70 | 69.964 | |
| 10,000.0 | 6,819.0 | 6,846.7 | 6,846.0 | 84.6 | 1.8 | 90.81 | 3,352.3 | -7,957.3 | 5,691.6 | 5,606.2 | 85.43 | 66.622 | |
| 10,100.0 | 6,819.0 | 6,846.3 | 6,845.7 | 87.4 | 1.8 | 90.80 | 3,352.3 | -7,957.3 | 5,597.6 | 5,509.4 | 88.17 | 63.486 | |
| 10,200.0 | 6,819.0 | 6,846.0 | 6,845.3 | 90.1 | 1.8 | 90.79 | 3,352.3 | -7,957.3 | 5,503.7 | 5,412.8 | 90.91 | 60.538 | |
| 10,300.0 | 6,819.0 | 6,845.6 | 6,845.0 | 92.8 | 1.8 | 90.78 | 3,352.3 | -7,957.3 | 5,410.1 | 5,316.4 | 93.66 | 57.763 | |
| 10,400.0 | 6,819.0 | 6,845.3 | 6,844.6 | 95.5 | 1.8 | 90.77 | 3,352.3 | -7,957.3 | 5,316.6 | 5,220.2 | 96.41 | 55.146 | |
| 10,500.0 | 6,819.0 | 6,844.9 | 6,844.3 | 98.3 | 1.8 | 90.76 | 3,352.3 | -7,957.3 | 5,223.5 | 5,124.3 | 99.16 | 52.675 | |
| 10,600.0 | 6,819.0 | 6,844.6 | 6,844.0 | 101.0 | 1.8 | 90.75 | 3,352.3 | -7,957.3 | 5,130.5 | 5,028.6 | 101.92 | 50.338 | |
| 10,700.0 | 6,819.0 | 6,844.3 | 6,843.6 | 103.8 | 1.8 | 90.74 | 3,352.3 | -7,957.3 | 5,037.9 | 4,933.2 | 104.68 | 48.126 | |
| 10,800.0 | 6,819.0 | 6,844.0 | 6,843.3 | 106.5 | 1.8 | 90.73 | 3,352.3 | -7,957.3 | 4,945.5 | 4,838.1 | 107.44 | 46.029 | |
| 10,900.0 | 6,819.0 | 6,843.7 | 6,843.0 | 109.2 | 1.8 | 90.72 | 3,352.3 | -7,957.3 | 4,853.5 | 4,743.3 | 110.21 | 44.039 | |
| 11,000.0 | 6,819.0 | 6,843.3 | 6,842.7 | 112.0 | 1.8 | 90.71 | 3,352.3 | -7,957.3 | 4,761.8 | 4,648.8 | 112.98 | 42.148 | |
| 11,100.0 | 6,819.0 | 6,843.0 | 6,842.4 | 114.8 | 1.8 | 90.70 | 3,352.3 | -7,957.3 | 4,670.4 | 4,554.6 | 115.75 | 40.350 | |
| 11,200.0 | 6,819.0 | 6,842.7 | 6,842.1 | 117.5 | 1.8 | 90.69 | 3,352.3 | -7,957.3 | 4,579.3 | 4,460.8 | 118.52 | 38.638 | |
| 11,300.0 | 6,819.0 | 6,842.4 | 6,841.8 | 120.3 | 1.8 | 90.68 | 3,352.3 | -7,957.3 | 4,488.7 | 4,367.4 | 121.29 | 37.007 | |
| 11,400.0 | 6,819.0 | 6,842.1 | 6,841.5 | 123.0 | 1.8 | 90.67 | 3,352.3 | -7,957.3 | 4,398.4 | 4,274.4 | 124.07 | 35.451 | |
| 11,500.0 | 6,819.0 | 6,841.8 | 6,841.2 | 125.8 | 1.8 | 90.66 | 3,352.3 | -7,957.3 | 4,308.6 | 4,181.8 | 126.85 | 33.967 | |
| 11,600.0 | 6,819.0 | 6,841.5 | 6,840.9 | 128.6 | 1.8 | 90.66 | 3,352.3 | -7,957.3 | 4,219.2 | 4,089.6 | 129.62 | 32.550 | |
| 11,700.0 | 6,819.0 | 6,841.2 | 6,840.6 | 131.3 | 1.8 | 90.65 | 3,352.3 | -7,957.3 | 4,130.4 | 3,998.0 | 132.40 | 31.195 | |
| 11,800.0 | 6,819.0 | 6,840.9 | 6,840.3 | 134.1 | 1.8 | 90.64 | 3,352.3 | -7,957.3 | 4,042.0 | 3,906.8 | 135.19 | 29.900 | |
| 11,900.0 | 6,819.0 | 6,840.6 | 6,840.0 | 136.9 | 1.8 | 90.63 | 3,352.3 | -7,957.3 | 3,954.2 | 3,816.2 | 137.97 | 28.660 | |
| 12,000.0 | 6,819.0 | 6,840.4 | 6,839.7 | 139.6 | 1.8 | 90.62 | 3,352.3 | -7,957.3 | 3,867.0 | 3,726.3 | 140.75 | 27.474 | |
| 12,100.0 | 6,819.0 | 6,840.1 | 6,839.4 | 142.4 | 1.8 | 90.61 | 3,352.3 | -7,957.3 | 3,780.4 | 3,636.9 | 143.54 | 26.338 | |
| 12,200.0 | 6,819.0 | 6,839.8 | 6,839.2 | 145.2 | 1.8 | 90.60 | 3,352.3 | -7,957.3 | 3,694.5 | 3,548.2 | 146.32 | 25.249 | |
| 12,300.0 | 6,819.0 | 6,839.5 | 6,838.9 | 148.0 | 1.8 | 90.60 | 3,352.3 | -7,957.3 | 3,609.4 | 3,460.3 | 149.11 | 24.206 | |
| 12,400.0 | 6,819.0 | 6,839.3 | 6,838.6 | 150.8 | 1.8 | 90.59 | 3,352.3 | -7,957.3 | 3,525.0 | 3,373.1 | 151.90 | 23.206 | |
| 12,500.0 | 6,819.0 | 6,839.0 | 6,838.3 | 153.5 | 1.8 | 90.58 | 3,352.3 | -7,957.3 | 3,441.4 | 3,286.8 | 154.69 | 22.248 | |
| 12,600.0 | 6,819.0 | 6,838.7 | 6,838.1 | 156.3 | 1.8 | 90.57 | 3,352.3 | -7,957.3 | 3,358.8 | 3,201.3 | 157.48 | 21.329 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT NOFFSINGER #21-5 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 6,819.0 | 6,838.5 | 6,837.8 | 159.1 | 1.8 | 90.56 | 3,352.3 | -7,957.3 | 3,277.1 | 3,116.8 | 160.27 | 20.448 | |
| 12,800.0 | 6,819.0 | 6,838.2 | 6,837.6 | 161.9 | 1.8 | 90.56 | 3,352.3 | -7,957.3 | 3,196.5 | 3,033.4 | 163.06 | 19.603 | |
| 12,900.0 | 6,819.0 | 6,837.9 | 6,837.3 | 164.7 | 1.8 | 90.55 | 3,352.3 | -7,957.3 | 3,116.9 | 2,951.1 | 165.85 | 18.794 | |
| 13,000.0 | 6,819.0 | 6,837.7 | 6,837.0 | 167.4 | 1.8 | 90.54 | 3,352.3 | -7,957.3 | 3,038.6 | 2,870.0 | 168.64 | 18.018 | |
| 13,100.0 | 6,819.0 | 6,837.4 | 6,836.8 | 170.2 | 1.8 | 90.53 | 3,352.3 | -7,957.3 | 2,961.6 | 2,790.2 | 171.44 | 17.275 | |
| 13,200.0 | 6,819.0 | 6,837.2 | 6,836.5 | 173.0 | 1.8 | 90.53 | 3,352.3 | -7,957.3 | 2,886.0 | 2,711.8 | 174.23 | 16.564 | |
| 13,300.0 | 6,819.0 | 6,836.9 | 6,836.3 | 175.8 | 1.8 | 90.52 | 3,352.3 | -7,957.3 | 2,812.0 | 2,634.9 | 177.02 | 15.885 | |
| 13,400.0 | 6,819.0 | 6,836.7 | 6,836.0 | 178.6 | 1.8 | 90.51 | 3,352.3 | -7,957.3 | 2,739.5 | 2,559.7 | 179.82 | 15.235 | |
| 13,500.0 | 6,819.0 | 6,836.5 | 6,835.8 | 181.4 | 1.8 | 90.50 | 3,352.3 | -7,957.3 | 2,668.9 | 2,486.3 | 182.61 | 14.615 | |
| 13,600.0 | 6,819.0 | 6,836.2 | 6,835.6 | 184.2 | 1.8 | 90.50 | 3,352.3 | -7,957.3 | 2,600.2 | 2,414.8 | 185.41 | 14.024 | |
| 13,700.0 | 6,819.0 | 6,836.0 | 6,835.3 | 187.0 | 1.8 | 90.49 | 3,352.3 | -7,957.3 | 2,533.5 | 2,345.3 | 188.21 | 13.462 | |
| 13,800.0 | 6,819.0 | 6,835.7 | 6,835.1 | 189.7 | 1.8 | 90.48 | 3,352.4 | -7,957.3 | 2,469.2 | 2,278.2 | 191.00 | 12.927 | |
| 13,900.0 | 6,819.0 | 6,835.5 | 6,834.9 | 192.5 | 1.8 | 90.48 | 3,352.4 | -7,957.3 | 2,407.2 | 2,213.4 | 193.80 | 12.421 | |
| 14,000.0 | 6,819.0 | 6,835.3 | 6,834.6 | 195.3 | 1.8 | 90.47 | 3,352.4 | -7,957.3 | 2,347.9 | 2,151.3 | 196.60 | 11.943 | |
| 14,100.0 | 6,819.0 | 6,835.0 | 6,834.4 | 198.1 | 1.8 | 90.46 | 3,352.4 | -7,957.3 | 2,291.4 | 2,092.0 | 199.40 | 11.492 | |
| 14,200.0 | 6,819.0 | 6,834.8 | 6,834.2 | 200.9 | 1.8 | 90.45 | 3,352.4 | -7,957.3 | 2,238.0 | 2,035.8 | 202.19 | 11.068 | |
| 14,300.0 | 6,819.0 | 6,834.6 | 6,833.9 | 203.7 | 1.8 | 90.45 | 3,352.4 | -7,957.3 | 2,187.8 | 1,982.8 | 204.99 | 10.673 | |
| 14,400.0 | 6,819.0 | 6,834.4 | 6,833.7 | 206.5 | 1.8 | 90.44 | 3,352.4 | -7,957.3 | 2,141.1 | 1,933.3 | 207.79 | 10.304 | |
| 14,500.0 | 6,819.0 | 6,834.1 | 6,833.5 | 209.3 | 1.8 | 90.43 | 3,352.4 | -7,957.3 | 2,098.2 | 1,887.6 | 210.59 | 9.963 | |
| 14,600.0 | 6,819.0 | 6,833.9 | 6,833.3 | 212.1 | 1.8 | 90.43 | 3,352.4 | -7,957.3 | 2,059.2 | 1,845.8 | 213.39 | 9.650 | |
| 14,700.0 | 6,819.0 | 6,833.7 | 6,833.1 | 214.9 | 1.8 | 90.42 | 3,352.4 | -7,957.3 | 2,024.4 | 1,808.2 | 216.19 | 9.364 | |
| 14,720.3 | 6,819.0 | 6,833.7 | 6,833.0 | 215.4 | 1.8 | 90.42 | 3,352.4 | -7,957.3 | 2,017.9 | 1,801.2 | 216.76 | 9.309 | CC, ES, SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT NOFFSINGER #32-5 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -74.04 | 1,899.0 | -6,641.5 | 6,907.7 | | | | |
| 100.0 | 100.0 | 184.8 | 184.8 | 0.1 | 0.2 | -74.04 | 1,898.7 | -6,639.9 | 6,906.7 | 6,906.4 | 0.29 | N/A | |
| 200.0 | 200.0 | 291.3 | 291.3 | 0.3 | 0.3 | -74.04 | 1,898.6 | -6,638.4 | 6,905.3 | 6,904.7 | 0.62 | N/A | |
| 300.0 | 300.0 | 376.2 | 376.2 | 0.5 | 0.4 | -74.04 | 1,898.6 | -6,637.3 | 6,904.0 | 6,903.1 | 0.91 | 7,626.388 | |
| 400.0 | 400.0 | 464.1 | 464.1 | 0.8 | 0.4 | -74.03 | 1,898.6 | -6,636.3 | 6,902.9 | 6,901.7 | 1.19 | 5,818.469 | |
| 500.0 | 500.0 | 580.2 | 580.2 | 1.0 | 0.5 | -74.03 | 1,898.3 | -6,635.1 | 6,901.8 | 6,900.3 | 1.48 | 4,669.397 | |
| 600.0 | 600.0 | 689.9 | 689.8 | 1.2 | 0.6 | -74.03 | 1,898.0 | -6,633.6 | 6,900.5 | 6,898.7 | 1.76 | 3,920.040 | |
| 700.0 | 700.0 | 768.4 | 768.4 | 1.4 | 0.6 | -74.03 | 1,898.1 | -6,632.6 | 6,899.2 | 6,897.2 | 2.02 | 3,410.485 | |
| 800.0 | 800.0 | 846.4 | 846.3 | 1.7 | 0.6 | -74.02 | 1,898.5 | -6,631.7 | 6,898.3 | 6,896.0 | 2.28 | 3,019.791 | |
| 900.0 | 900.0 | 930.4 | 930.4 | 1.9 | 0.7 | -95.20 | 1,899.0 | -6,631.0 | 6,897.8 | 6,895.3 | 2.54 | 2,714.880 | |
| 951.1 | 951.0 | 978.2 | 978.1 | 2.0 | 0.7 | -95.22 | 1,899.3 | -6,630.7 | 6,897.8 | 6,895.1 | 2.67 | 2,579.330 | |
| 1,000.0 | 999.8 | 1,030.9 | 1,030.9 | 2.1 | 0.7 | -95.24 | 1,899.6 | -6,630.4 | 6,897.8 | 6,895.0 | 2.80 | 2,459.755 | |
| 1,100.0 | 1,099.5 | 1,141.8 | 1,141.8 | 2.3 | 0.8 | -95.31 | 1,900.3 | -6,629.4 | 6,898.0 | 6,894.9 | 3.08 | 2,240.550 | |
| 1,200.0 | 1,198.7 | 1,235.2 | 1,235.1 | 2.6 | 0.8 | -95.38 | 1,901.2 | -6,628.5 | 6,898.4 | 6,895.1 | 3.36 | 2,052.068 | |
| 1,300.0 | 1,297.5 | 1,321.4 | 1,321.3 | 2.9 | 0.8 | -95.47 | 1,902.1 | -6,627.7 | 6,899.4 | 6,895.7 | 3.67 | 1,881.078 | |
| 1,400.0 | 1,395.6 | 1,400.0 | 1,399.9 | 3.2 | 0.9 | -95.55 | 1,903.1 | -6,627.2 | 6,900.9 | 6,896.9 | 4.01 | 1,722.092 | |
| 1,500.0 | 1,493.1 | 1,487.8 | 1,487.7 | 3.5 | 0.9 | -95.66 | 1,904.2 | -6,626.8 | 6,903.1 | 6,898.7 | 4.40 | 1,570.591 | |
| 1,507.2 | 1,500.0 | 1,500.0 | 1,499.9 | 3.6 | 0.9 | -95.68 | 1,904.3 | -6,626.8 | 6,903.3 | 6,898.8 | 4.42 | 1,560.159 | |
| 1,572.2 | 1,563.0 | 1,552.2 | 1,552.1 | 3.8 | 0.9 | -95.78 | 1,904.9 | -6,626.6 | 6,904.9 | 6,900.2 | 4.69 | 1,473.646 | |
| 1,600.0 | 1,590.0 | 1,577.4 | 1,577.2 | 3.9 | 0.9 | -95.82 | 1,905.2 | -6,626.6 | 6,905.7 | 6,900.9 | 4.80 | 1,437.981 | |
| 1,700.0 | 1,686.3 | 1,664.3 | 1,664.2 | 4.4 | 0.9 | -95.94 | 1,906.1 | -6,626.5 | 6,908.7 | 6,903.5 | 5.27 | 1,310.638 | |
| 1,800.0 | 1,781.5 | 1,753.3 | 1,753.2 | 4.9 | 1.0 | -96.09 | 1,906.9 | -6,626.5 | 6,912.4 | 6,906.6 | 5.80 | 1,192.533 | |
| 1,817.6 | 1,798.2 | 1,769.4 | 1,769.3 | 5.0 | 1.0 | -96.12 | 1,907.0 | -6,626.6 | 6,913.1 | 6,907.2 | 5.90 | 1,172.698 | |
| 1,900.0 | 1,876.1 | 1,842.3 | 1,842.2 | 5.5 | 1.0 | -96.31 | 1,907.6 | -6,626.7 | 6,916.5 | 6,910.1 | 6.37 | 1,086.557 | |
| 2,000.0 | 1,970.6 | 1,931.9 | 1,931.8 | 6.0 | 1.0 | -96.55 | 1,907.9 | -6,627.0 | 6,920.8 | 6,913.9 | 6.95 | 995.909 | |
| 2,100.0 | 2,065.1 | 2,020.2 | 2,020.1 | 6.6 | 1.0 | -96.78 | 1,908.0 | -6,627.4 | 6,925.3 | 6,917.8 | 7.54 | 917.960 | |
| 2,200.0 | 2,159.6 | 2,100.0 | 2,099.9 | 7.2 | 1.0 | -97.00 | 1,907.8 | -6,628.1 | 6,930.2 | 6,922.1 | 8.15 | 850.087 | |
| 2,300.0 | 2,254.1 | 2,163.1 | 2,163.0 | 7.8 | 1.0 | -97.17 | 1,907.5 | -6,628.9 | 6,935.6 | 6,926.8 | 8.77 | 791.143 | |
| 2,400.0 | 2,348.7 | 2,250.9 | 2,250.8 | 8.4 | 1.0 | -97.42 | 1,907.0 | -6,630.2 | 6,941.4 | 6,932.0 | 9.39 | 739.217 | |
| 2,500.0 | 2,443.2 | 2,353.7 | 2,353.6 | 9.1 | 1.0 | -97.70 | 1,906.5 | -6,631.7 | 6,947.3 | 6,937.2 | 10.02 | 693.342 | |
| 2,600.0 | 2,537.7 | 2,461.4 | 2,461.2 | 9.7 | 1.1 | -97.99 | 1,906.1 | -6,633.0 | 6,953.2 | 6,942.5 | 10.65 | 652.659 | |
| 2,700.0 | 2,632.2 | 2,554.9 | 2,554.8 | 10.3 | 1.1 | -98.24 | 1,905.7 | -6,634.0 | 6,959.1 | 6,947.8 | 11.29 | 616.482 | |
| 2,800.0 | 2,726.8 | 2,638.4 | 2,638.2 | 10.9 | 1.1 | -98.47 | 1,905.5 | -6,635.0 | 6,965.2 | 6,953.3 | 11.92 | 584.119 | |
| 2,900.0 | 2,821.3 | 2,724.1 | 2,723.9 | 11.6 | 1.1 | -98.70 | 1,905.3 | -6,636.1 | 6,971.7 | 6,959.1 | 12.56 | 554.953 | |
| 3,000.0 | 2,915.8 | 2,815.9 | 2,815.7 | 12.2 | 1.1 | -98.95 | 1,905.3 | -6,637.4 | 6,978.4 | 6,965.2 | 13.20 | 528.534 | |
| 3,100.0 | 3,010.3 | 2,900.0 | 2,899.8 | 12.8 | 1.1 | -99.17 | 1,905.5 | -6,638.6 | 6,985.3 | 6,971.5 | 13.84 | 504.568 | |
| 3,200.0 | 3,104.8 | 2,988.2 | 2,988.0 | 13.5 | 1.1 | -99.40 | 1,905.9 | -6,639.8 | 6,992.5 | 6,978.0 | 14.49 | 482.671 | |
| 3,300.0 | 3,199.4 | 3,071.5 | 3,071.2 | 14.1 | 1.2 | -99.62 | 1,906.6 | -6,641.1 | 6,999.9 | 6,984.8 | 15.13 | 462.649 | |
| 3,400.0 | 3,293.9 | 3,174.5 | 3,174.3 | 14.8 | 1.2 | -99.88 | 1,908.3 | -6,642.6 | 7,007.6 | 6,991.8 | 15.78 | 444.212 | |
| 3,500.0 | 3,388.4 | 3,269.3 | 3,269.0 | 15.4 | 1.2 | -100.11 | 1,910.9 | -6,643.7 | 7,015.2 | 6,998.8 | 16.42 | 427.228 | |
| 3,600.0 | 3,482.9 | 3,398.7 | 3,398.3 | 16.0 | 1.2 | -100.42 | 1,915.2 | -6,644.8 | 7,022.9 | 7,005.9 | 17.07 | 411.441 | |
| 3,700.0 | 3,577.5 | 3,510.7 | 3,510.3 | 16.7 | 1.3 | -100.69 | 1,919.0 | -6,645.2 | 7,030.3 | 7,012.6 | 17.71 | 396.870 | |
| 3,800.0 | 3,672.0 | 3,612.9 | 3,612.4 | 17.3 | 1.3 | -100.93 | 1,922.5 | -6,645.5 | 7,037.6 | 7,019.2 | 18.36 | 383.344 | |
| 3,900.0 | 3,766.5 | 3,706.7 | 3,706.2 | 18.0 | 1.3 | -101.15 | 1,925.8 | -6,645.7 | 7,045.0 | 7,026.0 | 19.00 | 370.761 | |
| 4,000.0 | 3,861.0 | 3,810.6 | 3,810.0 | 18.6 | 1.4 | -101.39 | 1,929.2 | -6,645.9 | 7,052.5 | 7,032.8 | 19.64 | 359.000 | |
| 4,100.0 | 3,955.5 | 3,911.3 | 3,910.7 | 19.3 | 1.4 | -101.63 | 1,932.4 | -6,646.0 | 7,060.0 | 7,039.7 | 20.29 | 348.008 | |
| 4,200.0 | 4,050.1 | 4,012.0 | 4,011.3 | 19.9 | 1.4 | -101.87 | 1,935.4 | -6,646.0 | 7,067.5 | 7,046.6 | 20.93 | 337.706 | |
| 4,300.0 | 4,144.6 | 4,100.0 | 4,099.3 | 20.5 | 1.4 | -102.08 | 1,937.5 | -6,646.2 | 7,075.2 | 7,053.6 | 21.57 | 328.047 | |
| 4,400.0 | 4,239.1 | 4,182.5 | 4,181.8 | 21.2 | 1.5 | -102.28 | 1,939.1 | -6,646.4 | 7,083.1 | 7,060.9 | 22.21 | 318.963 | |
| 4,500.0 | 4,333.6 | 4,255.7 | 4,255.0 | 21.8 | 1.5 | -102.46 | 1,940.2 | -6,646.9 | 7,091.4 | 7,068.5 | 22.85 | 310.409 | |
| 4,600.0 | 4,428.2 | 4,326.4 | 4,325.7 | 22.5 | 1.5 | -102.64 | 1,941.2 | -6,647.6 | 7,100.1 | 7,076.6 | 23.48 | 302.340 | |
| 4,700.0 | 4,522.7 | 4,400.0 | 4,399.2 | 23.1 | 1.5 | -102.82 | 1,942.0 | -6,648.7 | 7,109.3 | 7,085.2 | 24.12 | 294.714 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT NOFFSINGER #32-5 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,489.4 | 4,488.6 | 23.8 | 1.5 | -103.05 | 1,943.0 | -6,650.1 | 7,118.8 | 7,094.1 | 24.76 | 287.485 | |
| 4,900.0 | 4,711.7 | 4,646.1 | 4,645.3 | 24.4 | 1.6 | -103.44 | 1,944.8 | -6,651.9 | 7,128.1 | 7,102.7 | 25.40 | 280.619 | |
| 5,000.0 | 4,806.2 | 4,833.7 | 4,832.8 | 25.1 | 1.6 | -103.91 | 1,946.1 | -6,652.1 | 7,136.4 | 7,110.4 | 26.02 | 274.222 | |
| 5,100.0 | 4,900.8 | 4,938.3 | 4,937.5 | 25.7 | 1.6 | -104.17 | 1,946.6 | -6,651.5 | 7,144.2 | 7,117.5 | 26.65 | 268.077 | |
| 5,200.0 | 4,995.3 | 5,043.0 | 5,042.1 | 26.4 | 1.7 | -104.43 | 1,947.2 | -6,650.8 | 7,152.0 | 7,124.7 | 27.28 | 262.216 | |
| 5,300.0 | 5,089.8 | 5,163.5 | 5,162.6 | 27.0 | 1.7 | -104.73 | 1,948.0 | -6,649.5 | 7,159.7 | 7,131.8 | 27.90 | 256.632 | |
| 5,400.0 | 5,184.3 | 5,275.4 | 5,274.5 | 27.7 | 1.7 | -105.01 | 1,949.0 | -6,648.1 | 7,167.2 | 7,138.7 | 28.52 | 251.284 | |
| 5,500.0 | 5,278.9 | 5,406.3 | 5,405.4 | 28.3 | 1.7 | -105.32 | 1,950.3 | -6,645.9 | 7,174.6 | 7,145.4 | 29.14 | 246.179 | |
| 5,533.5 | 5,310.5 | 5,442.8 | 5,441.9 | 28.5 | 1.7 | -105.41 | 1,950.6 | -6,645.1 | 7,177.0 | 7,147.6 | 29.35 | 244.509 | |
| 5,600.0 | 5,373.6 | 5,513.7 | 5,512.8 | 28.9 | 1.8 | -105.67 | 1,951.3 | -6,643.7 | 7,181.5 | 7,151.8 | 29.70 | 241.840 | |
| 5,700.0 | 5,469.4 | 5,610.8 | 5,609.9 | 29.3 | 1.8 | -105.99 | 1,952.3 | -6,641.6 | 7,187.5 | 7,157.4 | 30.11 | 238.694 | |
| 5,800.0 | 5,566.1 | 5,700.0 | 5,699.0 | 29.8 | 1.8 | -106.26 | 1,953.3 | -6,639.7 | 7,192.8 | 7,162.3 | 30.49 | 235.888 | |
| 5,900.0 | 5,663.6 | 5,776.5 | 5,775.5 | 30.1 | 1.8 | -106.47 | 1,954.0 | -6,638.3 | 7,197.3 | 7,166.4 | 30.84 | 233.412 | |
| 6,000.0 | 5,761.9 | 5,859.2 | 5,858.2 | 30.5 | 1.8 | -106.65 | 1,954.7 | -6,637.0 | 7,201.1 | 7,170.0 | 31.14 | 231.259 | |
| 6,100.0 | 5,860.7 | 5,945.7 | 5,944.7 | 30.7 | 1.9 | -106.80 | 1,955.4 | -6,635.8 | 7,204.2 | 7,172.8 | 31.40 | 229.409 | |
| 6,200.0 | 5,960.0 | 6,030.1 | 6,029.1 | 31.0 | 1.9 | -106.92 | 1,956.0 | -6,634.7 | 7,206.4 | 7,174.8 | 31.63 | 227.847 | |
| 6,300.0 | 6,059.7 | 6,100.0 | 6,099.0 | 31.2 | 1.9 | -106.99 | 1,956.4 | -6,634.1 | 7,208.0 | 7,176.1 | 31.81 | 226.576 | |
| 6,400.0 | 6,159.6 | 6,188.6 | 6,187.6 | 31.3 | 1.9 | -107.03 | 1,956.6 | -6,633.5 | 7,208.7 | 7,176.8 | 31.96 | 225.557 | |
| 6,486.1 | 6,245.7 | 6,256.0 | 6,255.0 | 31.4 | 1.9 | -85.88 | 1,956.8 | -6,633.3 | 7,208.8 | 7,188.2 | 20.65 | 349.179 | |
| 6,500.0 | 6,259.6 | 6,266.9 | 6,265.8 | 31.4 | 1.9 | -85.88 | 1,956.8 | -6,633.2 | 7,208.8 | 7,188.1 | 20.67 | 348.812 | |
| 6,516.1 | 6,275.7 | 6,279.5 | 6,278.4 | 31.4 | 1.9 | -85.88 | 1,956.8 | -6,633.2 | 7,208.8 | 7,188.1 | 20.69 | 348.346 | |
| 6,550.0 | 6,309.5 | 6,300.0 | 6,299.0 | 31.5 | 1.9 | 4.13 | 1,956.9 | -6,633.2 | 7,207.9 | 7,175.9 | 32.08 | 224.683 | |
| 6,600.0 | 6,359.4 | 6,349.0 | 6,348.0 | 31.5 | 1.9 | 4.15 | 1,957.0 | -6,633.2 | 7,203.9 | 7,171.8 | 32.05 | 224.749 | |
| 6,650.0 | 6,408.8 | 6,391.3 | 6,390.2 | 31.5 | 1.9 | 4.20 | 1,957.0 | -6,633.2 | 7,196.4 | 7,164.4 | 31.98 | 225.004 | |
| 6,700.0 | 6,457.5 | 6,433.8 | 6,432.8 | 31.5 | 1.9 | 4.27 | 1,956.9 | -6,633.3 | 7,185.5 | 7,153.7 | 31.85 | 225.597 | |
| 6,716.1 | 6,473.1 | 6,447.5 | 6,446.5 | 31.5 | 1.9 | 4.30 | 1,956.9 | -6,633.4 | 7,181.3 | 7,149.5 | 31.79 | 225.888 | |
| 6,725.0 | 6,481.6 | 6,454.9 | 6,453.9 | 31.5 | 1.9 | 4.33 | 1,956.9 | -6,633.4 | 7,178.8 | 7,147.1 | 31.73 | 226.235 | |
| 6,750.0 | 6,505.3 | 6,475.7 | 6,474.7 | 31.5 | 1.9 | 4.41 | 1,956.9 | -6,633.5 | 7,170.9 | 7,139.4 | 31.53 | 227.458 | |
| 6,775.0 | 6,528.5 | 6,500.0 | 6,499.0 | 31.4 | 1.9 | 4.50 | 1,957.0 | -6,633.5 | 7,161.9 | 7,130.6 | 31.27 | 229.055 | |
| 6,800.0 | 6,551.3 | 6,500.0 | 6,499.0 | 31.4 | 1.9 | 4.61 | 1,957.0 | -6,633.5 | 7,151.6 | 7,120.7 | 30.93 | 231.199 | |
| 6,825.0 | 6,573.4 | 6,526.5 | 6,525.5 | 31.4 | 1.9 | 4.74 | 1,957.0 | -6,633.7 | 7,140.2 | 7,109.6 | 30.56 | 233.671 | |
| 6,850.0 | 6,595.0 | 6,540.7 | 6,539.6 | 31.3 | 2.0 | 4.90 | 1,957.0 | -6,633.8 | 7,127.6 | 7,097.5 | 30.11 | 236.700 | |
| 6,875.0 | 6,615.8 | 6,554.4 | 6,553.3 | 31.3 | 2.0 | 5.07 | 1,957.0 | -6,633.9 | 7,114.0 | 7,084.4 | 29.61 | 240.251 | |
| 6,900.0 | 6,635.9 | 6,567.6 | 6,566.6 | 31.3 | 2.0 | 5.28 | 1,957.1 | -6,634.0 | 7,099.3 | 7,070.3 | 29.05 | 244.353 | |
| 6,925.0 | 6,655.1 | 6,580.3 | 6,579.3 | 31.2 | 2.0 | 5.51 | 1,957.1 | -6,634.1 | 7,083.6 | 7,055.2 | 28.44 | 249.031 | |
| 6,950.0 | 6,673.6 | 6,600.0 | 6,599.0 | 31.2 | 2.0 | 5.79 | 1,957.1 | -6,634.3 | 7,067.0 | 7,039.2 | 27.80 | 254.228 | |
| 6,975.0 | 6,691.1 | 6,600.0 | 6,599.0 | 31.1 | 2.0 | 6.10 | 1,957.1 | -6,634.3 | 7,049.3 | 7,022.3 | 27.09 | 260.260 | |
| 7,000.0 | 6,707.6 | 6,618.1 | 6,617.1 | 31.1 | 2.0 | 6.48 | 1,957.1 | -6,634.5 | 7,030.9 | 7,004.5 | 26.36 | 266.684 | |
| 7,025.0 | 6,723.1 | 6,630.5 | 6,629.5 | 31.0 | 2.0 | 6.92 | 1,957.2 | -6,634.7 | 7,011.5 | 6,985.9 | 25.61 | 273.769 | |
| 7,050.0 | 6,737.6 | 6,642.1 | 6,641.1 | 31.0 | 2.0 | 7.45 | 1,957.2 | -6,634.8 | 6,991.4 | 6,966.5 | 24.85 | 281.400 | |
| 7,075.0 | 6,751.0 | 6,652.9 | 6,651.9 | 30.9 | 2.0 | 8.08 | 1,957.2 | -6,634.9 | 6,970.5 | 6,946.5 | 24.08 | 289.468 | |
| 7,100.0 | 6,763.3 | 6,662.8 | 6,661.8 | 30.8 | 2.0 | 8.85 | 1,957.2 | -6,635.1 | 6,949.0 | 6,925.7 | 23.34 | 297.772 | |
| 7,125.0 | 6,774.5 | 6,671.8 | 6,670.8 | 30.8 | 2.0 | 9.81 | 1,957.3 | -6,635.2 | 6,926.8 | 6,904.2 | 22.64 | 305.970 | |
| 7,150.0 | 6,784.4 | 6,679.9 | 6,678.9 | 30.7 | 2.0 | 11.02 | 1,957.3 | -6,635.3 | 6,904.1 | 6,882.1 | 22.02 | 313.526 | |
| 7,175.0 | 6,793.1 | 6,687.1 | 6,686.0 | 30.7 | 2.0 | 12.59 | 1,957.3 | -6,635.4 | 6,880.9 | 6,859.3 | 21.53 | 319.626 | |
| 7,200.0 | 6,800.6 | 6,700.0 | 6,699.0 | 30.6 | 2.0 | 14.76 | 1,957.4 | -6,635.6 | 6,857.2 | 6,836.0 | 21.24 | 322.848 | |
| 7,225.0 | 6,806.8 | 6,700.0 | 6,699.0 | 30.6 | 2.0 | 17.71 | 1,957.4 | -6,635.6 | 6,833.2 | 6,812.0 | 21.19 | 322.441 | |
| 7,250.0 | 6,811.8 | 6,703.5 | 6,702.5 | 30.5 | 2.0 | 22.17 | 1,957.4 | -6,635.7 | 6,808.8 | 6,787.3 | 21.54 | 316.041 | |
| 7,275.0 | 6,815.5 | 6,707.7 | 6,706.6 | 30.5 | 2.0 | 29.44 | 1,957.4 | -6,635.7 | 6,784.2 | 6,761.8 | 22.43 | 302.405 | |
| 7,300.0 | 6,817.8 | 6,710.5 | 6,709.5 | 30.4 | 2.0 | 42.56 | 1,957.4 | -6,635.8 | 6,759.4 | 6,735.6 | 23.84 | 283.530 | |
| 7,325.0 | 6,818.9 | 6,712.0 | 6,711.0 | 30.4 | 2.0 | 67.80 | 1,957.4 | -6,635.8 | 6,734.6 | 6,710.4 | 24.21 | 278.217 | |
| 7,332.8 | 6,819.0 | 6,712.2 | 6,711.1 | 30.4 | 2.0 | 78.89 | 1,957.4 | -6,635.8 | 6,726.8 | 6,703.4 | 23.43 | 287.140 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT NOFFSINGER #32-5 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,713.2 | 6,712.2 | 30.3 | 2.0 | 79.00 | 1,957.4 | -6,635.8 | 6,659.8 | 6,635.7 | 24.10 | 276.377 | |
| 7,500.0 | 6,819.0 | 6,714.7 | 6,713.7 | 30.2 | 2.0 | 79.17 | 1,957.4 | -6,635.8 | 6,560.1 | 6,534.8 | 25.34 | 258.925 | |
| 7,600.0 | 6,819.0 | 6,716.3 | 6,715.2 | 30.3 | 2.0 | 79.33 | 1,957.4 | -6,635.9 | 6,460.4 | 6,433.6 | 26.83 | 240.833 | |
| 7,700.0 | 6,819.0 | 6,717.8 | 6,716.8 | 30.6 | 2.0 | 79.49 | 1,957.4 | -6,635.9 | 6,360.8 | 6,332.3 | 28.52 | 223.005 | |
| 7,800.0 | 6,819.0 | 6,719.3 | 6,718.3 | 31.3 | 2.0 | 79.66 | 1,957.4 | -6,635.9 | 6,261.1 | 6,230.7 | 30.39 | 206.014 | |
| 7,900.0 | 6,819.0 | 6,720.8 | 6,719.8 | 32.5 | 2.0 | 79.82 | 1,957.4 | -6,635.9 | 6,161.5 | 6,129.1 | 32.40 | 190.169 | |
| 8,000.0 | 6,819.0 | 6,722.4 | 6,721.3 | 34.2 | 2.0 | 79.98 | 1,957.4 | -6,635.9 | 6,061.9 | 6,027.3 | 34.52 | 175.591 | |
| 8,100.0 | 6,819.0 | 6,723.9 | 6,722.8 | 36.1 | 2.0 | 80.14 | 1,957.4 | -6,636.0 | 5,962.3 | 5,925.5 | 36.74 | 162.288 | |
| 8,200.0 | 6,819.0 | 6,725.4 | 6,724.4 | 38.3 | 2.0 | 80.31 | 1,957.5 | -6,636.0 | 5,862.7 | 5,823.6 | 39.03 | 150.202 | |
| 8,300.0 | 6,819.0 | 6,726.9 | 6,725.9 | 40.6 | 2.0 | 80.47 | 1,957.5 | -6,636.0 | 5,763.1 | 5,721.7 | 41.39 | 139.242 | |
| 8,400.0 | 6,819.0 | 6,728.4 | 6,727.4 | 42.9 | 2.0 | 80.63 | 1,957.5 | -6,636.0 | 5,663.5 | 5,619.7 | 43.80 | 129.306 | |
| 8,500.0 | 6,819.0 | 6,729.9 | 6,728.9 | 45.3 | 2.0 | 80.79 | 1,957.5 | -6,636.1 | 5,563.9 | 5,517.7 | 46.25 | 120.289 | |
| 8,600.0 | 6,819.0 | 6,731.4 | 6,730.4 | 47.8 | 2.0 | 80.96 | 1,957.5 | -6,636.1 | 5,464.4 | 5,415.6 | 48.75 | 112.094 | |
| 8,700.0 | 6,819.0 | 6,732.9 | 6,731.9 | 50.3 | 2.0 | 81.12 | 1,957.5 | -6,636.1 | 5,364.9 | 5,313.6 | 51.27 | 104.630 | |
| 8,800.0 | 6,819.0 | 6,734.4 | 6,733.4 | 52.8 | 2.0 | 81.28 | 1,957.5 | -6,636.1 | 5,265.3 | 5,211.5 | 53.83 | 97.817 | |
| 8,900.0 | 6,819.0 | 6,735.9 | 6,734.9 | 55.4 | 2.0 | 81.44 | 1,957.5 | -6,636.1 | 5,165.8 | 5,109.4 | 56.41 | 91.581 | |
| 9,000.0 | 6,819.0 | 6,737.4 | 6,736.4 | 58.0 | 2.0 | 81.60 | 1,957.5 | -6,636.2 | 5,066.4 | 5,007.4 | 59.01 | 85.860 | |
| 9,100.0 | 6,819.0 | 6,738.9 | 6,737.9 | 60.6 | 2.0 | 81.76 | 1,957.5 | -6,636.2 | 4,966.9 | 4,905.3 | 61.63 | 80.598 | |
| 9,200.0 | 6,819.0 | 6,740.4 | 6,739.4 | 63.2 | 2.0 | 81.92 | 1,957.5 | -6,636.2 | 4,867.5 | 4,803.2 | 64.26 | 75.745 | |
| 9,300.0 | 6,819.0 | 6,741.9 | 6,740.8 | 65.9 | 2.0 | 82.09 | 1,957.5 | -6,636.2 | 4,768.1 | 4,701.2 | 66.91 | 71.260 | |
| 9,400.0 | 6,819.0 | 6,743.4 | 6,742.3 | 68.5 | 2.0 | 82.25 | 1,957.5 | -6,636.3 | 4,668.7 | 4,599.1 | 69.57 | 67.104 | |
| 9,500.0 | 6,819.0 | 6,744.8 | 6,743.8 | 71.2 | 2.0 | 82.41 | 1,957.6 | -6,636.3 | 4,569.4 | 4,497.1 | 72.25 | 63.244 | |
| 9,600.0 | 6,819.0 | 6,746.3 | 6,745.3 | 73.9 | 2.0 | 82.57 | 1,957.6 | -6,636.3 | 4,470.0 | 4,395.1 | 74.93 | 59.652 | |
| 9,700.0 | 6,819.0 | 6,747.8 | 6,746.8 | 76.5 | 2.0 | 82.73 | 1,957.6 | -6,636.3 | 4,370.7 | 4,293.1 | 77.63 | 56.302 | |
| 9,800.0 | 6,819.0 | 6,749.3 | 6,748.2 | 79.2 | 2.0 | 82.89 | 1,957.6 | -6,636.3 | 4,271.5 | 4,191.1 | 80.33 | 53.172 | |
| 9,900.0 | 6,819.0 | 6,750.7 | 6,749.7 | 81.9 | 2.0 | 83.05 | 1,957.6 | -6,636.4 | 4,172.2 | 4,089.2 | 83.04 | 50.241 | |
| 10,000.0 | 6,819.0 | 6,752.2 | 6,751.2 | 84.6 | 2.0 | 83.21 | 1,957.6 | -6,636.4 | 4,073.0 | 3,987.3 | 85.76 | 47.492 | |
| 10,100.0 | 6,819.0 | 6,753.7 | 6,752.6 | 87.4 | 2.0 | 83.37 | 1,957.6 | -6,636.4 | 3,973.9 | 3,885.4 | 88.49 | 44.908 | |
| 10,200.0 | 6,819.0 | 6,755.1 | 6,754.1 | 90.1 | 2.0 | 83.53 | 1,957.6 | -6,636.4 | 3,874.8 | 3,783.6 | 91.22 | 42.477 | |
| 10,300.0 | 6,819.0 | 6,756.6 | 6,755.6 | 92.8 | 2.0 | 83.69 | 1,957.6 | -6,636.4 | 3,775.7 | 3,681.8 | 93.96 | 40.186 | |
| 10,400.0 | 6,819.0 | 6,758.1 | 6,757.0 | 95.5 | 2.0 | 83.85 | 1,957.6 | -6,636.5 | 3,676.7 | 3,580.0 | 96.70 | 38.022 | |
| 10,500.0 | 6,819.0 | 6,759.5 | 6,758.5 | 98.3 | 2.0 | 84.00 | 1,957.6 | -6,636.5 | 3,577.7 | 3,478.3 | 99.45 | 35.977 | |
| 10,600.0 | 6,819.0 | 6,761.0 | 6,759.9 | 101.0 | 2.0 | 84.16 | 1,957.6 | -6,636.5 | 3,478.8 | 3,376.6 | 102.20 | 34.041 | |
| 10,700.0 | 6,819.0 | 6,762.4 | 6,761.4 | 103.8 | 2.0 | 84.32 | 1,957.7 | -6,636.5 | 3,380.0 | 3,275.0 | 104.95 | 32.205 | |
| 10,800.0 | 6,819.0 | 6,763.9 | 6,762.8 | 106.5 | 2.0 | 84.48 | 1,957.7 | -6,636.6 | 3,281.2 | 3,173.5 | 107.71 | 30.463 | |
| 10,900.0 | 6,819.0 | 6,765.3 | 6,764.3 | 109.2 | 2.0 | 84.64 | 1,957.7 | -6,636.6 | 3,182.5 | 3,072.1 | 110.47 | 28.808 | |
| 11,000.0 | 6,819.0 | 6,766.7 | 6,765.7 | 112.0 | 2.0 | 84.80 | 1,957.7 | -6,636.6 | 3,083.9 | 2,970.7 | 113.24 | 27.234 | |
| 11,100.0 | 6,819.0 | 6,768.2 | 6,767.1 | 114.8 | 2.0 | 84.95 | 1,957.7 | -6,636.6 | 2,985.4 | 2,869.4 | 116.01 | 25.735 | |
| 11,200.0 | 6,819.0 | 6,769.6 | 6,768.6 | 117.5 | 2.0 | 85.11 | 1,957.7 | -6,636.6 | 2,887.0 | 2,768.2 | 118.78 | 24.306 | |
| 11,300.0 | 6,819.0 | 6,771.1 | 6,770.0 | 120.3 | 2.0 | 85.27 | 1,957.7 | -6,636.7 | 2,788.7 | 2,667.2 | 121.55 | 22.943 | |
| 11,400.0 | 6,819.0 | 6,772.5 | 6,771.4 | 123.0 | 2.0 | 85.43 | 1,957.7 | -6,636.7 | 2,690.5 | 2,566.2 | 124.33 | 21.641 | |
| 11,500.0 | 6,819.0 | 6,773.9 | 6,772.9 | 125.8 | 2.0 | 85.58 | 1,957.7 | -6,636.7 | 2,592.5 | 2,465.4 | 127.11 | 20.396 | |
| 11,600.0 | 6,819.0 | 6,775.3 | 6,774.3 | 128.6 | 2.0 | 85.74 | 1,957.7 | -6,636.7 | 2,494.6 | 2,364.7 | 129.89 | 19.206 | |
| 11,700.0 | 6,819.0 | 6,776.8 | 6,775.7 | 131.3 | 2.0 | 85.90 | 1,957.8 | -6,636.7 | 2,396.9 | 2,264.2 | 132.67 | 18.067 | |
| 11,800.0 | 6,819.0 | 6,778.2 | 6,777.1 | 134.1 | 2.0 | 86.05 | 1,957.8 | -6,636.8 | 2,299.4 | 2,163.9 | 135.45 | 16.976 | |
| 11,900.0 | 6,819.0 | 6,779.6 | 6,778.6 | 136.9 | 2.0 | 86.21 | 1,957.8 | -6,636.8 | 2,202.1 | 2,063.9 | 138.24 | 15.930 | |
| 12,000.0 | 6,819.0 | 6,781.0 | 6,780.0 | 139.6 | 2.0 | 86.36 | 1,957.8 | -6,636.8 | 2,105.1 | 1,964.0 | 141.02 | 14.927 | |
| 12,100.0 | 6,819.0 | 6,782.4 | 6,781.4 | 142.4 | 2.0 | 86.52 | 1,957.8 | -6,636.8 | 2,008.3 | 1,864.5 | 143.81 | 13.965 | |
| 12,200.0 | 6,819.0 | 6,783.9 | 6,782.8 | 145.2 | 2.0 | 86.68 | 1,957.8 | -6,636.8 | 1,911.9 | 1,765.3 | 146.60 | 13.042 | |
| 12,300.0 | 6,819.0 | 6,785.3 | 6,784.2 | 148.0 | 2.0 | 86.83 | 1,957.8 | -6,636.9 | 1,815.9 | 1,666.5 | 149.39 | 12.155 | |
| 12,400.0 | 6,819.0 | 6,786.7 | 6,785.6 | 150.8 | 2.0 | 86.99 | 1,957.8 | -6,636.9 | 1,720.3 | 1,568.1 | 152.18 | 11.304 | |
| 12,500.0 | 6,819.0 | 6,788.1 | 6,787.0 | 153.5 | 2.0 | 87.14 | 1,957.8 | -6,636.9 | 1,625.3 | 1,470.3 | 154.97 | 10.487 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT NOFFSINGER #32-5 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,789.5 | 6,788.4 | 156.3 | 2.0 | 87.29 | 1,957.9 | -6,636.9 | 1,530.8 | 1,373.1 | 157.77 | 9.703 | |
| 12,700.0 | 6,819.0 | 6,790.9 | 6,789.8 | 159.1 | 2.0 | 87.45 | 1,957.9 | -6,636.9 | 1,437.2 | 1,276.6 | 160.56 | 8.951 | |
| 12,800.0 | 6,819.0 | 6,792.3 | 6,791.2 | 161.9 | 2.0 | 87.60 | 1,957.9 | -6,637.0 | 1,344.4 | 1,181.1 | 163.35 | 8.230 | |
| 12,900.0 | 6,819.0 | 6,793.7 | 6,792.6 | 164.7 | 2.0 | 87.76 | 1,957.9 | -6,637.0 | 1,252.8 | 1,086.7 | 166.15 | 7.540 | |
| 13,000.0 | 6,819.0 | 6,795.1 | 6,794.0 | 167.4 | 2.0 | 87.91 | 1,957.9 | -6,637.0 | 1,162.5 | 993.6 | 168.94 | 6.881 | |
| 13,100.0 | 6,819.0 | 6,796.5 | 6,795.4 | 170.2 | 2.0 | 88.06 | 1,957.9 | -6,637.0 | 1,074.0 | 902.3 | 171.74 | 6.254 | |
| 13,200.0 | 6,819.0 | 6,797.9 | 6,796.8 | 173.0 | 2.0 | 88.22 | 1,957.9 | -6,637.0 | 987.7 | 813.1 | 174.53 | 5.659 | |
| 13,300.0 | 6,819.0 | 6,800.0 | 6,799.0 | 175.8 | 2.0 | 88.45 | 1,957.9 | -6,637.1 | 904.2 | 726.8 | 177.33 | 5.099 | |
| 13,400.0 | 6,819.0 | 6,800.8 | 6,799.8 | 178.6 | 2.0 | 88.54 | 1,957.9 | -6,637.1 | 824.3 | 644.2 | 180.12 | 4.576 | |
| 13,500.0 | 6,819.0 | 6,802.5 | 6,801.4 | 181.4 | 2.0 | 88.73 | 1,958.0 | -6,637.1 | 749.3 | 566.4 | 182.92 | 4.096 | |
| 13,600.0 | 6,819.0 | 6,804.1 | 6,803.0 | 184.2 | 2.0 | 88.90 | 1,958.0 | -6,637.1 | 680.8 | 495.1 | 185.71 | 3.666 | |
| 13,700.0 | 6,819.0 | 6,805.6 | 6,804.5 | 187.0 | 2.0 | 89.07 | 1,958.0 | -6,637.1 | 620.8 | 432.3 | 188.50 | 3.293 | |
| 13,800.0 | 6,819.0 | 6,807.0 | 6,805.9 | 189.7 | 2.0 | 89.22 | 1,958.0 | -6,637.2 | 572.2 | 380.9 | 191.30 | 2.991 | |
| 13,900.0 | 6,819.0 | 6,808.3 | 6,807.2 | 192.5 | 2.0 | 89.37 | 1,958.0 | -6,637.2 | 537.9 | 343.8 | 194.09 | 2.771 | |
| 14,000.0 | 6,819.0 | 6,809.5 | 6,808.5 | 195.3 | 2.0 | 89.50 | 1,958.0 | -6,637.2 | 520.9 | 324.0 | 196.88 | 2.646 | |
| 14,040.2 | 6,819.0 | 6,810.0 | 6,809.0 | 196.4 | 2.0 | 89.56 | 1,958.0 | -6,637.2 | 519.3 | 321.3 | 198.01 | 2.623 | CC, ES |
| 14,100.0 | 6,819.0 | 6,810.7 | 6,809.7 | 198.1 | 2.0 | 89.64 | 1,958.0 | -6,637.2 | 522.8 | 323.1 | 199.68 | 2.618 | SF |
| 14,200.0 | 6,819.0 | 6,811.8 | 6,810.8 | 200.9 | 2.0 | 89.76 | 1,958.0 | -6,637.2 | 543.4 | 340.9 | 202.47 | 2.684 | |
| 14,300.0 | 6,819.0 | 6,812.9 | 6,811.9 | 203.7 | 2.0 | 89.88 | 1,958.0 | -6,637.2 | 580.7 | 375.4 | 205.26 | 2.829 | |
| 14,400.0 | 6,819.0 | 6,813.9 | 6,812.9 | 206.5 | 2.0 | 89.99 | 1,958.0 | -6,637.2 | 631.8 | 423.7 | 208.06 | 3.037 | |
| 14,500.0 | 6,819.0 | 6,814.9 | 6,813.8 | 209.3 | 2.0 | 90.10 | 1,958.1 | -6,637.2 | 693.6 | 482.8 | 210.85 | 3.290 | |
| 14,600.0 | 6,819.0 | 6,815.8 | 6,814.7 | 212.1 | 2.0 | 90.20 | 1,958.1 | -6,637.3 | 763.6 | 549.9 | 213.64 | 3.574 | |
| 14,700.0 | 6,819.0 | 6,816.7 | 6,815.6 | 214.9 | 2.0 | 90.29 | 1,958.1 | -6,637.3 | 839.6 | 623.2 | 216.44 | 3.879 | |
| 14,720.3 | 6,819.0 | 6,816.9 | 6,815.8 | 215.4 | 2.0 | 90.31 | 1,958.1 | -6,637.3 | 855.7 | 638.7 | 217.00 | 3.943 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT PLUMB #B5-11 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -85.30 | 654.9 | -7,963.2 | 7,990.1 | | | | |
| 100.0 | 100.0 | 44.1 | 44.1 | 0.1 | 0.0 | -85.30 | 654.9 | -7,963.3 | 7,990.2 | 7,990.1 | 0.13 | N/A | |
| 200.0 | 200.0 | 100.0 | 100.0 | 0.3 | 0.1 | -85.30 | 654.8 | -7,963.7 | 7,990.9 | 7,990.5 | 0.40 | N/A | |
| 300.0 | 300.0 | 194.5 | 194.5 | 0.5 | 0.2 | -85.30 | 654.7 | -7,964.6 | 7,991.9 | 7,991.1 | 0.76 | N/A | |
| 400.0 | 400.0 | 294.0 | 293.9 | 0.8 | 0.3 | -85.30 | 654.6 | -7,965.6 | 7,992.9 | 7,991.8 | 1.07 | 7,436.332 | |
| 500.0 | 500.0 | 381.5 | 381.5 | 1.0 | 0.4 | -85.30 | 654.6 | -7,966.6 | 7,994.0 | 7,992.6 | 1.36 | 5,869.602 | |
| 600.0 | 600.0 | 479.0 | 479.0 | 1.2 | 0.4 | -85.30 | 654.7 | -7,967.8 | 7,995.2 | 7,993.5 | 1.65 | 4,850.821 | |
| 700.0 | 700.0 | 586.1 | 586.0 | 1.4 | 0.5 | -85.30 | 654.8 | -7,969.0 | 7,996.4 | 7,994.4 | 1.93 | 4,134.237 | |
| 800.0 | 800.0 | 681.0 | 681.0 | 1.7 | 0.6 | -85.30 | 654.8 | -7,970.1 | 7,997.5 | 7,995.3 | 2.21 | 3,620.404 | |
| 900.0 | 900.0 | 782.3 | 782.3 | 1.9 | 0.6 | -106.44 | 654.9 | -7,971.3 | 7,999.2 | 7,996.7 | 2.49 | 3,216.335 | |
| 1,000.0 | 999.8 | 919.3 | 919.2 | 2.1 | 0.7 | -106.45 | 654.7 | -7,972.6 | 8,001.6 | 7,998.8 | 2.78 | 2,881.811 | |
| 1,100.0 | 1,099.5 | 1,010.2 | 1,010.2 | 2.3 | 0.7 | -106.44 | 654.6 | -7,973.3 | 8,004.9 | 8,001.8 | 3.05 | 2,624.191 | |
| 1,200.0 | 1,198.7 | 1,123.4 | 1,123.3 | 2.6 | 0.8 | -106.46 | 654.4 | -7,974.2 | 8,009.1 | 8,005.7 | 3.35 | 2,391.203 | |
| 1,300.0 | 1,297.5 | 1,245.2 | 1,245.1 | 2.9 | 0.8 | -106.49 | 654.3 | -7,974.7 | 8,014.0 | 8,010.4 | 3.68 | 2,179.957 | |
| 1,400.0 | 1,395.6 | 1,348.5 | 1,348.4 | 3.2 | 0.9 | -106.52 | 654.3 | -7,975.1 | 8,019.9 | 8,015.8 | 4.03 | 1,990.022 | |
| 1,500.0 | 1,493.1 | 1,459.7 | 1,459.7 | 3.5 | 0.9 | -106.56 | 654.4 | -7,975.3 | 8,026.7 | 8,022.2 | 4.43 | 1,813.696 | |
| 1,507.2 | 1,500.0 | 1,468.2 | 1,468.2 | 3.6 | 0.9 | -106.56 | 654.4 | -7,975.3 | 8,027.2 | 8,022.7 | 4.45 | 1,802.369 | |
| 1,572.2 | 1,563.0 | 1,543.0 | 1,543.0 | 3.8 | 0.9 | -106.69 | 654.3 | -7,975.3 | 8,031.9 | 8,027.2 | 4.71 | 1,704.319 | |
| 1,600.0 | 1,590.0 | 1,574.4 | 1,574.4 | 3.9 | 0.9 | -106.70 | 654.2 | -7,975.3 | 8,033.9 | 8,029.1 | 4.83 | 1,664.312 | |
| 1,700.0 | 1,686.3 | 1,699.9 | 1,699.8 | 4.4 | 1.0 | -106.79 | 653.1 | -7,975.1 | 8,041.7 | 8,036.4 | 5.29 | 1,520.929 | |
| 1,800.0 | 1,781.5 | 1,775.2 | 1,775.1 | 4.9 | 1.0 | -106.79 | 651.8 | -7,974.9 | 8,050.5 | 8,044.7 | 5.80 | 1,389.173 | |
| 1,817.6 | 1,798.2 | 1,788.3 | 1,788.2 | 5.0 | 1.0 | -106.79 | 651.5 | -7,974.9 | 8,052.2 | 8,046.3 | 5.89 | 1,366.969 | |
| 1,900.0 | 1,876.1 | 1,853.3 | 1,853.2 | 5.5 | 1.0 | -106.94 | 650.2 | -7,974.9 | 8,060.3 | 8,054.0 | 6.35 | 1,269.691 | |
| 2,000.0 | 1,970.6 | 1,928.5 | 1,928.4 | 6.0 | 1.0 | -107.12 | 648.5 | -7,975.1 | 8,070.5 | 8,063.6 | 6.92 | 1,166.434 | |
| 2,100.0 | 2,065.1 | 2,000.0 | 1,999.9 | 6.6 | 1.0 | -107.29 | 647.1 | -7,975.4 | 8,081.1 | 8,073.6 | 7.50 | 1,077.035 | |
| 2,200.0 | 2,159.6 | 2,059.1 | 2,059.0 | 7.2 | 1.1 | -107.43 | 646.2 | -7,975.9 | 8,092.1 | 8,084.0 | 8.10 | 999.468 | |
| 2,300.0 | 2,254.1 | 2,132.6 | 2,132.4 | 7.8 | 1.1 | -107.60 | 645.3 | -7,976.8 | 8,103.6 | 8,094.9 | 8.70 | 931.270 | |
| 2,400.0 | 2,348.7 | 2,220.4 | 2,220.3 | 8.4 | 1.1 | -107.80 | 644.2 | -7,977.9 | 8,115.3 | 8,106.0 | 9.32 | 871.017 | |
| 2,500.0 | 2,443.2 | 2,300.0 | 2,299.8 | 9.1 | 1.1 | -107.98 | 643.2 | -7,979.1 | 8,127.4 | 8,117.5 | 9.93 | 818.138 | |
| 2,600.0 | 2,537.7 | 2,371.7 | 2,371.5 | 9.7 | 1.2 | -108.15 | 642.5 | -7,980.3 | 8,139.8 | 8,129.2 | 10.55 | 771.308 | |
| 2,700.0 | 2,632.2 | 2,456.1 | 2,455.9 | 10.3 | 1.2 | -108.34 | 641.6 | -7,981.9 | 8,152.4 | 8,141.2 | 11.18 | 729.321 | |
| 2,800.0 | 2,726.8 | 2,534.5 | 2,534.3 | 10.9 | 1.2 | -108.51 | 640.8 | -7,983.4 | 8,165.3 | 8,153.5 | 11.80 | 691.787 | |
| 2,900.0 | 2,821.3 | 2,600.0 | 2,599.8 | 11.6 | 1.3 | -108.66 | 640.1 | -7,984.9 | 8,178.6 | 8,166.1 | 12.43 | 658.150 | |
| 3,000.0 | 2,915.8 | 2,683.5 | 2,683.2 | 12.2 | 1.3 | -108.85 | 639.2 | -7,986.9 | 8,192.1 | 8,179.1 | 13.06 | 627.442 | |
| 3,100.0 | 3,010.3 | 2,758.5 | 2,758.2 | 12.8 | 1.3 | -109.02 | 638.7 | -7,988.9 | 8,206.0 | 8,192.4 | 13.69 | 599.634 | |
| 3,200.0 | 3,104.8 | 2,840.3 | 2,840.0 | 13.5 | 1.3 | -109.20 | 638.1 | -7,991.3 | 8,220.3 | 8,206.0 | 14.32 | 574.199 | |
| 3,300.0 | 3,199.4 | 2,928.7 | 2,928.3 | 14.1 | 1.4 | -109.39 | 637.8 | -7,993.9 | 8,234.7 | 8,219.7 | 14.95 | 550.858 | |
| 3,400.0 | 3,293.9 | 3,000.0 | 2,999.6 | 14.8 | 1.4 | -109.55 | 637.6 | -7,996.1 | 8,249.3 | 8,233.8 | 15.58 | 529.571 | |
| 3,500.0 | 3,388.4 | 3,079.7 | 3,079.3 | 15.4 | 1.4 | -109.72 | 637.9 | -7,998.7 | 8,264.3 | 8,248.1 | 16.21 | 509.865 | |
| 3,600.0 | 3,482.9 | 3,141.3 | 3,140.8 | 16.0 | 1.4 | -109.85 | 638.5 | -8,000.9 | 8,279.7 | 8,262.9 | 16.84 | 491.775 | |
| 3,700.0 | 3,577.5 | 3,200.0 | 3,199.4 | 16.7 | 1.5 | -109.97 | 639.4 | -8,003.3 | 8,295.6 | 8,278.1 | 17.46 | 475.020 | |
| 3,800.0 | 3,672.0 | 3,261.0 | 3,260.3 | 17.3 | 1.5 | -110.09 | 640.6 | -8,006.0 | 8,312.0 | 8,293.9 | 18.09 | 459.436 | |
| 3,900.0 | 3,766.5 | 3,300.0 | 3,299.3 | 18.0 | 1.5 | -110.17 | 641.5 | -8,007.9 | 8,328.9 | 8,310.2 | 18.71 | 445.058 | |
| 4,000.0 | 3,861.0 | 3,364.3 | 3,363.5 | 18.6 | 1.5 | -110.29 | 643.2 | -8,011.4 | 8,346.3 | 8,327.0 | 19.34 | 431.470 | |
| 4,100.0 | 3,955.5 | 3,400.0 | 3,399.1 | 19.3 | 1.5 | -110.36 | 644.3 | -8,013.5 | 8,364.5 | 8,344.5 | 19.97 | 418.931 | |
| 4,200.0 | 4,050.1 | 3,476.8 | 3,475.8 | 19.9 | 1.5 | -110.51 | 647.0 | -8,018.4 | 8,383.0 | 8,362.4 | 20.60 | 406.962 | |
| 4,300.0 | 4,144.6 | 3,554.3 | 3,552.9 | 20.5 | 1.6 | -110.65 | 650.1 | -8,023.7 | 8,402.0 | 8,380.8 | 21.23 | 395.762 | |
| 4,400.0 | 4,239.1 | 3,683.6 | 3,681.8 | 21.2 | 1.6 | -110.89 | 655.7 | -8,032.5 | 8,421.1 | 8,399.3 | 21.87 | 385.094 | |
| 4,500.0 | 4,333.6 | 3,777.8 | 3,775.7 | 21.8 | 1.6 | -111.06 | 659.7 | -8,038.5 | 8,439.9 | 8,417.4 | 22.50 | 375.166 | |
| 4,600.0 | 4,428.2 | 4,072.7 | 4,070.0 | 22.5 | 1.7 | -111.60 | 671.0 | -8,053.6 | 8,457.2 | 8,434.1 | 23.15 | 365.379 | |
| 4,700.0 | 4,522.7 | 4,208.2 | 4,205.4 | 23.1 | 1.7 | -111.85 | 675.6 | -8,058.8 | 8,473.7 | 8,449.9 | 23.77 | 356.424 | |
| 4,800.0 | 4,617.2 | 4,311.8 | 4,308.8 | 23.8 | 1.8 | -112.04 | 679.2 | -8,062.5 | 8,490.1 | 8,465.7 | 24.40 | 347.992 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT PLUMB #B5-11 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,430.3 | 4,427.2 | 24.4 | 1.8 | -112.26 | 683.4 | -8,066.5 | 8,506.3 | 8,481.3 | 25.02 | 339.974 | |
| 5,000.0 | 4,806.2 | 4,526.9 | 4,523.7 | 25.1 | 1.8 | -112.43 | 687.2 | -8,069.6 | 8,522.4 | 8,496.8 | 25.64 | 332.390 | |
| 5,100.0 | 4,900.8 | 4,600.0 | 4,596.7 | 25.7 | 1.9 | -112.56 | 690.2 | -8,072.1 | 8,538.8 | 8,512.5 | 26.26 | 325.203 | |
| 5,200.0 | 4,995.3 | 4,737.2 | 4,733.7 | 26.4 | 1.9 | -112.80 | 695.8 | -8,076.4 | 8,555.0 | 8,528.1 | 26.88 | 318.298 | |
| 5,300.0 | 5,089.8 | 4,817.3 | 4,813.7 | 27.0 | 1.9 | -112.94 | 699.2 | -8,078.9 | 8,571.3 | 8,543.8 | 27.49 | 311.777 | |
| 5,400.0 | 5,184.3 | 4,940.9 | 4,937.1 | 27.7 | 1.9 | -113.16 | 704.3 | -8,082.6 | 8,587.5 | 8,559.4 | 28.11 | 305.512 | |
| 5,500.0 | 5,278.9 | 5,038.2 | 5,034.3 | 28.3 | 2.0 | -113.33 | 707.8 | -8,085.3 | 8,603.7 | 8,574.9 | 28.72 | 299.550 | |
| 5,533.5 | 5,310.5 | 5,065.7 | 5,061.8 | 28.5 | 2.0 | -113.38 | 708.7 | -8,086.1 | 8,609.1 | 8,580.2 | 28.93 | 297.611 | |
| 5,600.0 | 5,373.6 | 5,139.9 | 5,136.0 | 28.9 | 2.0 | -113.70 | 711.2 | -8,088.2 | 8,619.7 | 8,590.4 | 29.24 | 294.741 | |
| 5,700.0 | 5,469.4 | 5,240.1 | 5,236.0 | 29.3 | 2.0 | -114.13 | 714.8 | -8,090.8 | 8,634.1 | 8,604.5 | 29.63 | 291.439 | |
| 5,800.0 | 5,566.1 | 5,300.0 | 5,295.9 | 29.8 | 2.0 | -114.45 | 717.2 | -8,092.5 | 8,647.5 | 8,617.6 | 29.97 | 288.563 | |
| 5,900.0 | 5,663.6 | 5,373.9 | 5,369.6 | 30.1 | 2.1 | -114.75 | 720.2 | -8,095.0 | 8,659.9 | 8,629.6 | 30.28 | 286.036 | |
| 6,000.0 | 5,761.9 | 5,435.8 | 5,431.5 | 30.5 | 2.1 | -115.01 | 722.9 | -8,097.2 | 8,671.2 | 8,640.6 | 30.54 | 283.887 | |
| 6,100.0 | 5,860.7 | 5,500.0 | 5,495.5 | 30.7 | 2.1 | -115.24 | 726.0 | -8,099.9 | 8,681.5 | 8,650.7 | 30.78 | 282.083 | |
| 6,200.0 | 5,960.0 | 5,564.8 | 5,560.2 | 31.0 | 2.1 | -115.42 | 729.1 | -8,102.9 | 8,690.7 | 8,659.7 | 30.97 | 280.606 | |
| 6,300.0 | 6,059.7 | 5,643.0 | 5,638.2 | 31.2 | 2.1 | -115.58 | 732.8 | -8,106.7 | 8,698.7 | 8,667.6 | 31.13 | 279.412 | |
| 6,400.0 | 6,159.6 | 5,757.9 | 5,752.9 | 31.3 | 2.2 | -115.70 | 737.7 | -8,112.3 | 8,705.4 | 8,674.1 | 31.27 | 278.415 | |
| 6,486.1 | 6,245.7 | 5,879.9 | 5,874.7 | 31.4 | 2.2 | -94.59 | 742.3 | -8,117.8 | 8,709.5 | 8,687.3 | 22.23 | 391.721 | |
| 6,500.0 | 6,259.6 | 5,897.4 | 5,892.1 | 31.4 | 2.2 | -94.59 | 742.9 | -8,118.5 | 8,710.1 | 8,687.8 | 22.25 | 391.392 | |
| 6,516.1 | 6,275.7 | 5,919.7 | 5,914.4 | 31.4 | 2.2 | -94.58 | 743.7 | -8,119.5 | 8,710.7 | 8,688.4 | 22.28 | 390.962 | |
| 6,550.0 | 6,309.5 | 5,967.3 | 5,961.9 | 31.5 | 2.2 | -4.56 | 745.6 | -8,121.4 | 8,711.2 | 8,679.8 | 31.37 | 277.708 | |
| 6,600.0 | 6,359.4 | 6,033.9 | 6,028.4 | 31.5 | 2.3 | -4.56 | 748.2 | -8,124.1 | 8,708.9 | 8,677.6 | 31.25 | 278.650 | |
| 6,650.0 | 6,408.8 | 6,097.0 | 6,091.4 | 31.5 | 2.3 | -4.59 | 750.6 | -8,126.4 | 8,703.1 | 8,672.0 | 31.07 | 280.105 | |
| 6,700.0 | 6,457.5 | 6,245.1 | 6,239.4 | 31.5 | 2.3 | -4.63 | 755.8 | -8,131.0 | 8,693.4 | 8,662.6 | 30.85 | 281.776 | |
| 6,716.1 | 6,473.1 | 6,282.2 | 6,276.4 | 31.5 | 2.3 | -4.65 | 757.0 | -8,131.9 | 8,689.5 | 8,658.7 | 30.76 | 282.462 | |
| 6,725.0 | 6,481.6 | 6,300.0 | 6,294.2 | 31.5 | 2.3 | -4.68 | 757.6 | -8,132.2 | 8,687.2 | 8,656.5 | 30.67 | 283.208 | |
| 6,750.0 | 6,505.3 | 6,318.0 | 6,312.2 | 31.5 | 2.3 | -4.75 | 758.1 | -8,132.6 | 8,679.7 | 8,649.3 | 30.37 | 285.777 | |
| 6,775.0 | 6,528.5 | 6,334.9 | 6,329.1 | 31.4 | 2.3 | -4.85 | 758.6 | -8,133.0 | 8,671.0 | 8,641.0 | 30.02 | 288.885 | |
| 6,800.0 | 6,551.3 | 6,351.6 | 6,345.7 | 31.4 | 2.3 | -4.96 | 759.1 | -8,133.4 | 8,661.1 | 8,631.5 | 29.60 | 292.592 | |
| 6,825.0 | 6,573.4 | 6,367.8 | 6,362.0 | 31.4 | 2.4 | -5.09 | 759.6 | -8,133.8 | 8,650.0 | 8,620.9 | 29.13 | 296.965 | |
| 6,850.0 | 6,595.0 | 6,383.6 | 6,377.7 | 31.3 | 2.4 | -5.24 | 760.1 | -8,134.2 | 8,637.8 | 8,609.3 | 28.60 | 302.074 | |
| 6,875.0 | 6,615.8 | 6,400.0 | 6,394.1 | 31.3 | 2.4 | -5.42 | 760.6 | -8,134.6 | 8,624.5 | 8,596.5 | 28.00 | 307.984 | |
| 6,900.0 | 6,635.9 | 6,518.2 | 6,512.3 | 31.3 | 2.4 | -5.65 | 764.1 | -8,136.8 | 8,610.0 | 8,582.5 | 27.45 | 313.671 | |
| 6,925.0 | 6,655.1 | 6,538.9 | 6,533.0 | 31.2 | 2.4 | -5.90 | 764.8 | -8,137.1 | 8,594.3 | 8,567.6 | 26.75 | 321.253 | |
| 6,950.0 | 6,673.6 | 6,558.7 | 6,552.8 | 31.2 | 2.4 | -6.19 | 765.4 | -8,137.4 | 8,577.7 | 8,551.7 | 26.00 | 329.910 | |
| 6,975.0 | 6,691.1 | 6,577.6 | 6,571.6 | 31.1 | 2.4 | -6.52 | 766.0 | -8,137.6 | 8,560.1 | 8,534.9 | 25.19 | 339.769 | |
| 7,000.0 | 6,707.6 | 6,716.2 | 6,710.1 | 31.1 | 2.4 | -6.99 | 771.0 | -8,138.7 | 8,541.5 | 8,517.0 | 24.48 | 348.898 | |
| 7,025.0 | 6,723.1 | 6,739.3 | 6,733.2 | 31.0 | 2.4 | -7.48 | 771.7 | -8,138.6 | 8,522.0 | 8,498.4 | 23.59 | 361.247 | |
| 7,050.0 | 6,737.6 | 7,050.0 | 6,743.0 | 31.0 | 2.5 | -8.06 | 772.0 | -8,138.6 | 8,501.6 | 8,478.5 | 23.07 | 368.466 | |
| 7,075.0 | 6,751.0 | 6,750.0 | 6,743.9 | 30.9 | 2.4 | -8.75 | 772.0 | -8,138.6 | 8,480.5 | 8,458.9 | 21.64 | 391.872 | |
| 7,100.0 | 6,763.3 | 6,750.0 | 6,743.9 | 30.8 | 2.4 | -9.59 | 772.0 | -8,138.6 | 8,458.8 | 8,438.2 | 20.61 | 410.396 | |
| 7,125.0 | 6,774.5 | 6,750.0 | 6,743.9 | 30.8 | 2.4 | -10.63 | 772.0 | -8,138.6 | 8,436.5 | 8,416.9 | 19.56 | 431.260 | |
| 7,150.0 | 6,784.4 | 6,750.0 | 6,743.9 | 30.7 | 2.4 | -11.96 | 772.0 | -8,138.6 | 8,413.6 | 8,395.1 | 18.51 | 454.554 | |
| 7,175.0 | 6,793.1 | 6,750.0 | 6,743.9 | 30.7 | 2.4 | -13.68 | 772.0 | -8,138.6 | 8,390.3 | 8,372.8 | 17.48 | 480.041 | |
| 7,200.0 | 6,800.6 | 6,750.0 | 6,743.9 | 30.6 | 2.4 | -16.02 | 772.0 | -8,138.6 | 8,366.6 | 8,350.0 | 16.52 | 506.564 | |
| 7,225.0 | 6,806.8 | 6,750.0 | 6,743.9 | 30.6 | 2.4 | -19.34 | 772.0 | -8,138.6 | 8,342.5 | 8,326.7 | 15.73 | 530.489 | |
| 7,250.0 | 6,811.8 | 6,750.0 | 6,743.9 | 30.5 | 2.4 | -24.34 | 772.0 | -8,138.6 | 8,318.1 | 8,302.7 | 15.34 | 542.169 | |
| 7,275.0 | 6,815.5 | 6,750.0 | 6,743.9 | 30.5 | 2.4 | -32.52 | 772.0 | -8,138.6 | 8,293.4 | 8,277.6 | 15.87 | 522.721 | |
| 7,300.0 | 6,817.8 | 6,750.0 | 6,743.9 | 30.4 | 2.4 | -47.28 | 772.0 | -8,138.6 | 8,268.6 | 8,250.6 | 18.01 | 458.989 | |
| 7,325.0 | 6,818.9 | 6,750.0 | 6,743.9 | 30.4 | 2.4 | -74.47 | 772.0 | -8,138.6 | 8,243.8 | 8,222.5 | 21.25 | 387.987 | |
| 7,332.8 | 6,819.0 | 6,750.0 | 6,743.9 | 30.4 | 2.4 | -85.62 | 772.0 | -8,138.6 | 8,236.0 | 8,214.0 | 22.00 | 374.342 | |
| 7,400.0 | 6,819.0 | 6,750.0 | 6,743.9 | 30.3 | 2.4 | -85.62 | 772.0 | -8,138.6 | 8,169.0 | 8,146.3 | 22.67 | 360.416 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT PLUMB #B5-11 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,750.0 | 6,743.9 | 30.2 | 2.4 | -85.62 | 772.0 | -8,138.6 | 8,069.4 | 8,045.4 | 23.92 | 337.385 | |
| 7,600.0 | 6,819.0 | 6,750.0 | 6,743.9 | 30.3 | 2.4 | -85.62 | 772.0 | -8,138.6 | 7,969.7 | 7,944.3 | 25.44 | 313.292 | |
| 7,700.0 | 6,819.0 | 6,750.0 | 6,743.9 | 30.6 | 2.4 | -85.62 | 772.0 | -8,138.6 | 7,870.1 | 7,842.9 | 27.18 | 289.549 | |
| 7,800.0 | 6,819.0 | 6,750.0 | 6,743.9 | 31.3 | 2.4 | -85.62 | 772.0 | -8,138.6 | 7,770.4 | 7,741.3 | 29.10 | 267.021 | |
| 7,900.0 | 6,819.0 | 6,750.0 | 6,743.9 | 32.5 | 2.4 | -85.62 | 772.0 | -8,138.6 | 7,670.8 | 7,639.6 | 31.16 | 246.146 | |
| 8,000.0 | 6,819.0 | 6,750.0 | 6,743.9 | 34.2 | 2.4 | -85.62 | 772.0 | -8,138.6 | 7,571.2 | 7,537.8 | 33.34 | 227.079 | |
| 8,100.0 | 6,819.0 | 6,750.0 | 6,743.9 | 36.1 | 2.4 | -85.62 | 772.0 | -8,138.6 | 7,471.6 | 7,436.0 | 35.61 | 209.803 | |
| 8,200.0 | 6,819.0 | 6,750.0 | 6,743.9 | 38.3 | 2.4 | -85.62 | 772.0 | -8,138.6 | 7,372.0 | 7,334.0 | 37.96 | 194.213 | |
| 8,300.0 | 6,819.0 | 6,750.0 | 6,743.9 | 40.6 | 2.4 | -85.62 | 772.0 | -8,138.6 | 7,272.4 | 7,232.0 | 40.37 | 180.164 | |
| 8,400.0 | 6,819.0 | 6,750.0 | 6,743.9 | 42.9 | 2.4 | -85.62 | 772.0 | -8,138.6 | 7,172.8 | 7,130.0 | 42.82 | 167.499 | |
| 8,500.0 | 6,819.0 | 6,750.0 | 6,743.9 | 45.3 | 2.4 | -85.62 | 772.0 | -8,138.6 | 7,073.3 | 7,028.0 | 45.32 | 156.064 | |
| 8,600.0 | 6,819.0 | 6,750.0 | 6,743.9 | 47.8 | 2.4 | -85.62 | 772.0 | -8,138.6 | 6,973.7 | 6,925.9 | 47.86 | 145.718 | |
| 8,700.0 | 6,819.0 | 6,750.0 | 6,743.9 | 50.3 | 2.4 | -85.62 | 772.0 | -8,138.6 | 6,874.2 | 6,823.8 | 50.42 | 136.333 | |
| 8,800.0 | 6,819.0 | 6,750.0 | 6,743.9 | 52.8 | 2.4 | -85.62 | 772.0 | -8,138.6 | 6,774.7 | 6,721.7 | 53.01 | 127.796 | |
| 8,900.0 | 6,819.0 | 6,750.0 | 6,743.9 | 55.4 | 2.4 | -85.62 | 772.0 | -8,138.6 | 6,675.2 | 6,619.6 | 55.62 | 120.009 | |
| 9,000.0 | 6,819.0 | 6,750.0 | 6,743.9 | 58.0 | 2.4 | -85.62 | 772.0 | -8,138.6 | 6,575.7 | 6,517.4 | 58.25 | 112.884 | |
| 9,100.0 | 6,819.0 | 6,750.0 | 6,743.9 | 60.6 | 2.4 | -85.62 | 772.0 | -8,138.6 | 6,476.2 | 6,415.3 | 60.90 | 106.346 | |
| 9,200.0 | 6,819.0 | 6,750.0 | 6,743.9 | 63.2 | 2.4 | -85.62 | 772.0 | -8,138.6 | 6,376.8 | 6,313.2 | 63.56 | 100.331 | |
| 9,300.0 | 6,819.0 | 6,750.0 | 6,743.9 | 65.9 | 2.4 | -85.62 | 772.0 | -8,138.6 | 6,277.3 | 6,211.1 | 66.23 | 94.783 | |
| 9,400.0 | 6,819.0 | 6,750.0 | 6,743.9 | 68.5 | 2.4 | -85.62 | 772.0 | -8,138.6 | 6,177.9 | 6,109.0 | 68.91 | 89.650 | |
| 9,500.0 | 6,819.0 | 6,750.0 | 6,743.9 | 71.2 | 2.4 | -85.62 | 772.0 | -8,138.6 | 6,078.5 | 6,006.9 | 71.60 | 84.892 | |
| 9,600.0 | 6,819.0 | 6,750.0 | 6,743.9 | 73.9 | 2.4 | -85.62 | 772.0 | -8,138.6 | 5,979.1 | 5,904.8 | 74.30 | 80.469 | |
| 9,700.0 | 6,819.0 | 6,750.0 | 6,743.9 | 76.5 | 2.4 | -85.62 | 772.0 | -8,138.6 | 5,879.7 | 5,802.7 | 77.01 | 76.349 | |
| 9,800.0 | 6,819.0 | 6,750.0 | 6,743.9 | 79.2 | 2.4 | -85.62 | 772.0 | -8,138.6 | 5,780.4 | 5,700.7 | 79.73 | 72.503 | |
| 9,900.0 | 6,819.0 | 6,750.0 | 6,743.9 | 81.9 | 2.4 | -85.62 | 772.0 | -8,138.6 | 5,681.1 | 5,598.6 | 82.45 | 68.906 | |
| 10,000.0 | 6,819.0 | 6,750.0 | 6,743.9 | 84.6 | 2.4 | -85.62 | 772.0 | -8,138.6 | 5,581.8 | 5,496.6 | 85.17 | 65.535 | |
| 10,100.0 | 6,819.0 | 6,750.0 | 6,743.9 | 87.4 | 2.4 | -85.62 | 772.0 | -8,138.6 | 5,482.5 | 5,394.6 | 87.90 | 62.369 | |
| 10,200.0 | 6,819.0 | 6,750.0 | 6,743.9 | 90.1 | 2.4 | -85.62 | 772.0 | -8,138.6 | 5,383.3 | 5,292.6 | 90.64 | 59.392 | |
| 10,300.0 | 6,819.0 | 6,750.0 | 6,743.9 | 92.8 | 2.4 | -85.62 | 772.0 | -8,138.6 | 5,284.1 | 5,190.7 | 93.38 | 56.587 | |
| 10,400.0 | 6,819.0 | 6,750.0 | 6,743.9 | 95.5 | 2.4 | -85.62 | 772.0 | -8,138.6 | 5,184.9 | 5,088.8 | 96.12 | 53.940 | |
| 10,500.0 | 6,819.0 | 6,750.0 | 6,743.9 | 98.3 | 2.4 | -85.62 | 772.0 | -8,138.6 | 5,085.7 | 4,986.9 | 98.87 | 51.438 | |
| 10,600.0 | 6,819.0 | 6,750.0 | 6,743.9 | 101.0 | 2.4 | -85.62 | 772.0 | -8,138.6 | 4,986.6 | 4,885.0 | 101.62 | 49.071 | |
| 10,700.0 | 6,819.0 | 6,750.0 | 6,743.9 | 103.8 | 2.4 | -85.62 | 772.0 | -8,138.6 | 4,887.6 | 4,783.2 | 104.37 | 46.827 | |
| 10,800.0 | 6,819.0 | 6,750.0 | 6,743.9 | 106.5 | 2.4 | -85.62 | 772.0 | -8,138.6 | 4,788.5 | 4,681.4 | 107.13 | 44.698 | |
| 10,900.0 | 6,819.0 | 6,750.0 | 6,743.9 | 109.2 | 2.4 | -85.62 | 772.0 | -8,138.6 | 4,689.5 | 4,579.6 | 109.89 | 42.675 | |
| 11,000.0 | 6,819.0 | 6,750.0 | 6,743.9 | 112.0 | 2.4 | -85.62 | 772.0 | -8,138.6 | 4,590.6 | 4,477.9 | 112.65 | 40.751 | |
| 11,100.0 | 6,819.0 | 6,750.0 | 6,743.9 | 114.8 | 2.4 | -85.62 | 772.0 | -8,138.6 | 4,491.6 | 4,376.2 | 115.41 | 38.919 | |
| 11,200.0 | 6,819.0 | 6,750.0 | 6,743.9 | 117.5 | 2.4 | -85.62 | 772.0 | -8,138.6 | 4,392.8 | 4,274.6 | 118.18 | 37.172 | |
| 11,300.0 | 6,819.0 | 6,750.0 | 6,743.9 | 120.3 | 2.4 | -85.62 | 772.0 | -8,138.6 | 4,294.0 | 4,173.0 | 120.94 | 35.505 | |
| 11,400.0 | 6,819.0 | 6,750.0 | 6,743.9 | 123.0 | 2.4 | -85.62 | 772.0 | -8,138.6 | 4,195.2 | 4,071.5 | 123.71 | 33.912 | |
| 11,500.0 | 6,819.0 | 6,750.0 | 6,743.9 | 125.8 | 2.4 | -85.62 | 772.0 | -8,138.6 | 4,096.5 | 3,970.1 | 126.48 | 32.389 | |
| 11,600.0 | 6,819.0 | 6,750.0 | 6,743.9 | 128.6 | 2.4 | -85.62 | 772.0 | -8,138.6 | 3,997.9 | 3,868.7 | 129.25 | 30.932 | |
| 11,700.0 | 6,819.0 | 6,750.0 | 6,743.9 | 131.3 | 2.4 | -85.62 | 772.0 | -8,138.6 | 3,899.4 | 3,767.3 | 132.02 | 29.535 | |
| 11,800.0 | 6,819.0 | 6,750.0 | 6,743.9 | 134.1 | 2.4 | -85.62 | 772.0 | -8,138.6 | 3,800.9 | 3,666.1 | 134.80 | 28.197 | |
| 11,900.0 | 6,819.0 | 6,750.0 | 6,743.9 | 136.9 | 2.4 | -85.62 | 772.0 | -8,138.6 | 3,702.5 | 3,564.9 | 137.57 | 26.913 | |
| 12,000.0 | 6,819.0 | 6,750.0 | 6,743.9 | 139.6 | 2.4 | -85.62 | 772.0 | -8,138.6 | 3,604.2 | 3,463.8 | 140.35 | 25.680 | |
| 12,100.0 | 6,819.0 | 6,750.0 | 6,743.9 | 142.4 | 2.4 | -85.62 | 772.0 | -8,138.6 | 3,506.0 | 3,362.8 | 143.12 | 24.496 | |
| 12,200.0 | 6,819.0 | 6,750.0 | 6,743.9 | 145.2 | 2.4 | -85.62 | 772.0 | -8,138.6 | 3,407.8 | 3,261.9 | 145.90 | 23.357 | |
| 12,300.0 | 6,819.0 | 6,750.0 | 6,743.9 | 148.0 | 2.4 | -85.62 | 772.0 | -8,138.6 | 3,309.8 | 3,161.2 | 148.68 | 22.261 | |
| 12,400.0 | 6,819.0 | 6,750.0 | 6,743.9 | 150.8 | 2.4 | -85.62 | 772.0 | -8,138.6 | 3,212.0 | 3,060.5 | 151.46 | 21.206 | |
| 12,500.0 | 6,819.0 | 6,750.0 | 6,743.9 | 153.5 | 2.4 | -85.62 | 772.0 | -8,138.6 | 3,114.2 | 2,960.0 | 154.24 | 20.190 | |
| 12,600.0 | 6,819.0 | 6,750.0 | 6,743.9 | 156.3 | 2.4 | -85.62 | 772.0 | -8,138.6 | 3,016.6 | 2,859.6 | 157.02 | 19.211 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT PLUMB #B5-11 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 6,819.0 | 6,750.0 | 6,743.9 | 159.1 | 2.4 | -85.62 | 772.0 | -8,138.6 | 2,919.2 | 2,759.4 | 159.81 | 18.267 | |
| 12,800.0 | 6,819.0 | 6,750.0 | 6,743.9 | 161.9 | 2.4 | -85.62 | 772.0 | -8,138.6 | 2,822.0 | 2,659.4 | 162.59 | 17.356 | |
| 12,900.0 | 6,819.0 | 6,750.0 | 6,743.9 | 164.7 | 2.4 | -85.62 | 772.0 | -8,138.6 | 2,724.9 | 2,559.5 | 165.37 | 16.477 | |
| 13,000.0 | 6,819.0 | 6,750.0 | 6,743.9 | 167.4 | 2.4 | -85.62 | 772.0 | -8,138.6 | 2,628.1 | 2,459.9 | 168.16 | 15.629 | |
| 13,100.0 | 6,819.0 | 6,750.0 | 6,743.9 | 170.2 | 2.4 | -85.62 | 772.0 | -8,138.6 | 2,531.5 | 2,360.6 | 170.94 | 14.809 | |
| 13,200.0 | 6,819.0 | 6,750.0 | 6,743.9 | 173.0 | 2.4 | -85.62 | 772.0 | -8,138.6 | 2,435.2 | 2,261.5 | 173.73 | 14.017 | |
| 13,300.0 | 6,819.0 | 6,750.0 | 6,743.9 | 175.8 | 2.4 | -85.62 | 772.0 | -8,138.6 | 2,339.2 | 2,162.7 | 176.52 | 13.252 | |
| 13,400.0 | 6,819.0 | 6,750.0 | 6,743.9 | 178.6 | 2.4 | -85.62 | 772.0 | -8,138.6 | 2,243.6 | 2,064.2 | 179.30 | 12.513 | |
| 13,500.0 | 6,819.0 | 6,750.0 | 6,743.9 | 181.4 | 2.4 | -85.62 | 772.0 | -8,138.6 | 2,148.3 | 1,966.2 | 182.09 | 11.798 | |
| 13,600.0 | 6,819.0 | 6,750.0 | 6,743.9 | 184.2 | 2.4 | -85.62 | 772.0 | -8,138.6 | 2,053.5 | 1,868.6 | 184.88 | 11.107 | |
| 13,700.0 | 6,819.0 | 6,750.0 | 6,743.9 | 187.0 | 2.4 | -85.62 | 772.0 | -8,138.6 | 1,959.2 | 1,771.6 | 187.67 | 10.440 | |
| 13,800.0 | 6,819.0 | 6,750.0 | 6,743.9 | 189.7 | 2.4 | -85.62 | 772.0 | -8,138.6 | 1,865.5 | 1,675.1 | 190.46 | 9.795 | |
| 13,900.0 | 6,819.0 | 6,750.0 | 6,743.9 | 192.5 | 2.4 | -85.62 | 772.0 | -8,138.6 | 1,772.5 | 1,579.3 | 193.24 | 9.173 | |
| 14,000.0 | 6,819.0 | 6,750.0 | 6,743.9 | 195.3 | 2.4 | -85.62 | 772.0 | -8,138.6 | 1,680.4 | 1,484.3 | 196.03 | 8.572 | |
| 14,100.0 | 6,819.0 | 6,750.0 | 6,743.9 | 198.1 | 2.4 | -85.62 | 772.0 | -8,138.6 | 1,589.1 | 1,390.3 | 198.82 | 7.993 | |
| 14,200.0 | 6,819.0 | 6,750.0 | 6,743.9 | 200.9 | 2.4 | -85.62 | 772.0 | -8,138.6 | 1,499.0 | 1,297.4 | 201.62 | 7.435 | |
| 14,300.0 | 6,819.0 | 6,750.0 | 6,743.9 | 203.7 | 2.4 | -85.62 | 772.0 | -8,138.6 | 1,410.2 | 1,205.8 | 204.41 | 6.899 | |
| 14,400.0 | 6,819.0 | 6,750.0 | 6,743.9 | 206.5 | 2.4 | -85.62 | 772.0 | -8,138.6 | 1,323.0 | 1,115.8 | 207.20 | 6.385 | |
| 14,500.0 | 6,819.0 | 6,750.0 | 6,743.9 | 209.3 | 2.4 | -85.62 | 772.0 | -8,138.6 | 1,237.7 | 1,027.7 | 209.99 | 5.894 | |
| 14,600.0 | 6,819.0 | 6,750.0 | 6,743.9 | 212.1 | 2.4 | -85.62 | 772.0 | -8,138.6 | 1,154.8 | 942.1 | 212.78 | 5.427 | |
| 14,700.0 | 6,819.0 | 6,750.0 | 6,743.9 | 214.9 | 2.4 | -85.62 | 772.0 | -8,138.6 | 1,074.9 | 859.3 | 215.57 | 4.986 | |
| 14,720.3 | 6,819.0 | 6,750.0 | 6,743.9 | 215.4 | 2.4 | -85.62 | 772.0 | -8,138.6 | 1,059.0 | 842.9 | 216.14 | 4.900 | CC, ES, SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT PLUMB B5-14 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -93.08 | -423.2 | -7,851.9 | 7,863.4 | | | | |
| 100.0 | 100.0 | 43.3 | 43.3 | 0.1 | 0.0 | -93.08 | -423.2 | -7,852.0 | 7,863.4 | 7,863.3 | 0.13 | N/A | |
| 200.0 | 200.0 | 113.4 | 113.4 | 0.3 | 0.1 | -93.08 | -423.1 | -7,852.3 | 7,863.9 | 7,863.4 | 0.43 | N/A | |
| 300.0 | 300.0 | 204.8 | 204.8 | 0.5 | 0.2 | -93.09 | -423.2 | -7,853.0 | 7,864.6 | 7,863.8 | 0.77 | N/A | |
| 400.0 | 400.0 | 318.4 | 318.4 | 0.8 | 0.3 | -93.08 | -423.0 | -7,853.8 | 7,865.3 | 7,864.2 | 1.07 | 7,319.420 | |
| 500.0 | 500.0 | 467.7 | 467.7 | 1.0 | 0.4 | -93.08 | -422.1 | -7,854.2 | 7,865.5 | 7,864.2 | 1.38 | 5,683.146 | |
| 600.0 | 600.0 | 575.4 | 575.4 | 1.2 | 0.5 | -93.07 | -421.2 | -7,854.1 | 7,865.4 | 7,863.7 | 1.66 | 4,733.780 | |
| 700.0 | 700.0 | 671.5 | 671.5 | 1.4 | 0.5 | -93.06 | -420.4 | -7,854.0 | 7,865.3 | 7,863.4 | 1.93 | 4,076.509 | |
| 800.0 | 800.0 | 769.8 | 769.8 | 1.7 | 0.6 | -93.06 | -419.8 | -7,854.0 | 7,865.2 | 7,863.0 | 2.20 | 3,583.021 | |
| 804.2 | 804.2 | 774.0 | 774.0 | 1.7 | 0.6 | -114.22 | -419.8 | -7,854.0 | 7,865.2 | 7,863.0 | 2.21 | 3,555.125 | |
| 900.0 | 900.0 | 866.6 | 866.6 | 1.9 | 0.6 | -114.21 | -419.0 | -7,854.0 | 7,865.9 | 7,863.4 | 2.46 | 3,194.043 | |
| 1,000.0 | 999.8 | 955.8 | 955.8 | 2.1 | 0.6 | -114.20 | -418.1 | -7,854.1 | 7,868.1 | 7,865.4 | 2.72 | 2,891.860 | |
| 1,100.0 | 1,099.5 | 1,060.5 | 1,060.4 | 2.3 | 0.7 | -114.18 | -417.3 | -7,854.3 | 7,871.8 | 7,868.8 | 2.99 | 2,632.464 | |
| 1,200.0 | 1,198.7 | 1,151.2 | 1,151.2 | 2.6 | 0.7 | -114.16 | -416.7 | -7,854.3 | 7,876.9 | 7,873.6 | 3.27 | 2,409.680 | |
| 1,300.0 | 1,297.5 | 1,239.6 | 1,239.5 | 2.9 | 0.8 | -114.12 | -415.9 | -7,854.6 | 7,883.6 | 7,880.0 | 3.57 | 2,207.653 | |
| 1,400.0 | 1,395.6 | 1,341.9 | 1,341.8 | 3.2 | 0.8 | -114.10 | -414.8 | -7,854.9 | 7,891.8 | 7,887.9 | 3.91 | 2,017.985 | |
| 1,500.0 | 1,493.1 | 1,453.9 | 1,453.9 | 3.5 | 0.9 | -114.08 | -413.8 | -7,855.3 | 7,901.4 | 7,897.1 | 4.29 | 1,841.170 | |
| 1,507.2 | 1,500.0 | 1,464.9 | 1,464.9 | 3.6 | 0.9 | -114.09 | -413.8 | -7,855.3 | 7,902.1 | 7,897.8 | 4.32 | 1,829.542 | |
| 1,572.2 | 1,563.0 | 1,526.7 | 1,526.6 | 3.8 | 0.9 | -114.18 | -413.5 | -7,855.2 | 7,908.7 | 7,904.2 | 4.57 | 1,732.189 | |
| 1,600.0 | 1,590.0 | 1,544.3 | 1,544.2 | 3.9 | 0.9 | -114.16 | -413.4 | -7,855.3 | 7,911.7 | 7,907.0 | 4.68 | 1,692.302 | |
| 1,700.0 | 1,686.3 | 1,600.0 | 1,599.9 | 4.4 | 0.9 | -114.04 | -413.0 | -7,855.5 | 7,923.4 | 7,918.3 | 5.12 | 1,548.823 | |
| 1,800.0 | 1,781.5 | 1,674.3 | 1,674.2 | 4.9 | 0.9 | -113.94 | -412.7 | -7,856.0 | 7,937.1 | 7,931.4 | 5.62 | 1,412.282 | |
| 1,817.6 | 1,798.2 | 1,700.0 | 1,699.9 | 5.0 | 0.9 | -113.94 | -412.6 | -7,856.3 | 7,939.7 | 7,933.9 | 5.72 | 1,388.386 | |
| 1,900.0 | 1,876.1 | 1,748.6 | 1,748.6 | 5.5 | 1.0 | -114.05 | -412.5 | -7,856.8 | 7,952.0 | 7,945.9 | 6.16 | 1,290.623 | |
| 2,000.0 | 1,970.6 | 1,837.4 | 1,837.4 | 6.0 | 1.0 | -114.24 | -412.5 | -7,857.9 | 7,967.3 | 7,960.6 | 6.72 | 1,185.450 | |
| 2,100.0 | 2,065.1 | 1,938.7 | 1,938.7 | 6.6 | 1.0 | -114.46 | -413.1 | -7,859.1 | 7,982.6 | 7,975.3 | 7.29 | 1,094.581 | |
| 2,200.0 | 2,159.6 | 2,025.2 | 2,025.2 | 7.2 | 1.0 | -114.65 | -413.6 | -7,860.0 | 7,998.0 | 7,990.1 | 7.87 | 1,016.144 | |
| 2,300.0 | 2,254.1 | 2,100.0 | 2,099.9 | 7.8 | 1.0 | -114.81 | -414.0 | -7,861.0 | 8,013.8 | 8,005.3 | 8.45 | 947.912 | |
| 2,400.0 | 2,348.7 | 2,200.0 | 2,199.9 | 8.4 | 1.1 | -115.03 | -414.6 | -7,862.5 | 8,029.7 | 8,020.6 | 9.05 | 887.444 | |
| 2,500.0 | 2,443.2 | 2,249.9 | 2,249.8 | 9.1 | 1.1 | -115.14 | -414.9 | -7,863.3 | 8,045.9 | 8,036.3 | 9.63 | 835.101 | |
| 2,600.0 | 2,537.7 | 2,300.0 | 2,299.9 | 9.7 | 1.1 | -115.25 | -415.1 | -7,864.4 | 8,062.8 | 8,052.6 | 10.22 | 788.566 | |
| 2,700.0 | 2,632.2 | 2,374.3 | 2,374.1 | 10.3 | 1.1 | -115.41 | -415.5 | -7,866.3 | 8,080.1 | 8,069.3 | 10.83 | 746.427 | |
| 2,800.0 | 2,726.8 | 2,458.3 | 2,458.1 | 10.9 | 1.1 | -115.59 | -416.1 | -7,868.7 | 8,097.8 | 8,086.3 | 11.43 | 708.626 | |
| 2,900.0 | 2,821.3 | 2,549.0 | 2,548.7 | 11.6 | 1.2 | -115.78 | -416.6 | -7,871.3 | 8,115.6 | 8,103.6 | 12.03 | 674.570 | |
| 3,000.0 | 2,915.8 | 2,640.5 | 2,640.2 | 12.2 | 1.2 | -115.97 | -416.8 | -7,874.0 | 8,133.5 | 8,120.9 | 12.63 | 643.742 | |
| 3,100.0 | 3,010.3 | 2,763.2 | 2,762.8 | 12.8 | 1.2 | -116.23 | -417.0 | -7,877.5 | 8,151.5 | 8,138.3 | 13.24 | 615.480 | |
| 3,200.0 | 3,104.8 | 2,868.7 | 2,868.4 | 13.5 | 1.3 | -116.45 | -417.1 | -7,880.1 | 8,169.2 | 8,155.4 | 13.85 | 589.868 | |
| 3,300.0 | 3,199.4 | 2,957.7 | 2,957.3 | 14.1 | 1.3 | -116.63 | -417.1 | -7,882.3 | 8,187.0 | 8,172.6 | 14.45 | 566.476 | |
| 3,400.0 | 3,293.9 | 3,036.0 | 3,035.6 | 14.8 | 1.3 | -116.79 | -417.2 | -7,884.4 | 8,205.1 | 8,190.0 | 15.05 | 545.010 | |
| 3,500.0 | 3,388.4 | 3,100.0 | 3,099.6 | 15.4 | 1.3 | -116.92 | -417.1 | -7,886.2 | 8,223.4 | 8,207.8 | 15.65 | 525.301 | |
| 3,600.0 | 3,482.9 | 3,172.4 | 3,171.9 | 16.0 | 1.4 | -117.07 | -417.1 | -7,888.6 | 8,242.2 | 8,226.0 | 16.26 | 506.993 | |
| 3,700.0 | 3,577.5 | 3,251.3 | 3,250.7 | 16.7 | 1.4 | -117.23 | -417.4 | -7,891.3 | 8,261.4 | 8,244.5 | 16.86 | 490.004 | |
| 3,800.0 | 3,672.0 | 3,300.0 | 3,299.5 | 17.3 | 1.4 | -117.33 | -417.5 | -7,893.0 | 8,280.8 | 8,263.3 | 17.46 | 474.373 | |
| 3,900.0 | 3,766.5 | 3,370.5 | 3,369.9 | 18.0 | 1.4 | -117.47 | -417.5 | -7,895.9 | 8,300.6 | 8,282.6 | 18.06 | 459.658 | |
| 4,000.0 | 3,861.0 | 3,429.1 | 3,428.5 | 18.6 | 1.4 | -117.59 | -417.3 | -7,898.6 | 8,321.1 | 8,302.5 | 18.66 | 445.980 | |
| 4,100.0 | 3,955.5 | 3,503.8 | 3,503.0 | 19.3 | 1.5 | -117.73 | -416.9 | -7,902.4 | 8,342.0 | 8,322.7 | 19.26 | 433.106 | |
| 4,200.0 | 4,050.1 | 3,638.2 | 3,637.3 | 19.9 | 1.5 | -117.99 | -416.2 | -7,908.9 | 8,362.7 | 8,342.8 | 19.87 | 420.937 | |
| 4,300.0 | 4,144.6 | 3,800.2 | 3,799.1 | 20.5 | 1.6 | -118.31 | -415.8 | -7,916.0 | 8,383.3 | 8,362.8 | 20.47 | 409.481 | |
| 4,400.0 | 4,239.1 | 3,904.0 | 3,902.8 | 21.2 | 1.6 | -118.51 | -415.8 | -7,919.8 | 8,403.3 | 8,382.2 | 21.07 | 398.827 | |
| 4,500.0 | 4,333.6 | 4,041.2 | 4,040.0 | 21.8 | 1.6 | -118.78 | -415.8 | -7,924.4 | 8,423.0 | 8,401.3 | 21.67 | 388.679 | |
| 4,600.0 | 4,428.2 | 4,152.0 | 4,150.7 | 22.5 | 1.7 | -119.00 | -415.9 | -7,927.7 | 8,442.5 | 8,420.2 | 22.27 | 379.138 | |
| 4,700.0 | 4,522.7 | 4,261.2 | 4,259.9 | 23.1 | 1.7 | -119.21 | -415.8 | -7,930.8 | 8,461.9 | 8,439.0 | 22.86 | 370.103 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT PLUMB B5-14 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,438.2 | 4,436.9 | 23.8 | 1.8 | -119.56 | -416.6 | -7,934.8 | 8,481.0 | 8,457.5 | 23.46 | 361.501 | |
| 4,900.0 | 4,711.7 | 4,595.3 | 4,594.0 | 24.4 | 1.8 | -119.86 | -417.0 | -7,936.7 | 8,499.1 | 8,475.1 | 24.05 | 353.379 | |
| 5,000.0 | 4,806.2 | 4,690.4 | 4,689.0 | 25.1 | 1.8 | -120.05 | -417.6 | -7,937.6 | 8,517.1 | 8,492.5 | 24.64 | 345.686 | |
| 5,100.0 | 4,900.8 | 4,776.1 | 4,774.7 | 25.7 | 1.9 | -120.22 | -418.0 | -7,938.4 | 8,535.2 | 8,510.0 | 25.23 | 338.354 | |
| 5,200.0 | 4,995.3 | 4,893.5 | 4,892.1 | 26.4 | 1.9 | -120.44 | -418.3 | -7,939.5 | 8,553.4 | 8,527.6 | 25.82 | 331.330 | |
| 5,300.0 | 5,089.8 | 5,032.7 | 5,031.3 | 27.0 | 1.9 | -120.71 | -418.6 | -7,940.2 | 8,571.3 | 8,544.9 | 26.40 | 324.700 | |
| 5,400.0 | 5,184.3 | 5,157.4 | 5,156.0 | 27.7 | 1.9 | -120.95 | -419.1 | -7,940.2 | 8,588.8 | 8,561.8 | 26.96 | 318.623 | |
| 5,500.0 | 5,278.9 | 5,304.0 | 5,302.6 | 28.3 | 1.9 | -121.23 | -419.2 | -7,939.6 | 8,606.0 | 8,578.5 | 27.49 | 313.062 | |
| 5,533.5 | 5,310.5 | 5,334.3 | 5,332.9 | 28.5 | 1.9 | -121.29 | -419.2 | -7,939.4 | 8,611.7 | 8,584.0 | 27.67 | 311.179 | |
| 5,600.0 | 5,373.6 | 5,394.8 | 5,393.4 | 28.9 | 1.9 | -121.59 | -419.4 | -7,939.0 | 8,622.6 | 8,594.6 | 27.94 | 308.639 | |
| 5,700.0 | 5,469.4 | 5,531.6 | 5,530.2 | 29.3 | 1.9 | -122.06 | -419.3 | -7,937.6 | 8,637.2 | 8,608.9 | 28.23 | 305.940 | |
| 5,800.0 | 5,566.1 | 5,600.0 | 5,598.6 | 29.8 | 1.9 | -122.38 | -419.2 | -7,937.0 | 8,650.1 | 8,621.6 | 28.51 | 303.379 | |
| 5,900.0 | 5,663.6 | 5,662.3 | 5,660.9 | 30.1 | 1.9 | -122.66 | -419.4 | -7,936.6 | 8,661.6 | 8,632.8 | 28.77 | 301.113 | |
| 6,000.0 | 5,761.9 | 5,749.4 | 5,748.0 | 30.5 | 1.9 | -122.92 | -420.0 | -7,936.2 | 8,671.5 | 8,642.5 | 28.98 | 299.189 | |
| 6,100.0 | 5,860.7 | 5,833.4 | 5,832.0 | 30.7 | 1.9 | -123.13 | -420.6 | -7,935.9 | 8,679.6 | 8,650.4 | 29.17 | 297.513 | |
| 6,200.0 | 5,960.0 | 5,900.0 | 5,898.6 | 31.0 | 1.9 | -123.29 | -421.2 | -7,935.9 | 8,686.2 | 8,656.9 | 29.34 | 296.103 | |
| 6,300.0 | 6,059.7 | 5,990.6 | 5,989.2 | 31.2 | 1.9 | -123.42 | -422.3 | -7,936.1 | 8,691.2 | 8,661.7 | 29.47 | 294.878 | |
| 6,400.0 | 6,159.6 | 6,101.8 | 6,100.4 | 31.3 | 1.9 | -123.51 | -423.7 | -7,936.2 | 8,694.2 | 8,664.6 | 29.58 | 293.873 | |
| 6,486.1 | 6,245.7 | 6,187.0 | 6,185.6 | 31.4 | 1.9 | -102.38 | -425.0 | -7,936.1 | 8,695.1 | 8,671.0 | 24.09 | 360.937 | |
| 6,500.0 | 6,259.6 | 6,200.0 | 6,198.5 | 31.4 | 1.9 | -102.38 | -425.2 | -7,936.1 | 8,695.2 | 8,671.1 | 24.11 | 360.674 | |
| 6,516.1 | 6,275.7 | 6,214.1 | 6,212.7 | 31.4 | 1.9 | -102.38 | -425.5 | -7,936.1 | 8,695.2 | 8,671.1 | 24.13 | 360.341 | |
| 6,550.0 | 6,309.5 | 6,242.4 | 6,240.9 | 31.5 | 1.9 | -12.40 | -426.0 | -7,936.1 | 8,694.6 | 8,664.9 | 29.64 | 293.306 | |
| 6,600.0 | 6,359.4 | 6,284.0 | 6,282.6 | 31.5 | 1.9 | -12.47 | -426.9 | -7,936.1 | 8,690.8 | 8,661.2 | 29.53 | 294.287 | |
| 6,650.0 | 6,408.8 | 6,351.3 | 6,349.8 | 31.5 | 1.9 | -12.62 | -428.5 | -7,936.0 | 8,683.6 | 8,654.2 | 29.37 | 295.669 | |
| 6,700.0 | 6,457.5 | 6,414.6 | 6,413.1 | 31.5 | 1.9 | -12.85 | -429.9 | -7,935.8 | 8,672.9 | 8,643.8 | 29.14 | 297.643 | |
| 6,716.1 | 6,473.1 | 6,426.0 | 6,424.5 | 31.5 | 1.9 | -12.93 | -430.2 | -7,935.7 | 8,668.8 | 8,639.7 | 29.04 | 298.461 | |
| 6,725.0 | 6,481.6 | 6,432.2 | 6,430.7 | 31.5 | 1.9 | -13.00 | -430.4 | -7,935.7 | 8,666.3 | 8,637.4 | 28.95 | 299.321 | |
| 6,750.0 | 6,505.3 | 6,449.6 | 6,448.0 | 31.5 | 1.9 | -13.23 | -430.8 | -7,935.7 | 8,658.6 | 8,629.9 | 28.66 | 302.150 | |
| 6,775.0 | 6,528.5 | 6,466.6 | 6,465.0 | 31.4 | 1.9 | -13.51 | -431.2 | -7,935.6 | 8,649.7 | 8,621.4 | 28.30 | 305.643 | |
| 6,800.0 | 6,551.3 | 6,483.2 | 6,481.7 | 31.4 | 1.9 | -13.84 | -431.6 | -7,935.6 | 8,639.6 | 8,611.8 | 27.88 | 309.885 | |
| 6,825.0 | 6,573.4 | 6,500.0 | 6,498.5 | 31.4 | 1.9 | -14.22 | -432.0 | -7,935.6 | 8,628.4 | 8,601.0 | 27.40 | 314.961 | |
| 6,850.0 | 6,595.0 | 6,520.7 | 6,519.1 | 31.3 | 2.0 | -14.67 | -432.5 | -7,935.6 | 8,616.1 | 8,589.3 | 26.85 | 320.945 | |
| 6,875.0 | 6,615.8 | 6,541.4 | 6,539.9 | 31.3 | 2.0 | -15.18 | -433.0 | -7,935.6 | 8,602.7 | 8,576.5 | 26.23 | 327.954 | |
| 6,900.0 | 6,635.9 | 6,561.4 | 6,559.9 | 31.3 | 2.0 | -15.78 | -433.4 | -7,935.6 | 8,588.3 | 8,562.8 | 25.55 | 336.115 | |
| 6,925.0 | 6,655.1 | 6,580.6 | 6,579.1 | 31.2 | 2.0 | -16.47 | -433.8 | -7,935.6 | 8,572.9 | 8,548.0 | 24.81 | 345.565 | |
| 6,950.0 | 6,673.6 | 6,599.0 | 6,597.4 | 31.2 | 2.0 | -17.26 | -434.1 | -7,935.6 | 8,556.4 | 8,532.4 | 24.00 | 356.460 | |
| 6,975.0 | 6,691.1 | 6,635.9 | 6,634.4 | 31.1 | 2.0 | -18.22 | -434.8 | -7,935.6 | 8,539.1 | 8,515.9 | 23.16 | 368.729 | |
| 7,000.0 | 6,707.6 | 6,671.8 | 6,670.2 | 31.1 | 2.0 | -19.35 | -435.5 | -7,935.5 | 8,520.8 | 8,498.6 | 22.26 | 382.751 | |
| 7,025.0 | 6,723.1 | 6,700.0 | 6,698.4 | 31.0 | 2.0 | -20.65 | -436.0 | -7,935.3 | 8,501.7 | 8,480.4 | 21.32 | 398.765 | |
| 7,050.0 | 6,737.6 | 6,711.9 | 6,710.3 | 31.0 | 2.0 | -22.12 | -436.3 | -7,935.3 | 8,481.8 | 8,461.5 | 20.34 | 416.978 | |
| 7,075.0 | 6,751.0 | 6,721.2 | 6,719.7 | 30.9 | 2.0 | -23.86 | -436.4 | -7,935.2 | 8,461.3 | 8,441.9 | 19.36 | 437.057 | |
| 7,100.0 | 6,763.3 | 6,729.8 | 6,728.3 | 30.8 | 2.0 | -25.94 | -436.6 | -7,935.2 | 8,440.0 | 8,421.6 | 18.41 | 458.328 | |
| 7,125.0 | 6,774.5 | 6,737.6 | 6,736.1 | 30.8 | 2.0 | -28.44 | -436.8 | -7,935.1 | 8,418.2 | 8,400.6 | 17.57 | 479.206 | |
| 7,150.0 | 6,784.4 | 6,744.6 | 6,743.0 | 30.7 | 2.0 | -31.48 | -436.9 | -7,935.1 | 8,395.9 | 8,379.0 | 16.91 | 496.620 | |
| 7,175.0 | 6,793.1 | 6,750.8 | 6,749.2 | 30.7 | 2.0 | -35.22 | -437.0 | -7,935.1 | 8,373.0 | 8,356.5 | 16.55 | 505.906 | |
| 7,200.0 | 6,800.6 | 6,756.0 | 6,754.4 | 30.6 | 2.0 | -39.88 | -437.1 | -7,935.1 | 8,349.8 | 8,333.2 | 16.62 | 502.329 | |
| 7,225.0 | 6,806.8 | 6,760.4 | 6,758.8 | 30.6 | 2.0 | -45.73 | -437.2 | -7,935.1 | 8,326.2 | 8,309.0 | 17.19 | 484.439 | |
| 7,250.0 | 6,811.8 | 6,763.9 | 6,762.3 | 30.5 | 2.0 | -53.07 | -437.2 | -7,935.1 | 8,302.4 | 8,284.2 | 18.20 | 456.254 | |
| 7,275.0 | 6,815.5 | 6,775.0 | 6,773.4 | 30.5 | 2.0 | -62.40 | -437.4 | -7,935.0 | 8,278.3 | 8,258.8 | 19.49 | 424.831 | |
| 7,300.0 | 6,817.8 | 6,775.0 | 6,773.4 | 30.4 | 2.0 | -73.35 | -437.4 | -7,935.0 | 8,254.1 | 8,233.4 | 20.69 | 398.898 | |
| 7,325.0 | 6,818.9 | 6,775.0 | 6,773.4 | 30.4 | 2.0 | -85.69 | -437.4 | -7,935.0 | 8,229.7 | 8,208.0 | 21.74 | 378.503 | |
| 7,332.8 | 6,819.0 | 6,775.0 | 6,773.4 | 30.4 | 2.0 | -89.68 | -437.4 | -7,935.0 | 8,222.1 | 8,200.0 | 22.12 | 371.638 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT PLUMB B5-14 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,775.0 | 6,773.4 | 30.3 | 2.0 | -89.68 | -437.4 | -7,935.0 | 8,156.7 | 8,133.9 | 22.80 | 357.813 | |
| 7,500.0 | 6,819.0 | 6,775.0 | 6,773.4 | 30.2 | 2.0 | -89.68 | -437.4 | -7,935.0 | 8,059.5 | 8,035.4 | 24.06 | 335.035 | |
| 7,600.0 | 6,819.0 | 6,775.0 | 6,773.4 | 30.3 | 2.0 | -89.68 | -437.4 | -7,935.0 | 7,962.2 | 7,936.7 | 25.58 | 311.259 | |
| 7,700.0 | 6,819.0 | 6,775.0 | 6,773.4 | 30.6 | 2.0 | -89.68 | -437.4 | -7,935.0 | 7,865.1 | 7,837.8 | 27.32 | 287.842 | |
| 7,800.0 | 6,819.0 | 6,775.0 | 6,773.4 | 31.3 | 2.0 | -89.68 | -437.4 | -7,935.0 | 7,768.0 | 7,738.8 | 29.24 | 265.619 | |
| 7,900.0 | 6,819.0 | 6,775.0 | 6,773.4 | 32.5 | 2.0 | -89.68 | -437.4 | -7,935.0 | 7,671.0 | 7,639.7 | 31.31 | 245.017 | |
| 8,000.0 | 6,819.0 | 6,775.0 | 6,773.4 | 34.2 | 2.0 | -89.68 | -437.4 | -7,935.0 | 7,574.1 | 7,540.6 | 33.49 | 226.186 | |
| 8,100.0 | 6,819.0 | 6,775.0 | 6,773.4 | 36.1 | 2.0 | -89.68 | -437.4 | -7,935.0 | 7,477.2 | 7,441.5 | 35.76 | 209.113 | |
| 8,200.0 | 6,819.0 | 6,775.0 | 6,773.4 | 38.3 | 2.0 | -89.68 | -437.4 | -7,935.0 | 7,380.5 | 7,342.4 | 38.10 | 193.697 | |
| 8,300.0 | 6,819.0 | 6,775.0 | 6,773.4 | 40.6 | 2.0 | -89.68 | -437.4 | -7,935.0 | 7,283.8 | 7,243.3 | 40.51 | 179.796 | |
| 8,400.0 | 6,819.0 | 6,775.0 | 6,773.4 | 42.9 | 2.0 | -89.68 | -437.4 | -7,935.0 | 7,187.2 | 7,144.3 | 42.97 | 167.259 | |
| 8,500.0 | 6,819.0 | 6,775.0 | 6,773.4 | 45.3 | 2.0 | -89.68 | -437.4 | -7,935.0 | 7,090.7 | 7,045.3 | 45.47 | 155.936 | |
| 8,600.0 | 6,819.0 | 6,775.0 | 6,773.4 | 47.8 | 2.0 | -89.68 | -437.4 | -7,935.0 | 6,994.4 | 6,946.4 | 48.01 | 145.688 | |
| 8,700.0 | 6,819.0 | 6,775.0 | 6,773.4 | 50.3 | 2.0 | -89.68 | -437.4 | -7,935.0 | 6,898.1 | 6,847.5 | 50.58 | 136.389 | |
| 8,800.0 | 6,819.0 | 6,775.0 | 6,773.4 | 52.8 | 2.0 | -89.68 | -437.4 | -7,935.0 | 6,801.9 | 6,748.7 | 53.17 | 127.930 | |
| 8,900.0 | 6,819.0 | 6,775.0 | 6,773.4 | 55.4 | 2.0 | -89.68 | -437.4 | -7,935.0 | 6,705.8 | 6,650.1 | 55.78 | 120.212 | |
| 9,000.0 | 6,819.0 | 6,766.3 | 6,764.7 | 58.0 | 2.0 | -89.41 | -437.3 | -7,935.1 | 6,609.9 | 6,551.5 | 58.40 | 113.192 | |
| 9,100.0 | 6,819.0 | 6,766.1 | 6,764.6 | 60.6 | 2.0 | -89.41 | -437.3 | -7,935.1 | 6,514.1 | 6,453.0 | 61.04 | 106.709 | |
| 9,200.0 | 6,819.0 | 6,766.0 | 6,764.4 | 63.2 | 2.0 | -89.40 | -437.3 | -7,935.1 | 6,418.4 | 6,354.7 | 63.71 | 100.746 | |
| 9,300.0 | 6,819.0 | 6,765.8 | 6,764.2 | 65.9 | 2.0 | -89.40 | -437.3 | -7,935.1 | 6,322.8 | 6,256.4 | 66.38 | 95.245 | |
| 9,400.0 | 6,819.0 | 6,765.6 | 6,764.1 | 68.5 | 2.0 | -89.39 | -437.3 | -7,935.1 | 6,227.4 | 6,158.3 | 69.07 | 90.158 | |
| 9,500.0 | 6,819.0 | 6,765.5 | 6,763.9 | 71.2 | 2.0 | -89.39 | -437.3 | -7,935.1 | 6,132.1 | 6,060.3 | 71.77 | 85.443 | |
| 9,600.0 | 6,819.0 | 6,765.3 | 6,763.7 | 73.9 | 2.0 | -89.38 | -437.3 | -7,935.1 | 6,037.0 | 5,962.5 | 74.47 | 81.062 | |
| 9,700.0 | 6,819.0 | 6,765.1 | 6,763.5 | 76.5 | 2.0 | -89.38 | -437.3 | -7,935.1 | 5,942.0 | 5,864.8 | 77.19 | 76.982 | |
| 9,800.0 | 6,819.0 | 6,764.9 | 6,763.4 | 79.2 | 2.0 | -89.37 | -437.3 | -7,935.1 | 5,847.2 | 5,767.3 | 79.91 | 73.175 | |
| 9,900.0 | 6,819.0 | 6,764.8 | 6,763.2 | 81.9 | 2.0 | -89.37 | -437.3 | -7,935.1 | 5,752.6 | 5,669.9 | 82.63 | 69.616 | |
| 10,000.0 | 6,819.0 | 6,764.6 | 6,763.0 | 84.6 | 2.0 | -89.36 | -437.2 | -7,935.1 | 5,658.1 | 5,572.8 | 85.36 | 66.282 | |
| 10,100.0 | 6,819.0 | 6,764.4 | 6,762.8 | 87.4 | 2.0 | -89.35 | -437.2 | -7,935.1 | 5,563.9 | 5,475.8 | 88.10 | 63.153 | |
| 10,200.0 | 6,819.0 | 6,764.2 | 6,762.6 | 90.1 | 2.0 | -89.35 | -437.2 | -7,935.1 | 5,469.9 | 5,379.0 | 90.84 | 60.212 | |
| 10,300.0 | 6,819.0 | 6,764.0 | 6,762.4 | 92.8 | 2.0 | -89.34 | -437.2 | -7,935.1 | 5,376.0 | 5,282.4 | 93.59 | 57.443 | |
| 10,400.0 | 6,819.0 | 6,763.8 | 6,762.3 | 95.5 | 2.0 | -89.34 | -437.2 | -7,935.1 | 5,282.4 | 5,186.1 | 96.34 | 54.832 | |
| 10,500.0 | 6,819.0 | 6,763.7 | 6,762.1 | 98.3 | 2.0 | -89.33 | -437.2 | -7,935.1 | 5,189.1 | 5,090.0 | 99.09 | 52.367 | |
| 10,600.0 | 6,819.0 | 6,763.5 | 6,761.9 | 101.0 | 2.0 | -89.33 | -437.2 | -7,935.1 | 5,096.0 | 4,994.1 | 101.85 | 50.036 | |
| 10,700.0 | 6,819.0 | 6,763.3 | 6,761.7 | 103.8 | 2.0 | -89.32 | -437.2 | -7,935.1 | 5,003.1 | 4,898.5 | 104.61 | 47.828 | |
| 10,800.0 | 6,819.0 | 6,763.1 | 6,761.5 | 106.5 | 2.0 | -89.31 | -437.2 | -7,935.1 | 4,910.6 | 4,803.2 | 107.37 | 45.736 | |
| 10,900.0 | 6,819.0 | 6,762.9 | 6,761.3 | 109.2 | 2.0 | -89.31 | -437.2 | -7,935.1 | 4,818.3 | 4,708.2 | 110.13 | 43.750 | |
| 11,000.0 | 6,819.0 | 6,762.7 | 6,761.1 | 112.0 | 2.0 | -89.30 | -437.2 | -7,935.1 | 4,726.3 | 4,613.4 | 112.90 | 41.864 | |
| 11,100.0 | 6,819.0 | 6,762.5 | 6,760.9 | 114.8 | 2.0 | -89.30 | -437.2 | -7,935.1 | 4,634.7 | 4,519.1 | 115.67 | 40.070 | |
| 11,200.0 | 6,819.0 | 6,762.3 | 6,760.7 | 117.5 | 2.0 | -89.29 | -437.2 | -7,935.1 | 4,543.5 | 4,425.0 | 118.44 | 38.362 | |
| 11,300.0 | 6,819.0 | 6,762.1 | 6,760.5 | 120.3 | 2.0 | -89.28 | -437.2 | -7,935.1 | 4,452.6 | 4,331.4 | 121.21 | 36.734 | |
| 11,400.0 | 6,819.0 | 6,761.9 | 6,760.3 | 123.0 | 2.0 | -89.28 | -437.2 | -7,935.1 | 4,362.1 | 4,238.1 | 123.98 | 35.183 | |
| 11,500.0 | 6,819.0 | 6,761.7 | 6,760.1 | 125.8 | 2.0 | -89.27 | -437.2 | -7,935.1 | 4,272.0 | 4,145.3 | 126.76 | 33.702 | |
| 11,600.0 | 6,819.0 | 6,761.4 | 6,759.9 | 128.6 | 2.0 | -89.26 | -437.2 | -7,935.1 | 4,182.4 | 4,052.9 | 129.54 | 32.287 | |
| 11,700.0 | 6,819.0 | 6,761.2 | 6,759.6 | 131.3 | 2.0 | -89.26 | -437.2 | -7,935.1 | 4,093.3 | 3,961.0 | 132.32 | 30.936 | |
| 11,800.0 | 6,819.0 | 6,761.0 | 6,759.4 | 134.1 | 2.0 | -89.25 | -437.2 | -7,935.1 | 4,004.7 | 3,869.6 | 135.10 | 29.643 | |
| 11,900.0 | 6,819.0 | 6,760.8 | 6,759.2 | 136.9 | 2.0 | -89.24 | -437.2 | -7,935.1 | 3,916.6 | 3,778.7 | 137.88 | 28.406 | |
| 12,000.0 | 6,819.0 | 6,760.6 | 6,759.0 | 139.6 | 2.0 | -89.24 | -437.2 | -7,935.1 | 3,829.1 | 3,688.5 | 140.66 | 27.222 | |
| 12,100.0 | 6,819.0 | 6,760.3 | 6,758.8 | 142.4 | 2.0 | -89.23 | -437.2 | -7,935.1 | 3,742.3 | 3,598.8 | 143.44 | 26.089 | |
| 12,200.0 | 6,819.0 | 6,760.1 | 6,758.5 | 145.2 | 2.0 | -89.22 | -437.2 | -7,935.1 | 3,656.1 | 3,509.9 | 146.23 | 25.002 | |
| 12,300.0 | 6,819.0 | 6,759.9 | 6,758.3 | 148.0 | 2.0 | -89.22 | -437.2 | -7,935.1 | 3,570.6 | 3,421.6 | 149.01 | 23.962 | |
| 12,400.0 | 6,819.0 | 6,759.7 | 6,758.1 | 150.8 | 2.0 | -89.21 | -437.2 | -7,935.1 | 3,485.9 | 3,334.1 | 151.80 | 22.964 | |
| 12,500.0 | 6,819.0 | 6,759.4 | 6,757.9 | 153.5 | 2.0 | -89.20 | -437.2 | -7,935.1 | 3,402.1 | 3,247.5 | 154.59 | 22.007 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** NW NW SEC. 5 T5N R64W 6th P.M. - EXIST VERT PLUMB B5-14 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,759.2 | 6,757.6 | 156.3 | 2.0 | -89.20 | -437.2 | -7,935.1 | 3,319.1 | 3,161.7 | 157.38 | 21.090 | |
| 12,700.0 | 6,819.0 | 6,759.0 | 6,757.4 | 159.1 | 2.0 | -89.19 | -437.1 | -7,935.1 | 3,237.1 | 3,077.0 | 160.17 | 20.211 | |
| 12,800.0 | 6,819.0 | 6,758.7 | 6,757.1 | 161.9 | 2.0 | -89.18 | -437.1 | -7,935.1 | 3,156.2 | 2,993.2 | 162.96 | 19.368 | |
| 12,900.0 | 6,819.0 | 6,758.5 | 6,756.9 | 164.7 | 2.0 | -89.17 | -437.1 | -7,935.1 | 3,076.3 | 2,910.6 | 165.75 | 18.560 | |
| 13,000.0 | 6,819.0 | 6,758.2 | 6,756.6 | 167.4 | 2.0 | -89.17 | -437.1 | -7,935.1 | 2,997.7 | 2,829.1 | 168.54 | 17.786 | |
| 13,100.0 | 6,819.0 | 6,758.0 | 6,756.4 | 170.2 | 2.0 | -89.16 | -437.1 | -7,935.1 | 2,920.4 | 2,749.0 | 171.33 | 17.045 | |
| 13,200.0 | 6,819.0 | 6,757.7 | 6,756.1 | 173.0 | 2.0 | -89.15 | -437.1 | -7,935.1 | 2,844.4 | 2,670.3 | 174.12 | 16.336 | |
| 13,300.0 | 6,819.0 | 6,757.5 | 6,755.9 | 175.8 | 2.0 | -89.14 | -437.1 | -7,935.1 | 2,770.1 | 2,593.1 | 176.91 | 15.658 | |
| 13,400.0 | 6,819.0 | 6,757.2 | 6,755.6 | 178.6 | 2.0 | -89.13 | -437.1 | -7,935.1 | 2,697.3 | 2,517.6 | 179.71 | 15.010 | |
| 13,500.0 | 6,819.0 | 6,756.9 | 6,755.4 | 181.4 | 2.0 | -89.13 | -437.1 | -7,935.1 | 2,626.4 | 2,443.9 | 182.50 | 14.391 | |
| 13,600.0 | 6,819.0 | 6,756.7 | 6,755.1 | 184.2 | 2.0 | -89.12 | -437.1 | -7,935.1 | 2,557.4 | 2,372.1 | 185.30 | 13.802 | |
| 13,700.0 | 6,819.0 | 6,756.4 | 6,754.8 | 187.0 | 2.0 | -89.11 | -437.1 | -7,935.1 | 2,490.5 | 2,302.4 | 188.09 | 13.241 | |
| 13,800.0 | 6,819.0 | 6,756.1 | 6,754.6 | 189.7 | 2.0 | -89.10 | -437.1 | -7,935.1 | 2,425.9 | 2,235.1 | 190.89 | 12.709 | |
| 13,900.0 | 6,819.0 | 6,755.9 | 6,754.3 | 192.5 | 2.0 | -89.09 | -437.1 | -7,935.1 | 2,363.8 | 2,170.1 | 193.68 | 12.205 | |
| 14,000.0 | 6,819.0 | 6,755.6 | 6,754.0 | 195.3 | 2.0 | -89.09 | -437.1 | -7,935.1 | 2,304.3 | 2,107.9 | 196.48 | 11.728 | |
| 14,100.0 | 6,819.0 | 6,755.3 | 6,753.7 | 198.1 | 2.0 | -89.08 | -437.1 | -7,935.1 | 2,247.7 | 2,048.5 | 199.27 | 11.280 | |
| 14,200.0 | 6,819.0 | 6,755.0 | 6,753.5 | 200.9 | 2.0 | -89.07 | -437.1 | -7,935.1 | 2,194.2 | 1,992.2 | 202.07 | 10.859 | |
| 14,300.0 | 6,819.0 | 6,754.7 | 6,753.2 | 203.7 | 2.0 | -89.06 | -437.1 | -7,935.1 | 2,144.1 | 1,939.2 | 204.87 | 10.466 | |
| 14,400.0 | 6,819.0 | 6,754.5 | 6,752.9 | 206.5 | 2.0 | -89.05 | -437.1 | -7,935.1 | 2,097.5 | 1,889.8 | 207.66 | 10.100 | |
| 14,500.0 | 6,819.0 | 6,754.2 | 6,752.6 | 209.3 | 2.0 | -89.04 | -437.1 | -7,935.1 | 2,054.7 | 1,844.3 | 210.46 | 9.763 | |
| 14,600.0 | 6,819.0 | 6,753.9 | 6,752.3 | 212.1 | 2.0 | -89.03 | -437.1 | -7,935.1 | 2,016.0 | 1,802.7 | 213.26 | 9.453 | |
| 14,700.0 | 6,819.0 | 6,753.6 | 6,752.0 | 214.9 | 2.0 | -89.02 | -437.1 | -7,935.1 | 1,981.6 | 1,765.5 | 216.06 | 9.171 | |
| 14,720.3 | 6,819.0 | 6,753.5 | 6,751.9 | 215.4 | 2.0 | -89.02 | -437.1 | -7,935.1 | 1,975.1 | 1,758.5 | 216.63 | 9.118 | CC, ES, SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT ACHZIGER B5-9 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -81.58 | 771.8 | -5,213.6 | 5,270.4 | | | | |
| 100.0 | 100.0 | 130.7 | 130.7 | 0.1 | 0.0 | -81.58 | 771.7 | -5,212.8 | 5,269.8 | 5,269.7 | 0.11 | N/A | |
| 200.0 | 200.0 | 206.7 | 206.7 | 0.3 | 0.1 | -81.58 | 771.5 | -5,212.5 | 5,269.3 | 5,268.9 | 0.39 | N/A | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.2 | -81.58 | 771.4 | -5,212.3 | 5,269.1 | 5,268.3 | 0.76 | 6,944.236 | |
| 400.0 | 400.0 | 412.3 | 412.3 | 0.8 | 0.3 | -81.58 | 771.5 | -5,212.0 | 5,268.8 | 5,267.8 | 1.05 | 5,036.511 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 0.3 | -81.58 | 771.5 | -5,211.8 | 5,268.6 | 5,267.4 | 1.27 | 4,143.784 | |
| 600.0 | 600.0 | 615.0 | 615.0 | 1.2 | 0.3 | -81.58 | 771.5 | -5,211.6 | 5,268.4 | 5,266.9 | 1.52 | 3,471.077 | |
| 700.0 | 700.0 | 713.6 | 713.6 | 1.4 | 0.4 | -81.58 | 771.2 | -5,211.2 | 5,268.0 | 5,266.2 | 1.80 | 2,923.141 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 0.4 | -81.58 | 771.2 | -5,211.0 | 5,267.7 | 5,265.7 | 2.05 | 2,571.492 | |
| 811.0 | 811.0 | 807.4 | 807.4 | 1.7 | 0.4 | -102.74 | 771.2 | -5,211.0 | 5,267.7 | 5,265.6 | 2.08 | 2,532.153 | |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 0.4 | -102.76 | 771.1 | -5,210.9 | 5,268.0 | 5,265.7 | 2.29 | 2,301.244 | |
| 1,000.0 | 999.8 | 983.2 | 983.2 | 2.1 | 0.4 | -102.78 | 771.1 | -5,210.9 | 5,269.2 | 5,266.6 | 2.51 | 2,096.351 | |
| 1,100.0 | 1,099.5 | 1,091.7 | 1,091.7 | 2.3 | 0.4 | -102.84 | 771.3 | -5,211.0 | 5,271.2 | 5,268.5 | 2.75 | 1,919.139 | |
| 1,200.0 | 1,198.7 | 1,182.0 | 1,182.0 | 2.6 | 0.4 | -102.90 | 771.4 | -5,211.0 | 5,274.0 | 5,271.0 | 3.00 | 1,759.656 | |
| 1,300.0 | 1,297.5 | 1,315.9 | 1,315.9 | 2.9 | 0.4 | -103.05 | 771.6 | -5,210.8 | 5,277.4 | 5,274.1 | 3.29 | 1,602.968 | |
| 1,400.0 | 1,395.6 | 1,400.0 | 1,400.0 | 3.2 | 0.5 | -103.14 | 771.6 | -5,210.5 | 5,281.5 | 5,277.8 | 3.64 | 1,451.609 | |
| 1,500.0 | 1,493.1 | 1,519.5 | 1,519.5 | 3.5 | 0.5 | -103.33 | 771.6 | -5,209.9 | 5,286.2 | 5,282.2 | 4.05 | 1,306.343 | |
| 1,507.2 | 1,500.0 | 1,526.0 | 1,526.0 | 3.6 | 0.5 | -103.34 | 771.6 | -5,209.9 | 5,286.6 | 5,282.5 | 4.08 | 1,297.169 | |
| 1,572.2 | 1,563.0 | 1,585.3 | 1,585.3 | 3.8 | 0.5 | -103.50 | 771.6 | -5,209.5 | 5,290.0 | 5,285.7 | 4.35 | 1,217.356 | |
| 1,600.0 | 1,590.0 | 1,610.2 | 1,610.2 | 3.9 | 0.5 | -103.53 | 771.6 | -5,209.3 | 5,291.5 | 5,287.0 | 4.47 | 1,184.885 | |
| 1,700.0 | 1,686.3 | 1,700.0 | 1,700.0 | 4.4 | 0.6 | -103.67 | 771.7 | -5,208.9 | 5,297.6 | 5,292.7 | 4.95 | 1,070.468 | |
| 1,800.0 | 1,781.5 | 1,767.4 | 1,767.4 | 4.9 | 0.6 | -103.74 | 771.7 | -5,208.9 | 5,305.1 | 5,299.6 | 5.45 | 972.755 | |
| 1,817.6 | 1,798.2 | 1,779.7 | 1,779.7 | 5.0 | 0.6 | -103.75 | 771.7 | -5,208.9 | 5,306.5 | 5,301.0 | 5.55 | 956.388 | |
| 1,900.0 | 1,876.1 | 1,848.2 | 1,848.2 | 5.5 | 0.6 | -103.99 | 771.9 | -5,209.1 | 5,313.6 | 5,307.6 | 6.01 | 884.614 | |
| 2,000.0 | 1,970.6 | 1,949.4 | 1,949.4 | 6.0 | 0.6 | -104.33 | 771.8 | -5,209.5 | 5,322.4 | 5,315.8 | 6.58 | 808.264 | |
| 2,100.0 | 2,065.1 | 2,041.2 | 2,041.2 | 6.6 | 0.6 | -104.65 | 771.2 | -5,209.7 | 5,331.2 | 5,324.0 | 7.17 | 743.353 | |
| 2,200.0 | 2,159.6 | 2,115.6 | 2,115.6 | 7.2 | 0.6 | -104.91 | 771.0 | -5,210.1 | 5,340.5 | 5,332.7 | 7.77 | 687.540 | |
| 2,300.0 | 2,254.1 | 2,200.0 | 2,200.0 | 7.8 | 0.7 | -105.19 | 771.2 | -5,210.8 | 5,350.3 | 5,341.9 | 8.38 | 638.787 | |
| 2,400.0 | 2,348.7 | 2,274.9 | 2,274.9 | 8.4 | 0.7 | -105.45 | 771.4 | -5,211.6 | 5,360.5 | 5,351.5 | 8.99 | 596.407 | |
| 2,500.0 | 2,443.2 | 2,400.0 | 2,400.0 | 9.1 | 0.7 | -105.87 | 771.4 | -5,212.9 | 5,370.9 | 5,361.3 | 9.61 | 558.799 | |
| 2,600.0 | 2,537.7 | 2,484.0 | 2,484.0 | 9.7 | 0.7 | -106.15 | 771.3 | -5,213.5 | 5,381.1 | 5,370.9 | 10.23 | 526.012 | |
| 2,700.0 | 2,632.2 | 2,577.5 | 2,577.5 | 10.3 | 0.8 | -106.47 | 771.0 | -5,214.3 | 5,391.7 | 5,380.9 | 10.85 | 496.820 | |
| 2,800.0 | 2,726.8 | 2,664.7 | 2,664.6 | 10.9 | 0.8 | -106.77 | 770.6 | -5,215.2 | 5,402.5 | 5,391.0 | 11.48 | 470.794 | |
| 2,900.0 | 2,821.3 | 2,769.3 | 2,769.2 | 11.6 | 0.8 | -107.12 | 770.5 | -5,216.2 | 5,413.5 | 5,401.4 | 12.10 | 447.292 | |
| 3,000.0 | 2,915.8 | 2,856.3 | 2,856.3 | 12.2 | 0.8 | -107.41 | 770.4 | -5,216.9 | 5,424.6 | 5,411.9 | 12.73 | 426.162 | |
| 3,100.0 | 3,010.3 | 2,947.1 | 2,947.0 | 12.8 | 0.9 | -107.71 | 770.2 | -5,217.9 | 5,436.0 | 5,422.7 | 13.36 | 407.013 | |
| 3,200.0 | 3,104.8 | 3,055.1 | 3,055.0 | 13.5 | 0.9 | -108.06 | 770.2 | -5,218.8 | 5,447.5 | 5,433.5 | 13.99 | 389.524 | |
| 3,300.0 | 3,199.4 | 3,163.6 | 3,163.5 | 14.1 | 0.9 | -108.42 | 770.4 | -5,219.5 | 5,458.9 | 5,444.3 | 14.61 | 373.566 | |
| 3,400.0 | 3,293.9 | 3,263.1 | 3,263.1 | 14.8 | 1.0 | -108.74 | 770.6 | -5,219.9 | 5,470.3 | 5,455.1 | 15.23 | 359.077 | |
| 3,500.0 | 3,388.4 | 3,362.4 | 3,362.3 | 15.4 | 1.0 | -109.06 | 771.4 | -5,220.3 | 5,481.9 | 5,466.0 | 15.86 | 345.734 | |
| 3,600.0 | 3,482.9 | 3,457.2 | 3,457.1 | 16.0 | 1.0 | -109.35 | 772.3 | -5,220.6 | 5,493.5 | 5,477.0 | 16.48 | 333.398 | |
| 3,700.0 | 3,577.5 | 3,537.6 | 3,537.5 | 16.7 | 1.0 | -109.60 | 773.2 | -5,220.9 | 5,505.3 | 5,488.2 | 17.10 | 322.003 | |
| 3,800.0 | 3,672.0 | 3,622.2 | 3,622.1 | 17.3 | 1.0 | -109.87 | 774.2 | -5,221.6 | 5,517.7 | 5,500.0 | 17.72 | 311.442 | |
| 3,900.0 | 3,766.5 | 3,734.7 | 3,734.6 | 18.0 | 1.1 | -110.22 | 775.3 | -5,222.0 | 5,529.8 | 5,511.5 | 18.33 | 301.635 | |
| 4,000.0 | 3,861.0 | 3,800.0 | 3,799.9 | 18.6 | 1.1 | -110.42 | 775.9 | -5,222.5 | 5,542.5 | 5,523.6 | 18.95 | 292.535 | |
| 4,100.0 | 3,955.5 | 3,924.3 | 3,924.2 | 19.3 | 1.1 | -110.81 | 776.8 | -5,223.2 | 5,555.1 | 5,535.6 | 19.56 | 283.993 | |
| 4,200.0 | 4,050.1 | 4,000.0 | 3,999.9 | 19.9 | 1.1 | -111.04 | 777.5 | -5,223.8 | 5,568.2 | 5,548.0 | 20.17 | 276.014 | |
| 4,300.0 | 4,144.6 | 4,040.1 | 4,040.0 | 20.5 | 1.1 | -111.16 | 778.0 | -5,224.4 | 5,581.9 | 5,561.1 | 20.79 | 268.499 | |
| 4,400.0 | 4,239.1 | 4,100.0 | 4,099.9 | 21.2 | 1.2 | -111.34 | 778.8 | -5,225.7 | 5,596.5 | 5,575.0 | 21.41 | 261.428 | |
| 4,500.0 | 4,333.6 | 4,157.4 | 4,157.2 | 21.8 | 1.2 | -111.51 | 779.6 | -5,227.3 | 5,611.8 | 5,589.8 | 22.02 | 254.795 | |
| 4,600.0 | 4,428.2 | 4,219.5 | 4,219.3 | 22.5 | 1.2 | -111.70 | 780.7 | -5,229.4 | 5,627.8 | 5,605.2 | 22.64 | 248.557 | |
| 4,700.0 | 4,522.7 | 4,300.0 | 4,299.7 | 23.1 | 1.2 | -111.93 | 782.3 | -5,232.6 | 5,644.5 | 5,621.3 | 23.26 | 242.672 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT ACHZIGER B5-9 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,353.1 | 4,352.7 | 23.8 | 1.2 | -112.08 | 783.4 | -5,234.9 | 5,661.8 | 5,637.9 | 23.87 | 237.150 | |
| 4,900.0 | 4,711.7 | 4,419.6 | 4,419.1 | 24.4 | 1.3 | -112.27 | 785.1 | -5,238.2 | 5,679.6 | 5,655.2 | 24.49 | 231.924 | |
| 5,000.0 | 4,806.2 | 4,483.6 | 4,483.1 | 25.1 | 1.3 | -112.45 | 786.9 | -5,241.7 | 5,698.1 | 5,673.0 | 25.10 | 226.985 | |
| 5,100.0 | 4,900.8 | 4,565.3 | 4,564.5 | 25.7 | 1.3 | -112.68 | 789.3 | -5,246.5 | 5,717.1 | 5,691.4 | 25.72 | 222.306 | |
| 5,200.0 | 4,995.3 | 4,640.0 | 4,639.1 | 26.4 | 1.3 | -112.88 | 791.4 | -5,251.0 | 5,736.5 | 5,710.1 | 26.33 | 217.871 | |
| 5,300.0 | 5,089.8 | 4,707.9 | 4,706.8 | 27.0 | 1.3 | -113.07 | 793.4 | -5,255.4 | 5,756.3 | 5,729.4 | 26.94 | 213.669 | |
| 5,400.0 | 5,184.3 | 4,792.5 | 4,791.2 | 27.7 | 1.4 | -113.30 | 795.8 | -5,261.2 | 5,776.6 | 5,749.1 | 27.55 | 209.666 | |
| 5,500.0 | 5,278.9 | 4,962.1 | 4,960.4 | 28.3 | 1.4 | -113.76 | 800.2 | -5,272.2 | 5,796.9 | 5,768.7 | 28.15 | 205.898 | |
| 5,533.5 | 5,310.5 | 5,023.3 | 5,021.5 | 28.5 | 1.4 | -113.93 | 802.0 | -5,275.4 | 5,803.2 | 5,774.9 | 28.35 | 204.671 | |
| 5,600.0 | 5,373.6 | 5,081.8 | 5,079.9 | 28.9 | 1.5 | -114.31 | 803.6 | -5,278.4 | 5,815.5 | 5,786.8 | 28.65 | 202.964 | |
| 5,700.0 | 5,469.4 | 5,188.0 | 5,185.8 | 29.3 | 1.5 | -114.87 | 806.3 | -5,283.8 | 5,832.9 | 5,803.9 | 29.01 | 201.064 | |
| 5,800.0 | 5,566.1 | 5,319.5 | 5,317.2 | 29.8 | 1.5 | -115.42 | 809.3 | -5,289.9 | 5,848.5 | 5,819.1 | 29.33 | 199.387 | |
| 5,900.0 | 5,663.6 | 5,421.6 | 5,419.2 | 30.1 | 1.6 | -115.85 | 811.7 | -5,294.3 | 5,862.3 | 5,832.7 | 29.62 | 197.918 | |
| 6,000.0 | 5,761.9 | 5,509.0 | 5,506.4 | 30.5 | 1.6 | -116.19 | 814.4 | -5,298.2 | 5,874.7 | 5,844.9 | 29.87 | 196.657 | |
| 6,100.0 | 5,860.7 | 5,625.6 | 5,622.9 | 30.7 | 1.6 | -116.50 | 818.2 | -5,303.4 | 5,885.7 | 5,855.6 | 30.10 | 195.566 | |
| 6,200.0 | 5,960.0 | 5,739.2 | 5,736.3 | 31.0 | 1.7 | -116.75 | 820.6 | -5,307.7 | 5,894.5 | 5,864.2 | 30.28 | 194.641 | |
| 6,300.0 | 6,059.7 | 5,800.0 | 5,797.1 | 31.2 | 1.7 | -116.92 | 821.6 | -5,310.2 | 5,902.2 | 5,871.8 | 30.43 | 193.960 | |
| 6,400.0 | 6,159.6 | 5,883.2 | 5,880.2 | 31.3 | 1.7 | -117.06 | 822.9 | -5,314.0 | 5,908.8 | 5,878.2 | 30.55 | 193.415 | |
| 6,486.1 | 6,245.7 | 5,973.8 | 5,970.7 | 31.4 | 1.7 | -95.97 | 824.5 | -5,318.4 | 5,913.3 | 5,890.9 | 22.42 | 263.721 | |
| 6,500.0 | 6,259.6 | 5,989.5 | 5,986.4 | 31.4 | 1.8 | -95.97 | 824.7 | -5,319.1 | 5,913.9 | 5,891.5 | 22.44 | 263.515 | |
| 6,516.1 | 6,275.7 | 6,017.7 | 6,014.6 | 31.4 | 1.8 | -95.96 | 825.2 | -5,320.4 | 5,914.7 | 5,892.2 | 22.47 | 263.235 | |
| 6,550.0 | 6,309.5 | 6,103.4 | 6,100.2 | 31.5 | 1.8 | -5.94 | 826.2 | -5,323.8 | 5,915.2 | 5,884.5 | 30.65 | 192.981 | |
| 6,600.0 | 6,359.4 | 6,193.4 | 6,190.1 | 31.5 | 1.8 | -5.97 | 826.6 | -5,326.6 | 5,912.6 | 5,882.0 | 30.57 | 193.401 | |
| 6,650.0 | 6,408.8 | 6,245.1 | 6,241.8 | 31.5 | 1.8 | -6.02 | 826.7 | -5,328.0 | 5,906.4 | 5,876.0 | 30.43 | 194.068 | |
| 6,700.0 | 6,457.5 | 6,293.2 | 6,289.9 | 31.5 | 1.8 | -6.12 | 826.7 | -5,329.3 | 5,896.8 | 5,866.6 | 30.23 | 195.043 | |
| 6,716.1 | 6,473.1 | 6,307.9 | 6,304.6 | 31.5 | 1.9 | -6.15 | 826.7 | -5,329.7 | 5,893.0 | 5,862.8 | 30.15 | 195.448 | |
| 6,725.0 | 6,481.6 | 6,315.6 | 6,312.3 | 31.5 | 1.9 | -6.19 | 826.7 | -5,330.0 | 5,890.7 | 5,860.6 | 30.07 | 195.900 | |
| 6,750.0 | 6,505.3 | 6,337.2 | 6,333.9 | 31.5 | 1.9 | -6.29 | 826.6 | -5,330.6 | 5,883.4 | 5,853.6 | 29.80 | 197.404 | |
| 6,775.0 | 6,528.5 | 6,358.4 | 6,355.1 | 31.4 | 1.9 | -6.42 | 826.7 | -5,331.2 | 5,875.0 | 5,845.5 | 29.48 | 199.281 | |
| 6,800.0 | 6,551.3 | 6,379.2 | 6,375.8 | 31.4 | 1.9 | -6.57 | 826.7 | -5,331.7 | 5,865.3 | 5,836.2 | 29.10 | 201.580 | |
| 6,825.0 | 6,573.4 | 6,400.0 | 6,396.6 | 31.4 | 1.9 | -6.75 | 826.7 | -5,332.4 | 5,854.4 | 5,825.8 | 28.65 | 204.343 | |
| 6,850.0 | 6,595.0 | 6,431.0 | 6,427.6 | 31.3 | 1.9 | -6.97 | 826.8 | -5,333.2 | 5,842.4 | 5,814.2 | 28.15 | 207.555 | |
| 6,875.0 | 6,615.8 | 6,461.8 | 6,458.4 | 31.3 | 1.9 | -7.22 | 826.8 | -5,334.1 | 5,829.2 | 5,801.6 | 27.59 | 211.317 | |
| 6,900.0 | 6,635.9 | 6,491.5 | 6,488.1 | 31.3 | 1.9 | -7.52 | 826.7 | -5,334.8 | 5,814.9 | 5,787.9 | 26.96 | 215.692 | |
| 6,925.0 | 6,655.1 | 6,517.3 | 6,513.9 | 31.2 | 1.9 | -7.86 | 826.6 | -5,335.4 | 5,799.5 | 5,773.2 | 26.27 | 220.762 | |
| 6,950.0 | 6,673.6 | 6,540.8 | 6,537.4 | 31.2 | 1.9 | -8.25 | 826.6 | -5,335.9 | 5,783.1 | 5,757.6 | 25.52 | 226.600 | |
| 6,975.0 | 6,691.1 | 6,563.2 | 6,559.8 | 31.1 | 1.9 | -8.71 | 826.6 | -5,336.4 | 5,765.7 | 5,741.0 | 24.71 | 233.291 | |
| 7,000.0 | 6,707.6 | 6,584.4 | 6,581.0 | 31.1 | 1.9 | -9.25 | 826.6 | -5,336.9 | 5,747.5 | 5,723.6 | 23.85 | 240.943 | |
| 7,025.0 | 6,723.1 | 6,605.7 | 6,602.3 | 31.0 | 1.9 | -9.89 | 826.5 | -5,337.3 | 5,728.3 | 5,705.4 | 22.94 | 249.664 | |
| 7,050.0 | 6,737.6 | 6,630.1 | 6,626.6 | 31.0 | 1.9 | -10.66 | 826.6 | -5,337.7 | 5,708.3 | 5,686.3 | 21.99 | 259.551 | |
| 7,075.0 | 6,751.0 | 6,652.6 | 6,649.2 | 30.9 | 2.0 | -11.58 | 826.6 | -5,338.1 | 5,687.6 | 5,666.6 | 21.00 | 270.810 | |
| 7,100.0 | 6,763.3 | 6,673.2 | 6,669.8 | 30.8 | 2.0 | -12.71 | 826.7 | -5,338.5 | 5,666.2 | 5,646.2 | 19.98 | 283.586 | |
| 7,125.0 | 6,774.5 | 6,691.9 | 6,688.4 | 30.8 | 2.0 | -14.10 | 826.8 | -5,338.8 | 5,644.1 | 5,625.1 | 18.94 | 297.964 | |
| 7,150.0 | 6,784.4 | 6,706.1 | 6,702.7 | 30.7 | 2.0 | -15.84 | 826.9 | -5,339.0 | 5,621.4 | 5,603.5 | 17.91 | 313.866 | |
| 7,175.0 | 6,793.1 | 6,716.6 | 6,713.1 | 30.7 | 2.0 | -18.08 | 827.0 | -5,339.1 | 5,598.2 | 5,581.3 | 16.93 | 330.652 | |
| 7,200.0 | 6,800.6 | 6,725.6 | 6,722.2 | 30.6 | 2.0 | -21.05 | 827.1 | -5,339.2 | 5,574.6 | 5,558.5 | 16.09 | 346.378 | |
| 7,225.0 | 6,806.8 | 6,733.2 | 6,729.7 | 30.6 | 2.0 | -25.16 | 827.1 | -5,339.3 | 5,550.6 | 5,535.1 | 15.57 | 356.503 | |
| 7,250.0 | 6,811.8 | 6,739.3 | 6,735.8 | 30.5 | 2.0 | -31.08 | 827.1 | -5,339.4 | 5,526.4 | 5,510.7 | 15.65 | 353.096 | |
| 7,275.0 | 6,815.5 | 6,743.9 | 6,740.4 | 30.5 | 2.0 | -40.08 | 827.2 | -5,339.5 | 5,501.8 | 5,485.1 | 16.70 | 329.398 | |
| 7,300.0 | 6,817.8 | 6,747.0 | 6,743.5 | 30.4 | 2.0 | -54.28 | 827.2 | -5,339.5 | 5,477.1 | 5,458.3 | 18.84 | 290.767 | |
| 7,325.0 | 6,818.9 | 6,748.5 | 6,745.1 | 30.4 | 2.0 | -75.83 | 827.2 | -5,339.5 | 5,452.3 | 5,431.2 | 21.14 | 257.867 | |
| 7,332.8 | 6,819.0 | 6,748.7 | 6,745.3 | 30.4 | 2.0 | -83.87 | 827.2 | -5,339.5 | 5,444.6 | 5,422.9 | 21.69 | 251.074 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT ACHZIGER B5-9 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,749.7 | 6,746.3 | 30.3 | 2.0 | -83.96 | 827.2 | -5,339.6 | 5,377.8 | 5,355.5 | 22.35 | 240.608 | |
| 7,500.0 | 6,819.0 | 6,751.2 | 6,747.7 | 30.2 | 2.0 | -84.10 | 827.2 | -5,339.6 | 5,278.5 | 5,254.9 | 23.61 | 223.597 | |
| 7,600.0 | 6,819.0 | 6,752.6 | 6,749.2 | 30.3 | 2.0 | -84.23 | 827.2 | -5,339.6 | 5,179.2 | 5,154.0 | 25.13 | 206.060 | |
| 7,700.0 | 6,819.0 | 6,754.0 | 6,750.6 | 30.6 | 2.0 | -84.36 | 827.2 | -5,339.6 | 5,079.9 | 5,053.0 | 26.88 | 188.961 | |
| 7,800.0 | 6,819.0 | 6,755.5 | 6,752.0 | 31.3 | 2.0 | -84.49 | 827.2 | -5,339.6 | 4,980.6 | 4,951.8 | 28.81 | 172.873 | |
| 7,900.0 | 6,819.0 | 6,756.9 | 6,753.4 | 32.5 | 2.0 | -84.63 | 827.2 | -5,339.6 | 4,881.4 | 4,850.5 | 30.88 | 158.065 | |
| 8,000.0 | 6,819.0 | 6,758.3 | 6,754.9 | 34.2 | 2.0 | -84.76 | 827.2 | -5,339.7 | 4,782.2 | 4,749.2 | 33.07 | 144.614 | |
| 8,100.0 | 6,819.0 | 6,759.7 | 6,756.3 | 36.1 | 2.0 | -84.89 | 827.2 | -5,339.7 | 4,683.1 | 4,647.7 | 35.35 | 132.484 | |
| 8,200.0 | 6,819.0 | 6,761.1 | 6,757.6 | 38.3 | 2.0 | -85.02 | 827.2 | -5,339.7 | 4,584.0 | 4,546.3 | 37.70 | 121.580 | |
| 8,300.0 | 6,819.0 | 6,762.5 | 6,759.0 | 40.6 | 2.0 | -85.14 | 827.3 | -5,339.7 | 4,484.9 | 4,444.8 | 40.12 | 111.787 | |
| 8,400.0 | 6,819.0 | 6,763.8 | 6,760.4 | 42.9 | 2.0 | -85.27 | 827.3 | -5,339.7 | 4,385.8 | 4,343.3 | 42.59 | 102.985 | |
| 8,500.0 | 6,819.0 | 6,765.2 | 6,761.8 | 45.3 | 2.0 | -85.40 | 827.3 | -5,339.7 | 4,286.9 | 4,241.8 | 45.10 | 95.059 | |
| 8,600.0 | 6,819.0 | 6,766.6 | 6,763.1 | 47.8 | 2.0 | -85.52 | 827.3 | -5,339.8 | 4,187.9 | 4,140.3 | 47.64 | 87.904 | |
| 8,700.0 | 6,819.0 | 6,767.9 | 6,764.5 | 50.3 | 2.0 | -85.65 | 827.3 | -5,339.8 | 4,089.0 | 4,038.8 | 50.22 | 81.427 | |
| 8,800.0 | 6,819.0 | 6,769.2 | 6,765.8 | 52.8 | 2.0 | -85.77 | 827.3 | -5,339.8 | 3,990.2 | 3,937.3 | 52.82 | 75.546 | |
| 8,900.0 | 6,819.0 | 6,770.6 | 6,767.1 | 55.4 | 2.0 | -85.90 | 827.3 | -5,339.8 | 3,891.4 | 3,835.9 | 55.44 | 70.190 | |
| 9,000.0 | 6,819.0 | 6,771.9 | 6,768.4 | 58.0 | 2.0 | -86.02 | 827.3 | -5,339.8 | 3,792.7 | 3,734.6 | 58.08 | 65.299 | |
| 9,100.0 | 6,819.0 | 6,773.2 | 6,769.8 | 60.6 | 2.0 | -86.14 | 827.3 | -5,339.8 | 3,694.0 | 3,633.3 | 60.74 | 60.817 | |
| 9,200.0 | 6,819.0 | 6,774.5 | 6,771.1 | 63.2 | 2.0 | -86.27 | 827.3 | -5,339.9 | 3,595.4 | 3,532.0 | 63.41 | 56.700 | |
| 9,300.0 | 6,819.0 | 6,775.8 | 6,772.4 | 65.9 | 2.0 | -86.39 | 827.3 | -5,339.9 | 3,496.9 | 3,430.8 | 66.10 | 52.906 | |
| 9,400.0 | 6,819.0 | 6,777.1 | 6,773.6 | 68.5 | 2.0 | -86.51 | 827.3 | -5,339.9 | 3,398.5 | 3,329.7 | 68.79 | 49.402 | |
| 9,500.0 | 6,819.0 | 6,778.4 | 6,774.9 | 71.2 | 2.0 | -86.63 | 827.3 | -5,339.9 | 3,300.2 | 3,228.7 | 71.50 | 46.158 | |
| 9,600.0 | 6,819.0 | 6,779.6 | 6,776.2 | 73.9 | 2.0 | -86.75 | 827.3 | -5,339.9 | 3,202.0 | 3,127.8 | 74.21 | 43.146 | |
| 9,700.0 | 6,819.0 | 6,780.9 | 6,777.5 | 76.5 | 2.0 | -86.86 | 827.3 | -5,339.9 | 3,103.9 | 3,027.0 | 76.94 | 40.344 | |
| 9,800.0 | 6,819.0 | 6,782.2 | 6,778.7 | 79.2 | 2.0 | -86.98 | 827.3 | -5,339.9 | 3,005.9 | 2,926.3 | 79.67 | 37.732 | |
| 9,900.0 | 6,819.0 | 6,783.4 | 6,780.0 | 81.9 | 2.0 | -87.10 | 827.3 | -5,340.0 | 2,908.1 | 2,825.7 | 82.40 | 35.292 | |
| 10,000.0 | 6,819.0 | 6,784.7 | 6,781.2 | 84.6 | 2.0 | -87.21 | 827.3 | -5,340.0 | 2,810.4 | 2,725.3 | 85.14 | 33.008 | |
| 10,100.0 | 6,819.0 | 6,785.9 | 6,782.5 | 87.4 | 2.0 | -87.33 | 827.4 | -5,340.0 | 2,712.9 | 2,625.0 | 87.89 | 30.867 | |
| 10,200.0 | 6,819.0 | 6,787.1 | 6,783.7 | 90.1 | 2.0 | -87.44 | 827.4 | -5,340.0 | 2,615.6 | 2,525.0 | 90.64 | 28.857 | |
| 10,300.0 | 6,819.0 | 6,788.4 | 6,784.9 | 92.8 | 2.0 | -87.56 | 827.4 | -5,340.0 | 2,518.5 | 2,425.1 | 93.40 | 26.965 | |
| 10,400.0 | 6,819.0 | 6,789.6 | 6,786.1 | 95.5 | 2.0 | -87.67 | 827.4 | -5,340.0 | 2,421.6 | 2,325.4 | 96.16 | 25.184 | |
| 10,500.0 | 6,819.0 | 6,790.8 | 6,787.3 | 98.3 | 2.0 | -87.78 | 827.4 | -5,340.0 | 2,325.0 | 2,226.1 | 98.92 | 23.504 | |
| 10,600.0 | 6,819.0 | 6,792.0 | 6,788.5 | 101.0 | 2.0 | -87.90 | 827.4 | -5,340.1 | 2,228.7 | 2,127.0 | 101.69 | 21.917 | |
| 10,700.0 | 6,819.0 | 6,793.2 | 6,789.7 | 103.8 | 2.0 | -88.01 | 827.4 | -5,340.1 | 2,132.7 | 2,028.2 | 104.45 | 20.417 | |
| 10,800.0 | 6,819.0 | 6,794.3 | 6,790.9 | 106.5 | 2.0 | -88.12 | 827.4 | -5,340.1 | 2,037.1 | 1,929.8 | 107.23 | 18.998 | |
| 10,900.0 | 6,819.0 | 6,795.5 | 6,792.1 | 109.2 | 2.0 | -88.23 | 827.4 | -5,340.1 | 1,941.9 | 1,831.9 | 110.00 | 17.654 | |
| 11,000.0 | 6,819.0 | 6,796.7 | 6,793.2 | 112.0 | 2.0 | -88.34 | 827.4 | -5,340.1 | 1,847.3 | 1,734.5 | 112.78 | 16.380 | |
| 11,100.0 | 6,819.0 | 6,797.9 | 6,794.4 | 114.8 | 2.0 | -88.45 | 827.4 | -5,340.1 | 1,753.2 | 1,637.7 | 115.56 | 15.172 | |
| 11,200.0 | 6,819.0 | 6,799.0 | 6,795.6 | 117.5 | 2.0 | -88.56 | 827.4 | -5,340.1 | 1,659.9 | 1,541.5 | 118.34 | 14.027 | |
| 11,300.0 | 6,819.0 | 6,800.2 | 6,796.7 | 120.3 | 2.0 | -88.66 | 827.4 | -5,340.2 | 1,567.3 | 1,446.2 | 121.12 | 12.940 | |
| 11,400.0 | 6,819.0 | 6,800.0 | 6,796.6 | 123.0 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,475.8 | 1,351.9 | 123.89 | 11.912 | |
| 11,500.0 | 6,819.0 | 6,800.0 | 6,796.6 | 125.8 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,385.4 | 1,258.7 | 126.67 | 10.937 | |
| 11,600.0 | 6,819.0 | 6,800.0 | 6,796.6 | 128.6 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,296.4 | 1,167.0 | 129.45 | 10.015 | |
| 11,700.0 | 6,819.0 | 6,800.0 | 6,796.6 | 131.3 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,209.2 | 1,076.9 | 132.22 | 9.145 | |
| 11,800.0 | 6,819.0 | 6,800.0 | 6,796.6 | 134.1 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,124.0 | 989.0 | 135.01 | 8.326 | |
| 11,900.0 | 6,819.0 | 6,800.0 | 6,796.6 | 136.9 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,041.5 | 903.7 | 137.79 | 7.559 | |
| 12,000.0 | 6,819.0 | 6,800.0 | 6,796.6 | 139.6 | 2.0 | -88.65 | 827.4 | -5,340.2 | 962.4 | 821.8 | 140.57 | 6.846 | |
| 12,100.0 | 6,819.0 | 6,800.0 | 6,796.6 | 142.4 | 2.0 | -88.65 | 827.4 | -5,340.2 | 887.4 | 744.1 | 143.35 | 6.190 | |
| 12,200.0 | 6,819.0 | 6,800.0 | 6,796.6 | 145.2 | 2.0 | -88.65 | 827.4 | -5,340.2 | 817.9 | 671.7 | 146.14 | 5.597 | |
| 12,300.0 | 6,819.0 | 6,800.0 | 6,796.6 | 148.0 | 2.0 | -88.65 | 827.4 | -5,340.2 | 755.2 | 606.2 | 148.92 | 5.071 | |
| 12,400.0 | 6,819.0 | 6,800.0 | 6,796.6 | 150.8 | 2.0 | -88.65 | 827.4 | -5,340.2 | 701.2 | 549.5 | 151.71 | 4.622 | |
| 12,500.0 | 6,819.0 | 6,800.0 | 6,796.6 | 153.5 | 2.0 | -88.65 | 827.4 | -5,340.2 | 658.0 | 503.5 | 154.50 | 4.259 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT ACHZIGER B5-9 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,800.0 | 6,796.6 | 156.3 | 2.0 | -88.65 | 827.4 | -5,340.2 | 628.0 | 470.7 | 157.29 | 3.993 | |
| 12,700.0 | 6,819.0 | 6,800.0 | 6,796.6 | 159.1 | 2.0 | -88.65 | 827.4 | -5,340.2 | 613.0 | 452.9 | 160.08 | 3.829 | |
| 12,743.1 | 6,819.0 | 6,800.0 | 6,796.6 | 160.3 | 2.0 | -88.65 | 827.4 | -5,340.2 | 611.5 | 450.2 | 161.28 | 3.791 | CC, ES |
| 12,800.0 | 6,819.0 | 6,800.0 | 6,796.6 | 161.9 | 2.0 | -88.65 | 827.4 | -5,340.2 | 614.1 | 451.2 | 162.87 | 3.771 | SF |
| 12,900.0 | 6,819.0 | 6,800.0 | 6,796.6 | 164.7 | 2.0 | -88.65 | 827.4 | -5,340.2 | 631.3 | 465.6 | 165.66 | 3.811 | |
| 13,000.0 | 6,819.0 | 6,800.0 | 6,796.6 | 167.4 | 2.0 | -88.65 | 827.4 | -5,340.2 | 663.2 | 494.8 | 168.45 | 3.937 | |
| 13,100.0 | 6,819.0 | 6,800.0 | 6,796.6 | 170.2 | 2.0 | -88.65 | 827.4 | -5,340.2 | 708.0 | 536.7 | 171.24 | 4.134 | |
| 13,200.0 | 6,819.0 | 6,800.0 | 6,796.6 | 173.0 | 2.0 | -88.65 | 827.4 | -5,340.2 | 763.3 | 589.3 | 174.03 | 4.386 | |
| 13,300.0 | 6,819.0 | 6,800.0 | 6,796.6 | 175.8 | 2.0 | -88.65 | 827.4 | -5,340.2 | 827.0 | 650.2 | 176.83 | 4.677 | |
| 13,400.0 | 6,819.0 | 6,800.0 | 6,796.6 | 178.6 | 2.0 | -88.65 | 827.4 | -5,340.2 | 897.4 | 717.8 | 179.62 | 4.996 | |
| 13,500.0 | 6,819.0 | 6,800.0 | 6,796.6 | 181.4 | 2.0 | -88.65 | 827.4 | -5,340.2 | 973.0 | 790.6 | 182.41 | 5.334 | |
| 13,600.0 | 6,819.0 | 6,800.0 | 6,796.6 | 184.2 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,052.7 | 867.4 | 185.21 | 5.684 | |
| 13,700.0 | 6,819.0 | 6,800.0 | 6,796.6 | 187.0 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,135.5 | 947.5 | 188.00 | 6.040 | |
| 13,800.0 | 6,819.0 | 6,800.0 | 6,796.6 | 189.7 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,221.0 | 1,030.2 | 190.80 | 6.399 | |
| 13,900.0 | 6,819.0 | 6,800.0 | 6,796.6 | 192.5 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,308.5 | 1,114.9 | 193.60 | 6.759 | |
| 14,000.0 | 6,819.0 | 6,800.0 | 6,796.6 | 195.3 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,397.7 | 1,201.3 | 196.39 | 7.117 | |
| 14,100.0 | 6,819.0 | 6,800.0 | 6,796.6 | 198.1 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,488.3 | 1,289.1 | 199.19 | 7.472 | |
| 14,200.0 | 6,819.0 | 6,800.0 | 6,796.6 | 200.9 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,580.0 | 1,378.0 | 201.99 | 7.822 | |
| 14,300.0 | 6,819.0 | 6,800.0 | 6,796.6 | 203.7 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,672.6 | 1,467.8 | 204.78 | 8.168 | |
| 14,400.0 | 6,819.0 | 6,800.0 | 6,796.6 | 206.5 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,766.1 | 1,558.5 | 207.58 | 8.508 | |
| 14,500.0 | 6,819.0 | 6,800.0 | 6,796.6 | 209.3 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,860.2 | 1,649.8 | 210.38 | 8.842 | |
| 14,600.0 | 6,819.0 | 6,800.0 | 6,796.6 | 212.1 | 2.0 | -88.65 | 827.4 | -5,340.2 | 1,954.9 | 1,741.8 | 213.18 | 9.170 | |
| 14,700.0 | 6,819.0 | 6,800.0 | 6,796.6 | 214.9 | 2.0 | -88.65 | 827.4 | -5,340.2 | 2,050.2 | 1,834.2 | 215.98 | 9.492 | |
| 14,720.3 | 6,819.0 | 6,800.0 | 6,796.6 | 215.4 | 2.0 | -88.65 | 827.4 | -5,340.2 | 2,069.6 | 1,853.0 | 216.55 | 9.557 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT MILLAGE 3-1 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 112.88 | -521.3 | 1,235.4 | 1,340.9 | | | | |
| 100.0 | 100.0 | 87.0 | 87.0 | 0.1 | 0.0 | 112.88 | -521.3 | 1,235.4 | 1,340.9 | 1,340.8 | 0.09 | N/A | |
| 200.0 | 200.0 | 187.0 | 187.0 | 0.3 | 0.9 | 112.88 | -521.3 | 1,235.4 | 1,340.9 | 1,339.7 | 1.17 | 1,147.580 | |
| 300.0 | 300.0 | 287.0 | 287.0 | 0.5 | 3.0 | 112.88 | -521.3 | 1,235.4 | 1,340.9 | 1,337.3 | 3.56 | 377.011 | |
| 400.0 | 400.0 | 387.0 | 387.0 | 0.8 | 5.1 | 112.88 | -521.3 | 1,235.4 | 1,340.9 | 1,335.0 | 5.90 | 227.414 | |
| 500.0 | 500.0 | 487.0 | 487.0 | 1.0 | 7.2 | 112.88 | -521.3 | 1,235.4 | 1,340.9 | 1,332.7 | 8.17 | 164.148 | |
| 600.0 | 600.0 | 587.0 | 587.0 | 1.2 | 9.2 | 112.88 | -521.3 | 1,235.4 | 1,340.9 | 1,330.4 | 10.42 | 128.629 | |
| 700.0 | 700.0 | 687.0 | 687.0 | 1.4 | 11.2 | 112.88 | -521.3 | 1,235.4 | 1,340.9 | 1,328.2 | 12.67 | 105.808 | |
| 800.0 | 800.0 | 787.0 | 787.0 | 1.7 | 13.3 | 112.88 | -521.3 | 1,235.4 | 1,340.9 | 1,325.9 | 14.92 | 89.888 | CC |
| 900.0 | 900.0 | 887.0 | 887.0 | 1.9 | 15.3 | 91.79 | -521.3 | 1,235.4 | 1,340.9 | 1,323.8 | 17.16 | 78.156 | |
| 1,000.0 | 999.8 | 986.8 | 986.8 | 2.1 | 17.3 | 92.01 | -521.3 | 1,235.4 | 1,341.1 | 1,321.7 | 19.39 | 69.151 | |
| 1,100.0 | 1,099.5 | 1,086.5 | 1,086.5 | 2.3 | 19.3 | 92.38 | -521.3 | 1,235.4 | 1,341.4 | 1,319.8 | 21.63 | 62.009 | |
| 1,200.0 | 1,198.7 | 1,185.7 | 1,185.7 | 2.6 | 21.3 | 92.88 | -521.3 | 1,235.4 | 1,342.0 | 1,318.1 | 23.88 | 56.193 | |
| 1,300.0 | 1,297.5 | 1,284.5 | 1,284.5 | 2.9 | 23.3 | 93.52 | -521.3 | 1,235.4 | 1,342.9 | 1,316.7 | 26.15 | 51.356 | |
| 1,400.0 | 1,395.6 | 1,382.6 | 1,382.6 | 3.2 | 25.3 | 94.29 | -521.3 | 1,235.4 | 1,344.2 | 1,315.8 | 28.44 | 47.266 | |
| 1,500.0 | 1,493.1 | 1,480.1 | 1,480.1 | 3.5 | 27.2 | 95.18 | -521.3 | 1,235.4 | 1,346.1 | 1,315.3 | 30.76 | 43.760 | |
| 1,507.2 | 1,500.0 | 1,487.0 | 1,487.0 | 3.6 | 27.4 | 95.25 | -521.3 | 1,235.4 | 1,346.3 | 1,315.3 | 30.93 | 43.531 | ES |
| 1,572.2 | 1,563.0 | 1,550.0 | 1,550.0 | 3.8 | 28.6 | 95.90 | -521.3 | 1,235.4 | 1,347.9 | 1,315.4 | 32.44 | 41.548 | |
| 1,600.0 | 1,590.0 | 1,577.0 | 1,577.0 | 3.9 | 29.2 | 96.17 | -521.3 | 1,235.4 | 1,348.6 | 1,315.5 | 33.09 | 40.753 | |
| 1,700.0 | 1,686.3 | 1,673.3 | 1,673.3 | 4.4 | 31.1 | 97.21 | -521.3 | 1,235.4 | 1,351.9 | 1,316.4 | 35.47 | 38.116 | |
| 1,800.0 | 1,781.5 | 1,768.5 | 1,768.5 | 4.9 | 33.0 | 98.34 | -521.3 | 1,235.4 | 1,356.2 | 1,318.3 | 37.87 | 35.811 | |
| 1,817.6 | 1,798.2 | 1,785.2 | 1,785.2 | 5.0 | 33.4 | 98.54 | -521.3 | 1,235.4 | 1,357.1 | 1,318.8 | 38.30 | 35.435 | |
| 1,900.0 | 1,876.1 | 1,863.1 | 1,863.1 | 5.5 | 34.9 | 99.60 | -521.3 | 1,235.4 | 1,361.6 | 1,321.3 | 40.30 | 33.783 | |
| 2,000.0 | 1,970.6 | 1,957.6 | 1,957.6 | 6.0 | 36.8 | 100.88 | -521.3 | 1,235.4 | 1,367.7 | 1,324.9 | 42.75 | 31.995 | |
| 2,100.0 | 2,065.1 | 2,052.1 | 2,052.1 | 6.6 | 38.7 | 102.15 | -521.3 | 1,235.4 | 1,374.6 | 1,329.4 | 45.20 | 30.413 | |
| 2,200.0 | 2,159.6 | 2,146.6 | 2,146.6 | 7.2 | 40.6 | 103.40 | -521.3 | 1,235.4 | 1,382.2 | 1,334.5 | 47.65 | 29.009 | |
| 2,300.0 | 2,254.1 | 2,241.1 | 2,241.1 | 7.8 | 42.5 | 104.64 | -521.3 | 1,235.4 | 1,390.5 | 1,340.4 | 50.10 | 27.757 | |
| 2,400.0 | 2,348.7 | 2,335.7 | 2,335.7 | 8.4 | 44.4 | 105.87 | -521.3 | 1,235.4 | 1,399.6 | 1,347.0 | 52.54 | 26.638 | |
| 2,500.0 | 2,443.2 | 2,430.2 | 2,430.2 | 9.1 | 46.3 | 107.08 | -521.3 | 1,235.4 | 1,409.3 | 1,354.3 | 54.98 | 25.634 | |
| 2,600.0 | 2,537.7 | 2,524.7 | 2,524.7 | 9.7 | 48.2 | 108.28 | -521.3 | 1,235.4 | 1,419.8 | 1,362.3 | 57.41 | 24.731 | |
| 2,700.0 | 2,632.2 | 2,619.2 | 2,619.2 | 10.3 | 50.1 | 109.46 | -521.3 | 1,235.4 | 1,430.9 | 1,371.0 | 59.83 | 23.915 | |
| 2,800.0 | 2,726.8 | 2,713.8 | 2,713.8 | 10.9 | 52.0 | 110.63 | -521.3 | 1,235.4 | 1,442.6 | 1,380.4 | 62.24 | 23.177 | |
| 2,900.0 | 2,821.3 | 2,808.3 | 2,808.3 | 11.6 | 53.9 | 111.77 | -521.3 | 1,235.4 | 1,455.0 | 1,390.4 | 64.65 | 22.507 | |
| 3,000.0 | 2,915.8 | 2,902.8 | 2,902.8 | 12.2 | 55.8 | 112.90 | -521.3 | 1,235.4 | 1,468.0 | 1,401.0 | 67.04 | 21.898 | |
| 3,100.0 | 3,010.3 | 2,997.3 | 2,997.3 | 12.8 | 57.7 | 114.01 | -521.3 | 1,235.4 | 1,481.6 | 1,412.2 | 69.42 | 21.343 | |
| 3,200.0 | 3,104.8 | 3,091.8 | 3,091.8 | 13.5 | 59.6 | 115.10 | -521.3 | 1,235.4 | 1,495.8 | 1,424.1 | 71.79 | 20.837 | |
| 3,300.0 | 3,199.4 | 3,186.4 | 3,186.4 | 14.1 | 61.5 | 116.17 | -521.3 | 1,235.4 | 1,510.6 | 1,436.5 | 74.15 | 20.373 | |
| 3,400.0 | 3,293.9 | 3,280.9 | 3,280.9 | 14.8 | 63.4 | 117.23 | -521.3 | 1,235.4 | 1,526.0 | 1,449.5 | 76.50 | 19.948 | |
| 3,500.0 | 3,388.4 | 3,375.4 | 3,375.4 | 15.4 | 65.3 | 118.26 | -521.3 | 1,235.4 | 1,541.8 | 1,463.0 | 78.83 | 19.559 | |
| 3,600.0 | 3,482.9 | 3,469.9 | 3,469.9 | 16.0 | 67.2 | 119.27 | -521.3 | 1,235.4 | 1,558.2 | 1,477.1 | 81.16 | 19.200 | |
| 3,700.0 | 3,577.5 | 3,564.5 | 3,564.5 | 16.7 | 69.1 | 120.27 | -521.3 | 1,235.4 | 1,575.1 | 1,491.7 | 83.47 | 18.871 | |
| 3,800.0 | 3,672.0 | 3,659.0 | 3,659.0 | 17.3 | 71.1 | 121.24 | -521.3 | 1,235.4 | 1,592.5 | 1,506.7 | 85.77 | 18.567 | |
| 3,900.0 | 3,766.5 | 3,753.5 | 3,753.5 | 18.0 | 73.0 | 122.20 | -521.3 | 1,235.4 | 1,610.4 | 1,522.3 | 88.06 | 18.287 | |
| 4,000.0 | 3,861.0 | 3,848.0 | 3,848.0 | 18.6 | 74.9 | 123.13 | -521.3 | 1,235.4 | 1,628.7 | 1,538.4 | 90.34 | 18.028 | |
| 4,100.0 | 3,955.5 | 3,942.5 | 3,942.5 | 19.3 | 76.8 | 124.05 | -521.3 | 1,235.4 | 1,647.5 | 1,554.9 | 92.61 | 17.789 | |
| 4,200.0 | 4,050.1 | 4,037.1 | 4,037.1 | 19.9 | 78.7 | 124.94 | -521.3 | 1,235.4 | 1,666.7 | 1,571.8 | 94.87 | 17.567 | |
| 4,300.0 | 4,144.6 | 4,131.6 | 4,131.6 | 20.5 | 80.6 | 125.82 | -521.3 | 1,235.4 | 1,686.3 | 1,589.1 | 97.12 | 17.362 | |
| 4,400.0 | 4,239.1 | 4,226.1 | 4,226.1 | 21.2 | 82.5 | 126.68 | -521.3 | 1,235.4 | 1,706.3 | 1,606.9 | 99.36 | 17.172 | |
| 4,500.0 | 4,333.6 | 4,320.6 | 4,320.6 | 21.8 | 84.4 | 127.52 | -521.3 | 1,235.4 | 1,726.7 | 1,625.1 | 101.60 | 16.995 | |
| 4,600.0 | 4,428.2 | 4,415.2 | 4,415.2 | 22.5 | 86.3 | 128.34 | -521.3 | 1,235.4 | 1,747.4 | 1,643.6 | 103.82 | 16.832 | |
| 4,700.0 | 4,522.7 | 4,509.7 | 4,509.7 | 23.1 | 88.2 | 129.14 | -521.3 | 1,235.4 | 1,768.6 | 1,662.5 | 106.03 | 16.679 | |
| 4,800.0 | 4,617.2 | 4,604.2 | 4,604.2 | 23.8 | 90.1 | 129.92 | -521.3 | 1,235.4 | 1,790.0 | 1,681.8 | 108.24 | 16.538 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT MILLAGE 3-1 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,698.7 | 4,698.7 | 24.4 | 92.0 | 130.69 | -521.3 | 1,235.4 | 1,811.8 | 1,701.4 | 110.44 | 16.406 | |
| 5,000.0 | 4,806.2 | 4,793.2 | 4,793.2 | 25.1 | 93.9 | 131.44 | -521.3 | 1,235.4 | 1,834.0 | 1,721.3 | 112.63 | 16.283 | |
| 5,100.0 | 4,900.8 | 4,887.8 | 4,887.8 | 25.7 | 95.8 | 132.17 | -521.3 | 1,235.4 | 1,856.4 | 1,741.6 | 114.81 | 16.169 | |
| 5,200.0 | 4,995.3 | 4,982.3 | 4,982.3 | 26.4 | 97.7 | 132.89 | -521.3 | 1,235.4 | 1,879.1 | 1,762.1 | 116.99 | 16.062 | |
| 5,300.0 | 5,089.8 | 5,076.8 | 5,076.8 | 27.0 | 99.6 | 133.59 | -521.3 | 1,235.4 | 1,902.1 | 1,783.0 | 119.16 | 15.963 | |
| 5,400.0 | 5,184.3 | 5,171.3 | 5,171.3 | 27.7 | 101.5 | 134.27 | -521.3 | 1,235.4 | 1,925.4 | 1,804.1 | 121.32 | 15.870 | |
| 5,500.0 | 5,278.9 | 5,265.9 | 5,265.9 | 28.3 | 103.4 | 134.94 | -521.3 | 1,235.4 | 1,949.0 | 1,825.5 | 123.48 | 15.784 | |
| 5,533.5 | 5,310.5 | 5,297.5 | 5,297.5 | 28.5 | 104.0 | 135.16 | -521.3 | 1,235.4 | 1,957.0 | 1,832.8 | 124.20 | 15.756 | |
| 5,600.0 | 5,373.6 | 5,360.6 | 5,360.6 | 28.9 | 105.3 | 135.80 | -521.3 | 1,235.4 | 1,972.3 | 1,846.4 | 125.92 | 15.663 | |
| 5,700.0 | 5,469.4 | 5,456.4 | 5,456.4 | 29.3 | 107.2 | 136.66 | -521.3 | 1,235.4 | 1,993.5 | 1,865.1 | 128.45 | 15.520 | |
| 5,800.0 | 5,566.1 | 5,553.1 | 5,553.1 | 29.8 | 109.1 | 137.41 | -521.3 | 1,235.4 | 2,012.4 | 1,881.4 | 130.98 | 15.364 | |
| 5,900.0 | 5,663.6 | 5,650.6 | 5,650.6 | 30.1 | 111.1 | 138.06 | -521.3 | 1,235.4 | 2,028.9 | 1,895.4 | 133.48 | 15.200 | |
| 6,000.0 | 5,761.9 | 5,748.9 | 5,748.9 | 30.5 | 113.1 | 138.59 | -521.3 | 1,235.4 | 2,042.9 | 1,906.9 | 135.95 | 15.027 | |
| 6,100.0 | 5,860.7 | 5,847.7 | 5,847.7 | 30.7 | 115.1 | 139.02 | -521.3 | 1,235.4 | 2,054.4 | 1,916.0 | 138.36 | 14.848 | |
| 6,200.0 | 5,960.0 | 5,947.0 | 5,947.0 | 31.0 | 117.1 | 139.35 | -521.3 | 1,235.4 | 2,063.2 | 1,922.5 | 140.70 | 14.664 | |
| 6,300.0 | 6,059.7 | 6,046.7 | 6,046.7 | 31.2 | 119.1 | 139.58 | -521.3 | 1,235.4 | 2,069.5 | 1,926.5 | 142.97 | 14.475 | |
| 6,400.0 | 6,159.6 | 6,146.6 | 6,146.6 | 31.3 | 121.1 | 139.71 | -521.3 | 1,235.4 | 2,073.1 | 1,928.0 | 145.16 | 14.282 | |
| 6,486.1 | 6,245.7 | 6,232.7 | 6,232.7 | 31.4 | 122.8 | 160.91 | -521.3 | 1,235.4 | 2,074.1 | 1,925.0 | 149.12 | 13.909 | |
| 6,500.0 | 6,259.6 | 6,246.6 | 6,246.6 | 31.4 | 123.1 | 160.91 | -521.3 | 1,235.4 | 2,074.1 | 1,924.7 | 149.41 | 13.882 | |
| 6,516.1 | 6,275.7 | 6,262.7 | 6,262.7 | 31.4 | 123.4 | 160.91 | -521.3 | 1,235.4 | 2,074.1 | 1,924.4 | 149.75 | 13.850 | |
| 6,550.0 | 6,309.5 | 6,296.5 | 6,296.5 | 31.5 | 124.1 | -109.10 | -521.3 | 1,235.4 | 2,074.4 | 1,926.1 | 148.32 | 13.986 | |
| 6,600.0 | 6,359.4 | 6,346.4 | 6,346.4 | 31.5 | 125.1 | -109.10 | -521.3 | 1,235.4 | 2,075.7 | 1,926.4 | 149.28 | 13.905 | |
| 6,650.0 | 6,408.8 | 6,395.8 | 6,395.8 | 31.5 | 126.1 | -109.11 | -521.3 | 1,235.4 | 2,078.2 | 1,928.1 | 150.09 | 13.846 | |
| 6,700.0 | 6,457.5 | 6,444.5 | 6,444.5 | 31.5 | 127.1 | -109.11 | -521.3 | 1,235.4 | 2,081.9 | 1,931.1 | 150.77 | 13.809 | |
| 6,716.1 | 6,473.1 | 6,460.1 | 6,460.1 | 31.5 | 127.4 | -109.10 | -521.3 | 1,235.4 | 2,083.4 | 1,932.4 | 150.96 | 13.801 | SF |
| 6,725.0 | 6,481.6 | 6,468.6 | 6,468.6 | 31.5 | 127.6 | -109.07 | -521.3 | 1,235.4 | 2,084.2 | 1,933.2 | 151.02 | 13.801 | |
| 6,750.0 | 6,505.3 | 6,492.3 | 6,492.3 | 31.5 | 128.0 | -108.96 | -521.3 | 1,235.4 | 2,086.9 | 1,935.8 | 151.14 | 13.808 | |
| 6,775.0 | 6,528.5 | 6,515.5 | 6,515.5 | 31.4 | 128.5 | -108.82 | -521.3 | 1,235.4 | 2,090.1 | 1,938.9 | 151.21 | 13.822 | |
| 6,800.0 | 6,551.3 | 6,538.3 | 6,538.3 | 31.4 | 129.0 | -108.65 | -521.3 | 1,235.4 | 2,093.7 | 1,942.5 | 151.23 | 13.845 | |
| 6,825.0 | 6,573.4 | 6,560.4 | 6,560.4 | 31.4 | 129.4 | -108.44 | -521.3 | 1,235.4 | 2,097.8 | 1,946.6 | 151.20 | 13.875 | |
| 6,850.0 | 6,595.0 | 6,582.0 | 6,582.0 | 31.3 | 129.8 | -108.20 | -521.3 | 1,235.4 | 2,102.4 | 1,951.3 | 151.13 | 13.911 | |
| 6,875.0 | 6,615.8 | 6,602.8 | 6,602.8 | 31.3 | 130.3 | -107.92 | -521.3 | 1,235.4 | 2,107.4 | 1,956.4 | 151.04 | 13.952 | |
| 6,900.0 | 6,635.9 | 6,622.9 | 6,622.9 | 31.3 | 130.7 | -107.59 | -521.3 | 1,235.4 | 2,112.9 | 1,962.0 | 150.94 | 13.998 | |
| 6,925.0 | 6,655.1 | 6,642.1 | 6,642.1 | 31.2 | 131.0 | -107.21 | -521.3 | 1,235.4 | 2,118.9 | 1,968.1 | 150.85 | 14.047 | |
| 6,950.0 | 6,673.6 | 6,660.6 | 6,660.6 | 31.2 | 131.4 | -106.77 | -521.3 | 1,235.4 | 2,125.4 | 1,974.7 | 150.77 | 14.097 | |
| 6,975.0 | 6,691.1 | 6,678.1 | 6,678.1 | 31.1 | 131.8 | -106.27 | -521.3 | 1,235.4 | 2,132.4 | 1,981.7 | 150.72 | 14.148 | |
| 7,000.0 | 6,707.6 | 6,694.6 | 6,694.6 | 31.1 | 132.1 | -105.71 | -521.3 | 1,235.4 | 2,139.8 | 1,989.1 | 150.71 | 14.198 | |
| 7,025.0 | 6,723.1 | 6,710.1 | 6,710.1 | 31.0 | 132.4 | -105.07 | -521.3 | 1,235.4 | 2,147.8 | 1,997.0 | 150.76 | 14.246 | |
| 7,050.0 | 6,737.6 | 6,724.6 | 6,724.6 | 31.0 | 132.7 | -104.36 | -521.3 | 1,235.4 | 2,156.2 | 2,005.3 | 150.88 | 14.291 | |
| 7,075.0 | 6,751.0 | 6,738.0 | 6,738.0 | 30.9 | 133.0 | -103.56 | -521.3 | 1,235.4 | 2,165.1 | 2,014.0 | 151.06 | 14.332 | |
| 7,100.0 | 6,763.3 | 6,750.3 | 6,750.3 | 30.8 | 133.2 | -102.68 | -521.3 | 1,235.4 | 2,174.4 | 2,023.1 | 151.32 | 14.369 | |
| 7,125.0 | 6,774.5 | 6,761.5 | 6,761.5 | 30.8 | 133.4 | -101.71 | -521.3 | 1,235.4 | 2,184.2 | 2,032.5 | 151.65 | 14.402 | |
| 7,150.0 | 6,784.4 | 6,771.4 | 6,771.4 | 30.7 | 133.6 | -100.65 | -521.3 | 1,235.4 | 2,194.4 | 2,042.4 | 152.05 | 14.432 | |
| 7,175.0 | 6,793.1 | 6,780.1 | 6,780.1 | 30.7 | 133.8 | -99.50 | -521.3 | 1,235.4 | 2,205.0 | 2,052.6 | 152.49 | 14.460 | |
| 7,200.0 | 6,800.6 | 6,787.6 | 6,787.6 | 30.6 | 134.0 | -98.24 | -521.3 | 1,235.4 | 2,216.1 | 2,063.1 | 152.96 | 14.488 | |
| 7,225.0 | 6,806.8 | 6,793.8 | 6,793.8 | 30.6 | 134.1 | -96.89 | -521.3 | 1,235.4 | 2,227.5 | 2,074.0 | 153.44 | 14.517 | |
| 7,250.0 | 6,811.8 | 6,798.8 | 6,798.8 | 30.5 | 134.2 | -95.45 | -521.3 | 1,235.4 | 2,239.2 | 2,085.3 | 153.89 | 14.551 | |
| 7,275.0 | 6,815.5 | 6,802.5 | 6,802.5 | 30.5 | 134.3 | -93.90 | -521.3 | 1,235.4 | 2,251.3 | 2,097.0 | 154.29 | 14.591 | |
| 7,300.0 | 6,817.8 | 6,804.8 | 6,804.8 | 30.4 | 134.3 | -92.27 | -521.3 | 1,235.4 | 2,263.6 | 2,109.0 | 154.60 | 14.642 | |
| 7,325.0 | 6,818.9 | 6,805.9 | 6,805.9 | 30.4 | 134.3 | -90.55 | -521.3 | 1,235.4 | 2,276.2 | 2,121.4 | 154.78 | 14.706 | |
| 7,332.8 | 6,819.0 | 6,806.0 | 6,806.0 | 30.4 | 134.3 | -90.00 | -521.3 | 1,235.4 | 2,280.2 | 2,125.4 | 154.81 | 14.729 | |
| 7,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 30.3 | 134.3 | -90.00 | -521.3 | 1,235.4 | 2,315.3 | 2,159.8 | 155.49 | 14.890 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT MILLAGE 3-1 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 30.2 | 134.3 | -90.00 | -521.3 | 1,235.4 | 2,370.0 | 2,213.2 | 156.75 | 15.120 | |
| 7,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 30.3 | 134.3 | -90.00 | -521.3 | 1,235.4 | 2,427.6 | 2,269.3 | 158.27 | 15.338 | |
| 7,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 30.6 | 134.3 | -90.00 | -521.3 | 1,235.4 | 2,487.9 | 2,327.9 | 160.02 | 15.548 | |
| 7,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 31.3 | 134.3 | -90.00 | -521.3 | 1,235.4 | 2,550.7 | 2,388.8 | 161.94 | 15.752 | |
| 7,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 32.5 | 134.3 | -90.00 | -521.3 | 1,235.4 | 2,615.9 | 2,451.9 | 164.00 | 15.951 | |
| 8,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 34.2 | 134.3 | -90.00 | -521.3 | 1,235.4 | 2,683.1 | 2,517.0 | 166.18 | 16.146 | |
| 8,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 36.1 | 134.3 | -90.00 | -521.3 | 1,235.4 | 2,752.4 | 2,584.0 | 168.45 | 16.340 | |
| 8,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 38.3 | 134.3 | -90.00 | -521.3 | 1,235.4 | 2,823.5 | 2,652.7 | 170.79 | 16.532 | |
| 8,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 40.6 | 134.3 | -90.00 | -521.3 | 1,235.4 | 2,896.3 | 2,723.1 | 173.20 | 16.722 | |
| 8,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 42.9 | 134.3 | -90.00 | -521.3 | 1,235.4 | 2,970.7 | 2,795.1 | 175.66 | 16.912 | |
| 8,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 45.3 | 134.3 | -90.00 | -521.3 | 1,235.4 | 3,046.6 | 2,868.4 | 178.16 | 17.100 | |
| 8,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 47.8 | 134.3 | -90.00 | -521.3 | 1,235.4 | 3,123.8 | 2,943.1 | 180.70 | 17.287 | |
| 8,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 50.3 | 134.3 | -90.00 | -521.3 | 1,235.4 | 3,202.3 | 3,019.0 | 183.26 | 17.474 | |
| 8,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 52.8 | 134.3 | -90.00 | -521.3 | 1,235.4 | 3,281.9 | 3,096.1 | 185.86 | 17.658 | |
| 8,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 55.4 | 134.3 | -90.00 | -521.3 | 1,235.4 | 3,362.7 | 3,174.2 | 188.47 | 17.842 | |
| 9,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 58.0 | 134.3 | -90.00 | -521.3 | 1,235.4 | 3,444.4 | 3,253.3 | 191.10 | 18.024 | |
| 9,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 60.6 | 134.3 | -90.00 | -521.3 | 1,235.4 | 3,527.1 | 3,333.4 | 193.75 | 18.204 | |
| 9,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 63.2 | 134.3 | -90.00 | -521.3 | 1,235.4 | 3,610.7 | 3,414.3 | 196.42 | 18.383 | |
| 9,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 65.9 | 134.3 | -90.00 | -521.3 | 1,235.4 | 3,695.1 | 3,496.0 | 199.09 | 18.559 | |
| 9,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 68.5 | 134.3 | -90.00 | -521.3 | 1,235.4 | 3,780.2 | 3,578.4 | 201.78 | 18.734 | |
| 9,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 71.2 | 134.3 | -90.00 | -521.3 | 1,235.4 | 3,866.1 | 3,661.6 | 204.48 | 18.907 | |
| 9,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 73.9 | 134.3 | -90.00 | -521.3 | 1,235.4 | 3,952.6 | 3,745.4 | 207.18 | 19.078 | |
| 9,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 76.5 | 134.3 | -90.00 | -521.3 | 1,235.4 | 4,039.7 | 3,829.8 | 209.90 | 19.246 | |
| 9,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 79.2 | 134.3 | -90.00 | -521.3 | 1,235.4 | 4,127.5 | 3,914.8 | 212.62 | 19.413 | |
| 9,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 81.9 | 134.3 | -90.00 | -521.3 | 1,235.4 | 4,215.7 | 4,000.4 | 215.34 | 19.577 | |
| 10,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 84.6 | 134.3 | -90.00 | -521.3 | 1,235.4 | 4,304.5 | 4,086.4 | 218.07 | 19.739 | |
| 10,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 87.4 | 134.3 | -90.00 | -521.3 | 1,235.4 | 4,393.8 | 4,173.0 | 220.81 | 19.898 | |
| 10,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 90.1 | 134.3 | -90.00 | -521.3 | 1,235.4 | 4,483.5 | 4,259.9 | 223.55 | 20.056 | |
| 10,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 92.8 | 134.3 | -90.00 | -521.3 | 1,235.4 | 4,573.6 | 4,347.3 | 226.30 | 20.211 | |
| 10,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 95.5 | 134.3 | -90.00 | -521.3 | 1,235.4 | 4,664.2 | 4,435.1 | 229.05 | 20.363 | |
| 10,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 98.3 | 134.3 | -90.00 | -521.3 | 1,235.4 | 4,755.1 | 4,523.3 | 231.80 | 20.514 | |
| 10,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 101.0 | 134.3 | -90.00 | -521.3 | 1,235.4 | 4,846.4 | 4,611.8 | 234.56 | 20.662 | |
| 10,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 103.8 | 134.3 | -90.00 | -521.3 | 1,235.4 | 4,938.0 | 4,700.7 | 237.32 | 20.808 | |
| 10,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 106.5 | 134.3 | -90.00 | -521.3 | 1,235.4 | 5,030.0 | 4,789.9 | 240.08 | 20.951 | |
| 10,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 109.2 | 134.3 | -90.00 | -521.3 | 1,235.4 | 5,122.2 | 4,879.4 | 242.85 | 21.092 | |
| 11,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 112.0 | 134.3 | -90.00 | -521.3 | 1,235.4 | 5,214.7 | 4,969.1 | 245.61 | 21.232 | |
| 11,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 114.8 | 134.3 | -90.00 | -521.3 | 1,235.4 | 5,307.5 | 5,059.2 | 248.38 | 21.368 | |
| 11,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 117.5 | 134.3 | -90.00 | -521.3 | 1,235.4 | 5,400.6 | 5,149.5 | 251.15 | 21.503 | |
| 11,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 120.3 | 134.3 | -90.00 | -521.3 | 1,235.4 | 5,493.9 | 5,240.0 | 253.93 | 21.636 | |
| 11,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 123.0 | 134.3 | -90.00 | -521.3 | 1,235.4 | 5,587.4 | 5,330.7 | 256.70 | 21.766 | |
| 11,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 125.8 | 134.3 | -90.00 | -521.3 | 1,235.4 | 5,681.2 | 5,421.7 | 259.48 | 21.895 | |
| 11,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 128.6 | 134.3 | -90.00 | -521.3 | 1,235.4 | 5,775.2 | 5,512.9 | 262.26 | 22.021 | |
| 11,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 131.3 | 134.3 | -90.00 | -521.3 | 1,235.4 | 5,869.3 | 5,604.3 | 265.04 | 22.145 | |
| 11,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 134.1 | 134.3 | -90.00 | -521.3 | 1,235.4 | 5,963.7 | 5,695.9 | 267.82 | 22.268 | |
| 11,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 136.9 | 134.3 | -90.00 | -521.3 | 1,235.4 | 6,058.2 | 5,787.6 | 270.60 | 22.388 | |
| 12,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 139.6 | 134.3 | -90.00 | -521.3 | 1,235.4 | 6,152.9 | 5,879.5 | 273.38 | 22.507 | |
| 12,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 142.4 | 134.3 | -90.00 | -521.3 | 1,235.4 | 6,247.8 | 5,971.6 | 276.17 | 22.623 | |
| 12,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 145.2 | 134.3 | -90.00 | -521.3 | 1,235.4 | 6,342.8 | 6,063.9 | 278.95 | 22.738 | |
| 12,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 148.0 | 134.3 | -90.00 | -521.3 | 1,235.4 | 6,438.0 | 6,156.3 | 281.74 | 22.851 | |
| 12,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 150.8 | 134.3 | -90.00 | -521.3 | 1,235.4 | 6,533.3 | 6,248.8 | 284.53 | 22.962 | |
| 12,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 153.5 | 134.3 | -90.00 | -521.3 | 1,235.4 | 6,628.8 | 6,341.5 | 287.31 | 23.072 | |
| 12,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 156.3 | 134.3 | -90.00 | -521.3 | 1,235.4 | 6,724.4 | 6,434.3 | 290.10 | 23.179 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT MILLAGE 3-1 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 159.1 | 134.3 | -90.00 | -521.3 | 1,235.4 | 6,820.1 | 6,527.2 | 292.89 | 23.285 | |
| 12,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 161.9 | 134.3 | -90.00 | -521.3 | 1,235.4 | 6,915.9 | 6,620.3 | 295.68 | 23.390 | |
| 12,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 164.7 | 134.3 | -90.00 | -521.3 | 1,235.4 | 7,011.9 | 6,713.4 | 298.48 | 23.492 | |
| 13,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 167.4 | 134.3 | -90.00 | -521.3 | 1,235.4 | 7,108.0 | 6,806.7 | 301.27 | 23.594 | |
| 13,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 170.2 | 134.3 | -90.00 | -521.3 | 1,235.4 | 7,204.1 | 6,900.1 | 304.06 | 23.693 | |
| 13,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 173.0 | 134.3 | -90.00 | -521.3 | 1,235.4 | 7,300.4 | 6,993.6 | 306.85 | 23.791 | |
| 13,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 175.8 | 134.3 | -90.00 | -521.3 | 1,235.4 | 7,396.8 | 7,087.1 | 309.65 | 23.888 | |
| 13,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 178.6 | 134.3 | -90.00 | -521.3 | 1,235.4 | 7,493.3 | 7,180.8 | 312.44 | 23.983 | |
| 13,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 181.4 | 134.3 | -90.00 | -521.3 | 1,235.4 | 7,589.8 | 7,274.6 | 315.24 | 24.077 | |
| 13,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 184.2 | 134.3 | -90.00 | -521.3 | 1,235.4 | 7,686.5 | 7,368.5 | 318.03 | 24.169 | |
| 13,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 187.0 | 134.3 | -90.00 | -521.3 | 1,235.4 | 7,783.2 | 7,462.4 | 320.83 | 24.260 | |
| 13,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 189.7 | 134.3 | -90.00 | -521.3 | 1,235.4 | 7,880.0 | 7,556.4 | 323.62 | 24.349 | |
| 13,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 192.5 | 134.3 | -90.00 | -521.3 | 1,235.4 | 7,976.9 | 7,650.5 | 326.42 | 24.438 | |
| 14,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 195.3 | 134.3 | -90.00 | -521.3 | 1,235.4 | 8,073.9 | 7,744.7 | 329.22 | 24.524 | |
| 14,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 198.1 | 134.3 | -90.00 | -521.3 | 1,235.4 | 8,170.9 | 7,838.9 | 332.02 | 24.610 | |
| 14,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 200.9 | 134.3 | -90.00 | -521.3 | 1,235.4 | 8,268.1 | 7,933.2 | 334.81 | 24.694 | |
| 14,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 203.7 | 134.3 | -90.00 | -521.3 | 1,235.4 | 8,365.2 | 8,027.6 | 337.61 | 24.778 | |
| 14,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 206.5 | 134.3 | -90.00 | -521.3 | 1,235.4 | 8,462.5 | 8,122.1 | 340.41 | 24.860 | |
| 14,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 209.3 | 134.3 | -90.00 | -521.3 | 1,235.4 | 8,559.8 | 8,216.6 | 343.21 | 24.940 | |
| 14,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 212.1 | 134.3 | -90.00 | -521.3 | 1,235.4 | 8,657.2 | 8,311.2 | 346.01 | 25.020 | |
| 14,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 214.9 | 134.3 | -90.00 | -521.3 | 1,235.4 | 8,754.6 | 8,405.8 | 348.81 | 25.099 | |
| 14,720.3 | 6,819.0 | 6,806.0 | 6,806.0 | 215.4 | 134.3 | -90.00 | -521.3 | 1,235.4 | 8,774.4 | 8,425.0 | 349.38 | 25.114 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT MININGER-PFEIF 1 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 3.0 | 3.0 | 0.0 | 0.0 | -69.19 | 2,067.7 | -5,439.3 | 5,819.1 | | | | |
| 100.0 | 100.0 | 103.0 | 103.0 | 0.1 | 0.0 | -69.19 | 2,067.7 | -5,439.3 | 5,819.1 | 5,819.0 | 0.11 | N/A | |
| 200.0 | 200.0 | 203.0 | 203.0 | 0.3 | 0.8 | -69.19 | 2,067.7 | -5,439.3 | 5,819.1 | 5,817.9 | 1.16 | 5,036.687 | |
| 300.0 | 300.0 | 303.0 | 303.0 | 0.5 | 3.2 | -69.19 | 2,067.7 | -5,439.3 | 5,819.1 | 5,815.3 | 3.77 | 1,545.240 | |
| 400.0 | 400.0 | 403.0 | 403.0 | 0.8 | 5.3 | -69.19 | 2,067.7 | -5,439.3 | 5,819.1 | 5,813.0 | 6.07 | 958.447 | |
| 500.0 | 500.0 | 503.0 | 503.0 | 1.0 | 7.4 | -69.19 | 2,067.7 | -5,439.3 | 5,819.1 | 5,810.8 | 8.34 | 697.905 | |
| 600.0 | 600.0 | 603.0 | 603.0 | 1.2 | 9.4 | -69.19 | 2,067.7 | -5,439.3 | 5,819.1 | 5,808.5 | 10.59 | 549.430 | |
| 700.0 | 700.0 | 703.0 | 703.0 | 1.4 | 11.4 | -69.19 | 2,067.7 | -5,439.3 | 5,819.1 | 5,806.3 | 12.84 | 453.266 | |
| 800.0 | 800.0 | 803.0 | 803.0 | 1.7 | 13.4 | -69.19 | 2,067.7 | -5,439.3 | 5,819.1 | 5,804.0 | 15.08 | 385.837 | |
| 900.0 | 900.0 | 903.0 | 903.0 | 1.9 | 15.4 | -90.36 | 2,067.7 | -5,439.3 | 5,819.1 | 5,801.8 | 17.32 | 335.955 | |
| 1,000.0 | 999.8 | 1,002.8 | 1,002.8 | 2.1 | 17.5 | -90.41 | 2,067.7 | -5,439.3 | 5,819.1 | 5,799.6 | 19.56 | 297.544 | |
| 1,100.0 | 1,099.5 | 1,102.5 | 1,102.5 | 2.3 | 19.5 | -90.50 | 2,067.7 | -5,439.3 | 5,819.2 | 5,797.4 | 21.80 | 266.983 | |
| 1,200.0 | 1,198.7 | 1,201.7 | 1,201.7 | 2.6 | 21.5 | -90.61 | 2,067.7 | -5,439.3 | 5,819.3 | 5,795.3 | 24.04 | 242.019 | |
| 1,300.0 | 1,297.5 | 1,300.5 | 1,300.5 | 2.9 | 23.4 | -90.76 | 2,067.7 | -5,439.3 | 5,819.5 | 5,793.2 | 26.31 | 221.176 | |
| 1,400.0 | 1,395.6 | 1,398.6 | 1,398.6 | 3.2 | 25.4 | -90.94 | 2,067.7 | -5,439.3 | 5,819.8 | 5,791.2 | 28.60 | 203.462 | |
| 1,500.0 | 1,493.1 | 1,496.1 | 1,496.1 | 3.5 | 27.4 | -91.15 | 2,067.7 | -5,439.3 | 5,820.2 | 5,789.3 | 30.93 | 188.176 | |
| 1,507.2 | 1,500.0 | 1,503.0 | 1,503.0 | 3.6 | 27.5 | -91.16 | 2,067.7 | -5,439.3 | 5,820.3 | 5,789.2 | 31.10 | 187.172 | |
| 1,572.2 | 1,563.0 | 1,566.0 | 1,566.0 | 3.8 | 28.8 | -91.32 | 2,067.7 | -5,439.3 | 5,820.6 | 5,788.0 | 32.61 | 178.475 | |
| 1,600.0 | 1,590.0 | 1,593.0 | 1,593.0 | 3.9 | 29.3 | -91.38 | 2,067.7 | -5,439.3 | 5,820.8 | 5,787.5 | 33.27 | 174.974 | |
| 1,700.0 | 1,686.3 | 1,689.3 | 1,689.3 | 4.4 | 31.3 | -91.62 | 2,067.7 | -5,439.3 | 5,821.5 | 5,785.9 | 35.65 | 163.280 | |
| 1,800.0 | 1,781.5 | 1,784.5 | 1,784.5 | 4.9 | 33.2 | -91.89 | 2,067.7 | -5,439.3 | 5,822.5 | 5,784.4 | 38.08 | 152.909 | |
| 1,817.6 | 1,798.2 | 1,801.2 | 1,801.2 | 5.0 | 33.5 | -91.94 | 2,067.7 | -5,439.3 | 5,822.7 | 5,784.2 | 38.51 | 151.203 | |
| 1,900.0 | 1,876.1 | 1,879.1 | 1,879.1 | 5.5 | 35.1 | -92.19 | 2,067.7 | -5,439.3 | 5,823.7 | 5,783.2 | 40.54 | 143.670 | |
| 2,000.0 | 1,970.6 | 1,973.6 | 1,973.6 | 6.0 | 37.0 | -92.49 | 2,067.7 | -5,439.3 | 5,825.1 | 5,782.1 | 43.01 | 135.433 | |
| 2,100.0 | 2,065.1 | 2,068.1 | 2,068.1 | 6.6 | 38.9 | -92.79 | 2,067.7 | -5,439.3 | 5,826.7 | 5,781.2 | 45.50 | 128.060 | |
| 2,200.0 | 2,159.6 | 2,162.6 | 2,162.6 | 7.2 | 40.8 | -93.10 | 2,067.7 | -5,439.3 | 5,828.5 | 5,780.5 | 48.00 | 121.431 | |
| 2,300.0 | 2,254.1 | 2,257.1 | 2,257.1 | 7.8 | 42.7 | -93.40 | 2,067.7 | -5,439.3 | 5,830.5 | 5,780.0 | 50.50 | 115.445 | |
| 2,400.0 | 2,348.7 | 2,351.7 | 2,351.7 | 8.4 | 44.6 | -93.70 | 2,067.7 | -5,439.3 | 5,832.6 | 5,779.6 | 53.02 | 110.017 | |
| 2,500.0 | 2,443.2 | 2,446.2 | 2,446.2 | 9.1 | 46.5 | -94.00 | 2,067.7 | -5,439.3 | 5,834.9 | 5,779.4 | 55.53 | 105.075 | |
| 2,600.0 | 2,537.7 | 2,540.7 | 2,540.7 | 9.7 | 48.4 | -94.31 | 2,067.7 | -5,439.3 | 5,837.4 | 5,779.4 | 58.05 | 100.559 | |
| 2,700.0 | 2,632.2 | 2,635.2 | 2,635.2 | 10.3 | 50.3 | -94.61 | 2,067.7 | -5,439.3 | 5,840.1 | 5,779.5 | 60.57 | 96.418 | |
| 2,800.0 | 2,726.8 | 2,729.8 | 2,729.8 | 10.9 | 52.2 | -94.91 | 2,067.7 | -5,439.3 | 5,843.0 | 5,779.9 | 63.09 | 92.607 | |
| 2,900.0 | 2,821.3 | 2,824.3 | 2,824.3 | 11.6 | 54.1 | -95.21 | 2,067.7 | -5,439.3 | 5,846.0 | 5,780.4 | 65.62 | 89.091 | |
| 3,000.0 | 2,915.8 | 2,918.8 | 2,918.8 | 12.2 | 56.0 | -95.51 | 2,067.7 | -5,439.3 | 5,849.2 | 5,781.1 | 68.14 | 85.838 | |
| 3,100.0 | 3,010.3 | 3,013.3 | 3,013.3 | 12.8 | 57.9 | -95.81 | 2,067.7 | -5,439.3 | 5,852.6 | 5,782.0 | 70.67 | 82.818 | |
| 3,200.0 | 3,104.8 | 3,107.8 | 3,107.8 | 13.5 | 59.8 | -96.11 | 2,067.7 | -5,439.3 | 5,856.2 | 5,783.0 | 73.19 | 80.009 | |
| 3,300.0 | 3,199.4 | 3,202.4 | 3,202.4 | 14.1 | 61.7 | -96.41 | 2,067.7 | -5,439.3 | 5,860.0 | 5,784.3 | 75.72 | 77.390 | |
| 3,400.0 | 3,293.9 | 3,296.9 | 3,296.9 | 14.8 | 63.6 | -96.71 | 2,067.7 | -5,439.3 | 5,863.9 | 5,785.7 | 78.25 | 74.942 | |
| 3,500.0 | 3,388.4 | 3,391.4 | 3,391.4 | 15.4 | 65.5 | -97.01 | 2,067.7 | -5,439.3 | 5,868.1 | 5,787.3 | 80.77 | 72.650 | |
| 3,600.0 | 3,482.9 | 3,485.9 | 3,485.9 | 16.0 | 67.4 | -97.31 | 2,067.7 | -5,439.3 | 5,872.4 | 5,789.1 | 83.30 | 70.500 | |
| 3,700.0 | 3,577.5 | 3,580.5 | 3,580.5 | 16.7 | 69.3 | -97.61 | 2,067.7 | -5,439.3 | 5,876.8 | 5,791.0 | 85.82 | 68.478 | |
| 3,800.0 | 3,672.0 | 3,675.0 | 3,675.0 | 17.3 | 71.2 | -97.91 | 2,067.7 | -5,439.3 | 5,881.5 | 5,793.1 | 88.34 | 66.575 | |
| 3,900.0 | 3,766.5 | 3,769.5 | 3,769.5 | 18.0 | 73.1 | -98.21 | 2,067.7 | -5,439.3 | 5,886.3 | 5,795.5 | 90.87 | 64.780 | |
| 4,000.0 | 3,861.0 | 3,864.0 | 3,864.0 | 18.6 | 75.0 | -98.50 | 2,067.7 | -5,439.3 | 5,891.3 | 5,797.9 | 93.39 | 63.085 | |
| 4,100.0 | 3,955.5 | 3,958.5 | 3,958.5 | 19.3 | 76.9 | -98.80 | 2,067.7 | -5,439.3 | 5,896.5 | 5,800.6 | 95.91 | 61.482 | |
| 4,200.0 | 4,050.1 | 4,053.1 | 4,053.1 | 19.9 | 78.8 | -99.10 | 2,067.7 | -5,439.3 | 5,901.9 | 5,803.5 | 98.43 | 59.963 | |
| 4,300.0 | 4,144.6 | 4,147.6 | 4,147.6 | 20.5 | 80.7 | -99.39 | 2,067.7 | -5,439.3 | 5,907.4 | 5,806.5 | 100.94 | 58.522 | |
| 4,400.0 | 4,239.1 | 4,242.1 | 4,242.1 | 21.2 | 82.6 | -99.69 | 2,067.7 | -5,439.3 | 5,913.1 | 5,809.7 | 103.46 | 57.154 | |
| 4,500.0 | 4,333.6 | 4,336.6 | 4,336.6 | 21.8 | 84.5 | -99.98 | 2,067.7 | -5,439.3 | 5,919.0 | 5,813.1 | 105.97 | 55.853 | |
| 4,600.0 | 4,428.2 | 4,431.2 | 4,431.2 | 22.5 | 86.4 | -100.28 | 2,067.7 | -5,439.3 | 5,925.1 | 5,816.6 | 108.49 | 54.615 | |
| 4,700.0 | 4,522.7 | 4,525.7 | 4,525.7 | 23.1 | 88.3 | -100.57 | 2,067.7 | -5,439.3 | 5,931.3 | 5,820.3 | 111.00 | 53.436 | |
| 4,800.0 | 4,617.2 | 4,620.2 | 4,620.2 | 23.8 | 90.2 | -100.86 | 2,067.7 | -5,439.3 | 5,937.7 | 5,824.2 | 113.51 | 52.311 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT MININGER-PFEIF 1 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,714.7 | 4,714.7 | 24.4 | 92.1 | -101.16 | 2,067.7 | -5,439.3 | 5,944.3 | 5,828.3 | 116.02 | 51.236 | |
| 5,000.0 | 4,806.2 | 4,809.2 | 4,809.2 | 25.1 | 94.0 | -101.45 | 2,067.7 | -5,439.3 | 5,951.1 | 5,832.6 | 118.52 | 50.210 | |
| 5,100.0 | 4,900.8 | 4,903.8 | 4,903.8 | 25.7 | 95.9 | -101.74 | 2,067.7 | -5,439.3 | 5,958.0 | 5,837.0 | 121.03 | 49.228 | |
| 5,200.0 | 4,995.3 | 4,998.3 | 4,998.3 | 26.4 | 97.8 | -102.03 | 2,067.7 | -5,439.3 | 5,965.1 | 5,841.6 | 123.53 | 48.288 | |
| 5,300.0 | 5,089.8 | 5,092.8 | 5,092.8 | 27.0 | 99.7 | -102.32 | 2,067.7 | -5,439.3 | 5,972.4 | 5,846.3 | 126.03 | 47.388 | |
| 5,400.0 | 5,184.3 | 5,187.3 | 5,187.3 | 27.7 | 101.6 | -102.61 | 2,067.7 | -5,439.3 | 5,979.8 | 5,851.3 | 128.53 | 46.524 | |
| 5,500.0 | 5,278.9 | 5,281.9 | 5,281.9 | 28.3 | 103.5 | -102.90 | 2,067.7 | -5,439.3 | 5,987.4 | 5,856.4 | 131.03 | 45.696 | |
| 5,533.5 | 5,310.5 | 5,313.5 | 5,313.5 | 28.5 | 104.2 | -103.00 | 2,067.7 | -5,439.3 | 5,990.0 | 5,858.1 | 131.86 | 45.425 | |
| 5,600.0 | 5,373.6 | 5,376.6 | 5,376.6 | 28.9 | 105.4 | -103.28 | 2,067.7 | -5,439.3 | 5,995.0 | 5,861.5 | 133.50 | 44.907 | |
| 5,700.0 | 5,469.4 | 5,472.4 | 5,472.4 | 29.3 | 107.4 | -103.67 | 2,067.7 | -5,439.3 | 6,002.0 | 5,866.1 | 135.88 | 44.173 | |
| 5,800.0 | 5,566.1 | 5,569.1 | 5,569.1 | 29.8 | 109.3 | -104.02 | 2,067.7 | -5,439.3 | 6,008.3 | 5,870.0 | 138.24 | 43.464 | |
| 5,900.0 | 5,663.6 | 5,666.6 | 5,666.6 | 30.1 | 111.3 | -104.33 | 2,067.7 | -5,439.3 | 6,013.8 | 5,873.2 | 140.57 | 42.780 | |
| 6,000.0 | 5,761.9 | 5,764.9 | 5,764.9 | 30.5 | 113.2 | -104.59 | 2,067.7 | -5,439.3 | 6,018.5 | 5,875.6 | 142.88 | 42.122 | |
| 6,100.0 | 5,860.7 | 5,863.7 | 5,863.7 | 30.7 | 115.2 | -104.80 | 2,067.7 | -5,439.3 | 6,022.4 | 5,877.2 | 145.16 | 41.487 | |
| 6,200.0 | 5,960.0 | 5,963.0 | 5,963.0 | 31.0 | 117.2 | -104.97 | 2,067.7 | -5,439.3 | 6,025.4 | 5,878.0 | 147.41 | 40.877 | |
| 6,300.0 | 6,059.7 | 6,062.7 | 6,062.7 | 31.2 | 119.2 | -105.09 | 2,067.7 | -5,439.3 | 6,027.6 | 5,878.0 | 149.61 | 40.290 | |
| 6,400.0 | 6,159.6 | 6,162.6 | 6,162.6 | 31.3 | 121.2 | -105.15 | 2,067.7 | -5,439.3 | 6,028.8 | 5,877.0 | 151.76 | 39.725 | |
| 6,486.1 | 6,245.7 | 6,248.7 | 6,248.7 | 31.4 | 123.0 | -84.01 | 2,067.7 | -5,439.3 | 6,029.1 | 5,887.8 | 141.37 | 42.649 | |
| 6,500.0 | 6,259.6 | 6,262.6 | 6,262.6 | 31.4 | 123.2 | -84.01 | 2,067.7 | -5,439.3 | 6,029.1 | 5,887.5 | 141.67 | 42.559 | |
| 6,516.1 | 6,275.7 | 6,278.7 | 6,278.7 | 31.4 | 123.6 | -84.01 | 2,067.7 | -5,439.3 | 6,029.1 | 5,887.1 | 142.02 | 42.454 | |
| 6,550.0 | 6,309.5 | 6,312.5 | 6,312.5 | 31.5 | 124.3 | 6.00 | 2,067.7 | -5,439.3 | 6,028.3 | 5,873.6 | 154.73 | 38.961 | |
| 6,600.0 | 6,359.4 | 6,362.4 | 6,362.4 | 31.5 | 125.3 | 6.03 | 2,067.7 | -5,439.3 | 6,024.3 | 5,869.4 | 154.86 | 38.901 | |
| 6,650.0 | 6,408.8 | 6,411.8 | 6,411.8 | 31.5 | 126.3 | 6.11 | 2,067.7 | -5,439.3 | 6,016.7 | 5,862.5 | 154.24 | 39.009 | |
| 6,700.0 | 6,457.5 | 6,460.5 | 6,460.5 | 31.5 | 127.2 | 6.21 | 2,067.7 | -5,439.3 | 6,005.8 | 5,852.9 | 152.85 | 39.291 | |
| 6,716.1 | 6,473.1 | 6,476.1 | 6,476.1 | 31.5 | 127.5 | 6.26 | 2,067.7 | -5,439.3 | 6,001.6 | 5,849.3 | 152.24 | 39.421 | |
| 6,725.0 | 6,481.6 | 6,484.6 | 6,484.6 | 31.5 | 127.7 | 6.29 | 2,067.7 | -5,439.3 | 5,999.0 | 5,847.4 | 151.60 | 39.572 | |
| 6,750.0 | 6,505.3 | 6,508.3 | 6,508.3 | 31.5 | 128.2 | 6.41 | 2,067.7 | -5,439.3 | 5,991.1 | 5,841.6 | 149.49 | 40.077 | |
| 6,775.0 | 6,528.5 | 6,531.5 | 6,531.5 | 31.4 | 128.7 | 6.56 | 2,067.7 | -5,439.3 | 5,982.0 | 5,835.0 | 146.97 | 40.702 | |
| 6,800.0 | 6,551.3 | 6,554.3 | 6,554.3 | 31.4 | 129.1 | 6.72 | 2,067.7 | -5,439.3 | 5,971.7 | 5,827.6 | 144.04 | 41.457 | |
| 6,825.0 | 6,573.4 | 6,576.4 | 6,576.4 | 31.4 | 129.6 | 6.92 | 2,067.7 | -5,439.3 | 5,960.2 | 5,819.4 | 140.72 | 42.353 | |
| 6,850.0 | 6,595.0 | 6,598.0 | 6,598.0 | 31.3 | 130.0 | 7.15 | 2,067.7 | -5,439.3 | 5,947.5 | 5,810.5 | 137.02 | 43.406 | |
| 6,875.0 | 6,615.8 | 6,618.8 | 6,618.8 | 31.3 | 130.4 | 7.42 | 2,067.7 | -5,439.3 | 5,933.8 | 5,800.8 | 132.95 | 44.631 | |
| 6,900.0 | 6,635.9 | 6,638.9 | 6,638.9 | 31.3 | 130.8 | 7.73 | 2,067.7 | -5,439.3 | 5,919.0 | 5,790.4 | 128.54 | 46.049 | |
| 6,925.0 | 6,655.1 | 6,658.1 | 6,658.1 | 31.2 | 131.2 | 8.09 | 2,067.7 | -5,439.3 | 5,903.1 | 5,779.3 | 123.80 | 47.682 | |
| 6,950.0 | 6,673.6 | 6,676.6 | 6,676.6 | 31.2 | 131.6 | 8.51 | 2,067.7 | -5,439.3 | 5,886.3 | 5,767.6 | 118.77 | 49.559 | |
| 6,975.0 | 6,691.1 | 6,694.1 | 6,694.1 | 31.1 | 131.9 | 8.99 | 2,067.7 | -5,439.3 | 5,868.6 | 5,755.1 | 113.50 | 51.706 | |
| 7,000.0 | 6,707.6 | 6,710.6 | 6,710.6 | 31.1 | 132.3 | 9.56 | 2,067.7 | -5,439.3 | 5,849.9 | 5,741.9 | 108.02 | 54.154 | |
| 7,025.0 | 6,723.1 | 6,726.1 | 6,726.1 | 31.0 | 132.6 | 10.24 | 2,067.7 | -5,439.3 | 5,830.5 | 5,728.1 | 102.42 | 56.926 | |
| 7,050.0 | 6,737.6 | 6,740.6 | 6,740.6 | 31.0 | 132.9 | 11.04 | 2,067.7 | -5,439.3 | 5,810.2 | 5,713.4 | 96.79 | 60.030 | |
| 7,075.0 | 6,751.0 | 6,754.0 | 6,754.0 | 30.9 | 133.1 | 12.00 | 2,067.7 | -5,439.3 | 5,789.3 | 5,698.0 | 91.26 | 63.436 | |
| 7,100.0 | 6,763.3 | 6,766.3 | 6,766.3 | 30.8 | 133.4 | 13.18 | 2,067.7 | -5,439.3 | 5,767.6 | 5,681.6 | 86.04 | 67.033 | |
| 7,125.0 | 6,774.5 | 6,777.5 | 6,777.5 | 30.8 | 133.6 | 14.64 | 2,067.7 | -5,439.3 | 5,745.4 | 5,663.9 | 81.44 | 70.549 | |
| 7,150.0 | 6,784.4 | 6,787.4 | 6,787.4 | 30.7 | 133.8 | 16.49 | 2,067.7 | -5,439.3 | 5,722.6 | 5,644.7 | 77.91 | 73.448 | |
| 7,175.0 | 6,793.1 | 6,796.1 | 6,796.1 | 30.7 | 134.0 | 18.89 | 2,067.7 | -5,439.3 | 5,699.3 | 5,623.1 | 76.17 | 74.825 | |
| 7,200.0 | 6,800.6 | 6,803.6 | 6,803.6 | 30.6 | 134.1 | 22.10 | 2,067.7 | -5,439.3 | 5,675.6 | 5,598.4 | 77.20 | 73.515 | |
| 7,225.0 | 6,806.8 | 6,809.8 | 6,809.8 | 30.6 | 134.3 | 26.58 | 2,067.7 | -5,439.3 | 5,651.5 | 5,569.2 | 82.35 | 68.630 | |
| 7,250.0 | 6,811.8 | 6,814.8 | 6,814.8 | 30.5 | 134.4 | 33.10 | 2,067.7 | -5,439.3 | 5,627.2 | 5,534.0 | 93.20 | 60.375 | |
| 7,275.0 | 6,815.5 | 6,818.5 | 6,818.5 | 30.5 | 134.4 | 43.09 | 2,067.7 | -5,439.3 | 5,602.6 | 5,491.3 | 111.28 | 50.345 | |
| 7,300.0 | 6,817.8 | 6,820.8 | 6,820.8 | 30.4 | 134.5 | 58.83 | 2,067.7 | -5,439.3 | 5,577.9 | 5,442.3 | 135.56 | 41.147 | |
| 7,325.0 | 6,818.9 | 6,821.9 | 6,821.9 | 30.4 | 134.5 | 81.84 | 2,067.7 | -5,439.3 | 5,553.1 | 5,399.0 | 154.06 | 36.044 | |
| 7,332.8 | 6,819.0 | 6,822.0 | 6,822.0 | 30.4 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 5,545.3 | 5,390.3 | 154.98 | 35.782 | |
| 7,400.0 | 6,819.0 | 6,822.0 | 6,822.0 | 30.3 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 5,478.6 | 5,322.9 | 155.65 | 35.198 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT MININGER-PFEIF 1 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,822.0 | 6,822.0 | 30.2 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 5,379.2 | 5,222.3 | 156.91 | 34.283 | |
| 7,600.0 | 6,819.0 | 6,822.0 | 6,822.0 | 30.3 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 5,279.9 | 5,121.5 | 158.43 | 33.326 | |
| 7,700.0 | 6,819.0 | 6,822.0 | 6,822.0 | 30.6 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 5,180.7 | 5,020.5 | 160.18 | 32.343 | |
| 7,800.0 | 6,819.0 | 6,822.0 | 6,822.0 | 31.3 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 5,081.4 | 4,919.3 | 162.10 | 31.348 | |
| 7,900.0 | 6,819.0 | 6,822.0 | 6,822.0 | 32.5 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 4,982.2 | 4,818.0 | 164.16 | 30.350 | |
| 8,000.0 | 6,819.0 | 6,822.0 | 6,822.0 | 34.2 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 4,883.0 | 4,716.7 | 166.34 | 29.356 | |
| 8,100.0 | 6,819.0 | 6,822.0 | 6,822.0 | 36.1 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 4,783.9 | 4,615.3 | 168.61 | 28.373 | |
| 8,200.0 | 6,819.0 | 6,822.0 | 6,822.0 | 38.3 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 4,684.8 | 4,513.8 | 170.95 | 27.404 | |
| 8,300.0 | 6,819.0 | 6,822.0 | 6,822.0 | 40.6 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 4,585.7 | 4,412.3 | 173.36 | 26.452 | |
| 8,400.0 | 6,819.0 | 6,822.0 | 6,822.0 | 42.9 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 4,486.6 | 4,310.8 | 175.82 | 25.518 | |
| 8,500.0 | 6,819.0 | 6,822.0 | 6,822.0 | 45.3 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 4,387.7 | 4,209.3 | 178.32 | 24.605 | |
| 8,600.0 | 6,819.0 | 6,822.0 | 6,822.0 | 47.8 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 4,288.7 | 4,107.9 | 180.86 | 23.713 | |
| 8,700.0 | 6,819.0 | 6,822.0 | 6,822.0 | 50.3 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 4,189.8 | 4,006.4 | 183.43 | 22.842 | |
| 8,800.0 | 6,819.0 | 6,822.0 | 6,822.0 | 52.8 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 4,091.0 | 3,905.0 | 186.02 | 21.992 | |
| 8,900.0 | 6,819.0 | 6,822.0 | 6,822.0 | 55.4 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 3,992.2 | 3,803.6 | 188.63 | 21.164 | |
| 9,000.0 | 6,819.0 | 6,822.0 | 6,822.0 | 58.0 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 3,893.5 | 3,702.2 | 191.26 | 20.357 | |
| 9,100.0 | 6,819.0 | 6,822.0 | 6,822.0 | 60.6 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 3,794.8 | 3,600.9 | 193.91 | 19.570 | |
| 9,200.0 | 6,819.0 | 6,822.0 | 6,822.0 | 63.2 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 3,696.3 | 3,499.7 | 196.58 | 18.803 | |
| 9,300.0 | 6,819.0 | 6,822.0 | 6,822.0 | 65.9 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 3,597.7 | 3,398.5 | 199.25 | 18.056 | |
| 9,400.0 | 6,819.0 | 6,822.0 | 6,822.0 | 68.5 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 3,499.3 | 3,297.4 | 201.94 | 17.328 | |
| 9,500.0 | 6,819.0 | 6,822.0 | 6,822.0 | 71.2 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 3,401.0 | 3,196.4 | 204.64 | 16.620 | |
| 9,600.0 | 6,819.0 | 6,822.0 | 6,822.0 | 73.9 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 3,302.8 | 3,095.4 | 207.34 | 15.929 | |
| 9,700.0 | 6,819.0 | 6,822.0 | 6,822.0 | 76.5 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 3,204.7 | 2,994.6 | 210.06 | 15.256 | |
| 9,800.0 | 6,819.0 | 6,822.0 | 6,822.0 | 79.2 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 3,106.7 | 2,893.9 | 212.78 | 14.601 | |
| 9,900.0 | 6,819.0 | 6,822.0 | 6,822.0 | 81.9 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 3,008.8 | 2,793.3 | 215.50 | 13.962 | |
| 10,000.0 | 6,819.0 | 6,822.0 | 6,822.0 | 84.6 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 2,911.1 | 2,692.9 | 218.24 | 13.339 | |
| 10,100.0 | 6,819.0 | 6,822.0 | 6,822.0 | 87.4 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 2,813.6 | 2,592.6 | 220.97 | 12.733 | |
| 10,200.0 | 6,819.0 | 6,822.0 | 6,822.0 | 90.1 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 2,716.2 | 2,492.5 | 223.71 | 12.141 | |
| 10,300.0 | 6,819.0 | 6,822.0 | 6,822.0 | 92.8 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 2,619.0 | 2,392.5 | 226.46 | 11.565 | |
| 10,400.0 | 6,819.0 | 6,822.0 | 6,822.0 | 95.5 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 2,522.0 | 2,292.8 | 229.21 | 11.003 | |
| 10,500.0 | 6,819.0 | 6,822.0 | 6,822.0 | 98.3 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 2,425.3 | 2,193.4 | 231.96 | 10.456 | |
| 10,600.0 | 6,819.0 | 6,822.0 | 6,822.0 | 101.0 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 2,328.9 | 2,094.2 | 234.72 | 9.922 | |
| 10,700.0 | 6,819.0 | 6,822.0 | 6,822.0 | 103.8 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 2,232.8 | 1,995.3 | 237.48 | 9.402 | |
| 10,800.0 | 6,819.0 | 6,822.0 | 6,822.0 | 106.5 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 2,137.0 | 1,896.8 | 240.24 | 8.895 | |
| 10,900.0 | 6,819.0 | 6,822.0 | 6,822.0 | 109.2 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 2,041.6 | 1,798.6 | 243.01 | 8.402 | |
| 11,000.0 | 6,819.0 | 6,822.0 | 6,822.0 | 112.0 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,946.8 | 1,701.0 | 245.77 | 7.921 | |
| 11,100.0 | 6,819.0 | 6,822.0 | 6,822.0 | 114.8 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,852.4 | 1,603.9 | 248.54 | 7.453 | |
| 11,200.0 | 6,819.0 | 6,822.0 | 6,822.0 | 117.5 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,758.7 | 1,507.4 | 251.32 | 6.998 | |
| 11,300.0 | 6,819.0 | 6,822.0 | 6,822.0 | 120.3 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,665.7 | 1,411.6 | 254.09 | 6.555 | |
| 11,400.0 | 6,819.0 | 6,822.0 | 6,822.0 | 123.0 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,573.5 | 1,316.7 | 256.86 | 6.126 | |
| 11,500.0 | 6,819.0 | 6,822.0 | 6,822.0 | 125.8 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,482.4 | 1,222.8 | 259.64 | 5.709 | |
| 11,600.0 | 6,819.0 | 6,822.0 | 6,822.0 | 128.6 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,392.5 | 1,130.1 | 262.42 | 5.306 | |
| 11,700.0 | 6,819.0 | 6,822.0 | 6,822.0 | 131.3 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,304.1 | 1,038.9 | 265.20 | 4.917 | |
| 11,800.0 | 6,819.0 | 6,822.0 | 6,822.0 | 134.1 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,217.4 | 949.4 | 267.98 | 4.543 | |
| 11,900.0 | 6,819.0 | 6,822.0 | 6,822.0 | 136.9 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,133.0 | 862.2 | 270.76 | 4.184 | |
| 12,000.0 | 6,819.0 | 6,822.0 | 6,822.0 | 139.6 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,051.3 | 777.7 | 273.54 | 3.843 | |
| 12,100.0 | 6,819.0 | 6,822.0 | 6,822.0 | 142.4 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 973.0 | 696.7 | 276.33 | 3.521 | |
| 12,200.0 | 6,819.0 | 6,822.0 | 6,822.0 | 145.2 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 899.0 | 619.9 | 279.11 | 3.221 | |
| 12,300.0 | 6,819.0 | 6,822.0 | 6,822.0 | 148.0 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 830.5 | 548.6 | 281.90 | 2.946 | |
| 12,400.0 | 6,819.0 | 6,822.0 | 6,822.0 | 150.8 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 769.0 | 484.3 | 284.69 | 2.701 | |
| 12,500.0 | 6,819.0 | 6,822.0 | 6,822.0 | 153.5 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 716.1 | 428.7 | 287.48 | 2.491 | |
| 12,600.0 | 6,819.0 | 6,822.0 | 6,822.0 | 156.3 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 674.1 | 383.8 | 290.27 | 2.322 | |

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|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT MININGER-PFEIF 1 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 6,819.0 | 6,822.0 | 6,822.0 | 159.1 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 644.9 | 351.9 | 293.05 | 2.201 | |
| 12,800.0 | 6,819.0 | 6,822.0 | 6,822.0 | 161.9 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 630.4 | 334.6 | 295.85 | 2.131 | |
| 12,842.3 | 6,819.0 | 6,822.0 | 6,822.0 | 163.1 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 629.0 | 332.0 | 297.03 | 2.118 | CC, ES |
| 12,900.0 | 6,819.0 | 6,822.0 | 6,822.0 | 164.7 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 631.6 | 333.0 | 298.64 | 2.115 | SF |
| 13,000.0 | 6,819.0 | 6,822.0 | 6,822.0 | 167.4 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 648.5 | 347.0 | 301.43 | 2.151 | |
| 13,100.0 | 6,819.0 | 6,822.0 | 6,822.0 | 170.2 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 679.7 | 375.5 | 304.22 | 2.234 | |
| 13,200.0 | 6,819.0 | 6,822.0 | 6,822.0 | 173.0 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 723.6 | 416.6 | 307.01 | 2.357 | |
| 13,300.0 | 6,819.0 | 6,822.0 | 6,822.0 | 175.8 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 777.9 | 468.1 | 309.81 | 2.511 | |
| 13,400.0 | 6,819.0 | 6,822.0 | 6,822.0 | 178.6 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 840.6 | 528.0 | 312.60 | 2.689 | |
| 13,500.0 | 6,819.0 | 6,822.0 | 6,822.0 | 181.4 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 910.0 | 594.6 | 315.40 | 2.885 | |
| 13,600.0 | 6,819.0 | 6,822.0 | 6,822.0 | 184.2 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 984.7 | 666.5 | 318.19 | 3.095 | |
| 13,700.0 | 6,819.0 | 6,822.0 | 6,822.0 | 187.0 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,063.6 | 742.6 | 320.99 | 3.314 | |
| 13,800.0 | 6,819.0 | 6,822.0 | 6,822.0 | 189.7 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,145.8 | 822.0 | 323.79 | 3.539 | |
| 13,900.0 | 6,819.0 | 6,822.0 | 6,822.0 | 192.5 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,230.6 | 904.0 | 326.58 | 3.768 | |
| 14,000.0 | 6,819.0 | 6,822.0 | 6,822.0 | 195.3 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,317.5 | 988.1 | 329.38 | 4.000 | |
| 14,100.0 | 6,819.0 | 6,822.0 | 6,822.0 | 198.1 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,406.2 | 1,074.0 | 332.18 | 4.233 | |
| 14,200.0 | 6,819.0 | 6,822.0 | 6,822.0 | 200.9 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,496.3 | 1,161.3 | 334.98 | 4.467 | |
| 14,300.0 | 6,819.0 | 6,822.0 | 6,822.0 | 203.7 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,587.6 | 1,249.8 | 337.77 | 4.700 | |
| 14,400.0 | 6,819.0 | 6,822.0 | 6,822.0 | 206.5 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,679.9 | 1,339.3 | 340.57 | 4.932 | |
| 14,500.0 | 6,819.0 | 6,822.0 | 6,822.0 | 209.3 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,773.0 | 1,429.6 | 343.37 | 5.163 | |
| 14,600.0 | 6,819.0 | 6,822.0 | 6,822.0 | 212.1 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,866.8 | 1,520.7 | 346.17 | 5.393 | |
| 14,700.0 | 6,819.0 | 6,822.0 | 6,822.0 | 214.9 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,961.3 | 1,612.3 | 348.97 | 5.620 | |
| 14,720.3 | 6,819.0 | 6,822.0 | 6,822.0 | 215.4 | 134.5 | 90.00 | 2,067.7 | -5,439.3 | 1,980.5 | 1,631.0 | 349.54 | 5.666 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT OGRADY 3 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -143.36 | -1,865.6 | -1,387.5 | 2,325.0 | | | | |
| 100.0 | 100.0 | 92.0 | 92.0 | 0.1 | 0.0 | -143.36 | -1,865.6 | -1,387.5 | 2,325.0 | 2,324.9 | 0.09 | N/A | |
| 200.0 | 200.0 | 192.0 | 192.0 | 0.3 | 0.8 | -143.36 | -1,865.6 | -1,387.5 | 2,325.0 | 2,323.8 | 1.16 | 2,010.460 | |
| 300.0 | 300.0 | 292.0 | 292.0 | 0.5 | 3.1 | -143.36 | -1,865.6 | -1,387.5 | 2,325.0 | 2,321.4 | 3.62 | 641.845 | |
| 400.0 | 400.0 | 392.0 | 392.0 | 0.8 | 5.2 | -143.36 | -1,865.6 | -1,387.5 | 2,325.0 | 2,319.0 | 5.95 | 390.702 | |
| 500.0 | 500.0 | 492.0 | 492.0 | 1.0 | 7.2 | -143.36 | -1,865.6 | -1,387.5 | 2,325.0 | 2,316.8 | 8.22 | 282.798 | |
| 600.0 | 600.0 | 592.0 | 592.0 | 1.2 | 9.3 | -143.36 | -1,865.6 | -1,387.5 | 2,325.0 | 2,314.5 | 10.48 | 221.929 | |
| 700.0 | 700.0 | 692.0 | 692.0 | 1.4 | 11.3 | -143.36 | -1,865.6 | -1,387.5 | 2,325.0 | 2,312.3 | 12.72 | 182.722 | |
| 800.0 | 800.0 | 792.0 | 792.0 | 1.7 | 13.3 | -143.36 | -1,865.6 | -1,387.5 | 2,325.0 | 2,310.0 | 14.97 | 155.327 | CC |
| 900.0 | 900.0 | 892.0 | 892.0 | 1.9 | 15.3 | -164.52 | -1,865.6 | -1,387.5 | 2,326.7 | 2,309.5 | 17.20 | 135.271 | ES |
| 1,000.0 | 999.8 | 991.8 | 991.8 | 2.1 | 17.3 | -164.53 | -1,865.6 | -1,387.5 | 2,331.7 | 2,312.3 | 19.40 | 120.165 | |
| 1,100.0 | 1,099.5 | 1,091.5 | 1,091.5 | 2.3 | 19.3 | -164.54 | -1,865.6 | -1,387.5 | 2,340.1 | 2,318.5 | 21.57 | 108.473 | |
| 1,200.0 | 1,198.7 | 1,190.7 | 1,190.7 | 2.6 | 21.3 | -164.56 | -1,865.6 | -1,387.5 | 2,351.9 | 2,328.2 | 23.70 | 99.235 | |
| 1,300.0 | 1,297.5 | 1,289.5 | 1,289.5 | 2.9 | 23.3 | -164.58 | -1,865.6 | -1,387.5 | 2,367.0 | 2,341.2 | 25.78 | 91.823 | |
| 1,400.0 | 1,395.6 | 1,387.6 | 1,387.6 | 3.2 | 25.3 | -164.60 | -1,865.6 | -1,387.5 | 2,385.4 | 2,357.6 | 27.80 | 85.807 | |
| 1,500.0 | 1,493.1 | 1,485.1 | 1,485.1 | 3.5 | 27.3 | -164.63 | -1,865.6 | -1,387.5 | 2,407.1 | 2,377.3 | 29.76 | 80.884 | |
| 1,507.2 | 1,500.0 | 1,492.0 | 1,492.0 | 3.6 | 27.4 | -164.63 | -1,865.6 | -1,387.5 | 2,408.8 | 2,378.9 | 29.90 | 80.569 | |
| 1,572.2 | 1,563.0 | 1,555.0 | 1,555.0 | 3.8 | 28.7 | -164.73 | -1,865.6 | -1,387.5 | 2,424.1 | 2,392.9 | 31.29 | 77.481 | |
| 1,600.0 | 1,590.0 | 1,582.0 | 1,582.0 | 3.9 | 29.2 | -164.73 | -1,865.6 | -1,387.5 | 2,430.8 | 2,399.0 | 31.81 | 76.410 | |
| 1,700.0 | 1,686.3 | 1,678.3 | 1,678.3 | 4.4 | 31.2 | -164.76 | -1,865.6 | -1,387.5 | 2,457.0 | 2,423.3 | 33.67 | 72.969 | |
| 1,800.0 | 1,781.5 | 1,773.5 | 1,773.5 | 4.9 | 33.1 | -164.78 | -1,865.6 | -1,387.5 | 2,486.4 | 2,451.0 | 35.45 | 70.132 | |
| 1,817.6 | 1,798.2 | 1,790.2 | 1,790.2 | 5.0 | 33.4 | -164.78 | -1,865.6 | -1,387.5 | 2,492.0 | 2,456.2 | 35.76 | 69.687 | |
| 1,900.0 | 1,876.1 | 1,868.1 | 1,868.1 | 5.5 | 35.0 | -164.94 | -1,865.6 | -1,387.5 | 2,518.0 | 2,480.5 | 37.49 | 67.164 | |
| 2,000.0 | 1,970.6 | 1,962.6 | 1,962.6 | 6.0 | 36.9 | -165.13 | -1,865.6 | -1,387.5 | 2,549.7 | 2,510.1 | 39.60 | 64.389 | |
| 2,100.0 | 2,065.1 | 2,057.1 | 2,057.1 | 6.6 | 38.8 | -165.32 | -1,865.6 | -1,387.5 | 2,581.3 | 2,539.6 | 41.71 | 61.888 | |
| 2,200.0 | 2,159.6 | 2,151.6 | 2,151.6 | 7.2 | 40.7 | -165.50 | -1,865.6 | -1,387.5 | 2,613.0 | 2,569.2 | 43.83 | 59.623 | |
| 2,300.0 | 2,254.1 | 2,246.1 | 2,246.1 | 7.8 | 42.6 | -165.68 | -1,865.6 | -1,387.5 | 2,644.8 | 2,598.8 | 45.94 | 57.565 | |
| 2,400.0 | 2,348.7 | 2,340.7 | 2,340.7 | 8.4 | 44.5 | -165.85 | -1,865.6 | -1,387.5 | 2,676.5 | 2,628.4 | 48.06 | 55.685 | |
| 2,500.0 | 2,443.2 | 2,435.2 | 2,435.2 | 9.1 | 46.4 | -166.02 | -1,865.6 | -1,387.5 | 2,708.3 | 2,658.1 | 50.19 | 53.964 | |
| 2,600.0 | 2,537.7 | 2,529.7 | 2,529.7 | 9.7 | 48.3 | -166.18 | -1,865.6 | -1,387.5 | 2,740.1 | 2,687.7 | 52.31 | 52.381 | |
| 2,700.0 | 2,632.2 | 2,624.2 | 2,624.2 | 10.3 | 50.2 | -166.34 | -1,865.6 | -1,387.5 | 2,771.9 | 2,717.4 | 54.43 | 50.921 | |
| 2,800.0 | 2,726.8 | 2,718.8 | 2,718.8 | 10.9 | 52.1 | -166.50 | -1,865.6 | -1,387.5 | 2,803.7 | 2,747.1 | 56.56 | 49.570 | |
| 2,900.0 | 2,821.3 | 2,813.3 | 2,813.3 | 11.6 | 54.0 | -166.65 | -1,865.6 | -1,387.5 | 2,835.5 | 2,776.8 | 58.69 | 48.317 | |
| 3,000.0 | 2,915.8 | 2,907.8 | 2,907.8 | 12.2 | 55.9 | -166.80 | -1,865.6 | -1,387.5 | 2,867.4 | 2,806.6 | 60.81 | 47.152 | |
| 3,100.0 | 3,010.3 | 3,002.3 | 3,002.3 | 12.8 | 57.8 | -166.95 | -1,865.6 | -1,387.5 | 2,899.3 | 2,836.3 | 62.94 | 46.066 | |
| 3,200.0 | 3,104.8 | 3,096.8 | 3,096.8 | 13.5 | 59.7 | -167.09 | -1,865.6 | -1,387.5 | 2,931.2 | 2,866.1 | 65.06 | 45.051 | |
| 3,300.0 | 3,199.4 | 3,191.4 | 3,191.4 | 14.1 | 61.6 | -167.23 | -1,865.6 | -1,387.5 | 2,963.1 | 2,895.9 | 67.19 | 44.100 | |
| 3,400.0 | 3,293.9 | 3,285.9 | 3,285.9 | 14.8 | 63.5 | -167.37 | -1,865.6 | -1,387.5 | 2,995.0 | 2,925.7 | 69.32 | 43.208 | |
| 3,500.0 | 3,388.4 | 3,380.4 | 3,380.4 | 15.4 | 65.4 | -167.51 | -1,865.6 | -1,387.5 | 3,026.9 | 2,955.5 | 71.44 | 42.369 | |
| 3,600.0 | 3,482.9 | 3,474.9 | 3,474.9 | 16.0 | 67.3 | -167.64 | -1,865.6 | -1,387.5 | 3,058.9 | 2,985.3 | 73.57 | 41.579 | |
| 3,700.0 | 3,577.5 | 3,569.5 | 3,569.5 | 16.7 | 69.2 | -167.77 | -1,865.6 | -1,387.5 | 3,090.9 | 3,015.2 | 75.70 | 40.833 | |
| 3,800.0 | 3,672.0 | 3,664.0 | 3,664.0 | 17.3 | 71.1 | -167.89 | -1,865.6 | -1,387.5 | 3,122.9 | 3,045.0 | 77.82 | 40.129 | |
| 3,900.0 | 3,766.5 | 3,758.5 | 3,758.5 | 18.0 | 73.0 | -168.02 | -1,865.6 | -1,387.5 | 3,154.8 | 3,074.9 | 79.95 | 39.462 | |
| 4,000.0 | 3,861.0 | 3,853.0 | 3,853.0 | 18.6 | 74.9 | -168.14 | -1,865.6 | -1,387.5 | 3,186.9 | 3,104.8 | 82.07 | 38.830 | |
| 4,100.0 | 3,955.5 | 3,947.5 | 3,947.5 | 19.3 | 76.8 | -168.26 | -1,865.6 | -1,387.5 | 3,218.9 | 3,134.7 | 84.20 | 38.230 | |
| 4,200.0 | 4,050.1 | 4,042.1 | 4,042.1 | 19.9 | 78.7 | -168.38 | -1,865.6 | -1,387.5 | 3,250.9 | 3,164.6 | 86.32 | 37.660 | |
| 4,300.0 | 4,144.6 | 4,136.6 | 4,136.6 | 20.5 | 80.6 | -168.49 | -1,865.6 | -1,387.5 | 3,283.0 | 3,194.5 | 88.45 | 37.117 | |
| 4,400.0 | 4,239.1 | 4,231.1 | 4,231.1 | 21.2 | 82.5 | -168.60 | -1,865.6 | -1,387.5 | 3,315.0 | 3,224.5 | 90.57 | 36.601 | |
| 4,500.0 | 4,333.6 | 4,325.6 | 4,325.6 | 21.8 | 84.4 | -168.71 | -1,865.6 | -1,387.5 | 3,347.1 | 3,254.4 | 92.70 | 36.108 | |
| 4,600.0 | 4,428.2 | 4,420.2 | 4,420.2 | 22.5 | 86.3 | -168.82 | -1,865.6 | -1,387.5 | 3,379.2 | 3,284.4 | 94.82 | 35.637 | |
| 4,700.0 | 4,522.7 | 4,514.7 | 4,514.7 | 23.1 | 88.2 | -168.93 | -1,865.6 | -1,387.5 | 3,411.3 | 3,314.3 | 96.95 | 35.187 | |
| 4,800.0 | 4,617.2 | 4,609.2 | 4,609.2 | 23.8 | 90.1 | -169.03 | -1,865.6 | -1,387.5 | 3,443.4 | 3,344.3 | 99.07 | 34.757 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT OGRADY 3 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,703.7 | 4,703.7 | 24.4 | 92.0 | -169.13 | -1,865.6 | -1,387.5 | 3,475.5 | 3,374.3 | 101.19 | 34.345 | |
| 5,000.0 | 4,806.2 | 4,798.2 | 4,798.2 | 25.1 | 93.9 | -169.23 | -1,865.6 | -1,387.5 | 3,507.6 | 3,404.3 | 103.32 | 33.950 | |
| 5,100.0 | 4,900.8 | 4,892.8 | 4,892.8 | 25.7 | 95.8 | -169.33 | -1,865.6 | -1,387.5 | 3,539.8 | 3,434.3 | 105.44 | 33.571 | |
| 5,200.0 | 4,995.3 | 4,987.3 | 4,987.3 | 26.4 | 97.7 | -169.43 | -1,865.6 | -1,387.5 | 3,571.9 | 3,464.3 | 107.56 | 33.207 | |
| 5,300.0 | 5,089.8 | 5,081.8 | 5,081.8 | 27.0 | 99.6 | -169.52 | -1,865.6 | -1,387.5 | 3,604.0 | 3,494.4 | 109.69 | 32.857 | |
| 5,400.0 | 5,184.3 | 5,176.3 | 5,176.3 | 27.7 | 101.5 | -169.62 | -1,865.6 | -1,387.5 | 3,636.2 | 3,524.4 | 111.81 | 32.521 | |
| 5,500.0 | 5,278.9 | 5,270.9 | 5,270.9 | 28.3 | 103.4 | -169.71 | -1,865.6 | -1,387.5 | 3,668.4 | 3,554.4 | 113.93 | 32.198 | |
| 5,533.5 | 5,310.5 | 5,302.5 | 5,302.5 | 28.5 | 104.1 | -169.74 | -1,865.6 | -1,387.5 | 3,679.2 | 3,564.5 | 114.64 | 32.092 | |
| 5,600.0 | 5,373.6 | 5,365.6 | 5,365.6 | 28.9 | 105.3 | -169.87 | -1,865.6 | -1,387.5 | 3,699.8 | 3,583.0 | 116.79 | 31.680 | |
| 5,700.0 | 5,469.4 | 5,461.4 | 5,461.4 | 29.3 | 107.2 | -170.05 | -1,865.6 | -1,387.5 | 3,728.2 | 3,608.3 | 119.92 | 31.090 | |
| 5,800.0 | 5,566.1 | 5,558.1 | 5,558.1 | 29.8 | 109.2 | -170.21 | -1,865.6 | -1,387.5 | 3,753.3 | 3,630.3 | 122.95 | 30.526 | |
| 5,900.0 | 5,663.6 | 5,655.6 | 5,655.6 | 30.1 | 111.2 | -170.34 | -1,865.6 | -1,387.5 | 3,775.0 | 3,649.1 | 125.88 | 29.988 | |
| 6,000.0 | 5,761.9 | 5,753.9 | 5,753.9 | 30.5 | 113.1 | -170.45 | -1,865.6 | -1,387.5 | 3,793.3 | 3,664.6 | 128.70 | 29.475 | |
| 6,100.0 | 5,860.7 | 5,852.7 | 5,852.7 | 30.7 | 115.1 | -170.54 | -1,865.6 | -1,387.5 | 3,808.3 | 3,676.9 | 131.38 | 28.986 | |
| 6,200.0 | 5,960.0 | 5,952.0 | 5,952.0 | 31.0 | 117.1 | -170.61 | -1,865.6 | -1,387.5 | 3,819.8 | 3,685.9 | 133.93 | 28.521 | |
| 6,300.0 | 6,059.7 | 6,051.7 | 6,051.7 | 31.2 | 119.1 | -170.65 | -1,865.6 | -1,387.5 | 3,828.0 | 3,691.6 | 136.33 | 28.079 | |
| 6,400.0 | 6,159.6 | 6,151.6 | 6,151.6 | 31.3 | 121.1 | -170.68 | -1,865.6 | -1,387.5 | 3,832.7 | 3,694.1 | 138.57 | 27.659 | |
| 6,486.1 | 6,245.7 | 6,237.7 | 6,237.7 | 31.4 | 122.9 | -149.53 | -1,865.6 | -1,387.5 | 3,833.9 | 3,679.9 | 153.99 | 24.897 | |
| 6,500.0 | 6,259.6 | 6,251.6 | 6,251.6 | 31.4 | 123.1 | -149.53 | -1,865.6 | -1,387.5 | 3,833.9 | 3,679.7 | 154.28 | 24.850 | |
| 6,516.1 | 6,275.7 | 6,267.7 | 6,267.7 | 31.4 | 123.5 | -149.53 | -1,865.6 | -1,387.5 | 3,833.9 | 3,679.3 | 154.62 | 24.796 | |
| 6,550.0 | 6,309.5 | 6,301.5 | 6,301.5 | 31.5 | 124.1 | -59.56 | -1,865.6 | -1,387.5 | 3,833.5 | 3,691.9 | 141.61 | 27.071 | |
| 6,600.0 | 6,359.4 | 6,351.4 | 6,351.4 | 31.5 | 125.1 | -59.76 | -1,865.6 | -1,387.5 | 3,831.4 | 3,689.1 | 142.31 | 26.923 | |
| 6,650.0 | 6,408.8 | 6,400.8 | 6,400.8 | 31.5 | 126.1 | -60.12 | -1,865.6 | -1,387.5 | 3,827.6 | 3,684.8 | 142.83 | 26.798 | |
| 6,700.0 | 6,457.5 | 6,449.5 | 6,449.5 | 31.5 | 127.1 | -60.65 | -1,865.6 | -1,387.5 | 3,822.1 | 3,678.9 | 143.19 | 26.692 | |
| 6,716.1 | 6,473.1 | 6,465.1 | 6,465.1 | 31.5 | 127.4 | -60.86 | -1,865.6 | -1,387.5 | 3,819.9 | 3,676.7 | 143.28 | 26.661 | |
| 6,725.0 | 6,481.6 | 6,473.6 | 6,473.6 | 31.5 | 127.6 | -61.02 | -1,865.6 | -1,387.5 | 3,818.7 | 3,675.4 | 143.25 | 26.658 | |
| 6,750.0 | 6,505.3 | 6,497.3 | 6,497.3 | 31.5 | 128.1 | -61.55 | -1,865.6 | -1,387.5 | 3,814.7 | 3,671.6 | 143.13 | 26.651 | |
| 6,775.0 | 6,528.5 | 6,520.5 | 6,520.5 | 31.4 | 128.5 | -62.16 | -1,865.6 | -1,387.5 | 3,810.1 | 3,667.1 | 142.99 | 26.646 | |
| 6,800.0 | 6,551.3 | 6,543.3 | 6,543.3 | 31.4 | 129.0 | -62.85 | -1,865.6 | -1,387.5 | 3,804.9 | 3,662.1 | 142.85 | 26.636 | |
| 6,825.0 | 6,573.4 | 6,565.4 | 6,565.4 | 31.4 | 129.5 | -63.62 | -1,865.6 | -1,387.5 | 3,799.2 | 3,656.5 | 142.73 | 26.619 | |
| 6,850.0 | 6,595.0 | 6,587.0 | 6,587.0 | 31.3 | 129.9 | -64.47 | -1,865.6 | -1,387.5 | 3,793.0 | 3,650.3 | 142.66 | 26.588 | |
| 6,875.0 | 6,615.8 | 6,607.8 | 6,607.8 | 31.3 | 130.3 | -65.40 | -1,865.6 | -1,387.5 | 3,786.2 | 3,643.5 | 142.66 | 26.540 | |
| 6,900.0 | 6,635.9 | 6,627.9 | 6,627.9 | 31.3 | 130.7 | -66.40 | -1,865.6 | -1,387.5 | 3,779.0 | 3,636.2 | 142.76 | 26.470 | |
| 6,925.0 | 6,655.1 | 6,647.1 | 6,647.1 | 31.2 | 131.1 | -67.47 | -1,865.6 | -1,387.5 | 3,771.3 | 3,628.3 | 142.98 | 26.376 | |
| 6,950.0 | 6,673.6 | 6,665.6 | 6,665.6 | 31.2 | 131.5 | -68.61 | -1,865.6 | -1,387.5 | 3,763.1 | 3,619.8 | 143.32 | 26.257 | |
| 6,975.0 | 6,691.1 | 6,683.1 | 6,683.1 | 31.1 | 131.8 | -69.82 | -1,865.6 | -1,387.5 | 3,754.6 | 3,610.8 | 143.79 | 26.112 | |
| 7,000.0 | 6,707.6 | 6,699.6 | 6,699.6 | 31.1 | 132.1 | -71.08 | -1,865.6 | -1,387.5 | 3,745.8 | 3,601.4 | 144.39 | 25.942 | |
| 7,025.0 | 6,723.1 | 6,715.1 | 6,715.1 | 31.0 | 132.5 | -72.40 | -1,865.6 | -1,387.5 | 3,736.6 | 3,591.5 | 145.11 | 25.750 | |
| 7,050.0 | 6,737.6 | 6,729.6 | 6,729.6 | 31.0 | 132.8 | -73.76 | -1,865.6 | -1,387.5 | 3,727.1 | 3,581.2 | 145.93 | 25.540 | |
| 7,075.0 | 6,751.0 | 6,743.0 | 6,743.0 | 30.9 | 133.0 | -75.16 | -1,865.6 | -1,387.5 | 3,717.4 | 3,570.6 | 146.84 | 25.317 | |
| 7,100.0 | 6,763.3 | 6,755.3 | 6,755.3 | 30.8 | 133.3 | -76.59 | -1,865.6 | -1,387.5 | 3,707.5 | 3,559.7 | 147.80 | 25.085 | |
| 7,125.0 | 6,774.5 | 6,766.5 | 6,766.5 | 30.8 | 133.5 | -78.05 | -1,865.6 | -1,387.5 | 3,697.4 | 3,548.6 | 148.78 | 24.851 | |
| 7,150.0 | 6,784.4 | 6,776.4 | 6,776.4 | 30.7 | 133.7 | -79.52 | -1,865.6 | -1,387.5 | 3,687.1 | 3,537.4 | 149.77 | 24.619 | |
| 7,175.0 | 6,793.1 | 6,785.1 | 6,785.1 | 30.7 | 133.9 | -81.00 | -1,865.6 | -1,387.5 | 3,676.8 | 3,526.1 | 150.73 | 24.394 | |
| 7,200.0 | 6,800.6 | 6,792.6 | 6,792.6 | 30.6 | 134.0 | -82.48 | -1,865.6 | -1,387.5 | 3,666.4 | 3,514.8 | 151.63 | 24.181 | |
| 7,225.0 | 6,806.8 | 6,798.8 | 6,798.8 | 30.6 | 134.1 | -83.95 | -1,865.6 | -1,387.5 | 3,656.0 | 3,503.5 | 152.45 | 23.981 | |
| 7,250.0 | 6,811.8 | 6,803.8 | 6,803.8 | 30.5 | 134.2 | -85.40 | -1,865.6 | -1,387.5 | 3,645.6 | 3,492.4 | 153.19 | 23.798 | |
| 7,275.0 | 6,815.5 | 6,807.5 | 6,807.5 | 30.5 | 134.3 | -86.83 | -1,865.6 | -1,387.5 | 3,635.2 | 3,481.4 | 153.82 | 23.633 | |
| 7,300.0 | 6,817.8 | 6,809.8 | 6,809.8 | 30.4 | 134.4 | -88.23 | -1,865.6 | -1,387.5 | 3,624.9 | 3,470.6 | 154.34 | 23.486 | |
| 7,325.0 | 6,818.9 | 6,810.9 | 6,810.9 | 30.4 | 134.4 | -89.58 | -1,865.6 | -1,387.5 | 3,614.7 | 3,459.9 | 154.76 | 23.357 | |
| 7,332.8 | 6,819.0 | 6,811.0 | 6,811.0 | 30.4 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,611.5 | 3,456.7 | 154.86 | 23.321 | |
| 7,400.0 | 6,819.0 | 6,811.0 | 6,811.0 | 30.3 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,584.9 | 3,429.4 | 155.54 | 23.049 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT OGRADY 3 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,811.0 | 6,811.0 | 30.2 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,547.4 | 3,390.6 | 156.80 | 22.624 | |
| 7,600.0 | 6,819.0 | 6,811.0 | 6,811.0 | 30.3 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,512.2 | 3,353.9 | 158.32 | 22.184 | |
| 7,700.0 | 6,819.0 | 6,811.0 | 6,811.0 | 30.6 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,479.6 | 3,319.5 | 160.07 | 21.738 | |
| 7,800.0 | 6,819.0 | 6,811.0 | 6,811.0 | 31.3 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,449.6 | 3,287.6 | 161.99 | 21.295 | |
| 7,900.0 | 6,819.0 | 6,811.0 | 6,811.0 | 32.5 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,422.2 | 3,258.1 | 164.05 | 20.861 | |
| 8,000.0 | 6,819.0 | 6,811.0 | 6,811.0 | 34.2 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,397.5 | 3,231.3 | 166.23 | 20.439 | |
| 8,100.0 | 6,819.0 | 6,811.0 | 6,811.0 | 36.1 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,375.7 | 3,207.2 | 168.50 | 20.034 | |
| 8,200.0 | 6,819.0 | 6,811.0 | 6,811.0 | 38.3 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,356.6 | 3,185.8 | 170.84 | 19.648 | |
| 8,300.0 | 6,819.0 | 6,811.0 | 6,811.0 | 40.6 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,340.5 | 3,167.3 | 173.25 | 19.281 | |
| 8,400.0 | 6,819.0 | 6,811.0 | 6,811.0 | 42.9 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,327.3 | 3,151.6 | 175.71 | 18.936 | |
| 8,500.0 | 6,819.0 | 6,811.0 | 6,811.0 | 45.3 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,317.0 | 3,138.8 | 178.21 | 18.613 | |
| 8,600.0 | 6,819.0 | 6,811.0 | 6,811.0 | 47.8 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,309.8 | 3,129.0 | 180.75 | 18.312 | |
| 8,700.0 | 6,819.0 | 6,811.0 | 6,811.0 | 50.3 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,305.5 | 3,122.2 | 183.31 | 18.032 | |
| 8,790.5 | 6,819.0 | 6,811.0 | 6,811.0 | 52.6 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,304.3 | 3,118.6 | 185.66 | 17.798 | |
| 8,800.0 | 6,819.0 | 6,811.0 | 6,811.0 | 52.8 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,304.3 | 3,118.4 | 185.91 | 17.774 | |
| 8,900.0 | 6,819.0 | 6,811.0 | 6,811.0 | 55.4 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,306.1 | 3,117.6 | 188.52 | 17.537 | |
| 9,000.0 | 6,819.0 | 6,811.0 | 6,811.0 | 58.0 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,310.9 | 3,119.8 | 191.15 | 17.321 | |
| 9,100.0 | 6,819.0 | 6,811.0 | 6,811.0 | 60.6 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,318.8 | 3,125.0 | 193.80 | 17.124 | |
| 9,200.0 | 6,819.0 | 6,811.0 | 6,811.0 | 63.2 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,329.6 | 3,133.1 | 196.47 | 16.947 | |
| 9,300.0 | 6,819.0 | 6,811.0 | 6,811.0 | 65.9 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,343.4 | 3,144.2 | 199.14 | 16.789 | |
| 9,400.0 | 6,819.0 | 6,811.0 | 6,811.0 | 68.5 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,360.1 | 3,158.2 | 201.83 | 16.648 | |
| 9,500.0 | 6,819.0 | 6,811.0 | 6,811.0 | 71.2 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,379.6 | 3,175.1 | 204.53 | 16.524 | |
| 9,600.0 | 6,819.0 | 6,811.0 | 6,811.0 | 73.9 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,402.0 | 3,194.8 | 207.23 | 16.416 | |
| 9,700.0 | 6,819.0 | 6,811.0 | 6,811.0 | 76.5 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,427.2 | 3,217.3 | 209.95 | 16.324 | |
| 9,800.0 | 6,819.0 | 6,811.0 | 6,811.0 | 79.2 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,455.1 | 3,242.4 | 212.67 | 16.246 | |
| 9,900.0 | 6,819.0 | 6,811.0 | 6,811.0 | 81.9 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,485.6 | 3,270.2 | 215.39 | 16.183 | |
| 10,000.0 | 6,819.0 | 6,811.0 | 6,811.0 | 84.6 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,518.7 | 3,300.6 | 218.13 | 16.132 | |
| 10,100.0 | 6,819.0 | 6,811.0 | 6,811.0 | 87.4 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,554.3 | 3,333.5 | 220.86 | 16.093 | |
| 10,200.0 | 6,819.0 | 6,811.0 | 6,811.0 | 90.1 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,592.4 | 3,368.8 | 223.60 | 16.066 | |
| 10,300.0 | 6,819.0 | 6,811.0 | 6,811.0 | 92.8 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,632.8 | 3,406.4 | 226.35 | 16.049 | |
| 10,400.0 | 6,819.0 | 6,811.0 | 6,811.0 | 95.5 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,675.5 | 3,446.4 | 229.10 | 16.043 | SF |
| 10,500.0 | 6,819.0 | 6,811.0 | 6,811.0 | 98.3 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,720.3 | 3,488.5 | 231.85 | 16.046 | |
| 10,600.0 | 6,819.0 | 6,811.0 | 6,811.0 | 101.0 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,767.3 | 3,532.7 | 234.61 | 16.058 | |
| 10,700.0 | 6,819.0 | 6,811.0 | 6,811.0 | 103.8 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,816.4 | 3,579.0 | 237.37 | 16.078 | |
| 10,800.0 | 6,819.0 | 6,811.0 | 6,811.0 | 106.5 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,867.4 | 3,627.3 | 240.13 | 16.105 | |
| 10,900.0 | 6,819.0 | 6,811.0 | 6,811.0 | 109.2 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,920.3 | 3,677.4 | 242.90 | 16.140 | |
| 11,000.0 | 6,819.0 | 6,811.0 | 6,811.0 | 112.0 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 3,975.0 | 3,729.3 | 245.66 | 16.181 | |
| 11,100.0 | 6,819.0 | 6,811.0 | 6,811.0 | 114.8 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,031.4 | 3,783.0 | 248.43 | 16.227 | |
| 11,200.0 | 6,819.0 | 6,811.0 | 6,811.0 | 117.5 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,089.5 | 3,838.3 | 251.20 | 16.280 | |
| 11,300.0 | 6,819.0 | 6,811.0 | 6,811.0 | 120.3 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,149.2 | 3,895.3 | 253.98 | 16.337 | |
| 11,400.0 | 6,819.0 | 6,811.0 | 6,811.0 | 123.0 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,210.5 | 3,953.7 | 256.75 | 16.399 | |
| 11,500.0 | 6,819.0 | 6,811.0 | 6,811.0 | 125.8 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,273.2 | 4,013.6 | 259.53 | 16.465 | |
| 11,600.0 | 6,819.0 | 6,811.0 | 6,811.0 | 128.6 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,337.3 | 4,075.0 | 262.31 | 16.535 | |
| 11,700.0 | 6,819.0 | 6,811.0 | 6,811.0 | 131.3 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,402.7 | 4,137.6 | 265.09 | 16.609 | |
| 11,800.0 | 6,819.0 | 6,811.0 | 6,811.0 | 134.1 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,469.4 | 4,201.6 | 267.87 | 16.685 | |
| 11,900.0 | 6,819.0 | 6,811.0 | 6,811.0 | 136.9 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,537.4 | 4,266.7 | 270.65 | 16.765 | |
| 12,000.0 | 6,819.0 | 6,811.0 | 6,811.0 | 139.6 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,606.5 | 4,333.0 | 273.43 | 16.847 | |
| 12,100.0 | 6,819.0 | 6,811.0 | 6,811.0 | 142.4 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,676.7 | 4,400.5 | 276.22 | 16.931 | |
| 12,200.0 | 6,819.0 | 6,811.0 | 6,811.0 | 145.2 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,748.0 | 4,469.0 | 279.00 | 17.018 | |
| 12,300.0 | 6,819.0 | 6,811.0 | 6,811.0 | 148.0 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,820.3 | 4,538.5 | 281.79 | 17.106 | |
| 12,400.0 | 6,819.0 | 6,811.0 | 6,811.0 | 150.8 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,893.6 | 4,609.0 | 284.58 | 17.196 | |
| 12,500.0 | 6,819.0 | 6,811.0 | 6,811.0 | 153.5 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 4,967.8 | 4,680.4 | 287.37 | 17.287 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - ABDN VERT OGRADY 3 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,811.0 | 6,811.0 | 156.3 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 5,042.9 | 4,752.8 | 290.15 | 17.380 | |
| 12,700.0 | 6,819.0 | 6,811.0 | 6,811.0 | 159.1 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 5,118.9 | 4,825.9 | 292.94 | 17.474 | |
| 12,800.0 | 6,819.0 | 6,811.0 | 6,811.0 | 161.9 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 5,195.6 | 4,899.9 | 295.73 | 17.569 | |
| 12,900.0 | 6,819.0 | 6,811.0 | 6,811.0 | 164.7 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 5,273.2 | 4,974.7 | 298.53 | 17.664 | |
| 13,000.0 | 6,819.0 | 6,811.0 | 6,811.0 | 167.4 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 5,351.5 | 5,050.2 | 301.32 | 17.760 | |
| 13,100.0 | 6,819.0 | 6,811.0 | 6,811.0 | 170.2 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 5,430.5 | 5,126.4 | 304.11 | 17.857 | |
| 13,200.0 | 6,819.0 | 6,811.0 | 6,811.0 | 173.0 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 5,510.2 | 5,203.3 | 306.90 | 17.954 | |
| 13,300.0 | 6,819.0 | 6,811.0 | 6,811.0 | 175.8 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 5,590.6 | 5,280.9 | 309.70 | 18.052 | |
| 13,400.0 | 6,819.0 | 6,811.0 | 6,811.0 | 178.6 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 5,671.5 | 5,359.0 | 312.49 | 18.149 | |
| 13,500.0 | 6,819.0 | 6,811.0 | 6,811.0 | 181.4 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 5,753.1 | 5,437.8 | 315.29 | 18.247 | |
| 13,600.0 | 6,819.0 | 6,811.0 | 6,811.0 | 184.2 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 5,835.2 | 5,517.2 | 318.08 | 18.345 | |
| 13,700.0 | 6,819.0 | 6,811.0 | 6,811.0 | 187.0 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 5,917.9 | 5,597.1 | 320.88 | 18.443 | |
| 13,800.0 | 6,819.0 | 6,811.0 | 6,811.0 | 189.7 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 6,001.2 | 5,677.5 | 323.67 | 18.541 | |
| 13,900.0 | 6,819.0 | 6,811.0 | 6,811.0 | 192.5 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 6,084.9 | 5,758.4 | 326.47 | 18.638 | |
| 14,000.0 | 6,819.0 | 6,811.0 | 6,811.0 | 195.3 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 6,169.1 | 5,839.8 | 329.27 | 18.736 | |
| 14,100.0 | 6,819.0 | 6,811.0 | 6,811.0 | 198.1 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 6,253.8 | 5,921.7 | 332.07 | 18.833 | |
| 14,200.0 | 6,819.0 | 6,811.0 | 6,811.0 | 200.9 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 6,338.9 | 6,004.0 | 334.86 | 18.930 | |
| 14,300.0 | 6,819.0 | 6,811.0 | 6,811.0 | 203.7 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 6,424.4 | 6,086.8 | 337.66 | 19.026 | |
| 14,400.0 | 6,819.0 | 6,811.0 | 6,811.0 | 206.5 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 6,510.4 | 6,169.9 | 340.46 | 19.122 | |
| 14,500.0 | 6,819.0 | 6,811.0 | 6,811.0 | 209.3 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 6,596.8 | 6,253.5 | 343.26 | 19.218 | |
| 14,600.0 | 6,819.0 | 6,811.0 | 6,811.0 | 212.1 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 6,683.5 | 6,337.4 | 346.06 | 19.313 | |
| 14,700.0 | 6,819.0 | 6,811.0 | 6,811.0 | 214.9 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 6,770.6 | 6,421.7 | 348.86 | 19.408 | |
| 14,720.3 | 6,819.0 | 6,811.0 | 6,811.0 | 215.4 | 134.4 | -90.00 | -1,865.6 | -1,387.5 | 6,788.3 | 6,438.9 | 349.43 | 19.427 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST DD MILLAGE 13-3D - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 474-MWD — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 47.11 | 1,230.7 | 1,324.7 | 1,808.2 | | | | |
| 100.0 | 100.0 | 74.1 | 74.1 | 0.1 | 0.1 | 47.10 | 1,231.0 | 1,324.7 | 1,808.4 | 1,808.2 | 0.17 | N/A | |
| 200.0 | 200.0 | 162.4 | 162.3 | 0.3 | 0.2 | 47.07 | 1,232.1 | 1,324.6 | 1,809.2 | 1,808.7 | 0.50 | 3,621.486 | |
| 300.0 | 300.0 | 250.5 | 250.5 | 0.5 | 0.3 | 47.02 | 1,234.2 | 1,324.6 | 1,810.7 | 1,809.9 | 0.83 | 2,190.539 | |
| 400.0 | 400.0 | 338.7 | 338.6 | 0.8 | 0.4 | 46.96 | 1,237.0 | 1,324.5 | 1,812.9 | 1,811.8 | 1.15 | 1,571.539 | |
| 500.0 | 500.0 | 426.8 | 426.6 | 1.0 | 0.5 | 46.87 | 1,240.8 | 1,324.5 | 1,815.8 | 1,814.3 | 1.48 | 1,226.459 | |
| 600.0 | 600.0 | 841.5 | 839.8 | 1.2 | 1.4 | 46.44 | 1,238.1 | 1,301.9 | 1,814.8 | 1,812.2 | 2.59 | 701.804 | |
| 700.0 | 700.0 | 1,256.9 | 1,241.5 | 1.4 | 3.0 | 47.51 | 1,148.9 | 1,254.2 | 1,789.9 | 1,786.1 | 3.86 | 463.779 | |
| 800.0 | 800.0 | 1,378.7 | 1,354.6 | 1.7 | 3.8 | 48.34 | 1,105.2 | 1,242.2 | 1,757.8 | 1,753.5 | 4.38 | 401.451 | |
| 900.0 | 900.0 | 1,441.5 | 1,412.5 | 1.9 | 4.2 | 28.02 | 1,081.6 | 1,237.2 | 1,724.7 | 1,719.8 | 4.90 | 351.635 | |
| 1,000.0 | 999.8 | 1,499.5 | 1,466.3 | 2.1 | 4.5 | 28.91 | 1,060.4 | 1,233.6 | 1,690.8 | 1,685.5 | 5.34 | 316.777 | |
| 1,100.0 | 1,099.5 | 1,566.9 | 1,529.5 | 2.3 | 4.8 | 29.92 | 1,037.3 | 1,229.1 | 1,655.8 | 1,650.0 | 5.81 | 285.115 | |
| 1,200.0 | 1,198.7 | 1,630.0 | 1,589.3 | 2.6 | 5.1 | 30.92 | 1,017.6 | 1,224.6 | 1,619.7 | 1,613.4 | 6.27 | 258.339 | |
| 1,300.0 | 1,297.5 | 1,690.0 | 1,646.7 | 2.9 | 5.4 | 31.91 | 1,000.9 | 1,219.7 | 1,582.8 | 1,576.0 | 6.72 | 235.385 | |
| 1,400.0 | 1,395.6 | 1,750.4 | 1,704.9 | 3.2 | 5.7 | 32.96 | 985.4 | 1,215.1 | 1,545.1 | 1,537.9 | 7.19 | 214.794 | |
| 1,500.0 | 1,493.1 | 1,809.0 | 1,761.6 | 3.5 | 6.0 | 34.08 | 971.3 | 1,211.4 | 1,506.8 | 1,499.1 | 7.68 | 196.157 | |
| 1,507.2 | 1,500.0 | 1,813.1 | 1,765.6 | 3.6 | 6.0 | 34.16 | 970.3 | 1,211.1 | 1,504.0 | 1,496.3 | 7.72 | 194.928 | |
| 1,572.2 | 1,563.0 | 1,855.5 | 1,806.9 | 3.8 | 6.2 | 34.64 | 961.2 | 1,208.6 | 1,479.5 | 1,471.4 | 8.06 | 183.663 | |
| 1,600.0 | 1,590.0 | 1,868.6 | 1,819.8 | 3.9 | 6.2 | 34.92 | 958.5 | 1,207.8 | 1,469.1 | 1,460.9 | 8.18 | 179.620 | |
| 1,700.0 | 1,686.3 | 1,932.5 | 1,882.5 | 4.4 | 6.5 | 36.11 | 947.0 | 1,203.7 | 1,431.5 | 1,422.8 | 8.72 | 164.206 | |
| 1,800.0 | 1,781.5 | 1,992.6 | 1,941.7 | 4.9 | 6.7 | 37.30 | 938.2 | 1,199.9 | 1,393.4 | 1,384.2 | 9.27 | 150.345 | |
| 1,817.6 | 1,798.2 | 2,004.2 | 1,953.3 | 5.0 | 6.7 | 37.53 | 936.7 | 1,199.2 | 1,386.7 | 1,377.3 | 9.37 | 147.954 | |
| 1,900.0 | 1,876.1 | 2,056.6 | 2,005.1 | 5.5 | 6.9 | 38.18 | 929.9 | 1,196.4 | 1,355.8 | 1,345.9 | 9.87 | 137.364 | |
| 2,000.0 | 1,970.6 | 2,119.2 | 2,067.3 | 6.0 | 7.1 | 38.96 | 923.1 | 1,193.8 | 1,320.5 | 1,310.0 | 10.49 | 125.932 | |
| 2,100.0 | 2,065.1 | 2,199.7 | 2,147.4 | 6.6 | 7.3 | 39.97 | 915.5 | 1,190.9 | 1,286.8 | 1,275.6 | 11.17 | 115.171 | |
| 2,200.0 | 2,159.6 | 2,279.6 | 2,227.0 | 7.2 | 7.5 | 40.97 | 909.0 | 1,188.1 | 1,254.4 | 1,242.5 | 11.87 | 105.643 | |
| 2,300.0 | 2,254.1 | 2,342.4 | 2,289.6 | 7.8 | 7.6 | 41.77 | 904.6 | 1,186.6 | 1,223.8 | 1,211.3 | 12.53 | 97.673 | |
| 2,400.0 | 2,348.7 | 2,411.5 | 2,358.6 | 8.4 | 7.7 | 42.66 | 901.1 | 1,186.1 | 1,196.0 | 1,182.8 | 13.21 | 90.532 | |
| 2,500.0 | 2,443.2 | 2,484.7 | 2,431.8 | 9.1 | 7.8 | 43.54 | 899.5 | 1,185.9 | 1,170.3 | 1,156.4 | 13.89 | 84.226 | |
| 2,600.0 | 2,537.7 | 2,572.5 | 2,519.6 | 9.7 | 8.0 | 44.61 | 898.5 | 1,186.3 | 1,146.1 | 1,131.5 | 14.63 | 78.341 | |
| 2,700.0 | 2,632.2 | 2,664.7 | 2,611.9 | 10.3 | 8.1 | 45.78 | 897.6 | 1,187.0 | 1,122.8 | 1,107.4 | 15.41 | 72.884 | |
| 2,800.0 | 2,726.8 | 2,757.1 | 2,704.2 | 10.9 | 8.2 | 46.98 | 896.8 | 1,187.9 | 1,100.1 | 1,083.9 | 16.20 | 67.923 | |
| 2,900.0 | 2,821.3 | 2,849.7 | 2,796.8 | 11.6 | 8.3 | 48.23 | 896.3 | 1,188.8 | 1,078.1 | 1,061.1 | 17.00 | 63.404 | |
| 3,000.0 | 2,915.8 | 2,942.4 | 2,889.5 | 12.2 | 8.5 | 49.52 | 895.9 | 1,189.8 | 1,056.9 | 1,039.0 | 17.83 | 59.283 | |
| 3,100.0 | 3,010.3 | 3,035.2 | 2,982.3 | 12.8 | 8.6 | 50.86 | 895.7 | 1,191.0 | 1,036.3 | 1,017.7 | 18.67 | 55.520 | |
| 3,200.0 | 3,104.8 | 3,128.2 | 3,075.3 | 13.5 | 8.7 | 52.23 | 895.7 | 1,192.2 | 1,016.6 | 997.1 | 19.52 | 52.079 | |
| 3,300.0 | 3,199.4 | 3,221.3 | 3,168.4 | 14.1 | 8.9 | 53.65 | 895.9 | 1,193.5 | 997.7 | 977.3 | 20.39 | 48.930 | |
| 3,400.0 | 3,293.9 | 3,314.6 | 3,261.6 | 14.8 | 9.0 | 55.11 | 896.3 | 1,194.9 | 979.6 | 958.3 | 21.27 | 46.048 | |
| 3,500.0 | 3,388.4 | 3,408.0 | 3,355.0 | 15.4 | 9.1 | 56.61 | 896.9 | 1,196.4 | 962.3 | 940.1 | 22.17 | 43.408 | |
| 3,600.0 | 3,482.9 | 3,501.6 | 3,448.6 | 16.0 | 9.3 | 58.15 | 897.7 | 1,198.1 | 945.9 | 922.8 | 23.08 | 40.990 | |
| 3,700.0 | 3,577.5 | 3,595.9 | 3,542.9 | 16.7 | 9.4 | 59.74 | 898.7 | 1,199.8 | 930.4 | 906.4 | 24.00 | 38.767 | |
| 3,800.0 | 3,672.0 | 3,693.6 | 3,640.5 | 17.3 | 9.5 | 61.44 | 899.7 | 1,201.4 | 915.6 | 890.7 | 24.96 | 36.689 | |
| 3,900.0 | 3,766.5 | 3,791.1 | 3,738.0 | 18.0 | 9.7 | 63.19 | 900.6 | 1,202.8 | 901.4 | 875.4 | 25.92 | 34.773 | |
| 4,000.0 | 3,861.0 | 3,888.4 | 3,835.4 | 18.6 | 9.8 | 65.00 | 901.4 | 1,204.0 | 887.7 | 860.8 | 26.89 | 33.010 | |
| 4,100.0 | 3,955.5 | 3,985.7 | 3,932.6 | 19.3 | 10.0 | 66.86 | 902.1 | 1,204.8 | 874.7 | 846.9 | 27.87 | 31.388 | |
| 4,200.0 | 4,050.1 | 4,082.8 | 4,029.7 | 19.9 | 10.1 | 68.78 | 902.6 | 1,205.4 | 862.5 | 833.6 | 28.85 | 29.898 | |
| 4,300.0 | 4,144.6 | 4,179.8 | 4,126.7 | 20.5 | 10.3 | 70.75 | 903.1 | 1,205.8 | 851.0 | 821.2 | 29.83 | 28.532 | |
| 4,400.0 | 4,239.1 | 4,276.6 | 4,223.6 | 21.2 | 10.5 | 72.77 | 903.5 | 1,205.9 | 840.3 | 809.5 | 30.80 | 27.283 | |
| 4,500.0 | 4,333.6 | 4,373.3 | 4,320.3 | 21.8 | 10.6 | 74.85 | 903.7 | 1,205.7 | 830.6 | 798.8 | 31.77 | 26.144 | |
| 4,600.0 | 4,428.2 | 4,469.9 | 4,416.9 | 22.5 | 10.8 | 76.97 | 903.8 | 1,205.3 | 821.7 | 789.0 | 32.73 | 25.109 | |
| 4,700.0 | 4,522.7 | 4,566.4 | 4,513.3 | 23.1 | 10.9 | 79.14 | 903.8 | 1,204.6 | 813.8 | 780.2 | 33.67 | 24.173 | |
| 4,800.0 | 4,617.2 | 4,659.8 | 4,606.8 | 23.8 | 11.1 | 81.29 | 903.8 | 1,203.9 | 807.2 | 772.6 | 34.60 | 23.331 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST DD MILLAGE 13-3D - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 474-MWD — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,752.9 | 4,699.8 | 24.4 | 11.2 | 83.44 | 903.8 | 1,203.3 | 801.9 | 766.4 | 35.51 | 22.586 | |
| 5,000.0 | 4,806.2 | 4,846.1 | 4,793.0 | 25.1 | 11.4 | 85.61 | 903.9 | 1,202.9 | 798.2 | 761.8 | 36.39 | 21.934 | |
| 5,100.0 | 4,900.8 | 4,939.3 | 4,886.2 | 25.7 | 11.6 | 87.79 | 904.0 | 1,202.7 | 795.9 | 758.7 | 37.25 | 21.369 | |
| 5,200.0 | 4,995.3 | 5,032.6 | 4,979.6 | 26.4 | 11.7 | 89.97 | 904.2 | 1,202.7 | 795.1 | 757.1 | 38.08 | 20.883 | |
| 5,203.5 | 4,998.6 | 5,035.9 | 4,982.8 | 26.4 | 11.7 | 90.05 | 904.2 | 1,202.7 | 795.1 | 757.0 | 38.10 | 20.868 | CC |
| 5,300.0 | 5,089.8 | 5,126.0 | 5,073.0 | 27.0 | 11.9 | 92.15 | 904.5 | 1,202.8 | 795.8 | 757.0 | 38.87 | 20.473 | ES |
| 5,400.0 | 5,184.3 | 5,219.5 | 5,166.4 | 27.7 | 12.0 | 94.31 | 904.8 | 1,203.1 | 798.0 | 758.3 | 39.63 | 20.133 | |
| 5,500.0 | 5,278.9 | 5,313.1 | 5,260.0 | 28.3 | 12.2 | 96.45 | 905.2 | 1,203.6 | 801.5 | 761.1 | 40.36 | 19.857 | |
| 5,533.5 | 5,310.5 | 5,344.5 | 5,291.4 | 28.5 | 12.3 | 97.16 | 905.3 | 1,203.8 | 803.0 | 762.4 | 40.60 | 19.779 | |
| 5,600.0 | 5,373.6 | 5,407.0 | 5,353.9 | 28.9 | 12.4 | 98.59 | 905.7 | 1,204.3 | 806.3 | 765.3 | 41.00 | 19.666 | |
| 5,700.0 | 5,469.4 | 5,501.9 | 5,448.8 | 29.3 | 12.5 | 100.55 | 906.2 | 1,205.2 | 811.9 | 770.4 | 41.48 | 19.570 | |
| 5,800.0 | 5,566.1 | 5,598.0 | 5,544.9 | 29.8 | 12.7 | 102.27 | 906.7 | 1,206.3 | 817.7 | 775.7 | 41.93 | 19.503 | |
| 5,900.0 | 5,663.6 | 5,695.2 | 5,642.1 | 30.1 | 12.9 | 103.78 | 907.2 | 1,207.3 | 823.4 | 781.1 | 42.33 | 19.452 | |
| 6,000.0 | 5,761.9 | 5,793.0 | 5,739.9 | 30.5 | 13.1 | 105.05 | 907.4 | 1,208.4 | 828.8 | 786.1 | 42.70 | 19.409 | |
| 6,100.0 | 5,860.7 | 5,891.4 | 5,838.3 | 30.7 | 13.3 | 106.09 | 907.5 | 1,209.3 | 833.7 | 790.7 | 43.05 | 19.367 | |
| 6,200.0 | 5,960.0 | 5,990.1 | 5,937.0 | 31.0 | 13.4 | 106.90 | 907.4 | 1,210.3 | 837.9 | 794.5 | 43.37 | 19.319 | |
| 6,300.0 | 6,059.7 | 6,089.1 | 6,036.0 | 31.2 | 13.6 | 107.48 | 907.1 | 1,211.1 | 841.2 | 797.5 | 43.67 | 19.263 | |
| 6,400.0 | 6,159.6 | 6,188.4 | 6,135.2 | 31.3 | 13.8 | 107.82 | 906.6 | 1,211.9 | 843.6 | 799.6 | 43.95 | 19.193 | |
| 6,486.1 | 6,245.7 | 6,273.9 | 6,220.8 | 31.4 | 14.0 | 129.09 | 906.0 | 1,212.6 | 844.9 | 813.2 | 31.67 | 26.679 | |
| 6,500.0 | 6,259.6 | 6,287.7 | 6,234.6 | 31.4 | 14.0 | 129.09 | 905.9 | 1,212.7 | 845.0 | 813.3 | 31.72 | 26.643 | |
| 6,516.1 | 6,275.7 | 6,303.7 | 6,250.6 | 31.4 | 14.0 | 129.10 | 905.7 | 1,212.8 | 845.2 | 813.4 | 31.77 | 26.601 | |
| 6,550.0 | 6,309.5 | 6,337.3 | 6,284.2 | 31.5 | 14.1 | -140.88 | 905.5 | 1,213.0 | 846.2 | 801.8 | 44.34 | 19.084 | SF |
| 6,600.0 | 6,359.4 | 6,386.8 | 6,333.7 | 31.5 | 14.2 | -140.86 | 905.0 | 1,213.4 | 849.9 | 805.6 | 44.31 | 19.180 | |
| 6,650.0 | 6,408.8 | 6,435.9 | 6,382.7 | 31.5 | 14.3 | -140.83 | 904.5 | 1,213.7 | 856.4 | 812.3 | 44.13 | 19.406 | |
| 6,700.0 | 6,457.5 | 6,484.4 | 6,431.3 | 31.5 | 14.4 | -140.80 | 903.9 | 1,214.0 | 865.6 | 821.8 | 43.79 | 19.765 | |
| 6,716.1 | 6,473.1 | 6,500.1 | 6,446.9 | 31.5 | 14.4 | -140.79 | 903.8 | 1,214.1 | 869.1 | 825.5 | 43.65 | 19.909 | |
| 6,725.0 | 6,481.6 | 6,508.6 | 6,455.4 | 31.5 | 14.4 | -140.72 | 903.7 | 1,214.1 | 871.2 | 827.7 | 43.52 | 20.019 | |
| 6,750.0 | 6,505.3 | 6,532.4 | 6,479.2 | 31.5 | 14.5 | -140.52 | 903.4 | 1,214.3 | 877.8 | 834.7 | 43.09 | 20.371 | |
| 6,775.0 | 6,528.5 | 6,555.7 | 6,502.6 | 31.4 | 14.5 | -140.28 | 903.1 | 1,214.4 | 885.4 | 842.8 | 42.59 | 20.790 | |
| 6,800.0 | 6,551.3 | 6,578.6 | 6,525.4 | 31.4 | 14.5 | -139.99 | 902.9 | 1,214.5 | 893.9 | 851.9 | 42.02 | 21.276 | |
| 6,825.0 | 6,573.4 | 6,600.8 | 6,547.7 | 31.4 | 14.6 | -139.64 | 902.6 | 1,214.7 | 903.4 | 862.1 | 41.38 | 21.832 | |
| 6,850.0 | 6,595.0 | 6,622.4 | 6,569.3 | 31.3 | 14.6 | -139.23 | 902.4 | 1,214.8 | 913.9 | 873.2 | 40.69 | 22.458 | |
| 6,875.0 | 6,615.8 | 6,643.3 | 6,590.2 | 31.3 | 14.7 | -138.74 | 902.2 | 1,214.9 | 925.4 | 885.4 | 39.96 | 23.156 | |
| 6,900.0 | 6,635.9 | 6,663.4 | 6,610.3 | 31.3 | 14.7 | -138.16 | 902.0 | 1,215.0 | 937.7 | 898.6 | 39.20 | 23.924 | |
| 6,925.0 | 6,655.1 | 6,682.8 | 6,629.6 | 31.2 | 14.7 | -137.48 | 901.8 | 1,215.1 | 951.0 | 912.6 | 38.41 | 24.761 | |
| 6,950.0 | 6,673.6 | 6,701.2 | 6,648.1 | 31.2 | 14.8 | -136.68 | 901.6 | 1,215.2 | 965.2 | 927.6 | 37.61 | 25.662 | |
| 6,975.0 | 6,691.1 | 6,718.8 | 6,665.6 | 31.1 | 14.8 | -135.75 | 901.4 | 1,215.3 | 980.3 | 943.4 | 36.83 | 26.618 | |
| 7,000.0 | 6,707.6 | 6,735.4 | 6,682.2 | 31.1 | 14.8 | -134.66 | 901.3 | 1,215.4 | 996.2 | 960.1 | 36.07 | 27.619 | |
| 7,025.0 | 6,723.1 | 6,750.9 | 6,697.8 | 31.0 | 14.9 | -133.40 | 901.1 | 1,215.5 | 1,012.8 | 977.5 | 35.36 | 28.645 | |
| 7,050.0 | 6,737.6 | 6,765.4 | 6,712.3 | 31.0 | 14.9 | -131.92 | 901.0 | 1,215.5 | 1,030.3 | 995.6 | 34.72 | 29.675 | |
| 7,075.0 | 6,751.0 | 6,778.8 | 6,725.7 | 30.9 | 14.9 | -130.21 | 900.8 | 1,215.6 | 1,048.5 | 1,014.3 | 34.17 | 30.680 | |
| 7,100.0 | 6,763.3 | 6,791.1 | 6,738.0 | 30.8 | 15.0 | -128.21 | 900.7 | 1,215.7 | 1,067.3 | 1,033.6 | 33.75 | 31.627 | |
| 7,125.0 | 6,774.5 | 6,802.2 | 6,749.1 | 30.8 | 15.0 | -125.91 | 900.6 | 1,215.7 | 1,086.8 | 1,053.3 | 33.46 | 32.483 | |
| 7,150.0 | 6,784.4 | 6,812.1 | 6,759.0 | 30.7 | 15.0 | -123.23 | 900.5 | 1,215.7 | 1,106.9 | 1,073.6 | 33.32 | 33.220 | |
| 7,175.0 | 6,793.1 | 6,820.8 | 6,767.7 | 30.7 | 15.0 | -120.14 | 900.5 | 1,215.8 | 1,127.5 | 1,094.1 | 33.34 | 33.822 | |
| 7,200.0 | 6,800.6 | 6,828.3 | 6,775.1 | 30.6 | 15.0 | -116.59 | 900.4 | 1,215.8 | 1,148.5 | 1,115.1 | 33.49 | 34.292 | |
| 7,225.0 | 6,806.8 | 6,834.5 | 6,781.3 | 30.6 | 15.0 | -112.52 | 900.3 | 1,215.8 | 1,170.0 | 1,136.3 | 33.76 | 34.657 | |
| 7,250.0 | 6,811.8 | 6,839.3 | 6,786.2 | 30.5 | 15.1 | -107.91 | 900.3 | 1,215.9 | 1,191.9 | 1,157.8 | 34.08 | 34.974 | |
| 7,275.0 | 6,815.5 | 6,842.9 | 6,789.8 | 30.5 | 15.1 | -102.74 | 900.2 | 1,215.9 | 1,214.0 | 1,179.7 | 34.37 | 35.325 | |
| 7,300.0 | 6,817.8 | 6,845.2 | 6,792.0 | 30.4 | 15.1 | -97.05 | 900.2 | 1,215.9 | 1,236.4 | 1,201.9 | 34.53 | 35.807 | |
| 7,325.0 | 6,818.9 | 6,846.2 | 6,793.0 | 30.4 | 15.1 | -90.93 | 900.2 | 1,215.9 | 1,258.9 | 1,224.5 | 34.47 | 36.523 | |
| 7,332.8 | 6,819.0 | 6,846.2 | 6,793.0 | 30.4 | 15.1 | -88.94 | 900.2 | 1,215.9 | 1,266.0 | 1,231.6 | 34.39 | 36.809 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST DD MILLAGE 13-3D - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 474-MWD — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,845.9 | 6,792.7 | 30.3 | 15.1 | -88.91 | 900.2 | 1,215.9 | 1,327.1 | 1,292.0 | 35.06 | 37.851 | |
| 7,500.0 | 6,819.0 | 6,845.5 | 6,792.3 | 30.2 | 15.1 | -88.86 | 900.2 | 1,215.9 | 1,419.1 | 1,382.8 | 36.31 | 39.077 | |
| 7,600.0 | 6,819.0 | 6,845.0 | 6,791.8 | 30.3 | 15.1 | -88.82 | 900.2 | 1,215.9 | 1,512.1 | 1,474.2 | 37.83 | 39.965 | |
| 7,700.0 | 6,819.0 | 6,844.6 | 6,791.4 | 30.6 | 15.1 | -88.77 | 900.2 | 1,215.9 | 1,605.9 | 1,566.3 | 39.57 | 40.581 | |
| 7,800.0 | 6,819.0 | 6,844.1 | 6,790.9 | 31.3 | 15.1 | -88.72 | 900.2 | 1,215.9 | 1,700.4 | 1,659.0 | 41.49 | 40.985 | |
| 7,900.0 | 6,819.0 | 6,843.7 | 6,790.5 | 32.5 | 15.1 | -88.67 | 900.2 | 1,215.9 | 1,795.6 | 1,752.0 | 43.55 | 41.232 | |
| 8,000.0 | 6,819.0 | 6,843.2 | 6,790.0 | 34.2 | 15.1 | -88.63 | 900.2 | 1,215.9 | 1,891.2 | 1,845.5 | 45.72 | 41.363 | |
| 8,100.0 | 6,819.0 | 6,842.8 | 6,789.6 | 36.1 | 15.1 | -88.58 | 900.3 | 1,215.9 | 1,987.3 | 1,939.3 | 47.99 | 41.411 | |
| 8,200.0 | 6,819.0 | 6,842.3 | 6,789.1 | 38.3 | 15.1 | -88.53 | 900.3 | 1,215.9 | 2,083.7 | 2,033.4 | 50.33 | 41.400 | |
| 8,300.0 | 6,819.0 | 6,841.9 | 6,788.7 | 40.6 | 15.1 | -88.48 | 900.3 | 1,215.9 | 2,180.5 | 2,127.7 | 52.74 | 41.347 | |
| 8,400.0 | 6,819.0 | 6,841.4 | 6,788.2 | 42.9 | 15.1 | -88.43 | 900.3 | 1,215.9 | 2,277.5 | 2,222.3 | 55.19 | 41.266 | |
| 8,500.0 | 6,819.0 | 6,841.0 | 6,787.8 | 45.3 | 15.1 | -88.39 | 900.3 | 1,215.9 | 2,374.8 | 2,317.1 | 57.69 | 41.166 | |
| 8,600.0 | 6,819.0 | 6,840.5 | 6,787.3 | 47.8 | 15.1 | -88.34 | 900.3 | 1,215.9 | 2,472.3 | 2,412.1 | 60.22 | 41.054 | |
| 8,700.0 | 6,819.0 | 6,840.1 | 6,786.9 | 50.3 | 15.1 | -88.29 | 900.3 | 1,215.9 | 2,570.0 | 2,507.2 | 62.78 | 40.934 | |
| 8,800.0 | 6,819.0 | 6,839.6 | 6,786.4 | 52.8 | 15.1 | -88.24 | 900.3 | 1,215.9 | 2,667.8 | 2,602.5 | 65.37 | 40.811 | |
| 8,900.0 | 6,819.0 | 6,839.1 | 6,786.0 | 55.4 | 15.1 | -88.19 | 900.3 | 1,215.9 | 2,765.8 | 2,697.9 | 67.98 | 40.686 | |
| 9,000.0 | 6,819.0 | 6,838.7 | 6,785.5 | 58.0 | 15.0 | -88.14 | 900.3 | 1,215.9 | 2,864.0 | 2,793.4 | 70.61 | 40.562 | |
| 9,100.0 | 6,819.0 | 6,838.2 | 6,785.1 | 60.6 | 15.0 | -88.10 | 900.3 | 1,215.9 | 2,962.3 | 2,889.0 | 73.25 | 40.440 | |
| 9,200.0 | 6,819.0 | 6,837.8 | 6,784.6 | 63.2 | 15.0 | -88.05 | 900.3 | 1,215.9 | 3,060.7 | 2,984.7 | 75.91 | 40.320 | |
| 9,300.0 | 6,819.0 | 6,837.3 | 6,784.2 | 65.9 | 15.0 | -88.00 | 900.3 | 1,215.9 | 3,159.1 | 3,080.6 | 78.58 | 40.203 | |
| 9,400.0 | 6,819.0 | 6,836.9 | 6,783.7 | 68.5 | 15.0 | -87.95 | 900.3 | 1,215.9 | 3,257.7 | 3,176.5 | 81.26 | 40.089 | |
| 9,500.0 | 6,819.0 | 6,836.4 | 6,783.3 | 71.2 | 15.0 | -87.90 | 900.3 | 1,215.9 | 3,356.4 | 3,272.4 | 83.95 | 39.980 | |
| 9,600.0 | 6,819.0 | 6,836.0 | 6,782.8 | 73.9 | 15.0 | -87.85 | 900.3 | 1,215.9 | 3,455.1 | 3,368.5 | 86.65 | 39.874 | |
| 9,700.0 | 6,819.0 | 6,835.5 | 6,782.3 | 76.5 | 15.0 | -87.81 | 900.3 | 1,215.9 | 3,553.9 | 3,464.6 | 89.36 | 39.772 | |
| 9,800.0 | 6,819.0 | 6,835.0 | 6,781.9 | 79.2 | 15.0 | -87.76 | 900.3 | 1,215.9 | 3,652.8 | 3,560.7 | 92.07 | 39.674 | |
| 9,900.0 | 6,819.0 | 6,834.6 | 6,781.4 | 81.9 | 15.0 | -87.71 | 900.3 | 1,215.8 | 3,751.7 | 3,657.0 | 94.79 | 39.580 | |
| 10,000.0 | 6,819.0 | 6,834.1 | 6,781.0 | 84.6 | 15.0 | -87.66 | 900.3 | 1,215.8 | 3,850.7 | 3,753.2 | 97.51 | 39.489 | |
| 10,100.0 | 6,819.0 | 6,833.7 | 6,780.5 | 87.4 | 15.0 | -87.61 | 900.3 | 1,215.8 | 3,949.8 | 3,849.5 | 100.24 | 39.402 | |
| 10,200.0 | 6,819.0 | 6,833.2 | 6,780.0 | 90.1 | 15.0 | -87.56 | 900.3 | 1,215.8 | 4,048.9 | 3,945.9 | 102.98 | 39.318 | |
| 10,300.0 | 6,819.0 | 6,832.8 | 6,779.6 | 92.8 | 15.0 | -87.51 | 900.3 | 1,215.8 | 4,148.0 | 4,042.3 | 105.71 | 39.238 | |
| 10,400.0 | 6,819.0 | 6,832.3 | 6,779.1 | 95.5 | 15.0 | -87.46 | 900.3 | 1,215.8 | 4,247.2 | 4,138.7 | 108.46 | 39.160 | |
| 10,500.0 | 6,819.0 | 6,831.8 | 6,778.7 | 98.3 | 15.0 | -87.42 | 900.3 | 1,215.8 | 4,346.4 | 4,235.2 | 111.20 | 39.086 | |
| 10,600.0 | 6,819.0 | 6,831.4 | 6,778.2 | 101.0 | 15.0 | -87.37 | 900.4 | 1,215.8 | 4,445.6 | 4,331.7 | 113.95 | 39.015 | |
| 10,700.0 | 6,819.0 | 6,830.9 | 6,777.7 | 103.8 | 15.0 | -87.32 | 900.4 | 1,215.8 | 4,544.9 | 4,428.2 | 116.70 | 38.946 | |
| 10,800.0 | 6,819.0 | 6,830.4 | 6,777.3 | 106.5 | 15.0 | -87.27 | 900.4 | 1,215.8 | 4,644.2 | 4,524.8 | 119.45 | 38.880 | |
| 10,900.0 | 6,819.0 | 6,830.0 | 6,776.8 | 109.2 | 15.0 | -87.22 | 900.4 | 1,215.8 | 4,743.6 | 4,621.4 | 122.20 | 38.817 | |
| 11,000.0 | 6,819.0 | 6,829.5 | 6,776.4 | 112.0 | 15.0 | -87.17 | 900.4 | 1,215.8 | 4,842.9 | 4,718.0 | 124.96 | 38.756 | |
| 11,100.0 | 6,819.0 | 6,829.1 | 6,775.9 | 114.8 | 15.0 | -87.12 | 900.4 | 1,215.8 | 4,942.3 | 4,814.6 | 127.72 | 38.697 | |
| 11,200.0 | 6,819.0 | 6,828.6 | 6,775.4 | 117.5 | 15.0 | -87.07 | 900.4 | 1,215.8 | 5,041.7 | 4,911.2 | 130.48 | 38.640 | |
| 11,300.0 | 6,819.0 | 6,828.1 | 6,775.0 | 120.3 | 15.0 | -87.02 | 900.4 | 1,215.8 | 5,141.2 | 5,007.9 | 133.24 | 38.585 | |
| 11,400.0 | 6,819.0 | 6,827.7 | 6,774.5 | 123.0 | 15.0 | -86.97 | 900.4 | 1,215.8 | 5,240.6 | 5,104.6 | 136.00 | 38.533 | |
| 11,500.0 | 6,819.0 | 6,827.2 | 6,774.0 | 125.8 | 15.0 | -86.92 | 900.4 | 1,215.8 | 5,340.1 | 5,201.3 | 138.77 | 38.482 | |
| 11,600.0 | 6,819.0 | 6,826.7 | 6,773.6 | 128.6 | 15.0 | -86.87 | 900.4 | 1,215.8 | 5,439.6 | 5,298.1 | 141.53 | 38.433 | |
| 11,700.0 | 6,819.0 | 6,826.3 | 6,773.1 | 131.3 | 15.0 | -86.82 | 900.4 | 1,215.8 | 5,539.1 | 5,394.8 | 144.30 | 38.386 | |
| 11,800.0 | 6,819.0 | 6,825.8 | 6,772.6 | 134.1 | 15.0 | -86.78 | 900.4 | 1,215.8 | 5,638.7 | 5,491.6 | 147.07 | 38.341 | |
| 11,900.0 | 6,819.0 | 6,825.3 | 6,772.2 | 136.9 | 15.0 | -86.73 | 900.4 | 1,215.8 | 5,738.2 | 5,588.4 | 149.84 | 38.297 | |
| 12,000.0 | 6,819.0 | 6,824.9 | 6,771.7 | 139.6 | 15.0 | -86.68 | 900.4 | 1,215.8 | 5,837.8 | 5,685.2 | 152.61 | 38.254 | |
| 12,100.0 | 6,819.0 | 6,824.4 | 6,771.2 | 142.4 | 15.0 | -86.63 | 900.4 | 1,215.8 | 5,937.3 | 5,782.0 | 155.38 | 38.213 | |
| 12,200.0 | 6,819.0 | 6,823.9 | 6,770.8 | 145.2 | 15.0 | -86.58 | 900.4 | 1,215.8 | 6,036.9 | 5,878.8 | 158.15 | 38.173 | |
| 12,300.0 | 6,819.0 | 6,823.5 | 6,770.3 | 148.0 | 15.0 | -86.53 | 900.4 | 1,215.8 | 6,136.5 | 5,975.6 | 160.92 | 38.135 | |
| 12,400.0 | 6,819.0 | 6,823.0 | 6,769.8 | 150.8 | 15.0 | -86.48 | 900.4 | 1,215.8 | 6,236.2 | 6,072.5 | 163.69 | 38.098 | |
| 12,500.0 | 6,819.0 | 6,822.5 | 6,769.4 | 153.5 | 15.0 | -86.43 | 900.4 | 1,215.8 | 6,335.8 | 6,169.3 | 166.46 | 38.062 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST DD MILLAGE 13-3D - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 474-MWD — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,822.1 | 6,768.9 | 156.3 | 15.0 | -86.38 | 900.4 | 1,215.8 | 6,435.4 | 6,266.2 | 169.23 | 38.027 | |
| 12,700.0 | 6,819.0 | 6,821.6 | 6,768.4 | 159.1 | 15.0 | -86.33 | 900.4 | 1,215.8 | 6,535.1 | 6,363.1 | 172.01 | 37.993 | |
| 12,800.0 | 6,819.0 | 6,821.1 | 6,768.0 | 161.9 | 15.0 | -86.28 | 900.4 | 1,215.8 | 6,634.8 | 6,460.0 | 174.78 | 37.961 | |
| 12,900.0 | 6,819.0 | 6,820.6 | 6,767.5 | 164.7 | 15.0 | -86.23 | 900.5 | 1,215.8 | 6,734.4 | 6,556.9 | 177.55 | 37.929 | |
| 13,000.0 | 6,819.0 | 6,820.2 | 6,767.0 | 167.4 | 15.0 | -86.18 | 900.5 | 1,215.8 | 6,834.1 | 6,653.8 | 180.33 | 37.899 | |
| 13,100.0 | 6,819.0 | 6,819.7 | 6,766.5 | 170.2 | 15.0 | -86.13 | 900.5 | 1,215.8 | 6,933.8 | 6,750.7 | 183.10 | 37.869 | |
| 13,200.0 | 6,819.0 | 6,819.2 | 6,766.1 | 173.0 | 15.0 | -86.08 | 900.5 | 1,215.8 | 7,033.5 | 6,847.6 | 185.87 | 37.840 | |
| 13,300.0 | 6,819.0 | 6,818.8 | 6,765.6 | 175.8 | 15.0 | -86.03 | 900.5 | 1,215.8 | 7,133.2 | 6,944.6 | 188.65 | 37.812 | |
| 13,400.0 | 6,819.0 | 6,818.3 | 6,765.1 | 178.6 | 15.0 | -85.98 | 900.5 | 1,215.8 | 7,232.9 | 7,041.5 | 191.42 | 37.785 | |
| 13,500.0 | 6,819.0 | 6,817.8 | 6,764.6 | 181.4 | 15.0 | -85.93 | 900.5 | 1,215.8 | 7,332.7 | 7,138.5 | 194.20 | 37.759 | |
| 13,600.0 | 6,819.0 | 6,817.3 | 6,764.2 | 184.2 | 15.0 | -85.88 | 900.5 | 1,215.8 | 7,432.4 | 7,235.4 | 196.97 | 37.733 | |
| 13,700.0 | 6,819.0 | 6,816.9 | 6,763.7 | 187.0 | 15.0 | -85.83 | 900.5 | 1,215.8 | 7,532.1 | 7,332.4 | 199.75 | 37.709 | |
| 13,800.0 | 6,819.0 | 6,816.4 | 6,763.2 | 189.7 | 15.0 | -85.78 | 900.5 | 1,215.8 | 7,631.9 | 7,429.4 | 202.52 | 37.685 | |
| 13,900.0 | 6,819.0 | 6,815.9 | 6,762.7 | 192.5 | 15.0 | -85.73 | 900.5 | 1,215.8 | 7,731.6 | 7,526.3 | 205.29 | 37.661 | |
| 14,000.0 | 6,819.0 | 6,815.4 | 6,762.3 | 195.3 | 15.0 | -85.68 | 900.5 | 1,215.8 | 7,831.4 | 7,623.3 | 208.07 | 37.639 | |
| 14,100.0 | 6,819.0 | 6,815.0 | 6,761.8 | 198.1 | 15.0 | -85.62 | 900.5 | 1,215.8 | 7,931.2 | 7,720.3 | 210.84 | 37.617 | |
| 14,200.0 | 6,819.0 | 6,814.5 | 6,761.3 | 200.9 | 15.0 | -85.57 | 900.5 | 1,215.8 | 8,030.9 | 7,817.3 | 213.62 | 37.595 | |
| 14,300.0 | 6,819.0 | 6,814.0 | 6,760.8 | 203.7 | 15.0 | -85.52 | 900.5 | 1,215.8 | 8,130.7 | 7,914.3 | 216.39 | 37.574 | |
| 14,400.0 | 6,819.0 | 6,813.5 | 6,760.4 | 206.5 | 15.0 | -85.47 | 900.5 | 1,215.8 | 8,230.5 | 8,011.3 | 219.16 | 37.554 | |
| 14,500.0 | 6,819.0 | 6,813.0 | 6,759.9 | 209.3 | 15.0 | -85.42 | 900.5 | 1,215.8 | 8,330.3 | 8,108.3 | 221.94 | 37.534 | |
| 14,600.0 | 6,819.0 | 6,812.6 | 6,759.4 | 212.1 | 15.0 | -85.37 | 900.5 | 1,215.7 | 8,430.1 | 8,205.4 | 224.71 | 37.515 | |
| 14,700.0 | 6,819.0 | 6,812.1 | 6,758.9 | 214.9 | 15.0 | -85.32 | 900.5 | 1,215.7 | 8,529.9 | 8,302.4 | 227.48 | 37.497 | |
| 14,720.3 | 6,819.0 | 6,812.0 | 6,758.9 | 215.4 | 15.0 | -85.31 | 900.5 | 1,215.7 | 8,550.1 | 8,322.1 | 228.05 | 37.493 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST HZ WOLFPACK PC B3-63-1HN - Wellbore #1 - Wellbore # — **Offset Site Error:** 0.0 usft

**Survey Program:** 620-MWD — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 87.20 | 292.9 | 5,978.8 | 5,985.9 | | | | |
| 100.0 | 100.0 | 103.2 | 103.2 | 0.1 | 0.1 | 87.20 | 292.9 | 5,978.7 | 5,985.8 | 5,985.7 | 0.18 | N/A | |
| 200.0 | 200.0 | 214.1 | 214.1 | 0.3 | 0.2 | 87.19 | 293.0 | 5,978.4 | 5,985.6 | 5,985.1 | 0.50 | N/A | |
| 300.0 | 300.0 | 325.0 | 325.0 | 0.5 | 0.3 | 87.19 | 293.1 | 5,977.9 | 5,985.1 | 5,984.3 | 0.82 | 7,265.399 | |
| 400.0 | 400.0 | 436.0 | 436.0 | 0.8 | 0.4 | 87.19 | 293.2 | 5,977.2 | 5,984.5 | 5,983.4 | 1.15 | 5,218.683 | |
| 500.0 | 500.0 | 546.9 | 546.9 | 1.0 | 0.5 | 87.19 | 293.3 | 5,976.3 | 5,983.7 | 5,982.2 | 1.47 | 4,071.362 | |
| 600.0 | 600.0 | 636.5 | 636.5 | 1.2 | 0.6 | 87.19 | 293.5 | 5,975.4 | 5,982.8 | 5,981.0 | 1.79 | 3,338.409 | |
| 700.0 | 700.0 | 844.1 | 844.0 | 1.4 | 1.0 | 87.18 | 294.5 | 5,971.2 | 5,980.4 | 5,978.0 | 2.44 | 2,447.780 | |
| 800.0 | 800.0 | 10,966.0 | 6,638.3 | 1.7 | 130.8 | 101.71 | -232.4 | 1,121.5 | 5,956.5 | 5,933.9 | 22.53 | 264.379 | |
| 900.0 | 900.0 | 10,966.0 | 6,638.3 | 1.9 | 130.8 | 90.72 | -232.4 | 1,121.5 | 5,858.3 | 5,798.8 | 59.51 | 98.439 | |
| 1,000.0 | 999.8 | 10,966.0 | 6,638.3 | 2.1 | 130.8 | 100.68 | -232.4 | 1,121.5 | 5,760.3 | 5,681.6 | 78.62 | 73.272 | |
| 1,100.0 | 1,099.5 | 10,966.0 | 6,638.3 | 2.3 | 130.8 | 109.87 | -232.4 | 1,121.5 | 5,662.4 | 5,568.0 | 94.38 | 59.996 | |
| 1,200.0 | 1,198.7 | 10,966.0 | 6,638.3 | 2.6 | 130.8 | 117.95 | -232.4 | 1,121.5 | 5,564.9 | 5,458.6 | 106.29 | 52.353 | |
| 1,300.0 | 1,297.5 | 10,966.0 | 6,638.3 | 2.9 | 130.8 | 124.84 | -232.4 | 1,121.5 | 5,467.8 | 5,353.1 | 114.73 | 47.659 | |
| 1,400.0 | 1,395.6 | 10,966.0 | 6,638.3 | 3.2 | 130.8 | 130.61 | -232.4 | 1,121.5 | 5,371.3 | 5,251.0 | 120.39 | 44.615 | |
| 1,500.0 | 1,493.1 | 10,966.0 | 6,638.3 | 3.5 | 130.8 | 135.42 | -232.4 | 1,121.5 | 5,275.7 | 5,151.7 | 124.01 | 42.542 | |
| 1,507.2 | 1,500.0 | 10,966.0 | 6,638.3 | 3.6 | 130.8 | 135.73 | -232.4 | 1,121.5 | 5,268.9 | 5,144.7 | 124.21 | 42.421 | |
| 1,572.2 | 1,563.0 | 10,966.0 | 6,638.3 | 3.8 | 130.8 | 135.73 | -232.4 | 1,121.5 | 5,207.0 | 5,082.6 | 124.41 | 41.854 | |
| 1,600.0 | 1,590.0 | 10,966.0 | 6,638.3 | 3.9 | 130.8 | 136.89 | -232.4 | 1,121.5 | 5,180.6 | 5,055.5 | 125.09 | 41.415 | |
| 1,700.0 | 1,686.3 | 10,966.0 | 6,638.3 | 4.4 | 130.8 | 140.61 | -232.4 | 1,121.5 | 5,086.4 | 4,959.6 | 126.81 | 40.112 | |
| 1,800.0 | 1,781.5 | 10,966.0 | 6,638.3 | 4.9 | 130.8 | 143.73 | -232.4 | 1,121.5 | 4,993.3 | 4,865.7 | 127.60 | 39.133 | |
| 1,817.6 | 1,798.2 | 10,966.0 | 6,638.3 | 5.0 | 130.8 | 144.22 | -232.4 | 1,121.5 | 4,977.1 | 4,849.4 | 127.67 | 38.985 | |
| 1,900.0 | 1,876.1 | 10,966.0 | 6,638.3 | 5.5 | 130.8 | 144.22 | -232.4 | 1,121.5 | 4,901.3 | 4,773.3 | 127.99 | 38.295 | |
| 2,000.0 | 1,970.6 | 10,966.0 | 6,638.3 | 6.0 | 130.8 | 144.22 | -232.4 | 1,121.5 | 4,809.5 | 4,681.1 | 128.39 | 37.460 | |
| 2,100.0 | 2,065.1 | 10,966.0 | 6,638.3 | 6.6 | 130.8 | 144.22 | -232.4 | 1,121.5 | 4,718.1 | 4,589.3 | 128.80 | 36.630 | |
| 2,200.0 | 2,159.6 | 10,966.0 | 6,638.3 | 7.2 | 130.8 | 144.22 | -232.4 | 1,121.5 | 4,627.1 | 4,497.8 | 129.22 | 35.807 | |
| 2,300.0 | 2,254.1 | 10,966.0 | 6,638.3 | 7.8 | 130.8 | 144.22 | -232.4 | 1,121.5 | 4,536.4 | 4,406.7 | 129.65 | 34.990 | |
| 2,400.0 | 2,348.7 | 10,966.0 | 6,638.3 | 8.4 | 130.8 | 144.22 | -232.4 | 1,121.5 | 4,446.1 | 4,316.0 | 130.08 | 34.180 | |
| 2,500.0 | 2,443.2 | 10,966.0 | 6,638.3 | 9.1 | 130.8 | 144.22 | -232.4 | 1,121.5 | 4,356.3 | 4,225.8 | 130.51 | 33.378 | |
| 2,600.0 | 2,537.7 | 10,966.0 | 6,638.3 | 9.7 | 130.8 | 144.22 | -232.4 | 1,121.5 | 4,266.9 | 4,135.9 | 130.95 | 32.583 | |
| 2,700.0 | 2,632.2 | 10,966.0 | 6,638.3 | 10.3 | 130.8 | 144.22 | -232.4 | 1,121.5 | 4,178.0 | 4,046.6 | 131.39 | 31.797 | |
| 2,800.0 | 2,726.8 | 10,966.0 | 6,638.3 | 10.9 | 130.8 | 144.22 | -232.4 | 1,121.5 | 4,089.6 | 3,957.7 | 131.84 | 31.020 | |
| 2,900.0 | 2,821.3 | 10,966.0 | 6,638.3 | 11.6 | 130.8 | 144.22 | -232.4 | 1,121.5 | 4,001.7 | 3,869.4 | 132.28 | 30.251 | |
| 3,000.0 | 2,915.8 | 10,966.0 | 6,638.3 | 12.2 | 130.8 | 144.22 | -232.4 | 1,121.5 | 3,914.5 | 3,781.7 | 132.73 | 29.492 | |
| 3,100.0 | 3,010.3 | 10,966.0 | 6,638.3 | 12.8 | 130.8 | 144.22 | -232.4 | 1,121.5 | 3,827.8 | 3,694.6 | 133.18 | 28.742 | |
| 3,200.0 | 3,104.8 | 10,966.0 | 6,638.3 | 13.5 | 130.8 | 144.22 | -232.4 | 1,121.5 | 3,741.8 | 3,608.2 | 133.63 | 28.002 | |
| 3,300.0 | 3,199.4 | 10,966.0 | 6,638.3 | 14.1 | 130.8 | 144.22 | -232.4 | 1,121.5 | 3,656.6 | 3,522.5 | 134.08 | 27.272 | |
| 3,400.0 | 3,293.9 | 10,966.0 | 6,638.3 | 14.8 | 130.8 | 144.22 | -232.4 | 1,121.5 | 3,572.1 | 3,437.5 | 134.53 | 26.552 | |
| 3,500.0 | 3,388.4 | 10,966.0 | 6,638.3 | 15.4 | 130.8 | 144.22 | -232.4 | 1,121.5 | 3,488.4 | 3,353.4 | 134.98 | 25.843 | |
| 3,600.0 | 3,482.9 | 10,966.0 | 6,638.3 | 16.0 | 130.8 | 144.22 | -232.4 | 1,121.5 | 3,405.6 | 3,270.1 | 135.44 | 25.145 | |
| 3,700.0 | 3,577.5 | 10,966.0 | 6,638.3 | 16.7 | 130.8 | 144.22 | -232.4 | 1,121.5 | 3,323.7 | 3,187.8 | 135.89 | 24.458 | |
| 3,800.0 | 3,672.0 | 10,966.0 | 6,638.3 | 17.3 | 130.8 | 144.22 | -232.4 | 1,121.5 | 3,242.9 | 3,106.5 | 136.35 | 23.784 | |
| 3,900.0 | 3,766.5 | 10,966.0 | 6,638.3 | 18.0 | 130.8 | 144.22 | -232.4 | 1,121.5 | 3,163.1 | 3,026.3 | 136.80 | 23.122 | |
| 4,000.0 | 3,861.0 | 10,966.0 | 6,638.3 | 18.6 | 130.8 | 144.22 | -232.4 | 1,121.5 | 3,084.6 | 2,947.3 | 137.26 | 22.473 | |
| 4,100.0 | 3,955.5 | 10,966.0 | 6,638.3 | 19.3 | 130.8 | 144.22 | -232.4 | 1,121.5 | 3,007.3 | 2,869.6 | 137.72 | 21.837 | |
| 4,200.0 | 4,050.1 | 10,966.0 | 6,638.3 | 19.9 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,931.4 | 2,793.2 | 138.17 | 21.215 | |
| 4,300.0 | 4,144.6 | 10,966.0 | 6,638.3 | 20.5 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,856.9 | 2,718.3 | 138.63 | 20.608 | |
| 4,400.0 | 4,239.1 | 10,966.0 | 6,638.3 | 21.2 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,784.1 | 2,645.0 | 139.09 | 20.017 | |
| 4,500.0 | 4,333.6 | 10,966.0 | 6,638.3 | 21.8 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,713.0 | 2,573.4 | 139.55 | 19.442 | |
| 4,600.0 | 4,428.2 | 10,966.0 | 6,638.3 | 22.5 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,643.8 | 2,503.8 | 140.00 | 18.883 | |
| 4,700.0 | 4,522.7 | 10,966.0 | 6,638.3 | 23.1 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,576.6 | 2,436.1 | 140.46 | 18.343 | |
| 4,800.0 | 4,617.2 | 10,966.0 | 6,638.3 | 23.8 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,511.5 | 2,370.6 | 140.92 | 17.822 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST HZ WOLFPACK PC B3-63-1HN - Wellbore #1 - Wellbore # — **Offset Site Error:** 0.0 usft

**Survey Program:** 620-MWD — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 10,966.0 | 6,638.3 | 24.4 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,448.9 | 2,307.5 | 141.38 | 17.321 | |
| 5,000.0 | 4,806.2 | 10,966.0 | 6,638.3 | 25.1 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,388.7 | 2,246.9 | 141.84 | 16.841 | |
| 5,100.0 | 4,900.8 | 10,966.0 | 6,638.3 | 25.7 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,331.4 | 2,189.1 | 142.30 | 16.383 | |
| 5,200.0 | 4,995.3 | 10,966.0 | 6,638.3 | 26.4 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,276.9 | 2,134.2 | 142.76 | 15.949 | |
| 5,300.0 | 5,089.8 | 10,966.0 | 6,638.3 | 27.0 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,225.7 | 2,082.4 | 143.22 | 15.540 | |
| 5,400.0 | 5,184.3 | 10,966.0 | 6,638.3 | 27.7 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,177.8 | 2,034.1 | 143.68 | 15.157 | |
| 5,500.0 | 5,278.9 | 10,966.0 | 6,638.3 | 28.3 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,133.5 | 1,989.4 | 144.14 | 14.802 | |
| 5,533.5 | 5,310.5 | 10,966.0 | 6,638.3 | 28.5 | 130.8 | 144.22 | -232.4 | 1,121.5 | 2,119.5 | 1,975.2 | 144.29 | 14.689 | |
| 5,600.0 | 5,373.6 | 10,966.0 | 6,638.3 | 28.9 | 130.8 | 143.88 | -232.4 | 1,121.5 | 2,092.5 | 1,947.3 | 145.18 | 14.413 | |
| 5,700.0 | 5,469.4 | 10,966.0 | 6,638.3 | 29.3 | 130.8 | 143.37 | -232.4 | 1,121.5 | 2,053.1 | 1,906.8 | 146.34 | 14.030 | |
| 5,800.0 | 5,566.1 | 10,966.0 | 6,638.3 | 29.8 | 130.8 | 142.88 | -232.4 | 1,121.5 | 2,015.2 | 1,867.9 | 147.34 | 13.677 | |
| 5,900.0 | 5,663.6 | 10,966.0 | 6,638.3 | 30.1 | 130.8 | 142.40 | -232.4 | 1,121.5 | 1,979.1 | 1,830.9 | 148.20 | 13.354 | |
| 6,000.0 | 5,761.9 | 10,966.0 | 6,638.3 | 30.5 | 130.8 | 141.96 | -232.4 | 1,121.5 | 1,944.7 | 1,795.8 | 148.91 | 13.060 | |
| 6,100.0 | 5,860.7 | 10,966.0 | 6,638.3 | 30.7 | 130.8 | 141.53 | -232.4 | 1,121.5 | 1,912.4 | 1,762.9 | 149.46 | 12.795 | |
| 6,200.0 | 5,960.0 | 10,966.0 | 6,638.3 | 31.0 | 130.8 | 141.14 | -232.4 | 1,121.5 | 1,882.1 | 1,732.3 | 149.88 | 12.558 | |
| 6,300.0 | 6,059.7 | 10,966.0 | 6,638.3 | 31.2 | 130.8 | 140.77 | -232.4 | 1,121.5 | 1,854.2 | 1,704.0 | 150.15 | 12.349 | |
| 6,400.0 | 6,159.6 | 10,966.0 | 6,638.3 | 31.3 | 130.8 | 140.43 | -232.4 | 1,121.5 | 1,828.6 | 1,678.3 | 150.28 | 12.168 | |
| 6,486.1 | 6,245.7 | 10,966.0 | 6,638.3 | 31.4 | 130.8 | 161.33 | -232.4 | 1,121.5 | 1,808.6 | 1,744.5 | 64.06 | 28.231 | |
| 6,500.0 | 6,259.6 | 10,966.0 | 6,638.3 | 31.4 | 130.8 | 161.33 | -232.4 | 1,121.5 | 1,805.6 | 1,741.5 | 64.08 | 28.178 | |
| 6,516.1 | 6,275.7 | 10,966.0 | 6,638.3 | 31.4 | 130.8 | 161.33 | -232.4 | 1,121.5 | 1,802.2 | 1,738.1 | 64.09 | 28.118 | |
| 6,550.0 | 6,309.5 | 10,966.0 | 6,638.3 | 31.5 | 130.8 | -109.16 | -232.4 | 1,121.5 | 1,795.8 | 1,645.6 | 150.20 | 11.956 | |
| 6,600.0 | 6,359.4 | 10,966.0 | 6,638.3 | 31.5 | 130.8 | -109.72 | -232.4 | 1,121.5 | 1,788.5 | 1,638.5 | 150.00 | 11.923 | |
| 6,650.0 | 6,408.8 | 10,966.0 | 6,638.3 | 31.5 | 130.8 | -110.08 | -232.4 | 1,121.5 | 1,783.7 | 1,633.9 | 149.79 | 11.908 | SF |
| 6,700.0 | 6,457.5 | 10,966.0 | 6,638.3 | 31.5 | 130.8 | -110.25 | -232.4 | 1,121.5 | 1,781.5 | 1,631.9 | 149.58 | 11.910 | |
| 6,716.1 | 6,473.1 | 10,966.0 | 6,638.3 | 31.5 | 130.8 | -110.26 | -232.4 | 1,121.5 | 1,781.3 | 1,631.8 | 149.52 | 11.914 | ES |
| 6,717.1 | 6,474.1 | 10,966.0 | 6,638.3 | 31.5 | 130.8 | -110.26 | -232.4 | 1,121.5 | 1,781.3 | 1,631.8 | 149.51 | 11.914 | CC |
| 6,725.0 | 6,481.6 | 10,966.0 | 6,638.3 | 31.5 | 130.8 | -110.26 | -232.4 | 1,121.5 | 1,781.3 | 1,631.9 | 149.47 | 11.918 | |
| 6,750.0 | 6,505.3 | 10,966.0 | 6,638.3 | 31.5 | 130.8 | -110.18 | -232.4 | 1,121.5 | 1,782.0 | 1,632.7 | 149.35 | 11.932 | |
| 6,775.0 | 6,528.5 | 10,966.0 | 6,638.3 | 31.4 | 130.8 | -110.02 | -232.4 | 1,121.5 | 1,783.5 | 1,634.2 | 149.23 | 11.951 | |
| 6,800.0 | 6,551.3 | 10,966.0 | 6,638.3 | 31.4 | 130.8 | -109.76 | -232.4 | 1,121.5 | 1,785.7 | 1,636.6 | 149.13 | 11.975 | |
| 6,825.0 | 6,573.4 | 10,966.0 | 6,638.3 | 31.4 | 130.8 | -109.42 | -232.4 | 1,121.5 | 1,788.7 | 1,639.7 | 149.04 | 12.002 | |
| 6,850.0 | 6,595.0 | 10,966.0 | 6,638.3 | 31.3 | 130.8 | -108.98 | -232.4 | 1,121.5 | 1,792.6 | 1,643.6 | 148.97 | 12.033 | |
| 6,875.0 | 6,615.8 | 10,966.0 | 6,638.3 | 31.3 | 130.8 | -108.45 | -232.4 | 1,121.5 | 1,797.1 | 1,648.2 | 148.92 | 12.068 | |
| 6,900.0 | 6,635.9 | 10,966.0 | 6,638.3 | 31.3 | 130.8 | -107.83 | -232.4 | 1,121.5 | 1,802.4 | 1,653.5 | 148.90 | 12.105 | |
| 6,925.0 | 6,655.1 | 10,966.0 | 6,638.3 | 31.2 | 130.8 | -107.12 | -232.4 | 1,121.5 | 1,808.5 | 1,659.6 | 148.90 | 12.145 | |
| 6,950.0 | 6,673.6 | 10,966.0 | 6,638.3 | 31.2 | 130.8 | -106.32 | -232.4 | 1,121.5 | 1,815.2 | 1,666.3 | 148.94 | 12.188 | |
| 6,975.0 | 6,691.1 | 10,966.0 | 6,638.3 | 31.1 | 130.8 | -105.43 | -232.4 | 1,121.5 | 1,822.6 | 1,673.6 | 149.00 | 12.232 | |
| 7,000.0 | 6,707.6 | 10,966.0 | 6,638.3 | 31.1 | 130.8 | -104.44 | -232.4 | 1,121.5 | 1,830.6 | 1,681.5 | 149.09 | 12.278 | |
| 7,025.0 | 6,723.1 | 10,966.0 | 6,638.3 | 31.0 | 130.8 | -103.37 | -232.4 | 1,121.5 | 1,839.3 | 1,690.0 | 149.21 | 12.326 | |
| 7,050.0 | 6,737.6 | 10,966.0 | 6,638.3 | 31.0 | 130.8 | -102.21 | -232.4 | 1,121.5 | 1,848.5 | 1,699.1 | 149.36 | 12.376 | |
| 7,075.0 | 6,751.0 | 10,966.0 | 6,638.3 | 30.9 | 130.8 | -100.96 | -232.4 | 1,121.5 | 1,858.3 | 1,708.7 | 149.52 | 12.428 | |
| 7,100.0 | 6,763.3 | 10,966.0 | 6,638.3 | 30.8 | 130.8 | -99.63 | -232.4 | 1,121.5 | 1,868.5 | 1,718.8 | 149.70 | 12.482 | |
| 7,125.0 | 6,774.5 | 10,966.0 | 6,638.3 | 30.8 | 130.8 | -98.22 | -232.4 | 1,121.5 | 1,879.3 | 1,729.4 | 149.88 | 12.538 | |
| 7,150.0 | 6,784.4 | 10,966.0 | 6,638.3 | 30.7 | 130.8 | -96.73 | -232.4 | 1,121.5 | 1,890.5 | 1,740.4 | 150.06 | 12.598 | |
| 7,175.0 | 6,793.1 | 10,966.0 | 6,638.3 | 30.7 | 130.8 | -95.17 | -232.4 | 1,121.5 | 1,902.1 | 1,751.9 | 150.21 | 12.662 | |
| 7,200.0 | 6,800.6 | 10,966.0 | 6,638.3 | 30.6 | 130.8 | -93.54 | -232.4 | 1,121.5 | 1,914.0 | 1,763.7 | 150.34 | 12.732 | |
| 7,225.0 | 6,806.8 | 10,966.0 | 6,638.3 | 30.6 | 130.8 | -91.85 | -232.4 | 1,121.5 | 1,926.3 | 1,775.9 | 150.41 | 12.807 | |
| 7,250.0 | 6,811.8 | 10,966.0 | 6,638.3 | 30.5 | 130.8 | -90.11 | -232.4 | 1,121.5 | 1,938.8 | 1,788.4 | 150.42 | 12.889 | |
| 7,275.0 | 6,815.5 | 10,966.0 | 6,638.3 | 30.5 | 130.8 | -88.32 | -232.4 | 1,121.5 | 1,951.6 | 1,801.3 | 150.36 | 12.979 | |
| 7,300.0 | 6,817.8 | 10,966.0 | 6,638.3 | 30.4 | 130.8 | -86.50 | -232.4 | 1,121.5 | 1,964.6 | 1,814.4 | 150.22 | 13.079 | |
| 7,325.0 | 6,818.9 | 10,966.0 | 6,638.3 | 30.4 | 130.8 | -84.65 | -232.4 | 1,121.5 | 1,977.8 | 1,827.8 | 149.97 | 13.187 | |
| 7,332.8 | 6,819.0 | 10,966.0 | 6,638.3 | 30.4 | 130.8 | -84.07 | -232.4 | 1,121.5 | 1,981.9 | 1,832.0 | 149.88 | 13.223 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST HZ WOLFPACK PC B3-63-1HN - Wellbore #1 - Wellbore # — **Offset Site Error:** 0.0 usft

**Survey Program:** 620-MWD — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 10,966.0 | 6,638.3 | 30.3 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,018.4 | 1,867.8 | 150.54 | 13.408 | |
| 7,500.0 | 6,819.0 | 10,966.0 | 6,638.3 | 30.2 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,075.4 | 1,923.7 | 151.79 | 13.673 | |
| 7,600.0 | 6,819.0 | 10,966.0 | 6,638.3 | 30.3 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,135.7 | 1,982.4 | 153.30 | 13.931 | |
| 7,700.0 | 6,819.0 | 10,966.0 | 6,638.3 | 30.6 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,198.8 | 2,043.8 | 155.04 | 14.182 | |
| 7,800.0 | 6,819.0 | 10,966.0 | 6,638.3 | 31.3 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,264.6 | 2,107.7 | 156.96 | 14.428 | |
| 7,900.0 | 6,819.0 | 10,966.0 | 6,638.3 | 32.5 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,332.9 | 2,173.8 | 159.02 | 14.670 | |
| 8,000.0 | 6,819.0 | 10,966.0 | 6,638.3 | 34.2 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,403.3 | 2,242.1 | 161.20 | 14.909 | |
| 8,100.0 | 6,819.0 | 10,966.0 | 6,638.3 | 36.1 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,475.8 | 2,312.4 | 163.47 | 15.146 | |
| 8,200.0 | 6,819.0 | 10,966.0 | 6,638.3 | 38.3 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,550.2 | 2,384.4 | 165.81 | 15.380 | |
| 8,300.0 | 6,819.0 | 10,966.0 | 6,638.3 | 40.6 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,626.2 | 2,458.0 | 168.21 | 15.613 | |
| 8,400.0 | 6,819.0 | 10,966.0 | 6,638.3 | 42.9 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,703.8 | 2,533.2 | 170.67 | 15.843 | |
| 8,500.0 | 6,819.0 | 10,966.0 | 6,638.3 | 45.3 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,782.9 | 2,609.7 | 173.16 | 16.071 | |
| 8,600.0 | 6,819.0 | 10,966.0 | 6,638.3 | 47.8 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,863.3 | 2,687.6 | 175.69 | 16.297 | |
| 8,700.0 | 6,819.0 | 10,966.0 | 6,638.3 | 50.3 | 130.8 | -84.07 | -232.4 | 1,121.5 | 2,944.8 | 2,766.6 | 178.25 | 16.520 | |
| 8,800.0 | 6,819.0 | 10,966.0 | 6,638.3 | 52.8 | 130.8 | -84.07 | -232.4 | 1,121.5 | 3,027.5 | 2,846.6 | 180.84 | 16.741 | |
| 8,900.0 | 6,819.0 | 10,966.0 | 6,638.3 | 55.4 | 130.8 | -84.07 | -232.4 | 1,121.5 | 3,111.2 | 2,927.7 | 183.44 | 16.960 | |
| 9,000.0 | 6,819.0 | 10,966.0 | 6,638.3 | 58.0 | 130.8 | -84.07 | -232.4 | 1,121.5 | 3,195.8 | 3,009.7 | 186.07 | 17.175 | |
| 9,100.0 | 6,819.0 | 10,966.0 | 6,638.3 | 60.6 | 130.8 | -84.07 | -232.4 | 1,121.5 | 3,281.3 | 3,092.6 | 188.71 | 17.388 | |
| 9,200.0 | 6,819.0 | 10,966.0 | 6,638.3 | 63.2 | 130.8 | -84.07 | -232.4 | 1,121.5 | 3,367.6 | 3,176.2 | 191.36 | 17.598 | |
| 9,300.0 | 6,819.0 | 10,966.0 | 6,638.3 | 65.9 | 130.8 | -84.07 | -232.4 | 1,121.5 | 3,454.6 | 3,260.6 | 194.03 | 17.804 | |
| 9,400.0 | 6,819.0 | 10,966.0 | 6,638.3 | 68.5 | 130.8 | -84.07 | -232.4 | 1,121.5 | 3,542.3 | 3,345.6 | 196.71 | 18.008 | |
| 9,500.0 | 6,819.0 | 10,966.0 | 6,638.3 | 71.2 | 130.8 | -84.07 | -232.4 | 1,121.5 | 3,630.6 | 3,431.2 | 199.39 | 18.208 | |
| 9,600.0 | 6,819.0 | 10,966.0 | 6,638.3 | 73.9 | 130.8 | -84.07 | -232.4 | 1,121.5 | 3,719.6 | 3,517.5 | 202.09 | 18.406 | |
| 9,700.0 | 6,819.0 | 10,966.0 | 6,638.3 | 76.5 | 130.8 | -84.07 | -232.4 | 1,121.5 | 3,809.1 | 3,604.3 | 204.79 | 18.600 | |
| 9,800.0 | 6,819.0 | 10,966.0 | 6,638.3 | 79.2 | 130.8 | -84.07 | -232.4 | 1,121.5 | 3,899.1 | 3,691.6 | 207.50 | 18.791 | |
| 9,900.0 | 6,819.0 | 10,966.0 | 6,638.3 | 81.9 | 130.8 | -84.07 | -232.4 | 1,121.5 | 3,989.5 | 3,779.3 | 210.22 | 18.978 | |
| 10,000.0 | 6,819.0 | 10,966.0 | 6,638.3 | 84.6 | 130.8 | -84.07 | -232.4 | 1,121.5 | 4,080.4 | 3,867.5 | 212.94 | 19.163 | |
| 10,100.0 | 6,819.0 | 10,966.0 | 6,638.3 | 87.4 | 130.8 | -84.07 | -232.4 | 1,121.5 | 4,171.8 | 3,956.1 | 215.66 | 19.344 | |
| 10,200.0 | 6,819.0 | 10,966.0 | 6,638.3 | 90.1 | 130.8 | -84.07 | -232.4 | 1,121.5 | 4,263.5 | 4,045.1 | 218.39 | 19.522 | |
| 10,300.0 | 6,819.0 | 10,966.0 | 6,638.3 | 92.8 | 130.8 | -84.07 | -232.4 | 1,121.5 | 4,355.6 | 4,134.5 | 221.13 | 19.697 | |
| 10,400.0 | 6,819.0 | 10,966.0 | 6,638.3 | 95.5 | 130.8 | -84.07 | -232.4 | 1,121.5 | 4,448.0 | 4,224.2 | 223.86 | 19.869 | |
| 10,500.0 | 6,819.0 | 10,966.0 | 6,638.3 | 98.3 | 130.8 | -84.07 | -232.4 | 1,121.5 | 4,540.8 | 4,314.2 | 226.61 | 20.038 | |
| 10,600.0 | 6,819.0 | 10,966.0 | 6,638.3 | 101.0 | 130.8 | -84.07 | -232.4 | 1,121.5 | 4,633.8 | 4,404.5 | 229.35 | 20.204 | |
| 10,700.0 | 6,819.0 | 10,966.0 | 6,638.3 | 103.8 | 130.8 | -84.07 | -232.4 | 1,121.5 | 4,727.2 | 4,495.1 | 232.10 | 20.367 | |
| 10,800.0 | 6,819.0 | 10,966.0 | 6,638.3 | 106.5 | 130.8 | -84.07 | -232.4 | 1,121.5 | 4,820.8 | 4,585.9 | 234.85 | 20.527 | |
| 10,900.0 | 6,819.0 | 10,966.0 | 6,638.3 | 109.2 | 130.8 | -84.07 | -232.4 | 1,121.5 | 4,914.6 | 4,677.0 | 237.60 | 20.684 | |
| 11,000.0 | 6,819.0 | 10,966.0 | 6,638.3 | 112.0 | 130.8 | -84.07 | -232.4 | 1,121.5 | 5,008.7 | 4,768.3 | 240.35 | 20.839 | |
| 11,100.0 | 6,819.0 | 10,966.0 | 6,638.3 | 114.8 | 130.8 | -84.07 | -232.4 | 1,121.5 | 5,103.0 | 4,859.9 | 243.11 | 20.991 | |
| 11,200.0 | 6,819.0 | 10,966.0 | 6,638.3 | 117.5 | 130.8 | -84.07 | -232.4 | 1,121.5 | 5,197.5 | 4,951.7 | 245.87 | 21.140 | |
| 11,300.0 | 6,819.0 | 10,966.0 | 6,638.3 | 120.3 | 130.8 | -84.07 | -232.4 | 1,121.5 | 5,292.3 | 5,043.6 | 248.63 | 21.286 | |
| 11,400.0 | 6,819.0 | 10,966.0 | 6,638.3 | 123.0 | 130.8 | -84.07 | -232.4 | 1,121.5 | 5,387.2 | 5,135.8 | 251.39 | 21.430 | |
| 11,500.0 | 6,819.0 | 10,966.0 | 6,638.3 | 125.8 | 130.8 | -84.07 | -232.4 | 1,121.5 | 5,482.3 | 5,228.1 | 254.15 | 21.571 | |
| 11,600.0 | 6,819.0 | 10,966.0 | 6,638.3 | 128.6 | 130.8 | -84.07 | -232.4 | 1,121.5 | 5,577.6 | 5,320.7 | 256.92 | 21.709 | |
| 11,700.0 | 6,819.0 | 10,966.0 | 6,638.3 | 131.3 | 130.8 | -84.07 | -232.4 | 1,121.5 | 5,673.0 | 5,413.3 | 259.69 | 21.846 | |
| 11,800.0 | 6,819.0 | 10,966.0 | 6,638.3 | 134.1 | 130.8 | -84.07 | -232.4 | 1,121.5 | 5,768.6 | 5,506.1 | 262.45 | 21.980 | |
| 11,900.0 | 6,819.0 | 10,966.0 | 6,638.3 | 136.9 | 130.8 | -84.07 | -232.4 | 1,121.5 | 5,864.3 | 5,599.1 | 265.22 | 22.111 | |
| 12,000.0 | 6,819.0 | 10,966.0 | 6,638.3 | 139.6 | 130.8 | -84.07 | -232.4 | 1,121.5 | 5,960.2 | 5,692.2 | 267.99 | 22.240 | |
| 12,100.0 | 6,819.0 | 10,966.0 | 6,638.3 | 142.4 | 130.8 | -84.07 | -232.4 | 1,121.5 | 6,056.2 | 5,785.5 | 270.76 | 22.367 | |
| 12,200.0 | 6,819.0 | 10,966.0 | 6,638.3 | 145.2 | 130.8 | -84.07 | -232.4 | 1,121.5 | 6,152.4 | 5,878.8 | 273.53 | 22.492 | |
| 12,300.0 | 6,819.0 | 10,966.0 | 6,638.3 | 148.0 | 130.8 | -84.07 | -232.4 | 1,121.5 | 6,248.6 | 5,972.3 | 276.31 | 22.615 | |
| 12,400.0 | 6,819.0 | 10,966.0 | 6,638.3 | 150.8 | 130.8 | -84.07 | -232.4 | 1,121.5 | 6,345.0 | 6,065.9 | 279.08 | 22.735 | |
| 12,500.0 | 6,819.0 | 10,966.0 | 6,638.3 | 153.5 | 130.8 | -84.07 | -232.4 | 1,121.5 | 6,441.5 | 6,159.6 | 281.86 | 22.854 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST HZ WOLFPACK PC B3-63-1HN - Wellbore #1 - Wellbore # — **Offset Site Error:** 0.0 usft

**Survey Program:** 620-MWD — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 10,966.0 | 6,638.3 | 156.3 | 130.8 | -84.07 | -232.4 | 1,121.5 | 6,538.1 | 6,253.4 | 284.63 | 22.970 | |
| 12,700.0 | 6,819.0 | 10,966.0 | 6,638.3 | 159.1 | 130.8 | -84.07 | -232.4 | 1,121.5 | 6,634.8 | 6,347.4 | 287.41 | 23.085 | |
| 12,800.0 | 6,819.0 | 10,966.0 | 6,638.3 | 161.9 | 130.8 | -84.07 | -232.4 | 1,121.5 | 6,731.5 | 6,441.4 | 290.18 | 23.197 | |
| 12,900.0 | 6,819.0 | 10,966.0 | 6,638.3 | 164.7 | 130.8 | -84.07 | -232.4 | 1,121.5 | 6,828.4 | 6,535.5 | 292.96 | 23.308 | |
| 13,000.0 | 6,819.0 | 10,966.0 | 6,638.3 | 167.4 | 130.8 | -84.07 | -232.4 | 1,121.5 | 6,925.4 | 6,629.7 | 295.74 | 23.417 | |
| 13,100.0 | 6,819.0 | 10,966.0 | 6,638.3 | 170.2 | 130.8 | -84.07 | -232.4 | 1,121.5 | 7,022.5 | 6,723.9 | 298.52 | 23.524 | |
| 13,200.0 | 6,819.0 | 10,966.0 | 6,638.3 | 173.0 | 130.8 | -84.07 | -232.4 | 1,121.5 | 7,119.6 | 6,818.3 | 301.30 | 23.630 | |
| 13,300.0 | 6,819.0 | 10,966.0 | 6,638.3 | 175.8 | 130.8 | -84.07 | -232.4 | 1,121.5 | 7,216.8 | 6,912.7 | 304.08 | 23.733 | |
| 13,400.0 | 6,819.0 | 10,966.0 | 6,638.3 | 178.6 | 130.8 | -84.07 | -232.4 | 1,121.5 | 7,314.1 | 7,007.2 | 306.86 | 23.835 | |
| 13,500.0 | 6,819.0 | 10,966.0 | 6,638.3 | 181.4 | 130.8 | -84.07 | -232.4 | 1,121.5 | 7,411.5 | 7,101.8 | 309.64 | 23.936 | |
| 13,600.0 | 6,819.0 | 10,966.0 | 6,638.3 | 184.2 | 130.8 | -84.07 | -232.4 | 1,121.5 | 7,508.9 | 7,196.5 | 312.42 | 24.034 | |
| 13,700.0 | 6,819.0 | 10,966.0 | 6,638.3 | 187.0 | 130.8 | -84.07 | -232.4 | 1,121.5 | 7,606.4 | 7,291.2 | 315.20 | 24.132 | |
| 13,800.0 | 6,819.0 | 10,966.0 | 6,638.3 | 189.7 | 130.8 | -84.07 | -232.4 | 1,121.5 | 7,703.9 | 7,386.0 | 317.99 | 24.227 | |
| 13,900.0 | 6,819.0 | 10,966.0 | 6,638.3 | 192.5 | 130.8 | -84.07 | -232.4 | 1,121.5 | 7,801.6 | 7,480.8 | 320.77 | 24.321 | |
| 14,000.0 | 6,819.0 | 10,966.0 | 6,638.3 | 195.3 | 130.8 | -84.07 | -232.4 | 1,121.5 | 7,899.3 | 7,575.7 | 323.55 | 24.414 | |
| 14,100.0 | 6,819.0 | 10,966.0 | 6,638.3 | 198.1 | 130.8 | -84.07 | -232.4 | 1,121.5 | 7,997.0 | 7,670.7 | 326.34 | 24.505 | |
| 14,200.0 | 6,819.0 | 10,966.0 | 6,638.3 | 200.9 | 130.8 | -84.07 | -232.4 | 1,121.5 | 8,094.8 | 7,765.7 | 329.12 | 24.595 | |
| 14,300.0 | 6,819.0 | 10,966.0 | 6,638.3 | 203.7 | 130.8 | -84.07 | -232.4 | 1,121.5 | 8,192.6 | 7,860.7 | 331.91 | 24.684 | |
| 14,400.0 | 6,819.0 | 10,966.0 | 6,638.3 | 206.5 | 130.8 | -84.07 | -232.4 | 1,121.5 | 8,290.5 | 7,955.8 | 334.69 | 24.771 | |
| 14,500.0 | 6,819.0 | 10,966.0 | 6,638.3 | 209.3 | 130.8 | -84.07 | -232.4 | 1,121.5 | 8,388.5 | 8,051.0 | 337.47 | 24.857 | |
| 14,600.0 | 6,819.0 | 10,966.0 | 6,638.3 | 212.1 | 130.8 | -84.07 | -232.4 | 1,121.5 | 8,486.5 | 8,146.2 | 340.26 | 24.941 | |
| 14,700.0 | 6,819.0 | 10,966.0 | 6,638.3 | 214.9 | 130.8 | -84.07 | -232.4 | 1,121.5 | 8,584.5 | 8,241.5 | 343.05 | 25.024 | |
| 14,720.3 | 6,819.0 | 10,966.0 | 6,638.3 | 215.4 | 130.8 | -84.07 | -232.4 | 1,121.5 | 8,604.4 | 8,260.8 | 343.61 | 25.041 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ACHZIGER #B5-16 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -96.03 | -550.3 | -5,213.3 | 5,242.3 | | | | |
| 100.0 | 100.0 | 72.6 | 72.6 | 0.1 | 0.1 | -96.02 | -550.1 | -5,213.3 | 5,242.3 | 5,242.1 | 0.16 | N/A | |
| 200.0 | 200.0 | 172.6 | 172.6 | 0.3 | 0.2 | -96.01 | -549.3 | -5,213.5 | 5,242.4 | 5,241.9 | 0.51 | N/A | |
| 300.0 | 300.0 | 272.6 | 272.6 | 0.5 | 0.3 | -96.01 | -548.8 | -5,213.7 | 5,242.5 | 5,241.7 | 0.83 | 6,336.631 | |
| 400.0 | 400.0 | 377.9 | 377.9 | 0.8 | 0.4 | -96.01 | -548.6 | -5,213.8 | 5,242.6 | 5,241.5 | 1.12 | 4,698.571 | |
| 500.0 | 500.0 | 479.2 | 479.2 | 1.0 | 0.4 | -96.01 | -548.5 | -5,213.8 | 5,242.5 | 5,241.2 | 1.40 | 3,753.589 | |
| 600.0 | 600.0 | 583.6 | 583.6 | 1.2 | 0.5 | -96.00 | -548.3 | -5,213.7 | 5,242.5 | 5,240.8 | 1.67 | 3,132.603 | |
| 700.0 | 700.0 | 679.3 | 679.3 | 1.4 | 0.5 | -96.00 | -548.2 | -5,213.7 | 5,242.4 | 5,240.5 | 1.93 | 2,714.884 | |
| 722.0 | 722.0 | 700.0 | 700.0 | 1.5 | 0.5 | -96.00 | -548.2 | -5,213.7 | 5,242.4 | 5,240.4 | 1.99 | 2,638.516 | |
| 800.0 | 800.0 | 774.2 | 774.2 | 1.7 | 0.6 | -96.00 | -548.1 | -5,213.7 | 5,242.4 | 5,240.2 | 2.19 | 2,390.876 | |
| 900.0 | 900.0 | 867.8 | 867.8 | 1.9 | 0.6 | -117.16 | -548.0 | -5,213.8 | 5,243.4 | 5,240.9 | 2.45 | 2,144.187 | |
| 1,000.0 | 999.8 | 958.8 | 958.8 | 2.1 | 0.6 | -117.16 | -548.0 | -5,214.1 | 5,246.0 | 5,243.3 | 2.70 | 1,939.840 | |
| 1,100.0 | 1,099.5 | 1,053.7 | 1,053.6 | 2.3 | 0.7 | -117.16 | -548.2 | -5,214.5 | 5,250.5 | 5,247.5 | 2.98 | 1,764.741 | |
| 1,200.0 | 1,198.7 | 1,152.6 | 1,152.5 | 2.6 | 0.7 | -117.17 | -548.4 | -5,214.9 | 5,256.5 | 5,253.2 | 3.26 | 1,611.054 | |
| 1,300.0 | 1,297.5 | 1,250.0 | 1,250.0 | 2.9 | 0.7 | -117.18 | -548.6 | -5,215.4 | 5,264.2 | 5,260.6 | 3.57 | 1,473.610 | |
| 1,400.0 | 1,395.6 | 1,349.5 | 1,349.5 | 3.2 | 0.8 | -117.20 | -548.8 | -5,215.8 | 5,273.5 | 5,269.6 | 3.91 | 1,347.457 | |
| 1,500.0 | 1,493.1 | 1,455.6 | 1,455.5 | 3.5 | 0.8 | -117.24 | -549.0 | -5,216.2 | 5,284.4 | 5,280.1 | 4.30 | 1,229.752 | |
| 1,507.2 | 1,500.0 | 1,463.3 | 1,463.3 | 3.6 | 0.8 | -117.25 | -549.0 | -5,216.2 | 5,285.3 | 5,280.9 | 4.32 | 1,222.157 | |
| 1,572.2 | 1,563.0 | 1,532.1 | 1,532.1 | 3.8 | 0.8 | -117.41 | -549.1 | -5,216.4 | 5,292.9 | 5,288.3 | 4.57 | 1,157.235 | |
| 1,600.0 | 1,590.0 | 1,560.7 | 1,560.7 | 3.9 | 0.8 | -117.42 | -549.1 | -5,216.4 | 5,296.2 | 5,291.5 | 4.69 | 1,130.361 | |
| 1,700.0 | 1,686.3 | 1,655.9 | 1,655.9 | 4.4 | 0.9 | -117.44 | -549.3 | -5,216.5 | 5,309.2 | 5,304.0 | 5.13 | 1,034.620 | |
| 1,800.0 | 1,781.5 | 1,749.9 | 1,749.8 | 4.9 | 0.9 | -117.45 | -549.4 | -5,216.7 | 5,323.9 | 5,318.3 | 5.63 | 945.606 | |
| 1,817.6 | 1,798.2 | 1,767.0 | 1,767.0 | 5.0 | 0.9 | -117.45 | -549.4 | -5,216.7 | 5,326.7 | 5,321.0 | 5.72 | 930.580 | |
| 1,900.0 | 1,876.1 | 1,848.1 | 1,848.1 | 5.5 | 0.9 | -117.71 | -549.5 | -5,216.8 | 5,339.8 | 5,333.7 | 6.16 | 867.178 | |
| 2,000.0 | 1,970.6 | 1,944.9 | 1,944.9 | 6.0 | 0.9 | -118.01 | -549.4 | -5,216.9 | 5,355.8 | 5,349.1 | 6.70 | 799.834 | |
| 2,100.0 | 2,065.1 | 2,037.9 | 2,037.9 | 6.6 | 1.0 | -118.30 | -549.2 | -5,217.0 | 5,372.0 | 5,364.8 | 7.25 | 741.032 | |
| 2,200.0 | 2,159.6 | 2,130.2 | 2,130.1 | 7.2 | 1.0 | -118.58 | -549.0 | -5,217.1 | 5,388.4 | 5,380.5 | 7.81 | 689.954 | |
| 2,300.0 | 2,254.1 | 2,223.3 | 2,223.3 | 7.8 | 1.0 | -118.87 | -548.7 | -5,217.3 | 5,404.9 | 5,396.5 | 8.38 | 645.310 | |
| 2,400.0 | 2,348.7 | 2,317.8 | 2,317.8 | 8.4 | 1.1 | -119.15 | -548.4 | -5,217.5 | 5,421.6 | 5,412.6 | 8.95 | 606.087 | |
| 2,500.0 | 2,443.2 | 2,413.6 | 2,413.6 | 9.1 | 1.1 | -119.44 | -548.1 | -5,217.7 | 5,438.4 | 5,428.9 | 9.52 | 571.466 | |
| 2,600.0 | 2,537.7 | 2,502.0 | 2,501.9 | 9.7 | 1.1 | -119.71 | -547.7 | -5,218.0 | 5,455.4 | 5,445.3 | 10.09 | 540.748 | |
| 2,700.0 | 2,632.2 | 2,600.6 | 2,600.6 | 10.3 | 1.2 | -120.00 | -547.1 | -5,218.3 | 5,472.6 | 5,461.9 | 10.66 | 513.257 | |
| 2,800.0 | 2,726.8 | 2,699.5 | 2,699.5 | 10.9 | 1.2 | -120.29 | -546.6 | -5,218.5 | 5,489.8 | 5,478.5 | 11.23 | 488.665 | |
| 2,900.0 | 2,821.3 | 2,799.3 | 2,799.3 | 11.6 | 1.2 | -120.58 | -546.2 | -5,218.6 | 5,507.1 | 5,495.3 | 11.80 | 466.547 | |
| 3,000.0 | 2,915.8 | 2,909.2 | 2,909.2 | 12.2 | 1.2 | -120.90 | -545.8 | -5,218.6 | 5,524.3 | 5,511.9 | 12.37 | 446.744 | |
| 3,100.0 | 3,010.3 | 3,025.9 | 3,025.9 | 12.8 | 1.3 | -121.24 | -545.6 | -5,218.1 | 5,541.4 | 5,528.5 | 12.92 | 428.950 | |
| 3,200.0 | 3,104.8 | 3,155.1 | 3,155.1 | 13.5 | 1.3 | -121.62 | -545.5 | -5,216.7 | 5,558.0 | 5,544.6 | 13.47 | 412.663 | |
| 3,300.0 | 3,199.4 | 3,254.8 | 3,254.7 | 14.1 | 1.3 | -121.92 | -545.8 | -5,215.3 | 5,574.5 | 5,560.5 | 14.02 | 397.528 | |
| 3,400.0 | 3,293.9 | 3,359.2 | 3,359.1 | 14.8 | 1.3 | -122.23 | -547.1 | -5,213.4 | 5,591.1 | 5,576.5 | 14.58 | 383.529 | |
| 3,500.0 | 3,388.4 | 3,475.6 | 3,475.4 | 15.4 | 1.3 | -122.60 | -549.9 | -5,210.7 | 5,607.5 | 5,592.4 | 15.13 | 370.619 | |
| 3,600.0 | 3,482.9 | 3,571.6 | 3,571.4 | 16.0 | 1.3 | -122.91 | -552.7 | -5,208.1 | 5,623.8 | 5,608.1 | 15.68 | 358.587 | |
| 3,700.0 | 3,577.5 | 3,667.3 | 3,667.0 | 16.7 | 1.3 | -123.21 | -555.8 | -5,205.5 | 5,640.3 | 5,624.1 | 16.24 | 347.400 | |
| 3,800.0 | 3,672.0 | 3,768.6 | 3,768.2 | 17.3 | 1.3 | -123.53 | -559.2 | -5,202.6 | 5,656.9 | 5,640.1 | 16.79 | 337.007 | |
| 3,900.0 | 3,766.5 | 3,864.1 | 3,863.6 | 18.0 | 1.3 | -123.84 | -562.4 | -5,199.7 | 5,673.6 | 5,656.2 | 17.33 | 327.298 | |
| 4,000.0 | 3,861.0 | 3,940.1 | 3,939.5 | 18.6 | 1.3 | -124.07 | -564.4 | -5,197.7 | 5,690.5 | 5,672.6 | 17.89 | 318.148 | |
| 4,100.0 | 3,955.5 | 4,007.4 | 4,006.8 | 19.3 | 1.3 | -124.27 | -565.7 | -5,196.3 | 5,708.0 | 5,689.5 | 18.44 | 309.557 | |
| 4,200.0 | 4,050.1 | 4,093.8 | 4,093.2 | 19.9 | 1.3 | -124.53 | -567.1 | -5,194.9 | 5,725.9 | 5,706.9 | 18.99 | 301.528 | |
| 4,300.0 | 4,144.6 | 4,163.3 | 4,162.7 | 20.5 | 1.3 | -124.73 | -567.8 | -5,194.0 | 5,744.2 | 5,724.7 | 19.54 | 293.962 | |
| 4,400.0 | 4,239.1 | 4,249.1 | 4,248.5 | 21.2 | 1.3 | -124.96 | -568.2 | -5,193.4 | 5,763.0 | 5,742.9 | 20.09 | 286.879 | |
| 4,500.0 | 4,333.6 | 4,347.7 | 4,347.1 | 21.8 | 1.4 | -125.23 | -568.4 | -5,192.7 | 5,781.9 | 5,761.2 | 20.63 | 280.233 | |
| 4,600.0 | 4,428.2 | 4,424.2 | 4,423.6 | 22.5 | 1.4 | -125.44 | -568.6 | -5,192.3 | 5,800.9 | 5,779.7 | 21.18 | 273.949 | |
| 4,700.0 | 4,522.7 | 4,500.0 | 4,499.4 | 23.1 | 1.4 | -125.64 | -568.4 | -5,192.4 | 5,820.7 | 5,799.0 | 21.71 | 268.069 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ACHZIGER #B5-16 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,577.0 | 4,576.4 | 23.8 | 1.4 | -125.84 | -567.7 | -5,193.0 | 5,840.8 | 5,818.6 | 22.26 | 262.389 | |
| 4,900.0 | 4,711.7 | 4,678.2 | 4,677.5 | 24.4 | 1.4 | -126.09 | -566.2 | -5,193.7 | 5,861.0 | 5,838.2 | 22.80 | 257.048 | |
| 5,000.0 | 4,806.2 | 4,805.7 | 4,805.1 | 25.1 | 1.4 | -126.40 | -564.0 | -5,194.3 | 5,880.9 | 5,857.6 | 23.33 | 252.031 | |
| 5,100.0 | 4,900.8 | 4,917.2 | 4,916.5 | 25.7 | 1.4 | -126.67 | -561.9 | -5,194.3 | 5,900.5 | 5,876.7 | 23.87 | 247.224 | |
| 5,200.0 | 4,995.3 | 5,000.0 | 4,999.3 | 26.4 | 1.5 | -126.87 | -560.2 | -5,194.4 | 5,920.2 | 5,895.8 | 24.41 | 242.579 | |
| 5,300.0 | 5,089.8 | 5,066.2 | 5,065.4 | 27.0 | 1.5 | -127.03 | -558.8 | -5,194.7 | 5,940.4 | 5,915.4 | 24.95 | 238.113 | |
| 5,400.0 | 5,184.3 | 5,135.5 | 5,134.7 | 27.7 | 1.5 | -127.19 | -557.3 | -5,195.3 | 5,961.0 | 5,935.5 | 25.49 | 233.864 | |
| 5,500.0 | 5,278.9 | 5,200.0 | 5,199.3 | 28.3 | 1.5 | -127.34 | -555.8 | -5,196.2 | 5,982.2 | 5,956.1 | 26.03 | 229.812 | |
| 5,533.5 | 5,310.5 | 5,230.9 | 5,230.1 | 28.5 | 1.5 | -127.41 | -555.0 | -5,196.8 | 5,989.4 | 5,963.1 | 26.21 | 228.503 | |
| 5,600.0 | 5,373.6 | 5,278.1 | 5,277.3 | 28.9 | 1.5 | -127.74 | -553.9 | -5,197.7 | 6,003.3 | 5,976.9 | 26.45 | 226.967 | |
| 5,700.0 | 5,469.4 | 5,376.4 | 5,375.5 | 29.3 | 1.6 | -128.23 | -551.0 | -5,200.0 | 6,022.8 | 5,996.0 | 26.73 | 225.350 | |
| 5,800.0 | 5,566.1 | 5,491.5 | 5,490.6 | 29.8 | 1.6 | -128.68 | -547.1 | -5,202.5 | 6,040.0 | 6,013.0 | 26.97 | 223.945 | |
| 5,900.0 | 5,663.6 | 5,609.9 | 5,608.8 | 30.1 | 1.6 | -129.07 | -543.6 | -5,204.6 | 6,054.7 | 6,027.5 | 27.19 | 222.718 | |
| 6,000.0 | 5,761.9 | 5,741.5 | 5,740.4 | 30.5 | 1.6 | -129.41 | -540.5 | -5,205.8 | 6,066.7 | 6,039.3 | 27.37 | 221.645 | |
| 6,100.0 | 5,860.7 | 5,829.2 | 5,828.2 | 30.7 | 1.7 | -129.65 | -539.4 | -5,206.3 | 6,076.5 | 6,049.0 | 27.53 | 220.695 | |
| 6,200.0 | 5,960.0 | 5,932.9 | 5,931.9 | 31.0 | 1.7 | -129.84 | -538.2 | -5,206.8 | 6,084.2 | 6,056.5 | 27.67 | 219.869 | |
| 6,300.0 | 6,059.7 | 6,034.0 | 6,033.0 | 31.2 | 1.7 | -129.98 | -537.3 | -5,207.3 | 6,089.6 | 6,061.8 | 27.79 | 219.144 | |
| 6,400.0 | 6,159.6 | 6,135.1 | 6,134.0 | 31.3 | 1.7 | -130.05 | -536.3 | -5,207.7 | 6,092.7 | 6,064.8 | 27.89 | 218.493 | |
| 6,486.1 | 6,245.7 | 6,226.2 | 6,225.1 | 31.4 | 1.8 | -108.90 | -535.5 | -5,208.0 | 6,093.5 | 6,067.7 | 25.87 | 235.530 | |
| 6,500.0 | 6,259.6 | 6,240.7 | 6,239.6 | 31.4 | 1.8 | -108.90 | -535.4 | -5,208.0 | 6,093.5 | 6,067.6 | 25.89 | 235.358 | |
| 6,516.1 | 6,275.7 | 6,257.5 | 6,256.4 | 31.4 | 1.8 | -108.90 | -535.3 | -5,208.0 | 6,093.5 | 6,067.6 | 25.91 | 235.143 | |
| 6,550.0 | 6,309.5 | 6,292.8 | 6,291.8 | 31.5 | 1.8 | -18.92 | -535.1 | -5,208.1 | 6,092.8 | 6,064.8 | 27.95 | 217.979 | |
| 6,600.0 | 6,359.4 | 6,344.8 | 6,343.7 | 31.5 | 1.8 | -19.04 | -534.8 | -5,208.1 | 6,088.8 | 6,061.0 | 27.86 | 218.555 | |
| 6,650.0 | 6,408.8 | 6,396.3 | 6,395.2 | 31.5 | 1.8 | -19.25 | -534.4 | -5,208.2 | 6,081.6 | 6,053.9 | 27.72 | 219.410 | |
| 6,700.0 | 6,457.5 | 6,445.4 | 6,444.3 | 31.5 | 1.8 | -19.56 | -534.0 | -5,208.3 | 6,071.1 | 6,043.6 | 27.50 | 220.735 | |
| 6,716.1 | 6,473.1 | 6,461.1 | 6,460.0 | 31.5 | 1.8 | -19.69 | -533.9 | -5,208.3 | 6,067.1 | 6,039.7 | 27.42 | 221.293 | |
| 6,725.0 | 6,481.6 | 6,469.6 | 6,468.5 | 31.5 | 1.8 | -19.80 | -533.8 | -5,208.3 | 6,064.7 | 6,037.3 | 27.33 | 221.922 | |
| 6,750.0 | 6,505.3 | 6,493.4 | 6,492.3 | 31.5 | 1.8 | -20.15 | -533.6 | -5,208.3 | 6,057.1 | 6,030.1 | 27.04 | 224.029 | |
| 6,775.0 | 6,528.5 | 6,516.0 | 6,514.9 | 31.4 | 1.8 | -20.56 | -533.4 | -5,208.3 | 6,048.4 | 6,021.7 | 26.68 | 226.677 | |
| 6,800.0 | 6,551.3 | 6,537.8 | 6,536.7 | 31.4 | 1.9 | -21.05 | -533.3 | -5,208.4 | 6,038.5 | 6,012.3 | 26.26 | 229.932 | |
| 6,825.0 | 6,573.4 | 6,559.1 | 6,558.0 | 31.4 | 1.9 | -21.62 | -533.2 | -5,208.4 | 6,027.6 | 6,001.8 | 25.77 | 233.858 | |
| 6,850.0 | 6,595.0 | 6,579.8 | 6,578.7 | 31.3 | 1.9 | -22.28 | -533.1 | -5,208.4 | 6,015.6 | 5,990.3 | 25.22 | 238.524 | |
| 6,875.0 | 6,615.8 | 6,600.0 | 6,598.9 | 31.3 | 1.9 | -23.03 | -533.0 | -5,208.4 | 6,002.5 | 5,977.9 | 24.60 | 244.003 | |
| 6,900.0 | 6,635.9 | 6,617.9 | 6,616.8 | 31.3 | 1.9 | -23.89 | -532.9 | -5,208.4 | 5,988.4 | 5,964.5 | 23.92 | 250.377 | |
| 6,925.0 | 6,655.1 | 6,635.2 | 6,634.1 | 31.2 | 1.9 | -24.88 | -532.8 | -5,208.5 | 5,973.4 | 5,950.2 | 23.18 | 257.715 | |
| 6,950.0 | 6,673.6 | 6,651.8 | 6,650.7 | 31.2 | 1.9 | -26.01 | -532.7 | -5,208.5 | 5,957.4 | 5,935.0 | 22.39 | 266.080 | |
| 6,975.0 | 6,691.1 | 6,667.6 | 6,666.5 | 31.1 | 1.9 | -27.30 | -532.7 | -5,208.5 | 5,940.6 | 5,919.0 | 21.56 | 275.502 | |
| 7,000.0 | 6,707.6 | 6,682.5 | 6,681.4 | 31.1 | 1.9 | -28.78 | -532.7 | -5,208.5 | 5,922.9 | 5,902.2 | 20.71 | 285.935 | |
| 7,025.0 | 6,723.1 | 6,700.0 | 6,698.9 | 31.0 | 1.9 | -30.50 | -532.6 | -5,208.5 | 5,904.5 | 5,884.6 | 19.87 | 297.173 | |
| 7,050.0 | 6,737.6 | 6,711.9 | 6,710.8 | 31.0 | 1.9 | -32.45 | -532.6 | -5,208.6 | 5,885.3 | 5,866.2 | 19.06 | 308.814 | |
| 7,075.0 | 6,751.0 | 6,726.8 | 6,725.7 | 30.9 | 1.9 | -34.74 | -532.6 | -5,208.6 | 5,865.4 | 5,847.1 | 18.33 | 319.968 | |
| 7,100.0 | 6,763.3 | 6,740.5 | 6,739.4 | 30.8 | 1.9 | -37.39 | -532.5 | -5,208.6 | 5,844.9 | 5,827.2 | 17.75 | 329.310 | |
| 7,125.0 | 6,774.5 | 6,750.0 | 6,748.9 | 30.8 | 1.9 | -40.43 | -532.5 | -5,208.6 | 5,823.9 | 5,806.5 | 17.38 | 335.140 | |
| 7,150.0 | 6,784.4 | 6,750.0 | 6,748.9 | 30.7 | 1.9 | -43.86 | -532.5 | -5,208.6 | 5,802.3 | 5,785.0 | 17.27 | 336.042 | |
| 7,175.0 | 6,793.1 | 6,750.0 | 6,748.9 | 30.7 | 1.9 | -47.85 | -532.5 | -5,208.6 | 5,780.3 | 5,762.8 | 17.46 | 331.046 | |
| 7,200.0 | 6,800.6 | 6,750.0 | 6,748.9 | 30.6 | 1.9 | -52.47 | -532.5 | -5,208.6 | 5,757.9 | 5,740.0 | 17.95 | 320.779 | |
| 7,225.0 | 6,806.8 | 6,750.0 | 6,748.9 | 30.6 | 1.9 | -57.81 | -532.5 | -5,208.6 | 5,735.2 | 5,716.5 | 18.67 | 307.145 | |
| 7,250.0 | 6,811.8 | 6,750.0 | 6,748.9 | 30.5 | 1.9 | -63.91 | -532.5 | -5,208.6 | 5,712.2 | 5,692.7 | 19.53 | 292.512 | |
| 7,275.0 | 6,815.5 | 6,750.0 | 6,748.9 | 30.5 | 1.9 | -70.74 | -532.5 | -5,208.6 | 5,689.1 | 5,668.7 | 20.40 | 278.859 | |
| 7,300.0 | 6,817.8 | 6,750.0 | 6,748.9 | 30.4 | 1.9 | -78.21 | -532.5 | -5,208.6 | 5,665.8 | 5,644.5 | 21.21 | 267.137 | |
| 7,325.0 | 6,818.9 | 6,750.0 | 6,748.9 | 30.4 | 1.9 | -86.10 | -532.5 | -5,208.6 | 5,642.4 | 5,620.4 | 21.98 | 256.694 | |
| 7,332.8 | 6,819.0 | 6,750.0 | 6,748.9 | 30.4 | 1.9 | -88.60 | -532.5 | -5,208.6 | 5,635.0 | 5,612.8 | 22.24 | 253.392 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ACHZIGER #B5-16 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,750.0 | 6,748.9 | 30.3 | 1.9 | -88.60 | -532.5 | -5,208.6 | 5,572.2 | 5,549.2 | 22.91 | 243.234 | |
| 7,500.0 | 6,819.0 | 6,750.0 | 6,748.9 | 30.2 | 1.9 | -88.60 | -532.5 | -5,208.6 | 5,478.7 | 5,454.6 | 24.17 | 226.707 | |
| 7,600.0 | 6,819.0 | 6,750.0 | 6,748.9 | 30.3 | 1.9 | -88.60 | -532.5 | -5,208.6 | 5,385.6 | 5,359.9 | 25.69 | 209.625 | |
| 7,700.0 | 6,819.0 | 6,750.0 | 6,748.9 | 30.6 | 1.9 | -88.60 | -532.5 | -5,208.6 | 5,292.6 | 5,265.2 | 27.44 | 192.914 | |
| 7,800.0 | 6,819.0 | 6,750.0 | 6,748.9 | 31.3 | 1.9 | -88.60 | -532.5 | -5,208.6 | 5,200.0 | 5,170.6 | 29.36 | 177.132 | |
| 7,900.0 | 6,819.0 | 6,750.0 | 6,748.9 | 32.5 | 1.9 | -88.60 | -532.5 | -5,208.6 | 5,107.6 | 5,076.1 | 31.42 | 162.555 | |
| 8,000.0 | 6,819.0 | 6,750.0 | 6,748.9 | 34.2 | 1.9 | -88.60 | -532.5 | -5,208.6 | 5,015.5 | 4,981.9 | 33.60 | 149.272 | |
| 8,100.0 | 6,819.0 | 6,750.0 | 6,748.9 | 36.1 | 1.9 | -88.60 | -532.5 | -5,208.6 | 4,923.7 | 4,887.8 | 35.87 | 137.259 | |
| 8,200.0 | 6,819.0 | 6,750.0 | 6,748.9 | 38.3 | 1.9 | -88.60 | -532.5 | -5,208.6 | 4,832.2 | 4,794.0 | 38.22 | 126.436 | |
| 8,300.0 | 6,819.0 | 6,750.0 | 6,748.9 | 40.6 | 1.9 | -88.60 | -532.5 | -5,208.6 | 4,741.1 | 4,700.5 | 40.63 | 116.696 | |
| 8,400.0 | 6,819.0 | 6,750.0 | 6,748.9 | 42.9 | 1.9 | -88.60 | -532.5 | -5,208.6 | 4,650.3 | 4,607.3 | 43.09 | 107.927 | |
| 8,500.0 | 6,819.0 | 6,750.0 | 6,748.9 | 45.3 | 1.9 | -88.60 | -532.5 | -5,208.6 | 4,560.0 | 4,514.4 | 45.59 | 100.022 | |
| 8,600.0 | 6,819.0 | 6,750.0 | 6,748.9 | 47.8 | 1.9 | -88.60 | -532.5 | -5,208.6 | 4,470.0 | 4,421.9 | 48.13 | 92.879 | |
| 8,700.0 | 6,819.0 | 6,750.0 | 6,748.9 | 50.3 | 1.9 | -88.60 | -532.5 | -5,208.6 | 4,380.5 | 4,329.8 | 50.70 | 86.409 | |
| 8,800.0 | 6,819.0 | 6,750.0 | 6,748.9 | 52.8 | 1.9 | -88.60 | -532.5 | -5,208.6 | 4,291.4 | 4,238.1 | 53.29 | 80.533 | |
| 8,900.0 | 6,819.0 | 6,750.0 | 6,748.9 | 55.4 | 1.9 | -88.60 | -532.5 | -5,208.6 | 4,202.9 | 4,147.0 | 55.90 | 75.182 | |
| 9,000.0 | 6,819.0 | 6,750.0 | 6,748.9 | 58.0 | 1.9 | -88.60 | -532.5 | -5,208.6 | 4,114.8 | 4,056.3 | 58.54 | 70.295 | |
| 9,100.0 | 6,819.0 | 6,750.0 | 6,748.9 | 60.6 | 1.9 | -88.60 | -532.5 | -5,208.6 | 4,027.3 | 3,966.1 | 61.19 | 65.821 | |
| 9,200.0 | 6,819.0 | 6,750.0 | 6,748.9 | 63.2 | 1.9 | -88.60 | -532.5 | -5,208.6 | 3,940.4 | 3,876.6 | 63.85 | 61.714 | |
| 9,300.0 | 6,819.0 | 6,750.0 | 6,748.9 | 65.9 | 1.9 | -88.60 | -532.5 | -5,208.6 | 3,854.2 | 3,787.7 | 66.53 | 57.935 | |
| 9,400.0 | 6,819.0 | 6,750.0 | 6,748.9 | 68.5 | 1.9 | -88.60 | -532.5 | -5,208.6 | 3,768.6 | 3,699.4 | 69.21 | 54.449 | |
| 9,500.0 | 6,819.0 | 6,750.0 | 6,748.9 | 71.2 | 1.9 | -88.60 | -532.5 | -5,208.6 | 3,683.8 | 3,611.9 | 71.91 | 51.227 | |
| 9,600.0 | 6,819.0 | 6,750.0 | 6,748.9 | 73.9 | 1.9 | -88.60 | -532.5 | -5,208.6 | 3,599.7 | 3,525.1 | 74.62 | 48.243 | |
| 9,700.0 | 6,819.0 | 6,750.0 | 6,748.9 | 76.5 | 1.9 | -88.60 | -532.5 | -5,208.6 | 3,516.5 | 3,439.1 | 77.33 | 45.474 | |
| 9,800.0 | 6,819.0 | 6,750.0 | 6,748.9 | 79.2 | 1.9 | -88.60 | -532.5 | -5,208.6 | 3,434.1 | 3,354.1 | 80.05 | 42.900 | |
| 9,900.0 | 6,819.0 | 6,750.0 | 6,748.9 | 81.9 | 1.9 | -88.60 | -532.5 | -5,208.6 | 3,352.7 | 3,270.0 | 82.78 | 40.504 | |
| 10,000.0 | 6,819.0 | 6,750.0 | 6,748.9 | 84.6 | 1.9 | -88.60 | -532.5 | -5,208.6 | 3,272.4 | 3,186.9 | 85.51 | 38.270 | |
| 10,100.0 | 6,819.0 | 6,750.0 | 6,748.9 | 87.4 | 1.9 | -88.60 | -532.5 | -5,208.6 | 3,193.1 | 3,104.9 | 88.24 | 36.185 | |
| 10,200.0 | 6,819.0 | 6,750.0 | 6,748.9 | 90.1 | 1.9 | -88.60 | -532.5 | -5,208.6 | 3,115.1 | 3,024.1 | 90.99 | 34.237 | |
| 10,300.0 | 6,819.0 | 6,750.0 | 6,748.9 | 92.8 | 1.9 | -88.60 | -532.5 | -5,208.6 | 3,038.3 | 2,944.6 | 93.73 | 32.415 | |
| 10,400.0 | 6,819.0 | 6,750.0 | 6,748.9 | 95.5 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,963.0 | 2,866.5 | 96.48 | 30.710 | |
| 10,500.0 | 6,819.0 | 6,750.0 | 6,748.9 | 98.3 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,889.1 | 2,789.9 | 99.23 | 29.114 | |
| 10,600.0 | 6,819.0 | 6,750.0 | 6,748.9 | 101.0 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,816.8 | 2,714.8 | 101.99 | 27.619 | |
| 10,700.0 | 6,819.0 | 6,750.0 | 6,748.9 | 103.8 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,746.3 | 2,641.6 | 104.75 | 26.218 | |
| 10,800.0 | 6,819.0 | 6,750.0 | 6,748.9 | 106.5 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,677.7 | 2,570.2 | 107.51 | 24.906 | |
| 10,900.0 | 6,819.0 | 6,750.0 | 6,748.9 | 109.2 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,611.1 | 2,500.8 | 110.28 | 23.678 | |
| 11,000.0 | 6,819.0 | 6,750.0 | 6,748.9 | 112.0 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,546.6 | 2,433.6 | 113.04 | 22.528 | |
| 11,100.0 | 6,819.0 | 6,750.0 | 6,748.9 | 114.8 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,484.5 | 2,368.7 | 115.81 | 21.453 | |
| 11,200.0 | 6,819.0 | 6,750.0 | 6,748.9 | 117.5 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,425.0 | 2,306.4 | 118.58 | 20.450 | |
| 11,300.0 | 6,819.0 | 6,750.0 | 6,748.9 | 120.3 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,368.2 | 2,246.8 | 121.35 | 19.515 | |
| 11,400.0 | 6,819.0 | 6,750.0 | 6,748.9 | 123.0 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,314.3 | 2,190.2 | 124.13 | 18.644 | |
| 11,500.0 | 6,819.0 | 6,750.0 | 6,748.9 | 125.8 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,263.6 | 2,136.6 | 126.90 | 17.837 | |
| 11,600.0 | 6,819.0 | 6,750.0 | 6,748.9 | 128.6 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,216.2 | 2,086.5 | 129.68 | 17.089 | |
| 11,700.0 | 6,819.0 | 6,750.0 | 6,748.9 | 131.3 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,172.3 | 2,039.9 | 132.46 | 16.400 | |
| 11,800.0 | 6,819.0 | 6,750.0 | 6,748.9 | 134.1 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,132.3 | 1,997.1 | 135.24 | 15.767 | |
| 11,900.0 | 6,819.0 | 6,750.0 | 6,748.9 | 136.9 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,096.3 | 1,958.3 | 138.02 | 15.188 | |
| 12,000.0 | 6,819.0 | 6,750.0 | 6,748.9 | 139.6 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,064.5 | 1,923.7 | 140.81 | 14.662 | |
| 12,100.0 | 6,819.0 | 6,750.0 | 6,748.9 | 142.4 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,037.1 | 1,893.5 | 143.59 | 14.187 | |
| 12,200.0 | 6,819.0 | 6,750.0 | 6,748.9 | 145.2 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,014.3 | 1,867.9 | 146.37 | 13.761 | |
| 12,300.0 | 6,819.0 | 6,750.0 | 6,748.9 | 148.0 | 1.9 | -88.60 | -532.5 | -5,208.6 | 1,996.3 | 1,847.1 | 149.16 | 13.383 | |
| 12,400.0 | 6,819.0 | 6,750.0 | 6,748.9 | 150.8 | 1.9 | -88.60 | -532.5 | -5,208.6 | 1,983.1 | 1,831.2 | 151.95 | 13.051 | |
| 12,500.0 | 6,819.0 | 6,750.0 | 6,748.9 | 153.5 | 1.9 | -88.60 | -532.5 | -5,208.6 | 1,975.0 | 1,820.2 | 154.73 | 12.764 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ACHZIGER #B5-16 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,750.0 | 6,748.9 | 156.3 | 1.9 | -88.60 | -532.5 | -5,208.6 | 1,971.8 | 1,814.3 | 157.52 | 12.518 | |
| 12,611.6 | 6,819.0 | 6,750.0 | 6,748.9 | 156.6 | 1.9 | -88.60 | -532.5 | -5,208.6 | 1,971.8 | 1,814.0 | 157.85 | 12.492 | CC |
| 12,700.0 | 6,819.0 | 6,750.0 | 6,748.9 | 159.1 | 1.9 | -88.60 | -532.5 | -5,208.6 | 1,973.8 | 1,813.5 | 160.31 | 12.312 | ES |
| 12,800.0 | 6,819.0 | 6,750.0 | 6,748.9 | 161.9 | 1.9 | -88.60 | -532.5 | -5,208.6 | 1,980.8 | 1,817.7 | 163.10 | 12.144 | |
| 12,900.0 | 6,819.0 | 6,750.0 | 6,748.9 | 164.7 | 1.9 | -88.60 | -532.5 | -5,208.6 | 1,992.8 | 1,826.9 | 165.89 | 12.012 | |
| 13,000.0 | 6,819.0 | 6,750.0 | 6,748.9 | 167.4 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,009.7 | 1,841.0 | 168.68 | 11.914 | |
| 13,100.0 | 6,819.0 | 6,750.0 | 6,748.9 | 170.2 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,031.4 | 1,859.9 | 171.48 | 11.846 | |
| 13,200.0 | 6,819.0 | 6,750.0 | 6,748.9 | 173.0 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,057.7 | 1,883.4 | 174.27 | 11.808 | |
| 13,300.0 | 6,819.0 | 6,750.0 | 6,748.9 | 175.8 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,088.5 | 1,911.4 | 177.06 | 11.795 | SF |
| 13,400.0 | 6,819.0 | 6,750.0 | 6,748.9 | 178.6 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,123.6 | 1,943.7 | 179.85 | 11.807 | |
| 13,500.0 | 6,819.0 | 6,750.0 | 6,748.9 | 181.4 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,162.7 | 1,980.0 | 182.65 | 11.841 | |
| 13,600.0 | 6,819.0 | 6,750.0 | 6,748.9 | 184.2 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,205.7 | 2,020.2 | 185.44 | 11.894 | |
| 13,700.0 | 6,819.0 | 6,750.0 | 6,748.9 | 187.0 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,252.2 | 2,064.0 | 188.24 | 11.965 | |
| 13,800.0 | 6,819.0 | 6,750.0 | 6,748.9 | 189.7 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,302.2 | 2,111.2 | 191.03 | 12.051 | |
| 13,900.0 | 6,819.0 | 6,750.0 | 6,748.9 | 192.5 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,355.4 | 2,161.6 | 193.83 | 12.152 | |
| 14,000.0 | 6,819.0 | 6,750.0 | 6,748.9 | 195.3 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,411.6 | 2,214.9 | 196.63 | 12.265 | |
| 14,100.0 | 6,819.0 | 6,750.0 | 6,748.9 | 198.1 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,470.5 | 2,271.1 | 199.42 | 12.388 | |
| 14,200.0 | 6,819.0 | 6,750.0 | 6,748.9 | 200.9 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,532.0 | 2,329.8 | 202.22 | 12.521 | |
| 14,300.0 | 6,819.0 | 6,750.0 | 6,748.9 | 203.7 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,595.9 | 2,390.9 | 205.02 | 12.662 | |
| 14,400.0 | 6,819.0 | 6,750.0 | 6,748.9 | 206.5 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,662.0 | 2,454.2 | 207.82 | 12.809 | |
| 14,500.0 | 6,819.0 | 6,750.0 | 6,748.9 | 209.3 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,730.2 | 2,519.6 | 210.62 | 12.963 | |
| 14,600.0 | 6,819.0 | 6,750.0 | 6,748.9 | 212.1 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,800.3 | 2,586.9 | 213.41 | 13.121 | |
| 14,700.0 | 6,819.0 | 6,750.0 | 6,748.9 | 214.9 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,872.2 | 2,656.0 | 216.21 | 13.284 | |
| 14,720.3 | 6,819.0 | 6,750.0 | 6,748.9 | 215.4 | 1.9 | -88.60 | -532.5 | -5,208.6 | 2,887.0 | 2,670.2 | 216.78 | 13.317 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ACHZIGER 14-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -97.45 | -541.0 | -4,139.4 | 4,174.6 | | | | |
| 100.0 | 100.0 | 94.9 | 94.9 | 0.1 | 0.1 | -97.45 | -541.3 | -4,139.2 | 4,174.5 | 4,174.3 | 0.18 | N/A | |
| 139.3 | 139.3 | 125.3 | 125.3 | 0.2 | 0.1 | -97.45 | -541.5 | -4,139.2 | 4,174.4 | 4,174.1 | 0.30 | N/A | |
| 200.0 | 200.0 | 169.5 | 169.5 | 0.3 | 0.2 | -97.46 | -541.9 | -4,139.2 | 4,174.6 | 4,174.1 | 0.49 | 8,554.516 | |
| 300.0 | 300.0 | 275.7 | 275.6 | 0.5 | 0.3 | -97.47 | -542.8 | -4,139.6 | 4,175.1 | 4,174.2 | 0.81 | 5,131.156 | |
| 400.0 | 400.0 | 398.9 | 398.9 | 0.8 | 0.3 | -97.47 | -542.9 | -4,139.5 | 4,175.0 | 4,174.0 | 1.06 | 3,936.860 | |
| 500.0 | 500.0 | 525.8 | 525.8 | 1.0 | 0.4 | -97.46 | -541.8 | -4,138.8 | 4,174.3 | 4,173.0 | 1.36 | 3,060.878 | |
| 600.0 | 600.0 | 630.7 | 630.7 | 1.2 | 0.4 | -97.45 | -541.0 | -4,137.8 | 4,173.3 | 4,171.6 | 1.64 | 2,538.606 | |
| 700.0 | 700.0 | 719.6 | 719.6 | 1.4 | 0.5 | -97.45 | -540.8 | -4,137.0 | 4,172.3 | 4,170.4 | 1.91 | 2,180.972 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 0.5 | -97.45 | -540.8 | -4,136.5 | 4,171.7 | 4,169.5 | 2.18 | 1,916.906 | |
| 820.2 | 820.2 | 820.3 | 820.3 | 1.7 | 0.5 | -118.61 | -540.8 | -4,136.4 | 4,171.7 | 4,169.4 | 2.23 | 1,874.128 | |
| 900.0 | 900.0 | 884.4 | 884.3 | 1.9 | 0.5 | -118.61 | -540.8 | -4,136.3 | 4,172.3 | 4,169.9 | 2.41 | 1,731.001 | |
| 1,000.0 | 999.8 | 981.2 | 981.2 | 2.1 | 0.6 | -118.62 | -540.4 | -4,136.5 | 4,175.0 | 4,172.3 | 2.67 | 1,564.693 | |
| 1,100.0 | 1,099.5 | 1,094.2 | 1,094.1 | 2.3 | 0.6 | -118.66 | -539.3 | -4,136.6 | 4,179.1 | 4,176.2 | 2.94 | 1,419.679 | |
| 1,200.0 | 1,198.7 | 1,219.1 | 1,219.1 | 2.6 | 0.7 | -118.73 | -538.0 | -4,136.1 | 4,184.5 | 4,181.2 | 3.24 | 1,293.415 | |
| 1,300.0 | 1,297.5 | 1,324.2 | 1,324.1 | 2.9 | 0.7 | -118.80 | -537.1 | -4,135.2 | 4,191.1 | 4,187.6 | 3.54 | 1,182.607 | |
| 1,400.0 | 1,395.6 | 1,414.4 | 1,414.4 | 3.2 | 0.7 | -118.85 | -536.7 | -4,134.4 | 4,199.6 | 4,195.7 | 3.88 | 1,082.461 | |
| 1,500.0 | 1,493.1 | 1,500.0 | 1,499.9 | 3.5 | 0.8 | -118.90 | -536.7 | -4,134.0 | 4,210.1 | 4,205.9 | 4.25 | 989.746 | |
| 1,507.2 | 1,500.0 | 1,500.0 | 1,499.9 | 3.6 | 0.8 | -118.88 | -536.7 | -4,134.0 | 4,211.0 | 4,206.7 | 4.28 | 984.240 | |
| 1,572.2 | 1,563.0 | 1,545.7 | 1,545.7 | 3.8 | 0.8 | -119.02 | -536.7 | -4,134.0 | 4,218.8 | 4,214.3 | 4.51 | 935.718 | |
| 1,600.0 | 1,590.0 | 1,567.5 | 1,567.4 | 3.9 | 0.8 | -119.02 | -536.7 | -4,134.0 | 4,222.3 | 4,217.6 | 4.61 | 915.407 | |
| 1,700.0 | 1,686.3 | 1,649.3 | 1,649.3 | 4.4 | 0.8 | -119.04 | -536.6 | -4,134.4 | 4,236.2 | 4,231.1 | 5.04 | 839.961 | |
| 1,800.0 | 1,781.5 | 1,741.6 | 1,741.5 | 4.9 | 0.8 | -119.09 | -536.2 | -4,135.1 | 4,252.1 | 4,246.6 | 5.53 | 768.467 | |
| 1,817.6 | 1,798.2 | 1,759.9 | 1,759.8 | 5.0 | 0.8 | -119.10 | -536.0 | -4,135.2 | 4,255.1 | 4,249.5 | 5.63 | 756.439 | |
| 1,900.0 | 1,876.1 | 1,837.3 | 1,837.2 | 5.5 | 0.8 | -119.40 | -535.6 | -4,135.7 | 4,269.3 | 4,263.3 | 6.05 | 705.496 | |
| 2,000.0 | 1,970.6 | 1,922.8 | 1,922.7 | 6.0 | 0.8 | -119.72 | -535.2 | -4,136.3 | 4,286.8 | 4,280.2 | 6.58 | 651.476 | |
| 2,100.0 | 2,065.1 | 2,000.0 | 1,999.9 | 6.6 | 0.9 | -120.01 | -535.0 | -4,137.1 | 4,304.7 | 4,297.6 | 7.12 | 604.624 | |
| 2,200.0 | 2,159.6 | 2,080.5 | 2,080.4 | 7.2 | 0.9 | -120.32 | -534.9 | -4,138.1 | 4,323.1 | 4,315.4 | 7.67 | 563.743 | |
| 2,300.0 | 2,254.1 | 2,150.2 | 2,150.1 | 7.8 | 0.9 | -120.58 | -535.1 | -4,139.3 | 4,342.1 | 4,333.9 | 8.22 | 528.084 | |
| 2,400.0 | 2,348.7 | 2,229.9 | 2,229.8 | 8.4 | 0.9 | -120.88 | -535.7 | -4,141.1 | 4,361.9 | 4,353.1 | 8.78 | 496.695 | |
| 2,500.0 | 2,443.2 | 2,346.3 | 2,346.1 | 9.1 | 0.9 | -121.33 | -537.1 | -4,143.4 | 4,381.7 | 4,372.4 | 9.34 | 469.041 | |
| 2,600.0 | 2,537.7 | 2,471.3 | 2,471.1 | 9.7 | 1.0 | -121.81 | -539.1 | -4,144.9 | 4,401.1 | 4,391.2 | 9.90 | 444.696 | |
| 2,700.0 | 2,632.2 | 2,574.4 | 2,574.2 | 10.3 | 1.0 | -122.21 | -541.0 | -4,145.6 | 4,420.1 | 4,409.7 | 10.45 | 422.872 | |
| 2,800.0 | 2,726.8 | 2,667.7 | 2,667.5 | 10.9 | 1.0 | -122.57 | -542.7 | -4,146.2 | 4,439.4 | 4,428.3 | 11.01 | 403.204 | |
| 2,900.0 | 2,821.3 | 2,754.1 | 2,753.9 | 11.6 | 1.0 | -122.90 | -544.3 | -4,146.8 | 4,458.8 | 4,447.3 | 11.57 | 385.439 | |
| 3,000.0 | 2,915.8 | 2,836.9 | 2,836.7 | 12.2 | 1.0 | -123.21 | -545.9 | -4,147.5 | 4,478.7 | 4,466.6 | 12.13 | 369.338 | |
| 3,100.0 | 3,010.3 | 2,924.1 | 2,923.8 | 12.8 | 1.1 | -123.54 | -547.4 | -4,148.6 | 4,499.0 | 4,486.3 | 12.68 | 354.698 | |
| 3,200.0 | 3,104.8 | 3,040.5 | 3,040.2 | 13.5 | 1.1 | -123.97 | -549.2 | -4,149.9 | 4,519.3 | 4,506.0 | 13.24 | 341.408 | |
| 3,300.0 | 3,199.4 | 3,166.7 | 3,166.5 | 14.1 | 1.1 | -124.41 | -549.8 | -4,150.6 | 4,539.0 | 4,525.2 | 13.78 | 329.359 | |
| 3,400.0 | 3,293.9 | 3,279.2 | 3,278.9 | 14.8 | 1.1 | -124.79 | -549.6 | -4,150.9 | 4,558.5 | 4,544.2 | 14.32 | 318.252 | |
| 3,500.0 | 3,388.4 | 3,356.4 | 3,356.1 | 15.4 | 1.1 | -125.06 | -549.4 | -4,151.1 | 4,578.0 | 4,563.2 | 14.87 | 307.933 | |
| 3,600.0 | 3,482.9 | 3,431.7 | 3,431.4 | 16.0 | 1.1 | -125.31 | -549.6 | -4,151.5 | 4,598.2 | 4,582.8 | 15.41 | 298.319 | |
| 3,700.0 | 3,577.5 | 3,518.6 | 3,518.3 | 16.7 | 1.2 | -125.61 | -549.8 | -4,152.3 | 4,618.8 | 4,602.8 | 15.97 | 289.296 | |
| 3,800.0 | 3,672.0 | 3,608.5 | 3,608.2 | 17.3 | 1.2 | -125.91 | -550.2 | -4,153.1 | 4,639.6 | 4,623.1 | 16.51 | 280.963 | |
| 3,900.0 | 3,766.5 | 3,695.5 | 3,695.2 | 18.0 | 1.2 | -126.20 | -550.8 | -4,154.0 | 4,660.7 | 4,643.6 | 17.06 | 273.211 | |
| 4,000.0 | 3,861.0 | 3,776.0 | 3,775.7 | 18.6 | 1.2 | -126.47 | -551.4 | -4,155.0 | 4,682.1 | 4,664.5 | 17.60 | 265.964 | |
| 4,100.0 | 3,955.5 | 3,863.4 | 3,863.1 | 19.3 | 1.3 | -126.76 | -552.0 | -4,156.3 | 4,703.9 | 4,685.8 | 18.15 | 259.195 | |
| 4,200.0 | 4,050.1 | 3,964.0 | 3,963.7 | 19.9 | 1.3 | -127.09 | -552.2 | -4,157.9 | 4,725.9 | 4,707.2 | 18.69 | 252.878 | |
| 4,300.0 | 4,144.6 | 4,063.1 | 4,062.8 | 20.5 | 1.3 | -127.40 | -552.2 | -4,159.5 | 4,747.8 | 4,728.6 | 19.23 | 246.947 | |
| 4,400.0 | 4,239.1 | 4,155.9 | 4,155.5 | 21.2 | 1.3 | -127.69 | -551.9 | -4,160.9 | 4,769.9 | 4,750.1 | 19.76 | 241.354 | |
| 4,500.0 | 4,333.6 | 4,248.9 | 4,248.5 | 21.8 | 1.4 | -127.97 | -551.7 | -4,162.5 | 4,792.1 | 4,771.8 | 20.30 | 236.081 | |
| 4,600.0 | 4,428.2 | 4,347.3 | 4,347.0 | 22.5 | 1.4 | -128.27 | -551.4 | -4,164.1 | 4,814.4 | 4,793.6 | 20.83 | 231.123 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ACHZIGER 14-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,700.0 | 4,522.7 | 4,499.8 | 4,499.4 | 23.1 | 1.4 | -128.72 | -549.9 | -4,166.1 | 4,836.5 | 4,815.1 | 21.35 | 226.580 | |
| 4,800.0 | 4,617.2 | 4,616.2 | 4,615.8 | 23.8 | 1.4 | -129.06 | -548.4 | -4,166.6 | 4,857.6 | 4,835.8 | 21.86 | 222.265 | |
| 4,900.0 | 4,711.7 | 4,720.0 | 4,719.5 | 24.4 | 1.5 | -129.37 | -547.4 | -4,166.5 | 4,878.6 | 4,856.2 | 22.37 | 218.132 | |
| 5,000.0 | 4,806.2 | 4,800.0 | 4,799.6 | 25.1 | 1.5 | -129.60 | -546.9 | -4,166.4 | 4,899.7 | 4,876.8 | 22.88 | 214.155 | |
| 5,100.0 | 4,900.8 | 4,888.2 | 4,887.7 | 25.7 | 1.5 | -129.86 | -546.5 | -4,166.4 | 4,921.1 | 4,897.7 | 23.39 | 210.375 | |
| 5,200.0 | 4,995.3 | 4,979.9 | 4,979.5 | 26.4 | 1.5 | -130.13 | -546.4 | -4,166.5 | 4,942.8 | 4,918.9 | 23.90 | 206.769 | |
| 5,300.0 | 5,089.8 | 5,062.9 | 5,062.4 | 27.0 | 1.5 | -130.38 | -546.3 | -4,166.7 | 4,964.7 | 4,940.3 | 24.42 | 203.302 | |
| 5,400.0 | 5,184.3 | 5,144.8 | 5,144.4 | 27.7 | 1.5 | -130.61 | -546.1 | -4,167.1 | 4,987.0 | 4,962.1 | 24.94 | 199.985 | |
| 5,500.0 | 5,278.9 | 5,236.6 | 5,236.2 | 28.3 | 1.6 | -130.88 | -545.9 | -4,167.8 | 5,009.6 | 4,984.1 | 25.45 | 196.834 | |
| 5,533.5 | 5,310.5 | 5,272.8 | 5,272.4 | 28.5 | 1.6 | -130.98 | -545.8 | -4,168.0 | 5,017.2 | 4,991.5 | 25.62 | 195.822 | |
| 5,600.0 | 5,373.6 | 5,341.8 | 5,341.4 | 28.9 | 1.6 | -131.39 | -545.5 | -4,168.4 | 5,031.7 | 5,005.8 | 25.83 | 194.768 | |
| 5,700.0 | 5,469.4 | 5,445.0 | 5,444.6 | 29.3 | 1.6 | -131.94 | -544.6 | -4,169.1 | 5,051.5 | 5,025.5 | 26.08 | 193.720 | |
| 5,800.0 | 5,566.1 | 5,528.7 | 5,528.2 | 29.8 | 1.6 | -132.36 | -542.7 | -4,170.1 | 5,069.1 | 5,042.8 | 26.30 | 192.756 | |
| 5,900.0 | 5,663.6 | 5,600.0 | 5,599.5 | 30.1 | 1.7 | -132.70 | -540.6 | -4,171.6 | 5,085.1 | 5,058.6 | 26.50 | 191.912 | |
| 6,000.0 | 5,761.9 | 5,800.0 | 5,799.4 | 30.5 | 1.7 | -133.14 | -535.9 | -4,173.0 | 5,097.4 | 5,070.8 | 26.64 | 191.316 | |
| 6,100.0 | 5,860.7 | 5,879.9 | 5,879.3 | 30.7 | 1.7 | -133.37 | -534.4 | -4,172.9 | 5,107.0 | 5,080.2 | 26.79 | 190.664 | |
| 6,200.0 | 5,960.0 | 5,974.2 | 5,973.6 | 31.0 | 1.7 | -133.55 | -532.8 | -4,173.0 | 5,114.6 | 5,087.7 | 26.90 | 190.108 | |
| 6,300.0 | 6,059.7 | 6,054.0 | 6,053.4 | 31.2 | 1.7 | -133.67 | -532.0 | -4,173.0 | 5,119.9 | 5,092.9 | 27.00 | 189.617 | |
| 6,400.0 | 6,159.6 | 6,142.8 | 6,142.2 | 31.3 | 1.8 | -133.74 | -530.9 | -4,173.5 | 5,123.2 | 5,096.1 | 27.08 | 189.159 | |
| 6,486.1 | 6,245.7 | 6,240.7 | 6,240.1 | 31.4 | 1.8 | -112.59 | -529.3 | -4,174.1 | 5,124.0 | 5,097.3 | 26.72 | 191.760 | |
| 6,500.0 | 6,259.6 | 6,256.1 | 6,255.5 | 31.4 | 1.8 | -112.58 | -529.0 | -4,174.2 | 5,124.0 | 5,097.3 | 26.74 | 191.630 | |
| 6,516.1 | 6,275.7 | 6,274.1 | 6,273.4 | 31.4 | 1.8 | -112.58 | -528.7 | -4,174.3 | 5,124.0 | 5,097.2 | 26.76 | 191.468 | |
| 6,550.0 | 6,309.5 | 6,309.2 | 6,308.6 | 31.5 | 1.8 | -22.60 | -528.0 | -4,174.5 | 5,123.2 | 5,096.0 | 27.14 | 188.799 | |
| 6,600.0 | 6,359.4 | 6,353.0 | 6,352.3 | 31.5 | 1.8 | -22.72 | -527.1 | -4,174.8 | 5,119.3 | 5,092.2 | 27.02 | 189.458 | |
| 6,650.0 | 6,408.8 | 6,400.0 | 6,399.3 | 31.5 | 1.8 | -22.97 | -526.1 | -4,175.2 | 5,112.2 | 5,085.4 | 26.85 | 190.374 | |
| 6,700.0 | 6,457.5 | 6,470.4 | 6,469.7 | 31.5 | 1.8 | -23.35 | -524.8 | -4,175.5 | 5,102.0 | 5,075.4 | 26.62 | 191.670 | |
| 6,716.1 | 6,473.1 | 6,494.8 | 6,494.1 | 31.5 | 1.9 | -23.51 | -524.3 | -4,175.6 | 5,097.9 | 5,071.4 | 26.52 | 192.195 | |
| 6,725.0 | 6,481.6 | 6,505.6 | 6,504.9 | 31.5 | 1.9 | -23.64 | -524.1 | -4,175.6 | 5,095.5 | 5,069.1 | 26.43 | 192.790 | |
| 6,750.0 | 6,505.3 | 6,531.3 | 6,530.6 | 31.5 | 1.9 | -24.06 | -523.6 | -4,175.6 | 5,088.0 | 5,061.9 | 26.12 | 194.760 | |
| 6,775.0 | 6,528.5 | 6,556.4 | 6,555.7 | 31.4 | 1.9 | -24.55 | -523.2 | -4,175.5 | 5,079.4 | 5,053.6 | 25.76 | 197.204 | |
| 6,800.0 | 6,551.3 | 6,581.0 | 6,580.3 | 31.4 | 1.9 | -25.14 | -522.8 | -4,175.5 | 5,069.6 | 5,044.3 | 25.33 | 200.178 | |
| 6,825.0 | 6,573.4 | 6,604.8 | 6,604.1 | 31.4 | 1.9 | -25.81 | -522.4 | -4,175.4 | 5,058.7 | 5,033.9 | 24.83 | 203.738 | |
| 6,850.0 | 6,595.0 | 6,627.3 | 6,626.6 | 31.3 | 1.9 | -26.59 | -522.1 | -4,175.3 | 5,046.8 | 5,022.6 | 24.27 | 207.942 | |
| 6,875.0 | 6,615.8 | 6,649.1 | 6,648.4 | 31.3 | 1.9 | -27.49 | -521.9 | -4,175.2 | 5,033.9 | 5,010.3 | 23.65 | 212.838 | |
| 6,900.0 | 6,635.9 | 6,670.1 | 6,669.4 | 31.3 | 1.9 | -28.51 | -521.7 | -4,175.1 | 5,020.0 | 4,997.0 | 22.98 | 218.474 | |
| 6,925.0 | 6,655.1 | 6,690.2 | 6,689.5 | 31.2 | 1.9 | -29.67 | -521.5 | -4,174.9 | 5,005.2 | 4,982.9 | 22.26 | 224.878 | |
| 6,950.0 | 6,673.6 | 6,709.4 | 6,708.7 | 31.2 | 1.9 | -30.99 | -521.3 | -4,174.8 | 4,989.4 | 4,967.9 | 21.50 | 232.045 | |
| 6,975.0 | 6,691.1 | 6,727.7 | 6,726.9 | 31.1 | 1.9 | -32.50 | -521.2 | -4,174.7 | 4,972.9 | 4,952.1 | 20.73 | 239.900 | |
| 7,000.0 | 6,707.6 | 6,744.9 | 6,744.1 | 31.1 | 1.9 | -34.21 | -521.1 | -4,174.5 | 4,955.5 | 4,935.5 | 19.96 | 248.255 | |
| 7,025.0 | 6,723.1 | 6,750.0 | 6,749.3 | 31.0 | 1.9 | -36.06 | -521.1 | -4,174.5 | 4,937.4 | 4,918.1 | 19.23 | 256.767 | |
| 7,050.0 | 6,737.6 | 6,750.0 | 6,749.3 | 31.0 | 1.9 | -38.12 | -521.1 | -4,174.5 | 4,918.6 | 4,900.0 | 18.57 | 264.867 | |
| 7,075.0 | 6,751.0 | 6,750.0 | 6,749.3 | 30.9 | 1.9 | -40.46 | -521.1 | -4,174.5 | 4,899.2 | 4,881.1 | 18.03 | 271.700 | |
| 7,100.0 | 6,763.3 | 6,750.0 | 6,749.3 | 30.8 | 1.9 | -43.11 | -521.1 | -4,174.5 | 4,879.2 | 4,861.6 | 17.66 | 276.217 | |
| 7,125.0 | 6,774.5 | 6,750.0 | 6,749.3 | 30.8 | 1.9 | -46.12 | -521.1 | -4,174.5 | 4,858.7 | 4,841.2 | 17.51 | 277.426 | |
| 7,150.0 | 6,784.4 | 6,750.0 | 6,749.3 | 30.7 | 1.9 | -49.53 | -521.1 | -4,174.5 | 4,837.8 | 4,820.2 | 17.61 | 274.787 | |
| 7,175.0 | 6,793.1 | 6,750.0 | 6,749.3 | 30.7 | 1.9 | -53.39 | -521.1 | -4,174.5 | 4,816.4 | 4,798.5 | 17.94 | 268.528 | |
| 7,200.0 | 6,800.6 | 6,750.0 | 6,749.3 | 30.6 | 1.9 | -57.73 | -521.1 | -4,174.5 | 4,794.7 | 4,776.2 | 18.47 | 259.622 | |
| 7,225.0 | 6,806.8 | 6,750.0 | 6,749.3 | 30.6 | 1.9 | -62.58 | -521.1 | -4,174.5 | 4,772.7 | 4,753.6 | 19.13 | 249.423 | |
| 7,250.0 | 6,811.8 | 6,750.0 | 6,749.3 | 30.5 | 1.9 | -67.93 | -521.1 | -4,174.5 | 4,750.4 | 4,730.5 | 19.86 | 239.218 | |
| 7,275.0 | 6,815.5 | 6,750.0 | 6,749.3 | 30.5 | 1.9 | -73.74 | -521.1 | -4,174.5 | 4,727.9 | 4,707.4 | 20.57 | 229.901 | |
| 7,300.0 | 6,817.8 | 6,750.0 | 6,749.3 | 30.4 | 1.9 | -79.93 | -521.1 | -4,174.5 | 4,705.3 | 4,684.1 | 21.22 | 221.733 | |
| 7,325.0 | 6,818.9 | 6,750.0 | 6,749.3 | 30.4 | 1.9 | -86.35 | -521.1 | -4,174.5 | 4,682.6 | 4,660.8 | 21.87 | 214.153 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ACHZIGER 14-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,332.8 | 6,819.0 | 6,750.0 | 6,749.3 | 30.4 | 1.9 | -88.37 | -521.1 | -4,174.5 | 4,675.6 | 4,653.5 | 22.08 | 211.732 | |
| 7,400.0 | 6,819.0 | 6,750.0 | 6,749.3 | 30.3 | 1.9 | -88.37 | -521.1 | -4,174.5 | 4,614.6 | 4,591.9 | 22.75 | 202.821 | |
| 7,500.0 | 6,819.0 | 6,750.0 | 6,749.3 | 30.2 | 1.9 | -88.37 | -521.1 | -4,174.5 | 4,524.3 | 4,500.3 | 24.01 | 188.436 | |
| 7,600.0 | 6,819.0 | 6,750.0 | 6,749.3 | 30.3 | 1.9 | -88.37 | -521.1 | -4,174.5 | 4,434.4 | 4,408.9 | 25.53 | 173.664 | |
| 7,700.0 | 6,819.0 | 6,750.0 | 6,749.3 | 30.6 | 1.9 | -88.37 | -521.1 | -4,174.5 | 4,344.9 | 4,317.7 | 27.28 | 159.282 | |
| 7,800.0 | 6,819.0 | 6,750.0 | 6,749.3 | 31.3 | 1.9 | -88.37 | -521.1 | -4,174.5 | 4,255.9 | 4,226.7 | 29.20 | 145.753 | |
| 7,900.0 | 6,819.0 | 6,750.0 | 6,749.3 | 32.5 | 1.9 | -88.37 | -521.1 | -4,174.5 | 4,167.4 | 4,136.2 | 31.26 | 133.299 | |
| 8,000.0 | 6,819.0 | 6,750.0 | 6,749.3 | 34.2 | 1.9 | -88.37 | -521.1 | -4,174.5 | 4,079.5 | 4,046.0 | 33.44 | 121.982 | |
| 8,100.0 | 6,819.0 | 6,750.0 | 6,749.3 | 36.1 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,992.1 | 3,956.3 | 35.71 | 111.775 | |
| 8,200.0 | 6,819.0 | 6,750.0 | 6,749.3 | 38.3 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,905.3 | 3,867.2 | 38.06 | 102.601 | |
| 8,300.0 | 6,819.0 | 6,750.0 | 6,749.3 | 40.6 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,819.1 | 3,778.6 | 40.47 | 94.365 | |
| 8,400.0 | 6,819.0 | 6,750.0 | 6,749.3 | 42.9 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,733.6 | 3,690.7 | 42.93 | 86.967 | |
| 8,500.0 | 6,819.0 | 6,750.0 | 6,749.3 | 45.3 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,648.9 | 3,603.5 | 45.43 | 80.313 | |
| 8,600.0 | 6,819.0 | 6,750.0 | 6,749.3 | 47.8 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,565.0 | 3,517.0 | 47.97 | 74.315 | |
| 8,700.0 | 6,819.0 | 6,750.0 | 6,749.3 | 50.3 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,481.9 | 3,431.3 | 50.54 | 68.895 | |
| 8,800.0 | 6,819.0 | 6,750.0 | 6,749.3 | 52.8 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,399.7 | 3,346.6 | 53.13 | 63.986 | |
| 8,900.0 | 6,819.0 | 6,750.0 | 6,749.3 | 55.4 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,318.5 | 3,262.8 | 55.75 | 59.529 | |
| 9,000.0 | 6,819.0 | 6,750.0 | 6,749.3 | 58.0 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,238.4 | 3,180.0 | 58.38 | 55.471 | |
| 9,100.0 | 6,819.0 | 6,750.0 | 6,749.3 | 60.6 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,159.4 | 3,098.3 | 61.03 | 51.768 | |
| 9,200.0 | 6,819.0 | 6,750.0 | 6,749.3 | 63.2 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,081.6 | 3,017.9 | 63.69 | 48.381 | |
| 9,300.0 | 6,819.0 | 6,750.0 | 6,749.3 | 65.9 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,005.1 | 2,938.7 | 66.37 | 45.278 | |
| 9,400.0 | 6,819.0 | 6,750.0 | 6,749.3 | 68.5 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,930.0 | 2,861.0 | 69.06 | 42.429 | |
| 9,500.0 | 6,819.0 | 6,750.0 | 6,749.3 | 71.2 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,856.5 | 2,784.7 | 71.75 | 39.810 | |
| 9,600.0 | 6,819.0 | 6,750.0 | 6,749.3 | 73.9 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,784.6 | 2,710.2 | 74.46 | 37.398 | |
| 9,700.0 | 6,819.0 | 6,750.0 | 6,749.3 | 76.5 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,714.5 | 2,637.3 | 77.17 | 35.175 | |
| 9,800.0 | 6,819.0 | 6,750.0 | 6,749.3 | 79.2 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,646.3 | 2,566.4 | 79.89 | 33.124 | |
| 9,900.0 | 6,819.0 | 6,750.0 | 6,749.3 | 81.9 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,580.2 | 2,497.6 | 82.62 | 31.231 | |
| 10,000.0 | 6,819.0 | 6,750.0 | 6,749.3 | 84.6 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,516.4 | 2,431.0 | 85.35 | 29.483 | |
| 10,100.0 | 6,819.0 | 6,750.0 | 6,749.3 | 87.4 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,454.9 | 2,366.8 | 88.09 | 27.869 | |
| 10,200.0 | 6,819.0 | 6,750.0 | 6,749.3 | 90.1 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,396.1 | 2,305.2 | 90.83 | 26.380 | |
| 10,300.0 | 6,819.0 | 6,750.0 | 6,749.3 | 92.8 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,340.0 | 2,246.4 | 93.57 | 25.007 | |
| 10,400.0 | 6,819.0 | 6,750.0 | 6,749.3 | 95.5 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,287.0 | 2,190.6 | 96.32 | 23.743 | |
| 10,500.0 | 6,819.0 | 6,750.0 | 6,749.3 | 98.3 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,237.1 | 2,138.0 | 99.08 | 22.580 | |
| 10,600.0 | 6,819.0 | 6,750.0 | 6,749.3 | 101.0 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,190.7 | 2,088.9 | 101.83 | 21.513 | |
| 10,700.0 | 6,819.0 | 6,750.0 | 6,749.3 | 103.8 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,147.9 | 2,043.4 | 104.59 | 20.537 | |
| 10,800.0 | 6,819.0 | 6,750.0 | 6,749.3 | 106.5 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,109.1 | 2,001.7 | 107.35 | 19.646 | |
| 10,900.0 | 6,819.0 | 6,750.0 | 6,749.3 | 109.2 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,074.3 | 1,964.2 | 110.12 | 18.837 | |
| 11,000.0 | 6,819.0 | 6,750.0 | 6,749.3 | 112.0 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,043.8 | 1,930.9 | 112.88 | 18.106 | |
| 11,100.0 | 6,819.0 | 6,750.0 | 6,749.3 | 114.8 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,017.8 | 1,902.2 | 115.65 | 17.448 | |
| 11,200.0 | 6,819.0 | 6,750.0 | 6,749.3 | 117.5 | 1.9 | -88.37 | -521.1 | -4,174.5 | 1,996.6 | 1,878.1 | 118.42 | 16.860 | |
| 11,300.0 | 6,819.0 | 6,750.0 | 6,749.3 | 120.3 | 1.9 | -88.37 | -521.1 | -4,174.5 | 1,980.1 | 1,858.9 | 121.19 | 16.338 | |
| 11,400.0 | 6,819.0 | 6,750.0 | 6,749.3 | 123.0 | 1.9 | -88.37 | -521.1 | -4,174.5 | 1,968.6 | 1,844.6 | 123.97 | 15.880 | |
| 11,500.0 | 6,819.0 | 6,750.0 | 6,749.3 | 125.8 | 1.9 | -88.37 | -521.1 | -4,174.5 | 1,962.1 | 1,835.3 | 126.74 | 15.481 | |
| 11,577.5 | 6,819.0 | 6,750.0 | 6,749.3 | 127.9 | 1.9 | -88.37 | -521.1 | -4,174.5 | 1,960.5 | 1,831.7 | 128.90 | 15.210 | CC |
| 11,600.0 | 6,819.0 | 6,750.0 | 6,749.3 | 128.6 | 1.9 | -88.37 | -521.1 | -4,174.5 | 1,960.7 | 1,831.2 | 129.52 | 15.138 | ES |
| 11,700.0 | 6,819.0 | 6,750.0 | 6,749.3 | 131.3 | 1.9 | -88.37 | -521.1 | -4,174.5 | 1,964.4 | 1,832.1 | 132.30 | 14.848 | |
| 11,800.0 | 6,819.0 | 6,750.0 | 6,749.3 | 134.1 | 1.9 | -88.37 | -521.1 | -4,174.5 | 1,973.1 | 1,838.1 | 135.08 | 14.607 | |
| 11,900.0 | 6,819.0 | 6,750.0 | 6,749.3 | 136.9 | 1.9 | -88.37 | -521.1 | -4,174.5 | 1,986.9 | 1,849.0 | 137.86 | 14.412 | |
| 12,000.0 | 6,819.0 | 6,750.0 | 6,749.3 | 139.6 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,005.6 | 1,864.9 | 140.64 | 14.260 | |
| 12,100.0 | 6,819.0 | 6,750.0 | 6,749.3 | 142.4 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,029.0 | 1,885.6 | 143.43 | 14.146 | |
| 12,200.0 | 6,819.0 | 6,750.0 | 6,749.3 | 145.2 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,057.0 | 1,910.8 | 146.21 | 14.069 | |
| 12,300.0 | 6,819.0 | 6,750.0 | 6,749.3 | 148.0 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,089.5 | 1,940.5 | 149.00 | 14.023 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ACHZIGER 14-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,400.0 | 6,819.0 | 6,750.0 | 6,749.3 | 150.8 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,126.1 | 1,974.3 | 151.78 | 14.007 | SF |
| 12,500.0 | 6,819.0 | 6,750.0 | 6,749.3 | 153.5 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,166.8 | 2,012.2 | 154.57 | 14.018 | |
| 12,600.0 | 6,819.0 | 6,750.0 | 6,749.3 | 156.3 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,211.2 | 2,053.8 | 157.36 | 14.052 | |
| 12,700.0 | 6,819.0 | 6,750.0 | 6,749.3 | 159.1 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,259.2 | 2,099.0 | 160.15 | 14.107 | |
| 12,800.0 | 6,819.0 | 6,750.0 | 6,749.3 | 161.9 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,310.5 | 2,147.5 | 162.94 | 14.180 | |
| 12,900.0 | 6,819.0 | 6,750.0 | 6,749.3 | 164.7 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,364.9 | 2,199.2 | 165.73 | 14.270 | |
| 13,000.0 | 6,819.0 | 6,750.0 | 6,749.3 | 167.4 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,422.3 | 2,253.7 | 168.52 | 14.374 | |
| 13,100.0 | 6,819.0 | 6,750.0 | 6,749.3 | 170.2 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,482.3 | 2,311.0 | 171.31 | 14.490 | |
| 13,200.0 | 6,819.0 | 6,750.0 | 6,749.3 | 173.0 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,544.9 | 2,370.8 | 174.10 | 14.617 | |
| 13,300.0 | 6,819.0 | 6,750.0 | 6,749.3 | 175.8 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,609.8 | 2,432.9 | 176.90 | 14.753 | |
| 13,400.0 | 6,819.0 | 6,750.0 | 6,749.3 | 178.6 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,676.8 | 2,497.1 | 179.69 | 14.897 | |
| 13,500.0 | 6,819.0 | 6,750.0 | 6,749.3 | 181.4 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,745.9 | 2,563.4 | 182.48 | 15.047 | |
| 13,600.0 | 6,819.0 | 6,750.0 | 6,749.3 | 184.2 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,816.8 | 2,631.5 | 185.28 | 15.203 | |
| 13,700.0 | 6,819.0 | 6,750.0 | 6,749.3 | 187.0 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,889.4 | 2,701.4 | 188.07 | 15.364 | |
| 13,800.0 | 6,819.0 | 6,750.0 | 6,749.3 | 189.7 | 1.9 | -88.37 | -521.1 | -4,174.5 | 2,963.7 | 2,772.8 | 190.87 | 15.527 | |
| 13,900.0 | 6,819.0 | 6,750.0 | 6,749.3 | 192.5 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,039.4 | 2,845.7 | 193.66 | 15.694 | |
| 14,000.0 | 6,819.0 | 6,750.0 | 6,749.3 | 195.3 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,116.5 | 2,920.0 | 196.46 | 15.863 | |
| 14,100.0 | 6,819.0 | 6,750.0 | 6,749.3 | 198.1 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,194.8 | 2,995.6 | 199.26 | 16.034 | |
| 14,200.0 | 6,819.0 | 6,750.0 | 6,749.3 | 200.9 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,274.4 | 3,072.3 | 202.05 | 16.205 | |
| 14,300.0 | 6,819.0 | 6,750.0 | 6,749.3 | 203.7 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,355.0 | 3,150.1 | 204.85 | 16.378 | |
| 14,400.0 | 6,819.0 | 6,750.0 | 6,749.3 | 206.5 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,436.6 | 3,229.0 | 207.65 | 16.550 | |
| 14,500.0 | 6,819.0 | 6,750.0 | 6,749.3 | 209.3 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,519.2 | 3,308.8 | 210.45 | 16.723 | |
| 14,600.0 | 6,819.0 | 6,750.0 | 6,749.3 | 212.1 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,602.7 | 3,389.5 | 213.24 | 16.895 | |
| 14,700.0 | 6,819.0 | 6,750.0 | 6,749.3 | 214.9 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,687.0 | 3,471.0 | 216.04 | 17.066 | |
| 14,720.3 | 6,819.0 | 6,750.0 | 6,749.3 | 215.4 | 1.9 | -88.37 | -521.1 | -4,174.5 | 3,704.2 | 3,487.6 | 216.61 | 17.101 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ACHZINGER 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -79.29 | 802.9 | -4,246.3 | 4,321.6 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -79.30 | 802.4 | -4,246.4 | 4,321.5 | 4,321.4 | 0.17 | N/A | |
| 119.1 | 119.1 | 117.2 | 117.2 | 0.1 | 0.1 | -79.30 | 802.2 | -4,246.4 | 4,321.5 | 4,321.3 | 0.23 | N/A | |
| 200.0 | 200.0 | 179.4 | 179.4 | 0.3 | 0.2 | -79.31 | 801.8 | -4,246.6 | 4,321.7 | 4,321.2 | 0.49 | 8,873.886 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.3 | -79.32 | 801.0 | -4,247.0 | 4,321.9 | 4,321.1 | 0.80 | 5,413.133 | |
| 309.3 | 309.3 | 300.0 | 300.0 | 0.6 | 0.3 | -79.32 | 801.0 | -4,247.0 | 4,321.9 | 4,321.1 | 0.82 | 5,274.653 | |
| 400.0 | 400.0 | 365.4 | 365.4 | 0.8 | 0.3 | -79.33 | 800.5 | -4,247.2 | 4,322.1 | 4,321.1 | 1.05 | 4,097.614 | |
| 500.0 | 500.0 | 438.9 | 438.8 | 1.0 | 0.3 | -79.33 | 800.0 | -4,248.2 | 4,323.3 | 4,322.0 | 1.32 | 3,266.639 | |
| 600.0 | 600.0 | 561.5 | 561.5 | 1.2 | 0.4 | -79.36 | 798.4 | -4,250.1 | 4,324.6 | 4,323.0 | 1.63 | 2,658.049 | |
| 700.0 | 700.0 | 650.8 | 650.8 | 1.4 | 0.5 | -79.37 | 797.5 | -4,250.9 | 4,325.4 | 4,323.5 | 1.90 | 2,276.467 | |
| 800.0 | 800.0 | 735.0 | 735.0 | 1.7 | 0.5 | -79.39 | 796.8 | -4,252.3 | 4,326.8 | 4,324.6 | 2.17 | 1,996.653 | |
| 900.0 | 900.0 | 859.9 | 859.8 | 1.9 | 0.6 | -100.58 | 794.9 | -4,254.1 | 4,328.2 | 4,325.8 | 2.43 | 1,779.244 | |
| 1,000.0 | 999.8 | 944.6 | 944.5 | 2.1 | 0.6 | -100.61 | 794.1 | -4,255.0 | 4,330.1 | 4,327.4 | 2.69 | 1,607.640 | |
| 1,100.0 | 1,099.5 | 1,041.0 | 1,040.9 | 2.3 | 0.7 | -100.67 | 793.3 | -4,256.7 | 4,333.3 | 4,330.3 | 2.97 | 1,461.195 | |
| 1,200.0 | 1,198.7 | 1,145.1 | 1,145.0 | 2.6 | 0.7 | -100.79 | 792.1 | -4,257.9 | 4,336.5 | 4,333.2 | 3.25 | 1,332.491 | |
| 1,300.0 | 1,297.5 | 1,216.0 | 1,215.8 | 2.9 | 0.7 | -100.85 | 791.3 | -4,259.2 | 4,341.1 | 4,337.5 | 3.56 | 1,219.962 | |
| 1,400.0 | 1,395.6 | 1,337.2 | 1,337.0 | 3.2 | 0.8 | -101.08 | 789.7 | -4,261.3 | 4,346.3 | 4,342.4 | 3.92 | 1,109.235 | |
| 1,500.0 | 1,493.1 | 1,434.1 | 1,433.9 | 3.5 | 0.8 | -101.25 | 789.3 | -4,262.6 | 4,352.0 | 4,347.7 | 4.31 | 1,008.707 | |
| 1,507.2 | 1,500.0 | 1,440.0 | 1,439.8 | 3.6 | 0.8 | -101.26 | 789.2 | -4,262.7 | 4,352.5 | 4,348.1 | 4.34 | 1,002.237 | |
| 1,572.2 | 1,563.0 | 1,500.0 | 1,499.8 | 3.8 | 0.9 | -101.46 | 789.0 | -4,263.6 | 4,356.7 | 4,352.1 | 4.61 | 944.875 | |
| 1,600.0 | 1,590.0 | 1,529.2 | 1,529.0 | 3.9 | 0.9 | -101.52 | 788.8 | -4,264.1 | 4,358.5 | 4,353.8 | 4.73 | 921.470 | |
| 1,700.0 | 1,686.3 | 1,667.3 | 1,667.1 | 4.4 | 0.9 | -101.89 | 787.6 | -4,265.5 | 4,365.1 | 4,359.9 | 5.22 | 836.586 | |
| 1,800.0 | 1,781.5 | 1,750.5 | 1,750.3 | 4.9 | 1.0 | -102.08 | 787.5 | -4,265.8 | 4,372.1 | 4,366.4 | 5.74 | 761.113 | |
| 1,817.6 | 1,798.2 | 1,762.2 | 1,762.0 | 5.0 | 1.0 | -102.10 | 787.4 | -4,265.9 | 4,373.5 | 4,367.7 | 5.84 | 748.588 | |
| 1,900.0 | 1,876.1 | 1,823.8 | 1,823.6 | 5.5 | 1.0 | -102.36 | 787.5 | -4,266.6 | 4,380.4 | 4,374.1 | 6.31 | 693.821 | |
| 2,000.0 | 1,970.6 | 1,928.6 | 1,928.4 | 6.0 | 1.0 | -102.80 | 786.9 | -4,267.8 | 4,389.1 | 4,382.2 | 6.91 | 635.227 | |
| 2,100.0 | 2,065.1 | 2,051.5 | 2,051.3 | 6.6 | 1.0 | -103.31 | 787.0 | -4,268.4 | 4,397.3 | 4,389.8 | 7.51 | 585.179 | |
| 2,200.0 | 2,159.6 | 2,134.3 | 2,134.1 | 7.2 | 1.1 | -103.65 | 787.5 | -4,268.6 | 4,405.7 | 4,397.6 | 8.12 | 542.413 | |
| 2,300.0 | 2,254.1 | 2,205.5 | 2,205.2 | 7.8 | 1.1 | -103.94 | 788.3 | -4,269.1 | 4,414.8 | 4,406.0 | 8.74 | 505.392 | |
| 2,400.0 | 2,348.7 | 2,304.9 | 2,304.6 | 8.4 | 1.1 | -104.34 | 789.0 | -4,270.0 | 4,424.3 | 4,414.9 | 9.36 | 472.580 | |
| 2,500.0 | 2,443.2 | 2,426.7 | 2,426.5 | 9.1 | 1.1 | -104.83 | 789.8 | -4,270.6 | 4,433.5 | 4,423.5 | 9.99 | 443.883 | |
| 2,600.0 | 2,537.7 | 2,511.7 | 2,511.4 | 9.7 | 1.1 | -105.16 | 791.0 | -4,270.9 | 4,442.8 | 4,432.2 | 10.61 | 418.776 | |
| 2,700.0 | 2,632.2 | 2,585.4 | 2,585.1 | 10.3 | 1.2 | -105.45 | 792.3 | -4,271.3 | 4,452.7 | 4,441.5 | 11.23 | 396.426 | |
| 2,800.0 | 2,726.8 | 2,664.3 | 2,664.0 | 10.9 | 1.2 | -105.75 | 793.7 | -4,272.2 | 4,463.2 | 4,451.4 | 11.86 | 376.332 | |
| 2,900.0 | 2,821.3 | 2,760.9 | 2,760.5 | 11.6 | 1.2 | -106.13 | 795.1 | -4,273.5 | 4,474.1 | 4,461.6 | 12.49 | 358.154 | |
| 3,000.0 | 2,915.8 | 2,879.9 | 2,879.6 | 12.2 | 1.2 | -106.60 | 796.0 | -4,274.7 | 4,484.9 | 4,471.8 | 13.13 | 341.663 | |
| 3,100.0 | 3,010.3 | 2,992.5 | 2,992.2 | 12.8 | 1.3 | -107.04 | 796.9 | -4,275.2 | 4,495.5 | 4,481.7 | 13.75 | 326.854 | |
| 3,200.0 | 3,104.8 | 3,059.7 | 3,059.4 | 13.5 | 1.3 | -107.30 | 797.8 | -4,275.6 | 4,506.3 | 4,491.9 | 14.38 | 313.450 | |
| 3,300.0 | 3,199.4 | 3,161.7 | 3,161.3 | 14.1 | 1.3 | -107.68 | 799.4 | -4,276.7 | 4,517.8 | 4,502.8 | 15.00 | 301.109 | |
| 3,400.0 | 3,293.9 | 3,295.8 | 3,295.4 | 14.8 | 1.3 | -108.20 | 800.6 | -4,277.0 | 4,528.6 | 4,513.0 | 15.62 | 289.877 | |
| 3,500.0 | 3,388.4 | 3,423.8 | 3,423.5 | 15.4 | 1.3 | -108.69 | 801.8 | -4,276.6 | 4,539.2 | 4,523.0 | 16.22 | 279.796 | |
| 3,600.0 | 3,482.9 | 3,584.6 | 3,584.2 | 16.0 | 1.3 | -109.33 | 801.0 | -4,273.7 | 4,548.3 | 4,531.5 | 16.80 | 270.778 | |
| 3,700.0 | 3,577.5 | 3,666.5 | 3,666.1 | 16.7 | 1.3 | -109.65 | 800.5 | -4,271.9 | 4,557.5 | 4,540.1 | 17.39 | 262.026 | |
| 3,800.0 | 3,672.0 | 3,800.0 | 3,799.5 | 17.3 | 1.3 | -110.19 | 798.8 | -4,268.8 | 4,566.7 | 4,548.8 | 17.98 | 254.032 | |
| 3,900.0 | 3,766.5 | 3,862.9 | 3,862.4 | 18.0 | 1.3 | -110.44 | 798.0 | -4,267.1 | 4,575.9 | 4,557.3 | 18.58 | 246.332 | |
| 4,000.0 | 3,861.0 | 3,919.3 | 3,918.8 | 18.6 | 1.3 | -110.66 | 797.4 | -4,266.2 | 4,586.2 | 4,567.0 | 19.18 | 239.140 | |
| 4,100.0 | 3,955.5 | 3,982.8 | 3,982.3 | 19.3 | 1.4 | -110.92 | 796.6 | -4,265.5 | 4,597.3 | 4,577.6 | 19.78 | 232.423 | |
| 4,200.0 | 4,050.1 | 4,078.4 | 4,077.9 | 19.9 | 1.4 | -111.30 | 795.3 | -4,265.0 | 4,609.1 | 4,588.7 | 20.38 | 226.202 | |
| 4,300.0 | 4,144.6 | 4,167.0 | 4,166.4 | 20.5 | 1.4 | -111.65 | 794.0 | -4,264.4 | 4,621.0 | 4,600.0 | 20.97 | 220.358 | |
| 4,400.0 | 4,239.1 | 4,236.7 | 4,236.2 | 21.2 | 1.4 | -111.92 | 793.1 | -4,264.2 | 4,633.4 | 4,611.8 | 21.57 | 214.820 | |
| 4,500.0 | 4,333.6 | 4,300.0 | 4,299.5 | 21.8 | 1.4 | -112.17 | 792.7 | -4,264.4 | 4,646.7 | 4,624.5 | 22.17 | 209.623 | |
| 4,600.0 | 4,428.2 | 4,400.0 | 4,399.4 | 22.5 | 1.4 | -112.55 | 791.9 | -4,265.0 | 4,660.3 | 4,637.5 | 22.76 | 204.722 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ACHZINGER 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,700.0 | 4,522.7 | 4,476.4 | 4,475.9 | 23.1 | 1.4 | -112.84 | 791.4 | -4,265.5 | 4,674.3 | 4,650.9 | 23.36 | 200.107 | |
| 4,800.0 | 4,617.2 | 4,538.2 | 4,537.7 | 23.8 | 1.4 | -113.07 | 791.5 | -4,266.3 | 4,688.9 | 4,665.0 | 23.96 | 195.692 | |
| 4,900.0 | 4,711.7 | 4,600.0 | 4,599.4 | 24.4 | 1.5 | -113.30 | 791.3 | -4,267.5 | 4,704.5 | 4,680.0 | 24.57 | 191.511 | |
| 5,000.0 | 4,806.2 | 4,716.0 | 4,715.4 | 25.1 | 1.5 | -113.73 | 791.1 | -4,270.0 | 4,720.4 | 4,695.3 | 25.16 | 187.601 | |
| 5,100.0 | 4,900.8 | 4,800.0 | 4,799.4 | 25.7 | 1.5 | -114.02 | 792.2 | -4,271.7 | 4,736.3 | 4,710.5 | 25.76 | 183.890 | |
| 5,200.0 | 4,995.3 | 4,883.4 | 4,882.8 | 26.4 | 1.5 | -114.30 | 794.0 | -4,273.7 | 4,752.5 | 4,726.2 | 26.35 | 180.347 | |
| 5,300.0 | 5,089.8 | 5,007.4 | 5,006.6 | 27.0 | 1.6 | -114.72 | 796.4 | -4,276.5 | 4,768.8 | 4,741.9 | 26.94 | 177.022 | |
| 5,400.0 | 5,184.3 | 5,088.9 | 5,088.1 | 27.7 | 1.6 | -115.00 | 797.5 | -4,278.1 | 4,785.1 | 4,757.6 | 27.53 | 173.819 | |
| 5,500.0 | 5,278.9 | 5,200.0 | 5,199.2 | 28.3 | 1.6 | -115.38 | 798.8 | -4,280.2 | 4,801.5 | 4,773.4 | 28.11 | 170.790 | |
| 5,533.5 | 5,310.5 | 5,224.7 | 5,223.9 | 28.5 | 1.6 | -115.46 | 799.1 | -4,280.7 | 4,807.0 | 4,778.7 | 28.31 | 169.792 | |
| 5,600.0 | 5,373.6 | 5,271.6 | 5,270.8 | 28.9 | 1.6 | -115.81 | 799.8 | -4,281.6 | 4,817.8 | 4,789.2 | 28.61 | 168.410 | |
| 5,700.0 | 5,469.4 | 5,389.5 | 5,388.6 | 29.3 | 1.7 | -116.43 | 801.6 | -4,284.2 | 4,833.0 | 4,804.1 | 28.95 | 166.922 | |
| 5,800.0 | 5,566.1 | 5,500.0 | 5,499.1 | 29.8 | 1.7 | -116.95 | 803.2 | -4,285.9 | 4,846.1 | 4,816.9 | 29.26 | 165.602 | |
| 5,900.0 | 5,663.6 | 5,572.5 | 5,571.6 | 30.1 | 1.7 | -117.31 | 804.7 | -4,287.2 | 4,857.9 | 4,828.4 | 29.55 | 164.416 | |
| 6,000.0 | 5,761.9 | 5,675.5 | 5,674.6 | 30.5 | 1.7 | -117.67 | 806.8 | -4,289.5 | 4,868.6 | 4,838.8 | 29.80 | 163.402 | |
| 6,100.0 | 5,860.7 | 5,779.6 | 5,778.6 | 30.7 | 1.8 | -117.97 | 808.8 | -4,291.5 | 4,877.4 | 4,847.4 | 30.01 | 162.523 | |
| 6,200.0 | 5,960.0 | 5,957.0 | 5,956.0 | 31.0 | 1.8 | -118.24 | 813.0 | -4,293.0 | 4,883.3 | 4,853.1 | 30.19 | 161.759 | |
| 6,300.0 | 6,059.7 | 6,035.9 | 6,034.8 | 31.2 | 1.8 | -118.36 | 814.8 | -4,293.4 | 4,887.4 | 4,857.1 | 30.34 | 161.095 | |
| 6,400.0 | 6,159.6 | 6,119.8 | 6,118.7 | 31.3 | 1.8 | -118.44 | 816.0 | -4,294.2 | 4,890.4 | 4,859.9 | 30.46 | 160.543 | |
| 6,486.1 | 6,245.7 | 6,218.1 | 6,217.1 | 31.4 | 1.8 | -97.31 | 816.6 | -4,294.9 | 4,891.5 | 4,868.7 | 22.82 | 214.376 | |
| 6,500.0 | 6,259.6 | 6,229.8 | 6,228.8 | 31.4 | 1.9 | -97.31 | 816.7 | -4,294.9 | 4,891.6 | 4,868.8 | 22.84 | 214.200 | |
| 6,516.1 | 6,275.7 | 6,243.5 | 6,242.4 | 31.4 | 1.9 | -97.30 | 816.7 | -4,295.0 | 4,891.7 | 4,868.9 | 22.86 | 213.976 | |
| 6,550.0 | 6,309.5 | 6,272.1 | 6,271.0 | 31.5 | 1.9 | -7.31 | 816.8 | -4,295.2 | 4,891.2 | 4,860.6 | 30.56 | 160.052 | |
| 6,600.0 | 6,359.4 | 6,337.1 | 6,336.0 | 31.5 | 1.9 | -7.35 | 817.0 | -4,295.7 | 4,887.5 | 4,857.0 | 30.48 | 160.341 | |
| 6,650.0 | 6,408.8 | 6,400.0 | 6,398.9 | 31.5 | 1.9 | -7.45 | 816.9 | -4,295.8 | 4,880.0 | 4,849.6 | 30.35 | 160.787 | |
| 6,700.0 | 6,457.5 | 6,447.6 | 6,446.5 | 31.5 | 1.9 | -7.58 | 816.7 | -4,295.7 | 4,869.0 | 4,838.9 | 30.15 | 161.479 | |
| 6,716.1 | 6,473.1 | 6,458.2 | 6,457.2 | 31.5 | 1.9 | -7.63 | 816.7 | -4,295.7 | 4,864.8 | 4,834.8 | 30.07 | 161.780 | |
| 6,725.0 | 6,481.6 | 6,464.1 | 6,463.0 | 31.5 | 1.9 | -7.68 | 816.7 | -4,295.8 | 4,862.4 | 4,832.4 | 29.99 | 162.133 | |
| 6,750.0 | 6,505.3 | 6,480.3 | 6,479.2 | 31.5 | 1.9 | -7.82 | 816.7 | -4,295.8 | 4,854.6 | 4,824.9 | 29.72 | 163.320 | |
| 6,775.0 | 6,528.5 | 6,500.0 | 6,498.9 | 31.4 | 1.9 | -7.99 | 816.7 | -4,295.9 | 4,845.6 | 4,816.2 | 29.40 | 164.814 | |
| 6,800.0 | 6,551.3 | 6,513.9 | 6,512.8 | 31.4 | 1.9 | -8.19 | 816.7 | -4,296.0 | 4,835.5 | 4,806.4 | 29.01 | 166.672 | |
| 6,825.0 | 6,573.4 | 6,531.8 | 6,530.7 | 31.4 | 1.9 | -8.42 | 816.6 | -4,296.2 | 4,824.2 | 4,795.6 | 28.56 | 168.911 | |
| 6,850.0 | 6,595.0 | 6,549.2 | 6,548.1 | 31.3 | 1.9 | -8.70 | 816.5 | -4,296.3 | 4,811.8 | 4,783.7 | 28.04 | 171.583 | |
| 6,875.0 | 6,615.8 | 6,566.0 | 6,564.9 | 31.3 | 1.9 | -9.02 | 816.4 | -4,296.5 | 4,798.3 | 4,770.8 | 27.46 | 174.733 | |
| 6,900.0 | 6,635.9 | 6,582.3 | 6,581.2 | 31.3 | 1.9 | -9.38 | 816.2 | -4,296.6 | 4,783.7 | 4,756.9 | 26.81 | 178.413 | |
| 6,925.0 | 6,655.1 | 6,600.0 | 6,598.9 | 31.2 | 1.9 | -9.81 | 816.0 | -4,296.8 | 4,768.1 | 4,742.0 | 26.10 | 182.671 | |
| 6,950.0 | 6,673.6 | 6,632.1 | 6,631.0 | 31.2 | 1.9 | -10.35 | 815.5 | -4,297.1 | 4,751.6 | 4,726.2 | 25.34 | 187.492 | |
| 6,975.0 | 6,691.1 | 6,667.4 | 6,666.3 | 31.1 | 1.9 | -10.98 | 815.1 | -4,297.3 | 4,734.0 | 4,709.5 | 24.53 | 193.012 | |
| 7,000.0 | 6,707.6 | 6,700.0 | 6,698.9 | 31.1 | 1.9 | -11.73 | 814.9 | -4,297.3 | 4,715.5 | 4,691.8 | 23.65 | 199.361 | |
| 7,025.0 | 6,723.1 | 6,700.0 | 6,698.9 | 31.0 | 1.9 | -12.50 | 814.9 | -4,297.3 | 4,696.1 | 4,673.4 | 22.70 | 206.851 | |
| 7,050.0 | 6,737.6 | 6,700.0 | 6,698.9 | 31.0 | 1.9 | -13.41 | 814.9 | -4,297.3 | 4,676.0 | 4,654.3 | 21.71 | 215.406 | |
| 7,075.0 | 6,751.0 | 6,725.9 | 6,724.8 | 30.9 | 1.9 | -14.62 | 814.7 | -4,297.4 | 4,655.1 | 4,634.4 | 20.69 | 224.952 | |
| 7,100.0 | 6,763.3 | 6,733.2 | 6,732.1 | 30.8 | 1.9 | -16.00 | 814.6 | -4,297.4 | 4,633.6 | 4,614.0 | 19.64 | 235.876 | |
| 7,125.0 | 6,774.5 | 6,739.9 | 6,738.8 | 30.8 | 1.9 | -17.69 | 814.6 | -4,297.5 | 4,611.5 | 4,592.9 | 18.59 | 248.005 | |
| 7,150.0 | 6,784.4 | 6,745.9 | 6,744.8 | 30.7 | 1.9 | -19.80 | 814.6 | -4,297.5 | 4,588.9 | 4,571.3 | 17.58 | 260.962 | |
| 7,175.0 | 6,793.1 | 6,751.2 | 6,750.1 | 30.7 | 1.9 | -22.50 | 814.5 | -4,297.5 | 4,565.7 | 4,549.0 | 16.69 | 273.613 | |
| 7,200.0 | 6,800.6 | 6,755.8 | 6,754.7 | 30.6 | 1.9 | -26.04 | 814.5 | -4,297.6 | 4,542.2 | 4,526.1 | 16.03 | 283.343 | |
| 7,225.0 | 6,806.8 | 6,759.6 | 6,758.5 | 30.6 | 1.9 | -30.81 | 814.5 | -4,297.6 | 4,518.3 | 4,502.4 | 15.82 | 285.578 | |
| 7,250.0 | 6,811.8 | 6,762.8 | 6,761.7 | 30.5 | 1.9 | -37.44 | 814.5 | -4,297.6 | 4,494.1 | 4,477.7 | 16.31 | 275.585 | |
| 7,275.0 | 6,815.5 | 6,765.1 | 6,764.0 | 30.5 | 1.9 | -46.93 | 814.5 | -4,297.7 | 4,469.6 | 4,452.0 | 17.63 | 253.511 | |
| 7,300.0 | 6,817.8 | 6,766.7 | 6,765.6 | 30.4 | 1.9 | -60.57 | 814.5 | -4,297.7 | 4,445.0 | 4,425.4 | 19.57 | 227.176 | |
| 7,325.0 | 6,818.9 | 6,767.5 | 6,766.4 | 30.4 | 1.9 | -78.94 | 814.5 | -4,297.7 | 4,420.3 | 4,399.0 | 21.31 | 207.459 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ACHZINGER 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,332.8 | 6,819.0 | 6,767.6 | 6,766.5 | 30.4 | 1.9 | -85.38 | 814.5 | -4,297.7 | 4,412.6 | 4,390.8 | 21.76 | 202.756 | |
| 7,400.0 | 6,819.0 | 6,768.1 | 6,767.0 | 30.3 | 1.9 | -85.42 | 814.4 | -4,297.7 | 4,346.1 | 4,323.6 | 22.43 | 193.766 | |
| 7,500.0 | 6,819.0 | 6,768.7 | 6,767.6 | 30.2 | 1.9 | -85.48 | 814.4 | -4,297.7 | 4,247.1 | 4,223.4 | 23.69 | 179.316 | |
| 7,600.0 | 6,819.0 | 6,769.4 | 6,768.3 | 30.3 | 1.9 | -85.54 | 814.4 | -4,297.7 | 4,148.2 | 4,123.0 | 25.21 | 164.544 | |
| 7,700.0 | 6,819.0 | 6,770.1 | 6,769.0 | 30.6 | 1.9 | -85.61 | 814.4 | -4,297.7 | 4,049.4 | 4,022.5 | 26.96 | 150.217 | |
| 7,800.0 | 6,819.0 | 6,770.8 | 6,769.7 | 31.3 | 1.9 | -85.67 | 814.4 | -4,297.7 | 3,950.6 | 3,921.8 | 28.88 | 136.786 | |
| 7,900.0 | 6,819.0 | 6,771.6 | 6,770.5 | 32.5 | 1.9 | -85.74 | 814.4 | -4,297.7 | 3,851.9 | 3,821.0 | 30.95 | 124.456 | |
| 8,000.0 | 6,819.0 | 6,772.3 | 6,771.2 | 34.2 | 1.9 | -85.81 | 814.4 | -4,297.8 | 3,753.3 | 3,720.2 | 33.13 | 113.277 | |
| 8,100.0 | 6,819.0 | 6,773.1 | 6,772.0 | 36.1 | 1.9 | -85.88 | 814.4 | -4,297.8 | 3,654.7 | 3,619.3 | 35.41 | 103.211 | |
| 8,200.0 | 6,819.0 | 6,773.9 | 6,772.8 | 38.3 | 1.9 | -85.95 | 814.4 | -4,297.8 | 3,556.3 | 3,518.5 | 37.76 | 94.175 | |
| 8,300.0 | 6,819.0 | 6,774.7 | 6,773.6 | 40.6 | 1.9 | -86.02 | 814.4 | -4,297.8 | 3,457.9 | 3,417.7 | 40.18 | 86.068 | |
| 8,400.0 | 6,819.0 | 6,775.5 | 6,774.4 | 42.9 | 1.9 | -86.10 | 814.4 | -4,297.8 | 3,359.6 | 3,316.9 | 42.64 | 78.789 | |
| 8,500.0 | 6,819.0 | 6,776.3 | 6,775.2 | 45.3 | 1.9 | -86.17 | 814.4 | -4,297.8 | 3,261.4 | 3,216.2 | 45.15 | 72.239 | |
| 8,600.0 | 6,819.0 | 6,777.2 | 6,776.1 | 47.8 | 1.9 | -86.25 | 814.4 | -4,297.8 | 3,163.3 | 3,115.6 | 47.69 | 66.331 | |
| 8,700.0 | 6,819.0 | 6,778.0 | 6,776.9 | 50.3 | 1.9 | -86.33 | 814.4 | -4,297.8 | 3,065.3 | 3,015.1 | 50.26 | 60.987 | |
| 8,800.0 | 6,819.0 | 6,778.9 | 6,777.8 | 52.8 | 1.9 | -86.41 | 814.4 | -4,297.8 | 2,967.5 | 2,914.6 | 52.86 | 56.139 | |
| 8,900.0 | 6,819.0 | 6,779.8 | 6,778.7 | 55.4 | 1.9 | -86.49 | 814.4 | -4,297.8 | 2,869.8 | 2,814.3 | 55.48 | 51.727 | |
| 9,000.0 | 6,819.0 | 6,780.7 | 6,779.6 | 58.0 | 1.9 | -86.58 | 814.4 | -4,297.9 | 2,772.3 | 2,714.2 | 58.12 | 47.701 | |
| 9,100.0 | 6,819.0 | 6,781.7 | 6,780.6 | 60.6 | 1.9 | -86.66 | 814.4 | -4,297.9 | 2,675.0 | 2,614.2 | 60.77 | 44.015 | |
| 9,200.0 | 6,819.0 | 6,782.7 | 6,781.6 | 63.2 | 1.9 | -86.75 | 814.4 | -4,297.9 | 2,577.9 | 2,514.4 | 63.44 | 40.632 | |
| 9,300.0 | 6,819.0 | 6,783.6 | 6,782.5 | 65.9 | 1.9 | -86.84 | 814.4 | -4,297.9 | 2,481.0 | 2,414.8 | 66.13 | 37.518 | |
| 9,400.0 | 6,819.0 | 6,784.7 | 6,783.6 | 68.5 | 1.9 | -86.94 | 814.4 | -4,297.9 | 2,384.3 | 2,315.5 | 68.82 | 34.645 | |
| 9,500.0 | 6,819.0 | 6,785.7 | 6,784.6 | 71.2 | 1.9 | -87.03 | 814.4 | -4,297.9 | 2,288.0 | 2,216.5 | 71.53 | 31.988 | |
| 9,600.0 | 6,819.0 | 6,786.8 | 6,785.7 | 73.9 | 1.9 | -87.13 | 814.4 | -4,297.9 | 2,192.0 | 2,117.7 | 74.24 | 29.526 | |
| 9,700.0 | 6,819.0 | 6,787.9 | 6,786.8 | 76.5 | 1.9 | -87.23 | 814.4 | -4,298.0 | 2,096.3 | 2,019.3 | 76.96 | 27.239 | |
| 9,800.0 | 6,819.0 | 6,789.0 | 6,787.9 | 79.2 | 1.9 | -87.33 | 814.4 | -4,298.0 | 2,001.1 | 1,921.4 | 79.69 | 25.111 | |
| 9,900.0 | 6,819.0 | 6,800.0 | 6,798.9 | 81.9 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,906.4 | 1,823.9 | 82.51 | 23.106 | |
| 10,000.0 | 6,819.0 | 6,800.0 | 6,798.9 | 84.6 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,812.2 | 1,726.9 | 85.24 | 21.260 | |
| 10,100.0 | 6,819.0 | 6,800.0 | 6,798.9 | 87.4 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,718.7 | 1,630.7 | 87.97 | 19.536 | |
| 10,200.0 | 6,819.0 | 6,800.0 | 6,798.9 | 90.1 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,625.9 | 1,535.2 | 90.72 | 17.923 | |
| 10,300.0 | 6,819.0 | 6,800.0 | 6,798.9 | 92.8 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,534.1 | 1,440.6 | 93.46 | 16.414 | |
| 10,400.0 | 6,819.0 | 6,800.0 | 6,798.9 | 95.5 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,443.3 | 1,347.1 | 96.21 | 15.001 | |
| 10,500.0 | 6,819.0 | 6,800.0 | 6,798.9 | 98.3 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,353.8 | 1,254.9 | 98.96 | 13.680 | |
| 10,600.0 | 6,819.0 | 6,800.0 | 6,798.9 | 101.0 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,266.0 | 1,164.2 | 101.72 | 12.446 | |
| 10,700.0 | 6,819.0 | 6,800.0 | 6,798.9 | 103.8 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,180.0 | 1,075.5 | 104.48 | 11.294 | |
| 10,800.0 | 6,819.0 | 6,800.0 | 6,798.9 | 106.5 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,096.4 | 989.2 | 107.24 | 10.224 | |
| 10,900.0 | 6,819.0 | 6,800.0 | 6,798.9 | 109.2 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,015.9 | 905.9 | 110.00 | 9.235 | |
| 11,000.0 | 6,819.0 | 6,800.0 | 6,798.9 | 112.0 | 1.9 | -88.34 | 814.3 | -4,298.1 | 939.0 | 826.2 | 112.77 | 8.327 | |
| 11,100.0 | 6,819.0 | 6,800.0 | 6,798.9 | 114.8 | 1.9 | -88.34 | 814.3 | -4,298.1 | 866.9 | 751.4 | 115.54 | 7.503 | |
| 11,200.0 | 6,819.0 | 6,800.0 | 6,798.9 | 117.5 | 1.9 | -88.34 | 814.3 | -4,298.1 | 800.8 | 682.5 | 118.31 | 6.769 | |
| 11,300.0 | 6,819.0 | 6,800.0 | 6,798.9 | 120.3 | 1.9 | -88.34 | 814.3 | -4,298.1 | 742.3 | 621.2 | 121.08 | 6.131 | |
| 11,400.0 | 6,819.0 | 6,800.0 | 6,798.9 | 123.0 | 1.9 | -88.34 | 814.3 | -4,298.1 | 693.4 | 569.6 | 123.85 | 5.599 | |
| 11,500.0 | 6,819.0 | 6,800.0 | 6,798.9 | 125.8 | 1.9 | -88.34 | 814.3 | -4,298.1 | 656.2 | 529.6 | 126.63 | 5.182 | |
| 11,600.0 | 6,819.0 | 6,800.0 | 6,798.9 | 128.6 | 1.9 | -88.34 | 814.3 | -4,298.1 | 632.8 | 503.3 | 129.41 | 4.890 | |
| 11,700.0 | 6,819.0 | 6,800.0 | 6,798.9 | 131.3 | 1.9 | -88.34 | 814.3 | -4,298.1 | 624.6 | 492.4 | 132.19 | 4.725 | |
| 11,701.1 | 6,819.0 | 6,800.0 | 6,798.9 | 131.4 | 1.9 | -88.34 | 814.3 | -4,298.1 | 624.6 | 492.4 | 132.22 | 4.724 | CC, ES |
| 11,800.0 | 6,819.0 | 6,800.0 | 6,798.9 | 134.1 | 1.9 | -88.34 | 814.3 | -4,298.1 | 632.4 | 497.4 | 134.97 | 4.686 | SF |
| 11,900.0 | 6,819.0 | 6,800.0 | 6,798.9 | 136.9 | 1.9 | -88.34 | 814.3 | -4,298.1 | 655.5 | 517.8 | 137.75 | 4.759 | |
| 12,000.0 | 6,819.0 | 6,800.0 | 6,798.9 | 139.6 | 1.9 | -88.34 | 814.3 | -4,298.1 | 692.4 | 551.9 | 140.53 | 4.927 | |
| 12,100.0 | 6,819.0 | 6,800.0 | 6,798.9 | 142.4 | 1.9 | -88.34 | 814.3 | -4,298.1 | 741.1 | 597.8 | 143.31 | 5.171 | |
| 12,200.0 | 6,819.0 | 6,800.0 | 6,798.9 | 145.2 | 1.9 | -88.34 | 814.3 | -4,298.1 | 799.4 | 653.3 | 146.10 | 5.472 | |
| 12,300.0 | 6,819.0 | 6,800.0 | 6,798.9 | 148.0 | 1.9 | -88.34 | 814.3 | -4,298.1 | 865.3 | 716.4 | 148.88 | 5.812 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ACHZINGER 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,400.0 | 6,819.0 | 6,800.0 | 6,798.9 | 150.8 | 1.9 | -88.34 | 814.3 | -4,298.1 | 937.3 | 785.6 | 151.67 | 6.180 | |
| 12,500.0 | 6,819.0 | 6,800.0 | 6,798.9 | 153.5 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,014.1 | 859.6 | 154.46 | 6.565 | |
| 12,600.0 | 6,819.0 | 6,800.0 | 6,798.9 | 156.3 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,094.6 | 937.3 | 157.25 | 6.961 | |
| 12,700.0 | 6,819.0 | 6,800.0 | 6,798.9 | 159.1 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,178.1 | 1,018.1 | 160.03 | 7.361 | |
| 12,800.0 | 6,819.0 | 6,800.0 | 6,798.9 | 161.9 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,264.0 | 1,101.2 | 162.82 | 7.763 | |
| 12,900.0 | 6,819.0 | 6,800.0 | 6,798.9 | 164.7 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,351.8 | 1,186.2 | 165.61 | 8.163 | |
| 13,000.0 | 6,819.0 | 6,800.0 | 6,798.9 | 167.4 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,441.3 | 1,272.8 | 168.40 | 8.558 | |
| 13,100.0 | 6,819.0 | 6,800.0 | 6,798.9 | 170.2 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,532.0 | 1,360.8 | 171.20 | 8.949 | |
| 13,200.0 | 6,819.0 | 6,800.0 | 6,798.9 | 173.0 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,623.8 | 1,449.8 | 173.99 | 9.333 | |
| 13,300.0 | 6,819.0 | 6,800.0 | 6,798.9 | 175.8 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,716.5 | 1,539.8 | 176.78 | 9.710 | |
| 13,400.0 | 6,819.0 | 6,800.0 | 6,798.9 | 178.6 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,810.1 | 1,630.5 | 179.57 | 10.080 | |
| 13,500.0 | 6,819.0 | 6,800.0 | 6,798.9 | 181.4 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,904.2 | 1,721.9 | 182.37 | 10.442 | |
| 13,600.0 | 6,819.0 | 6,800.0 | 6,798.9 | 184.2 | 1.9 | -88.34 | 814.3 | -4,298.1 | 1,999.0 | 1,813.8 | 185.16 | 10.796 | |
| 13,700.0 | 6,819.0 | 6,800.0 | 6,798.9 | 187.0 | 1.9 | -88.34 | 814.3 | -4,298.1 | 2,094.2 | 1,906.2 | 187.96 | 11.142 | |
| 13,800.0 | 6,819.0 | 6,800.0 | 6,798.9 | 189.7 | 1.9 | -88.34 | 814.3 | -4,298.1 | 2,189.8 | 1,999.1 | 190.75 | 11.480 | |
| 13,900.0 | 6,819.0 | 6,800.0 | 6,798.9 | 192.5 | 1.9 | -88.34 | 814.3 | -4,298.1 | 2,285.9 | 2,092.3 | 193.55 | 11.810 | |
| 14,000.0 | 6,819.0 | 6,800.0 | 6,798.9 | 195.3 | 1.9 | -88.34 | 814.3 | -4,298.1 | 2,382.2 | 2,185.9 | 196.35 | 12.133 | |
| 14,100.0 | 6,819.0 | 6,800.0 | 6,798.9 | 198.1 | 1.9 | -88.34 | 814.3 | -4,298.1 | 2,478.9 | 2,279.7 | 199.14 | 12.448 | |
| 14,200.0 | 6,819.0 | 6,800.0 | 6,798.9 | 200.9 | 1.9 | -88.34 | 814.3 | -4,298.1 | 2,575.8 | 2,373.8 | 201.94 | 12.755 | |
| 14,300.0 | 6,819.0 | 6,800.0 | 6,798.9 | 203.7 | 1.9 | -88.34 | 814.3 | -4,298.1 | 2,672.9 | 2,468.1 | 204.74 | 13.055 | |
| 14,400.0 | 6,819.0 | 6,800.0 | 6,798.9 | 206.5 | 1.9 | -88.34 | 814.3 | -4,298.1 | 2,770.2 | 2,562.7 | 207.53 | 13.348 | |
| 14,500.0 | 6,819.0 | 6,800.0 | 6,798.9 | 209.3 | 1.9 | -88.34 | 814.3 | -4,298.1 | 2,867.7 | 2,657.4 | 210.33 | 13.634 | |
| 14,600.0 | 6,819.0 | 6,800.0 | 6,798.9 | 212.1 | 1.9 | -88.34 | 814.3 | -4,298.1 | 2,965.4 | 2,752.3 | 213.13 | 13.914 | |
| 14,700.0 | 6,819.0 | 6,800.0 | 6,798.9 | 214.9 | 1.9 | -88.34 | 814.3 | -4,298.1 | 3,063.2 | 2,847.3 | 215.93 | 14.186 | |
| 14,720.3 | 6,819.0 | 6,800.0 | 6,798.9 | 215.4 | 1.9 | -88.34 | 814.3 | -4,298.1 | 3,083.1 | 2,866.6 | 216.50 | 14.241 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT BAUER 12-4 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -63.81 | 1,953.4 | -3,972.2 | 4,426.5 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 1.0 | -63.81 | 1,953.4 | -3,972.2 | 4,426.5 | 4,425.4 | 1.11 | 3,981.837 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 3.4 | -63.81 | 1,953.4 | -3,972.2 | 4,426.5 | 4,422.9 | 3.67 | 1,207.419 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 5.4 | -63.81 | 1,953.4 | -3,972.2 | 4,426.5 | 4,420.6 | 5.97 | 741.249 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 7.5 | -63.81 | 1,953.4 | -3,972.2 | 4,426.5 | 4,418.3 | 8.24 | 537.254 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 9.5 | -63.81 | 1,953.4 | -3,972.2 | 4,426.5 | 4,416.0 | 10.49 | 421.852 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 11.5 | -63.81 | 1,953.4 | -3,972.2 | 4,426.5 | 4,413.8 | 12.74 | 347.434 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.4 | 13.5 | -63.81 | 1,953.4 | -3,972.2 | 4,426.5 | 4,411.5 | 14.98 | 295.404 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 15.6 | -63.81 | 1,953.4 | -3,972.2 | 4,426.5 | 4,409.3 | 17.23 | 256.960 | |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 17.6 | -85.00 | 1,953.4 | -3,972.2 | 4,426.4 | 4,406.9 | 19.46 | 227.404 | |
| 1,000.0 | 999.8 | 999.8 | 999.8 | 2.1 | 19.6 | -85.08 | 1,953.4 | -3,972.2 | 4,425.9 | 4,404.2 | 21.70 | 203.958 | |
| 1,100.0 | 1,099.5 | 1,099.5 | 1,099.5 | 2.3 | 21.6 | -85.20 | 1,953.4 | -3,972.2 | 4,425.2 | 4,401.2 | 23.94 | 184.858 | |
| 1,200.0 | 1,198.7 | 1,198.7 | 1,198.7 | 2.6 | 23.6 | -85.38 | 1,953.4 | -3,972.2 | 4,424.2 | 4,398.0 | 26.19 | 168.950 | |
| 1,300.0 | 1,297.5 | 1,297.5 | 1,297.5 | 2.9 | 25.6 | -85.60 | 1,953.4 | -3,972.2 | 4,422.9 | 4,394.5 | 28.45 | 155.452 | |
| 1,400.0 | 1,395.6 | 1,395.6 | 1,395.6 | 3.2 | 27.6 | -85.87 | 1,953.4 | -3,972.2 | 4,421.5 | 4,390.7 | 30.74 | 143.819 | |
| 1,500.0 | 1,493.1 | 1,493.1 | 1,493.1 | 3.5 | 29.5 | -86.19 | 1,953.4 | -3,972.2 | 4,419.9 | 4,386.8 | 33.07 | 133.658 | |
| 1,507.2 | 1,500.0 | 1,500.0 | 1,500.0 | 3.6 | 29.7 | -86.21 | 1,953.4 | -3,972.2 | 4,419.8 | 4,386.5 | 33.23 | 132.987 | |
| 1,572.2 | 1,563.0 | 1,563.0 | 1,563.0 | 3.8 | 30.9 | -86.41 | 1,953.4 | -3,972.2 | 4,418.7 | 4,384.0 | 34.75 | 127.148 | |
| 1,600.0 | 1,590.0 | 1,590.0 | 1,590.0 | 3.9 | 31.5 | -86.51 | 1,953.4 | -3,972.2 | 4,418.3 | 4,382.9 | 35.41 | 124.789 | |
| 1,700.0 | 1,686.3 | 1,686.3 | 1,686.3 | 4.4 | 33.4 | -86.88 | 1,953.4 | -3,972.2 | 4,416.7 | 4,378.9 | 37.79 | 116.863 | |
| 1,800.0 | 1,781.5 | 1,781.5 | 1,781.5 | 4.9 | 35.3 | -87.29 | 1,953.4 | -3,972.2 | 4,415.0 | 4,374.8 | 40.22 | 109.774 | |
| 1,817.6 | 1,798.2 | 1,798.2 | 1,798.2 | 5.0 | 35.7 | -87.36 | 1,953.4 | -3,972.2 | 4,414.7 | 4,374.1 | 40.65 | 108.602 | |
| 1,900.0 | 1,876.1 | 1,876.1 | 1,876.1 | 5.5 | 37.2 | -87.69 | 1,953.4 | -3,972.2 | 4,413.5 | 4,370.8 | 42.68 | 103.411 | |
| 2,000.0 | 1,970.6 | 1,970.6 | 1,970.6 | 6.0 | 39.1 | -88.09 | 1,953.4 | -3,972.2 | 4,412.3 | 4,367.1 | 45.16 | 97.706 | |
| 2,100.0 | 2,065.1 | 2,065.1 | 2,065.1 | 6.6 | 41.0 | -88.49 | 1,953.4 | -3,972.2 | 4,411.2 | 4,363.6 | 47.65 | 92.574 | |
| 2,200.0 | 2,159.6 | 2,159.6 | 2,159.6 | 7.2 | 42.9 | -88.89 | 1,953.4 | -3,972.2 | 4,410.4 | 4,360.3 | 50.15 | 87.939 | |
| 2,300.0 | 2,254.1 | 2,254.1 | 2,254.1 | 7.8 | 44.8 | -89.29 | 1,953.4 | -3,972.2 | 4,409.9 | 4,357.2 | 52.66 | 83.737 | |
| 2,400.0 | 2,348.7 | 2,348.7 | 2,348.7 | 8.4 | 46.7 | -89.69 | 1,953.4 | -3,972.2 | 4,409.6 | 4,354.4 | 55.18 | 79.913 | |
| 2,476.2 | 2,420.6 | 2,420.6 | 2,420.6 | 8.9 | 48.2 | -90.00 | 1,953.4 | -3,972.2 | 4,409.5 | 4,352.4 | 57.10 | 77.225 | |
| 2,500.0 | 2,443.2 | 2,443.2 | 2,443.2 | 9.1 | 48.6 | -90.10 | 1,953.4 | -3,972.2 | 4,409.5 | 4,351.8 | 57.70 | 76.420 | |
| 2,600.0 | 2,537.7 | 2,537.7 | 2,537.7 | 9.7 | 50.5 | -90.50 | 1,953.4 | -3,972.2 | 4,409.7 | 4,349.5 | 60.22 | 73.220 | |
| 2,700.0 | 2,632.2 | 2,632.2 | 2,632.2 | 10.3 | 52.4 | -90.90 | 1,953.4 | -3,972.2 | 4,410.1 | 4,347.4 | 62.75 | 70.279 | |
| 2,800.0 | 2,726.8 | 2,726.8 | 2,726.8 | 10.9 | 54.3 | -91.30 | 1,953.4 | -3,972.2 | 4,410.8 | 4,345.5 | 65.28 | 67.567 | |
| 2,900.0 | 2,821.3 | 2,821.3 | 2,821.3 | 11.6 | 56.2 | -91.70 | 1,953.4 | -3,972.2 | 4,411.7 | 4,343.9 | 67.81 | 65.059 | |
| 3,000.0 | 2,915.8 | 2,915.8 | 2,915.8 | 12.2 | 58.1 | -92.10 | 1,953.4 | -3,972.2 | 4,412.8 | 4,342.5 | 70.34 | 62.734 | |
| 3,100.0 | 3,010.3 | 3,010.3 | 3,010.3 | 12.8 | 60.0 | -92.50 | 1,953.4 | -3,972.2 | 4,414.2 | 4,341.3 | 72.87 | 60.574 | |
| 3,200.0 | 3,104.8 | 3,104.8 | 3,104.8 | 13.5 | 61.9 | -92.90 | 1,953.4 | -3,972.2 | 4,415.8 | 4,340.4 | 75.41 | 58.561 | |
| 3,300.0 | 3,199.4 | 3,199.4 | 3,199.4 | 14.1 | 63.8 | -93.30 | 1,953.4 | -3,972.2 | 4,417.7 | 4,339.8 | 77.94 | 56.683 | |
| 3,400.0 | 3,293.9 | 3,293.9 | 3,293.9 | 14.8 | 65.7 | -93.70 | 1,953.4 | -3,972.2 | 4,419.8 | 4,339.3 | 80.47 | 54.926 | |
| 3,500.0 | 3,388.4 | 3,388.4 | 3,388.4 | 15.4 | 67.6 | -94.10 | 1,953.4 | -3,972.2 | 4,422.2 | 4,339.2 | 83.00 | 53.279 | |
| 3,600.0 | 3,482.9 | 3,482.9 | 3,482.9 | 16.0 | 69.6 | -94.50 | 1,953.4 | -3,972.2 | 4,424.7 | 4,339.2 | 85.53 | 51.733 | |
| 3,700.0 | 3,577.5 | 3,577.5 | 3,577.5 | 16.7 | 71.5 | -94.89 | 1,953.4 | -3,972.2 | 4,427.6 | 4,339.5 | 88.06 | 50.279 | |
| 3,800.0 | 3,672.0 | 3,672.0 | 3,672.0 | 17.3 | 73.4 | -95.29 | 1,953.4 | -3,972.2 | 4,430.6 | 4,340.0 | 90.59 | 48.910 | |
| 3,900.0 | 3,766.5 | 3,766.5 | 3,766.5 | 18.0 | 75.3 | -95.69 | 1,953.4 | -3,972.2 | 4,433.9 | 4,340.8 | 93.11 | 47.618 | |
| 4,000.0 | 3,861.0 | 3,861.0 | 3,861.0 | 18.6 | 77.2 | -96.09 | 1,953.4 | -3,972.2 | 4,437.5 | 4,341.8 | 95.64 | 46.398 | |
| 4,100.0 | 3,955.5 | 3,955.5 | 3,955.5 | 19.3 | 79.1 | -96.48 | 1,953.4 | -3,972.2 | 4,441.3 | 4,343.1 | 98.16 | 45.243 | |
| 4,200.0 | 4,050.1 | 4,050.1 | 4,050.1 | 19.9 | 81.0 | -96.88 | 1,953.4 | -3,972.2 | 4,445.3 | 4,344.6 | 100.69 | 44.150 | |
| 4,300.0 | 4,144.6 | 4,144.6 | 4,144.6 | 20.5 | 82.9 | -97.27 | 1,953.4 | -3,972.2 | 4,449.5 | 4,346.3 | 103.21 | 43.113 | |
| 4,400.0 | 4,239.1 | 4,239.1 | 4,239.1 | 21.2 | 84.8 | -97.67 | 1,953.4 | -3,972.2 | 4,454.0 | 4,348.3 | 105.73 | 42.128 | |
| 4,500.0 | 4,333.6 | 4,333.6 | 4,333.6 | 21.8 | 86.7 | -98.06 | 1,953.4 | -3,972.2 | 4,458.7 | 4,350.5 | 108.24 | 41.192 | |
| 4,600.0 | 4,428.2 | 4,428.2 | 4,428.2 | 22.5 | 88.6 | -98.45 | 1,953.4 | -3,972.2 | 4,463.7 | 4,352.9 | 110.76 | 40.302 | |
| 4,700.0 | 4,522.7 | 4,522.7 | 4,522.7 | 23.1 | 90.5 | -98.84 | 1,953.4 | -3,972.2 | 4,468.9 | 4,355.6 | 113.27 | 39.454 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT BAUER 12-4 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,617.2 | 4,617.2 | 23.8 | 92.4 | -99.24 | 1,953.4 | -3,972.2 | 4,474.3 | 4,358.5 | 115.78 | 38.645 | |
| 4,900.0 | 4,711.7 | 4,711.7 | 4,711.7 | 24.4 | 94.3 | -99.63 | 1,953.4 | -3,972.2 | 4,479.9 | 4,361.6 | 118.29 | 37.874 | |
| 5,000.0 | 4,806.2 | 4,806.2 | 4,806.2 | 25.1 | 96.2 | -100.02 | 1,953.4 | -3,972.2 | 4,485.8 | 4,365.0 | 120.79 | 37.137 | |
| 5,100.0 | 4,900.8 | 4,900.8 | 4,900.8 | 25.7 | 98.1 | -100.40 | 1,953.4 | -3,972.2 | 4,491.9 | 4,368.6 | 123.29 | 36.433 | |
| 5,200.0 | 4,995.3 | 4,995.3 | 4,995.3 | 26.4 | 100.0 | -100.79 | 1,953.4 | -3,972.2 | 4,498.3 | 4,372.5 | 125.79 | 35.759 | |
| 5,300.0 | 5,089.8 | 5,089.8 | 5,089.8 | 27.0 | 101.9 | -101.18 | 1,953.4 | -3,972.2 | 4,504.8 | 4,376.5 | 128.29 | 35.114 | |
| 5,400.0 | 5,184.3 | 5,184.3 | 5,184.3 | 27.7 | 103.8 | -101.56 | 1,953.4 | -3,972.2 | 4,511.6 | 4,380.8 | 130.78 | 34.497 | |
| 5,500.0 | 5,278.9 | 5,278.9 | 5,278.9 | 28.3 | 105.7 | -101.95 | 1,953.4 | -3,972.2 | 4,518.6 | 4,385.4 | 133.28 | 33.905 | |
| 5,533.5 | 5,310.5 | 5,310.5 | 5,310.5 | 28.5 | 106.3 | -102.08 | 1,953.4 | -3,972.2 | 4,521.0 | 4,386.9 | 134.11 | 33.711 | |
| 5,600.0 | 5,373.6 | 5,373.6 | 5,373.6 | 28.9 | 107.6 | -102.41 | 1,953.4 | -3,972.2 | 4,525.7 | 4,390.0 | 135.74 | 33.342 | |
| 5,700.0 | 5,469.4 | 5,469.4 | 5,469.4 | 29.3 | 109.5 | -102.88 | 1,953.4 | -3,972.2 | 4,532.3 | 4,394.2 | 138.10 | 32.818 | |
| 5,800.0 | 5,566.1 | 5,566.1 | 5,566.1 | 29.8 | 111.4 | -103.30 | 1,953.4 | -3,972.2 | 4,538.2 | 4,397.8 | 140.45 | 32.311 | |
| 5,900.0 | 5,663.6 | 5,663.6 | 5,663.6 | 30.1 | 113.4 | -103.67 | 1,953.4 | -3,972.2 | 4,543.5 | 4,400.7 | 142.78 | 31.821 | |
| 6,000.0 | 5,761.9 | 5,761.9 | 5,761.9 | 30.5 | 115.4 | -103.98 | 1,953.4 | -3,972.2 | 4,548.0 | 4,402.9 | 145.09 | 31.346 | |
| 6,100.0 | 5,860.7 | 5,860.7 | 5,860.7 | 30.7 | 117.4 | -104.24 | 1,953.4 | -3,972.2 | 4,551.7 | 4,404.4 | 147.36 | 30.888 | |
| 6,200.0 | 5,960.0 | 5,960.0 | 5,960.0 | 31.0 | 119.4 | -104.43 | 1,953.4 | -3,972.2 | 4,554.7 | 4,405.1 | 149.60 | 30.445 | |
| 6,300.0 | 6,059.7 | 6,059.7 | 6,059.7 | 31.2 | 121.4 | -104.57 | 1,953.4 | -3,972.2 | 4,556.7 | 4,404.9 | 151.80 | 30.018 | |
| 6,400.0 | 6,159.6 | 6,159.6 | 6,159.6 | 31.3 | 123.4 | -104.66 | 1,953.4 | -3,972.2 | 4,557.9 | 4,404.0 | 153.95 | 29.606 | |
| 6,486.1 | 6,245.7 | 6,245.7 | 6,245.7 | 31.4 | 125.1 | -83.52 | 1,953.4 | -3,972.2 | 4,558.3 | 4,414.8 | 143.43 | 31.781 | |
| 6,500.0 | 6,259.6 | 6,259.6 | 6,259.6 | 31.4 | 125.4 | -83.52 | 1,953.4 | -3,972.2 | 4,558.3 | 4,414.5 | 143.72 | 31.715 | |
| 6,516.1 | 6,275.7 | 6,275.7 | 6,275.7 | 31.4 | 125.7 | -83.52 | 1,953.4 | -3,972.2 | 4,558.3 | 4,414.2 | 144.07 | 31.638 | |
| 6,550.0 | 6,309.5 | 6,309.5 | 6,309.5 | 31.5 | 126.4 | 6.49 | 1,953.4 | -3,972.2 | 4,557.5 | 4,400.5 | 156.92 | 29.044 | |
| 6,600.0 | 6,359.4 | 6,359.4 | 6,359.4 | 31.5 | 127.4 | 6.53 | 1,953.4 | -3,972.2 | 4,553.4 | 4,396.3 | 157.04 | 28.994 | |
| 6,650.0 | 6,408.8 | 6,408.8 | 6,408.8 | 31.5 | 128.4 | 6.62 | 1,953.4 | -3,972.2 | 4,545.9 | 4,389.5 | 156.40 | 29.065 | |
| 6,700.0 | 6,457.5 | 6,457.5 | 6,457.5 | 31.5 | 129.4 | 6.74 | 1,953.4 | -3,972.2 | 4,534.9 | 4,379.9 | 154.99 | 29.259 | |
| 6,716.1 | 6,473.1 | 6,473.1 | 6,473.1 | 31.5 | 129.7 | 6.78 | 1,953.4 | -3,972.2 | 4,530.7 | 4,376.3 | 154.37 | 29.350 | |
| 6,725.0 | 6,481.6 | 6,481.6 | 6,481.6 | 31.5 | 129.9 | 6.82 | 1,953.4 | -3,972.2 | 4,528.2 | 4,374.5 | 153.71 | 29.458 | |
| 6,750.0 | 6,505.3 | 6,505.3 | 6,505.3 | 31.5 | 130.3 | 6.96 | 1,953.4 | -3,972.2 | 4,520.3 | 4,368.7 | 151.58 | 29.821 | |
| 6,775.0 | 6,528.5 | 6,528.5 | 6,528.5 | 31.4 | 130.8 | 7.11 | 1,953.4 | -3,972.2 | 4,511.2 | 4,362.1 | 149.03 | 30.270 | |
| 6,800.0 | 6,551.3 | 6,551.3 | 6,551.3 | 31.4 | 131.3 | 7.30 | 1,953.4 | -3,972.2 | 4,500.8 | 4,354.8 | 146.07 | 30.813 | |
| 6,825.0 | 6,573.4 | 6,573.4 | 6,573.4 | 31.4 | 131.7 | 7.52 | 1,953.4 | -3,972.2 | 4,489.3 | 4,346.6 | 142.71 | 31.457 | |
| 6,850.0 | 6,595.0 | 6,595.0 | 6,595.0 | 31.3 | 132.1 | 7.78 | 1,953.4 | -3,972.2 | 4,476.7 | 4,337.7 | 138.97 | 32.213 | |
| 6,875.0 | 6,615.8 | 6,615.8 | 6,615.8 | 31.3 | 132.6 | 8.07 | 1,953.4 | -3,972.2 | 4,463.0 | 4,328.1 | 134.87 | 33.092 | |
| 6,900.0 | 6,635.9 | 6,635.9 | 6,635.9 | 31.3 | 133.0 | 8.42 | 1,953.4 | -3,972.2 | 4,448.2 | 4,317.8 | 130.42 | 34.107 | |
| 6,925.0 | 6,655.1 | 6,655.1 | 6,655.1 | 31.2 | 133.3 | 8.81 | 1,953.4 | -3,972.2 | 4,432.4 | 4,306.7 | 125.65 | 35.275 | |
| 6,950.0 | 6,673.6 | 6,673.6 | 6,673.6 | 31.2 | 133.7 | 9.28 | 1,953.4 | -3,972.2 | 4,415.6 | 4,295.0 | 120.60 | 36.613 | |
| 6,975.0 | 6,691.1 | 6,691.1 | 6,691.1 | 31.1 | 134.1 | 9.81 | 1,953.4 | -3,972.2 | 4,397.9 | 4,282.5 | 115.32 | 38.137 | |
| 7,000.0 | 6,707.6 | 6,707.6 | 6,707.6 | 31.1 | 134.4 | 10.45 | 1,953.4 | -3,972.2 | 4,379.2 | 4,269.4 | 109.85 | 39.865 | |
| 7,025.0 | 6,723.1 | 6,723.1 | 6,723.1 | 31.0 | 134.7 | 11.19 | 1,953.4 | -3,972.2 | 4,359.8 | 4,255.5 | 104.29 | 41.806 | |
| 7,050.0 | 6,737.6 | 6,737.6 | 6,737.6 | 31.0 | 135.0 | 12.08 | 1,953.4 | -3,972.2 | 4,339.6 | 4,240.8 | 98.73 | 43.952 | |
| 7,075.0 | 6,751.0 | 6,751.0 | 6,751.0 | 30.9 | 135.3 | 13.14 | 1,953.4 | -3,972.2 | 4,318.6 | 4,225.3 | 93.35 | 46.263 | |
| 7,100.0 | 6,763.3 | 6,763.3 | 6,763.3 | 30.8 | 135.5 | 14.44 | 1,953.4 | -3,972.2 | 4,297.0 | 4,208.7 | 88.36 | 48.629 | |
| 7,125.0 | 6,774.5 | 6,774.5 | 6,774.5 | 30.8 | 135.7 | 16.05 | 1,953.4 | -3,972.2 | 4,274.8 | 4,190.7 | 84.12 | 50.820 | |
| 7,150.0 | 6,784.4 | 6,784.4 | 6,784.4 | 30.7 | 135.9 | 18.08 | 1,953.4 | -3,972.2 | 4,252.0 | 4,170.9 | 81.12 | 52.418 | |
| 7,175.0 | 6,793.1 | 6,793.1 | 6,793.1 | 30.7 | 136.1 | 20.70 | 1,953.4 | -3,972.2 | 4,228.8 | 4,148.7 | 80.10 | 52.793 | |
| 7,200.0 | 6,800.6 | 6,800.6 | 6,800.6 | 30.6 | 136.3 | 24.19 | 1,953.4 | -3,972.2 | 4,205.1 | 4,123.0 | 82.07 | 51.241 | |
| 7,225.0 | 6,806.8 | 6,806.8 | 6,806.8 | 30.6 | 136.4 | 28.99 | 1,953.4 | -3,972.2 | 4,181.1 | 4,092.8 | 88.25 | 47.380 | |
| 7,250.0 | 6,811.8 | 6,811.8 | 6,811.8 | 30.5 | 136.5 | 35.87 | 1,953.4 | -3,972.2 | 4,156.8 | 4,056.8 | 99.98 | 41.575 | |
| 7,275.0 | 6,815.5 | 6,815.5 | 6,815.5 | 30.5 | 136.6 | 46.11 | 1,953.4 | -3,972.2 | 4,132.2 | 4,014.1 | 118.17 | 34.970 | |
| 7,300.0 | 6,817.8 | 6,817.8 | 6,817.8 | 30.4 | 136.6 | 61.47 | 1,953.4 | -3,972.2 | 4,107.5 | 3,966.9 | 140.69 | 29.195 | |
| 7,325.0 | 6,818.9 | 6,818.9 | 6,818.9 | 30.4 | 136.6 | 82.67 | 1,953.4 | -3,972.2 | 4,082.8 | 3,926.4 | 156.41 | 26.103 | |
| 7,332.8 | 6,819.0 | 6,819.0 | 6,819.0 | 30.4 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 4,075.0 | 3,917.9 | 157.12 | 25.936 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT BAUER 12-4 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,819.0 | 6,819.0 | 30.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 4,008.4 | 3,850.6 | 157.79 | 25.403 | |
| 7,500.0 | 6,819.0 | 6,819.0 | 6,819.0 | 30.2 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,909.2 | 3,750.2 | 159.05 | 24.579 | |
| 7,600.0 | 6,819.0 | 6,819.0 | 6,819.0 | 30.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,810.1 | 3,649.5 | 160.57 | 23.728 | |
| 7,700.0 | 6,819.0 | 6,819.0 | 6,819.0 | 30.6 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,711.1 | 3,548.7 | 162.32 | 22.863 | |
| 7,800.0 | 6,819.0 | 6,819.0 | 6,819.0 | 31.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,612.1 | 3,447.8 | 164.24 | 21.993 | |
| 7,900.0 | 6,819.0 | 6,819.0 | 6,819.0 | 32.5 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,513.1 | 3,346.8 | 166.30 | 21.125 | |
| 8,000.0 | 6,819.0 | 6,819.0 | 6,819.0 | 34.2 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,414.2 | 3,245.7 | 168.48 | 20.265 | |
| 8,100.0 | 6,819.0 | 6,819.0 | 6,819.0 | 36.1 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,315.4 | 3,144.6 | 170.75 | 19.417 | |
| 8,200.0 | 6,819.0 | 6,819.0 | 6,819.0 | 38.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,216.6 | 3,043.5 | 173.10 | 18.583 | |
| 8,300.0 | 6,819.0 | 6,819.0 | 6,819.0 | 40.6 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,118.0 | 2,942.5 | 175.50 | 17.766 | |
| 8,400.0 | 6,819.0 | 6,819.0 | 6,819.0 | 42.9 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,019.4 | 2,841.4 | 177.96 | 16.967 | |
| 8,500.0 | 6,819.0 | 6,819.0 | 6,819.0 | 45.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,920.9 | 2,740.4 | 180.46 | 16.186 | |
| 8,600.0 | 6,819.0 | 6,819.0 | 6,819.0 | 47.8 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,822.5 | 2,639.5 | 183.00 | 15.424 | |
| 8,700.0 | 6,819.0 | 6,819.0 | 6,819.0 | 50.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,724.3 | 2,538.7 | 185.57 | 14.681 | |
| 8,800.0 | 6,819.0 | 6,819.0 | 6,819.0 | 52.8 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,626.1 | 2,438.0 | 188.16 | 13.957 | |
| 8,900.0 | 6,819.0 | 6,819.0 | 6,819.0 | 55.4 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,528.1 | 2,337.4 | 190.77 | 13.252 | |
| 9,000.0 | 6,819.0 | 6,819.0 | 6,819.0 | 58.0 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,430.3 | 2,236.9 | 193.41 | 12.566 | |
| 9,100.0 | 6,819.0 | 6,819.0 | 6,819.0 | 60.6 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,332.7 | 2,136.6 | 196.06 | 11.898 | |
| 9,200.0 | 6,819.0 | 6,819.0 | 6,819.0 | 63.2 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,235.3 | 2,036.5 | 198.72 | 11.248 | |
| 9,300.0 | 6,819.0 | 6,819.0 | 6,819.0 | 65.9 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,138.1 | 1,936.7 | 201.40 | 10.616 | |
| 9,400.0 | 6,819.0 | 6,819.0 | 6,819.0 | 68.5 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,041.2 | 1,837.1 | 204.08 | 10.002 | |
| 9,500.0 | 6,819.0 | 6,819.0 | 6,819.0 | 71.2 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,944.6 | 1,737.8 | 206.78 | 9.404 | |
| 9,600.0 | 6,819.0 | 6,819.0 | 6,819.0 | 73.9 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,848.3 | 1,638.8 | 209.49 | 8.823 | |
| 9,700.0 | 6,819.0 | 6,819.0 | 6,819.0 | 76.5 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,752.5 | 1,540.3 | 212.20 | 8.259 | |
| 9,800.0 | 6,819.0 | 6,819.0 | 6,819.0 | 79.2 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,657.2 | 1,442.2 | 214.92 | 7.711 | |
| 9,900.0 | 6,819.0 | 6,819.0 | 6,819.0 | 81.9 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,562.4 | 1,344.8 | 217.65 | 7.179 | |
| 10,000.0 | 6,819.0 | 6,819.0 | 6,819.0 | 84.6 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,468.4 | 1,248.0 | 220.38 | 6.663 | |
| 10,100.0 | 6,819.0 | 6,819.0 | 6,819.0 | 87.4 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,375.2 | 1,152.0 | 223.11 | 6.163 | |
| 10,200.0 | 6,819.0 | 6,819.0 | 6,819.0 | 90.1 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,283.0 | 1,057.1 | 225.86 | 5.680 | |
| 10,300.0 | 6,819.0 | 6,819.0 | 6,819.0 | 92.8 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,192.0 | 963.4 | 228.60 | 5.214 | |
| 10,400.0 | 6,819.0 | 6,819.0 | 6,819.0 | 95.5 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,102.7 | 871.3 | 231.35 | 4.766 | |
| 10,500.0 | 6,819.0 | 6,819.0 | 6,819.0 | 98.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,015.3 | 781.2 | 234.11 | 4.337 | |
| 10,600.0 | 6,819.0 | 6,819.0 | 6,819.0 | 101.0 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 930.5 | 693.6 | 236.86 | 3.928 | |
| 10,700.0 | 6,819.0 | 6,819.0 | 6,819.0 | 103.8 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 849.0 | 609.4 | 239.62 | 3.543 | |
| 10,800.0 | 6,819.0 | 6,819.0 | 6,819.0 | 106.5 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 771.9 | 529.5 | 242.38 | 3.184 | |
| 10,900.0 | 6,819.0 | 6,819.0 | 6,819.0 | 109.2 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 700.5 | 455.4 | 245.15 | 2.858 | |
| 11,000.0 | 6,819.0 | 6,819.0 | 6,819.0 | 112.0 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 636.9 | 389.0 | 247.92 | 2.569 | |
| 11,100.0 | 6,819.0 | 6,819.0 | 6,819.0 | 114.8 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 583.7 | 333.0 | 250.69 | 2.328 | |
| 11,200.0 | 6,819.0 | 6,819.0 | 6,819.0 | 117.5 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 543.7 | 290.2 | 253.46 | 2.145 | |
| 11,300.0 | 6,819.0 | 6,819.0 | 6,819.0 | 120.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 520.2 | 263.9 | 256.23 | 2.030 | |
| 11,375.2 | 6,819.0 | 6,819.0 | 6,819.0 | 122.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 514.7 | 256.4 | 258.32 | 1.993 | CC |
| 11,400.0 | 6,819.0 | 6,819.0 | 6,819.0 | 123.0 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 515.3 | 256.3 | 259.00 | 1.990 | ES, SF |
| 11,500.0 | 6,819.0 | 6,819.0 | 6,819.0 | 125.8 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 529.6 | 267.8 | 261.78 | 2.023 | |
| 11,600.0 | 6,819.0 | 6,819.0 | 6,819.0 | 128.6 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 561.7 | 297.1 | 264.56 | 2.123 | |
| 11,700.0 | 6,819.0 | 6,819.0 | 6,819.0 | 131.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 608.6 | 341.3 | 267.34 | 2.277 | |
| 11,800.0 | 6,819.0 | 6,819.0 | 6,819.0 | 134.1 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 667.4 | 397.2 | 270.12 | 2.471 | |
| 11,900.0 | 6,819.0 | 6,819.0 | 6,819.0 | 136.9 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 735.1 | 462.2 | 272.90 | 2.694 | |
| 12,000.0 | 6,819.0 | 6,819.0 | 6,819.0 | 139.6 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 809.5 | 533.8 | 275.69 | 2.936 | |
| 12,100.0 | 6,819.0 | 6,819.0 | 6,819.0 | 142.4 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 889.0 | 610.5 | 278.47 | 3.192 | |
| 12,200.0 | 6,819.0 | 6,819.0 | 6,819.0 | 145.2 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 972.2 | 691.0 | 281.26 | 3.457 | |
| 12,300.0 | 6,819.0 | 6,819.0 | 6,819.0 | 148.0 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,058.4 | 774.3 | 284.04 | 3.726 | |
| 12,400.0 | 6,819.0 | 6,819.0 | 6,819.0 | 150.8 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,146.8 | 860.0 | 286.83 | 3.998 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT BAUER 12-4 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,500.0 | 6,819.0 | 6,819.0 | 6,819.0 | 153.5 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,237.0 | 947.4 | 289.62 | 4.271 | |
| 12,600.0 | 6,819.0 | 6,819.0 | 6,819.0 | 156.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,328.6 | 1,036.2 | 292.41 | 4.544 | |
| 12,700.0 | 6,819.0 | 6,819.0 | 6,819.0 | 159.1 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,421.3 | 1,126.1 | 295.20 | 4.815 | |
| 12,800.0 | 6,819.0 | 6,819.0 | 6,819.0 | 161.9 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,514.9 | 1,216.9 | 297.99 | 5.084 | |
| 12,900.0 | 6,819.0 | 6,819.0 | 6,819.0 | 164.7 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,609.3 | 1,308.6 | 300.78 | 5.351 | |
| 13,000.0 | 6,819.0 | 6,819.0 | 6,819.0 | 167.4 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,704.4 | 1,400.8 | 303.57 | 5.614 | |
| 13,100.0 | 6,819.0 | 6,819.0 | 6,819.0 | 170.2 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,800.0 | 1,493.6 | 306.36 | 5.875 | |
| 13,200.0 | 6,819.0 | 6,819.0 | 6,819.0 | 173.0 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,896.0 | 1,586.8 | 309.16 | 6.133 | |
| 13,300.0 | 6,819.0 | 6,819.0 | 6,819.0 | 175.8 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 1,992.4 | 1,680.5 | 311.95 | 6.387 | |
| 13,400.0 | 6,819.0 | 6,819.0 | 6,819.0 | 178.6 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,089.2 | 1,774.5 | 314.74 | 6.638 | |
| 13,500.0 | 6,819.0 | 6,819.0 | 6,819.0 | 181.4 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,186.3 | 1,868.7 | 317.54 | 6.885 | |
| 13,600.0 | 6,819.0 | 6,819.0 | 6,819.0 | 184.2 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,283.6 | 1,963.2 | 320.33 | 7.129 | |
| 13,700.0 | 6,819.0 | 6,819.0 | 6,819.0 | 187.0 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,381.1 | 2,058.0 | 323.13 | 7.369 | |
| 13,800.0 | 6,819.0 | 6,819.0 | 6,819.0 | 189.7 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,478.8 | 2,152.9 | 325.93 | 7.605 | |
| 13,900.0 | 6,819.0 | 6,819.0 | 6,819.0 | 192.5 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,576.7 | 2,248.0 | 328.72 | 7.839 | |
| 14,000.0 | 6,819.0 | 6,819.0 | 6,819.0 | 195.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,674.8 | 2,343.3 | 331.52 | 8.068 | |
| 14,100.0 | 6,819.0 | 6,819.0 | 6,819.0 | 198.1 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,773.0 | 2,438.7 | 334.32 | 8.294 | |
| 14,200.0 | 6,819.0 | 6,819.0 | 6,819.0 | 200.9 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,871.3 | 2,534.2 | 337.12 | 8.517 | |
| 14,300.0 | 6,819.0 | 6,819.0 | 6,819.0 | 203.7 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 2,969.7 | 2,629.8 | 339.92 | 8.737 | |
| 14,400.0 | 6,819.0 | 6,819.0 | 6,819.0 | 206.5 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,068.3 | 2,725.6 | 342.71 | 8.953 | |
| 14,500.0 | 6,819.0 | 6,819.0 | 6,819.0 | 209.3 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,166.9 | 2,821.4 | 345.51 | 9.166 | |
| 14,600.0 | 6,819.0 | 6,819.0 | 6,819.0 | 212.1 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,265.6 | 2,917.3 | 348.31 | 9.376 | |
| 14,700.0 | 6,819.0 | 6,819.0 | 6,819.0 | 214.9 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,364.4 | 3,013.3 | 351.11 | 9.582 | |
| 14,720.3 | 6,819.0 | 6,819.0 | 6,819.0 | 215.4 | 136.6 | 90.00 | 1,953.4 | -3,972.2 | 3,384.5 | 3,032.8 | 351.68 | 9.624 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT BLOSKAS 1 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -115.54 | -1,914.5 | -4,006.5 | 4,440.6 | | | | |
| 100.0 | 100.0 | 63.0 | 63.0 | 0.1 | 0.0 | -115.54 | -1,914.5 | -4,006.5 | 4,440.4 | 4,440.4 | 0.09 | N/A | |
| 200.0 | 200.0 | 163.0 | 163.0 | 0.3 | 0.8 | -115.54 | -1,914.5 | -4,006.5 | 4,440.4 | 4,439.3 | 1.13 | 3,918.214 | |
| 300.0 | 300.0 | 263.0 | 263.0 | 0.5 | 2.7 | -115.54 | -1,914.5 | -4,006.5 | 4,440.4 | 4,437.2 | 3.27 | 1,358.415 | |
| 400.0 | 400.0 | 363.0 | 363.0 | 0.8 | 4.9 | -115.54 | -1,914.5 | -4,006.5 | 4,440.4 | 4,434.8 | 5.64 | 787.270 | |
| 500.0 | 500.0 | 463.0 | 463.0 | 1.0 | 6.9 | -115.54 | -1,914.5 | -4,006.5 | 4,440.4 | 4,432.5 | 7.92 | 560.699 | |
| 600.0 | 600.0 | 563.0 | 563.0 | 1.2 | 9.0 | -115.54 | -1,914.5 | -4,006.5 | 4,440.4 | 4,430.3 | 10.18 | 436.288 | |
| 700.0 | 700.0 | 663.0 | 663.0 | 1.4 | 11.0 | -115.54 | -1,914.5 | -4,006.5 | 4,440.4 | 4,428.0 | 12.43 | 357.308 | |
| 800.0 | 800.0 | 763.0 | 763.0 | 1.7 | 13.0 | -115.54 | -1,914.5 | -4,006.5 | 4,440.4 | 4,425.8 | 14.67 | 302.632 | |
| 900.0 | 900.0 | 863.0 | 863.0 | 1.9 | 15.0 | -136.70 | -1,914.5 | -4,006.5 | 4,441.7 | 4,424.8 | 16.91 | 262.691 | |
| 1,000.0 | 999.8 | 962.8 | 962.8 | 2.1 | 17.0 | -136.69 | -1,914.5 | -4,006.5 | 4,445.5 | 4,426.4 | 19.13 | 232.424 | |
| 1,100.0 | 1,099.5 | 1,062.5 | 1,062.5 | 2.3 | 19.1 | -136.68 | -1,914.5 | -4,006.5 | 4,451.9 | 4,430.5 | 21.33 | 208.755 | |
| 1,200.0 | 1,198.7 | 1,161.7 | 1,161.7 | 2.6 | 21.1 | -136.67 | -1,914.5 | -4,006.5 | 4,460.8 | 4,437.3 | 23.51 | 189.778 | |
| 1,300.0 | 1,297.5 | 1,260.5 | 1,260.5 | 2.9 | 23.0 | -136.65 | -1,914.5 | -4,006.5 | 4,472.2 | 4,446.5 | 25.66 | 174.255 | |
| 1,400.0 | 1,395.6 | 1,358.6 | 1,358.6 | 3.2 | 25.0 | -136.62 | -1,914.5 | -4,006.5 | 4,486.2 | 4,458.4 | 27.80 | 161.346 | |
| 1,500.0 | 1,493.1 | 1,456.1 | 1,456.1 | 3.5 | 27.0 | -136.58 | -1,914.5 | -4,006.5 | 4,502.7 | 4,472.8 | 29.93 | 150.456 | |
| 1,507.2 | 1,500.0 | 1,463.0 | 1,463.0 | 3.6 | 27.1 | -136.58 | -1,914.5 | -4,006.5 | 4,504.0 | 4,474.0 | 30.08 | 149.750 | |
| 1,572.2 | 1,563.0 | 1,526.0 | 1,526.0 | 3.8 | 28.4 | -136.72 | -1,914.5 | -4,006.5 | 4,515.7 | 4,484.2 | 31.52 | 143.264 | |
| 1,600.0 | 1,590.0 | 1,553.0 | 1,553.0 | 3.9 | 28.9 | -136.70 | -1,914.5 | -4,006.5 | 4,520.9 | 4,488.8 | 32.10 | 140.822 | |
| 1,700.0 | 1,686.3 | 1,649.3 | 1,649.3 | 4.4 | 30.9 | -136.65 | -1,914.5 | -4,006.5 | 4,540.9 | 4,506.7 | 34.20 | 132.771 | |
| 1,800.0 | 1,781.5 | 1,744.5 | 1,744.5 | 4.9 | 32.8 | -136.59 | -1,914.5 | -4,006.5 | 4,563.5 | 4,527.2 | 36.28 | 125.794 | |
| 1,817.6 | 1,798.2 | 1,761.2 | 1,761.2 | 5.0 | 33.1 | -136.58 | -1,914.5 | -4,006.5 | 4,567.7 | 4,531.1 | 36.64 | 124.662 | |
| 1,900.0 | 1,876.1 | 1,839.1 | 1,839.1 | 5.5 | 34.7 | -136.81 | -1,914.5 | -4,006.5 | 4,587.8 | 4,549.3 | 38.50 | 119.164 | |
| 2,000.0 | 1,970.6 | 1,933.6 | 1,933.6 | 6.0 | 36.6 | -137.08 | -1,914.5 | -4,006.5 | 4,612.3 | 4,571.5 | 40.77 | 113.140 | |
| 2,100.0 | 2,065.1 | 2,028.1 | 2,028.1 | 6.6 | 38.5 | -137.34 | -1,914.5 | -4,006.5 | 4,636.9 | 4,593.8 | 43.04 | 107.735 | |
| 2,200.0 | 2,159.6 | 2,122.6 | 2,122.6 | 7.2 | 40.4 | -137.61 | -1,914.5 | -4,006.5 | 4,661.5 | 4,616.2 | 45.32 | 102.863 | |
| 2,300.0 | 2,254.1 | 2,217.1 | 2,217.1 | 7.8 | 42.3 | -137.87 | -1,914.5 | -4,006.5 | 4,686.3 | 4,638.7 | 47.60 | 98.454 | |
| 2,400.0 | 2,348.7 | 2,311.7 | 2,311.7 | 8.4 | 44.2 | -138.13 | -1,914.5 | -4,006.5 | 4,711.1 | 4,661.3 | 49.88 | 94.446 | |
| 2,500.0 | 2,443.2 | 2,406.2 | 2,406.2 | 9.1 | 46.1 | -138.39 | -1,914.5 | -4,006.5 | 4,736.1 | 4,683.9 | 52.17 | 90.789 | |
| 2,600.0 | 2,537.7 | 2,500.7 | 2,500.7 | 9.7 | 48.0 | -138.64 | -1,914.5 | -4,006.5 | 4,761.1 | 4,706.7 | 54.45 | 87.440 | |
| 2,700.0 | 2,632.2 | 2,595.2 | 2,595.2 | 10.3 | 49.9 | -138.90 | -1,914.5 | -4,006.5 | 4,786.3 | 4,729.6 | 56.73 | 84.364 | |
| 2,800.0 | 2,726.8 | 2,689.8 | 2,689.8 | 10.9 | 51.8 | -139.15 | -1,914.5 | -4,006.5 | 4,811.5 | 4,752.5 | 59.02 | 81.528 | |
| 2,900.0 | 2,821.3 | 2,784.3 | 2,784.3 | 11.6 | 53.7 | -139.39 | -1,914.5 | -4,006.5 | 4,836.8 | 4,775.5 | 61.30 | 78.907 | |
| 3,000.0 | 2,915.8 | 2,878.8 | 2,878.8 | 12.2 | 55.6 | -139.64 | -1,914.5 | -4,006.5 | 4,862.2 | 4,798.7 | 63.58 | 76.477 | |
| 3,100.0 | 3,010.3 | 2,973.3 | 2,973.3 | 12.8 | 57.5 | -139.88 | -1,914.5 | -4,006.5 | 4,887.7 | 4,821.9 | 65.86 | 74.218 | |
| 3,200.0 | 3,104.8 | 3,067.8 | 3,067.8 | 13.5 | 59.4 | -140.12 | -1,914.5 | -4,006.5 | 4,913.3 | 4,845.2 | 68.13 | 72.114 | |
| 3,300.0 | 3,199.4 | 3,162.4 | 3,162.4 | 14.1 | 61.3 | -140.36 | -1,914.5 | -4,006.5 | 4,939.0 | 4,868.6 | 70.41 | 70.149 | |
| 3,400.0 | 3,293.9 | 3,256.9 | 3,256.9 | 14.8 | 63.2 | -140.59 | -1,914.5 | -4,006.5 | 4,964.7 | 4,892.0 | 72.68 | 68.310 | |
| 3,500.0 | 3,388.4 | 3,351.4 | 3,351.4 | 15.4 | 65.1 | -140.82 | -1,914.5 | -4,006.5 | 4,990.5 | 4,915.6 | 74.95 | 66.585 | |
| 3,600.0 | 3,482.9 | 3,445.9 | 3,445.9 | 16.0 | 67.0 | -141.06 | -1,914.5 | -4,006.5 | 5,016.4 | 4,939.2 | 77.22 | 64.965 | |
| 3,700.0 | 3,577.5 | 3,540.5 | 3,540.5 | 16.7 | 68.9 | -141.28 | -1,914.5 | -4,006.5 | 5,042.4 | 4,962.9 | 79.48 | 63.440 | |
| 3,800.0 | 3,672.0 | 3,635.0 | 3,635.0 | 17.3 | 70.8 | -141.51 | -1,914.5 | -4,006.5 | 5,068.5 | 4,986.7 | 81.75 | 62.002 | |
| 3,900.0 | 3,766.5 | 3,729.5 | 3,729.5 | 18.0 | 72.7 | -141.73 | -1,914.5 | -4,006.5 | 5,094.6 | 5,010.6 | 84.01 | 60.645 | |
| 4,000.0 | 3,861.0 | 3,824.0 | 3,824.0 | 18.6 | 74.6 | -141.95 | -1,914.5 | -4,006.5 | 5,120.8 | 5,034.5 | 86.27 | 59.361 | |
| 4,100.0 | 3,955.5 | 3,918.5 | 3,918.5 | 19.3 | 76.5 | -142.17 | -1,914.5 | -4,006.5 | 5,147.1 | 5,058.6 | 88.52 | 58.145 | |
| 4,200.0 | 4,050.1 | 4,013.1 | 4,013.1 | 19.9 | 78.4 | -142.39 | -1,914.5 | -4,006.5 | 5,173.4 | 5,082.7 | 90.78 | 56.991 | |
| 4,300.0 | 4,144.6 | 4,107.6 | 4,107.6 | 20.5 | 80.3 | -142.61 | -1,914.5 | -4,006.5 | 5,199.9 | 5,106.8 | 93.03 | 55.896 | |
| 4,400.0 | 4,239.1 | 4,202.1 | 4,202.1 | 21.2 | 82.2 | -142.82 | -1,914.5 | -4,006.5 | 5,226.3 | 5,131.1 | 95.28 | 54.854 | |
| 4,500.0 | 4,333.6 | 4,296.6 | 4,296.6 | 21.8 | 84.1 | -143.03 | -1,914.5 | -4,006.5 | 5,252.9 | 5,155.4 | 97.52 | 53.863 | |
| 4,600.0 | 4,428.2 | 4,391.2 | 4,391.2 | 22.5 | 86.0 | -143.24 | -1,914.5 | -4,006.5 | 5,279.5 | 5,179.8 | 99.77 | 52.918 | |
| 4,700.0 | 4,522.7 | 4,485.7 | 4,485.7 | 23.1 | 87.9 | -143.45 | -1,914.5 | -4,006.5 | 5,306.2 | 5,204.2 | 102.01 | 52.016 | |
| 4,800.0 | 4,617.2 | 4,580.2 | 4,580.2 | 23.8 | 89.8 | -143.65 | -1,914.5 | -4,006.5 | 5,333.0 | 5,228.8 | 104.25 | 51.155 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT BLOSKAS 1 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,674.7 | 4,674.7 | 24.4 | 91.7 | -143.85 | -1,914.5 | -4,006.5 | 5,359.8 | 5,253.3 | 106.49 | 50.332 | |
| 5,000.0 | 4,806.2 | 4,769.2 | 4,769.2 | 25.1 | 93.6 | -144.06 | -1,914.5 | -4,006.5 | 5,386.7 | 5,278.0 | 108.72 | 49.545 | |
| 5,100.0 | 4,900.8 | 4,863.8 | 4,863.8 | 25.7 | 95.5 | -144.25 | -1,914.5 | -4,006.5 | 5,413.7 | 5,302.7 | 110.96 | 48.790 | |
| 5,200.0 | 4,995.3 | 4,958.3 | 4,958.3 | 26.4 | 97.4 | -144.45 | -1,914.5 | -4,006.5 | 5,440.7 | 5,327.5 | 113.19 | 48.067 | |
| 5,300.0 | 5,089.8 | 5,052.8 | 5,052.8 | 27.0 | 99.3 | -144.65 | -1,914.5 | -4,006.5 | 5,467.8 | 5,352.4 | 115.42 | 47.374 | |
| 5,400.0 | 5,184.3 | 5,147.3 | 5,147.3 | 27.7 | 101.2 | -144.84 | -1,914.5 | -4,006.5 | 5,494.9 | 5,377.3 | 117.65 | 46.708 | |
| 5,500.0 | 5,278.9 | 5,241.9 | 5,241.9 | 28.3 | 103.1 | -145.03 | -1,914.5 | -4,006.5 | 5,522.1 | 5,402.3 | 119.87 | 46.067 | |
| 5,533.5 | 5,310.5 | 5,273.5 | 5,273.5 | 28.5 | 103.8 | -145.10 | -1,914.5 | -4,006.5 | 5,531.3 | 5,410.6 | 120.62 | 45.858 | |
| 5,600.0 | 5,373.6 | 5,336.6 | 5,336.6 | 28.9 | 105.0 | -145.42 | -1,914.5 | -4,006.5 | 5,548.8 | 5,426.3 | 122.52 | 45.290 | |
| 5,700.0 | 5,469.4 | 5,432.4 | 5,432.4 | 29.3 | 107.0 | -145.87 | -1,914.5 | -4,006.5 | 5,572.9 | 5,447.5 | 125.31 | 44.474 | |
| 5,800.0 | 5,566.1 | 5,529.1 | 5,529.1 | 29.8 | 108.9 | -146.26 | -1,914.5 | -4,006.5 | 5,594.2 | 5,466.1 | 128.05 | 43.687 | |
| 5,900.0 | 5,663.6 | 5,626.6 | 5,626.6 | 30.1 | 110.9 | -146.59 | -1,914.5 | -4,006.5 | 5,612.6 | 5,481.9 | 130.74 | 42.931 | |
| 6,000.0 | 5,761.9 | 5,724.9 | 5,724.9 | 30.5 | 112.8 | -146.87 | -1,914.5 | -4,006.5 | 5,628.3 | 5,494.9 | 133.35 | 42.207 | |
| 6,100.0 | 5,860.7 | 5,823.7 | 5,823.7 | 30.7 | 114.8 | -147.09 | -1,914.5 | -4,006.5 | 5,641.0 | 5,505.2 | 135.88 | 41.516 | |
| 6,200.0 | 5,960.0 | 5,923.0 | 5,923.0 | 31.0 | 116.8 | -147.26 | -1,914.5 | -4,006.5 | 5,650.9 | 5,512.6 | 138.31 | 40.857 | |
| 6,300.0 | 6,059.7 | 6,022.7 | 6,022.7 | 31.2 | 118.8 | -147.38 | -1,914.5 | -4,006.5 | 5,657.8 | 5,517.2 | 140.64 | 40.230 | |
| 6,400.0 | 6,159.6 | 6,122.6 | 6,122.6 | 31.3 | 120.8 | -147.45 | -1,914.5 | -4,006.5 | 5,661.8 | 5,519.0 | 142.85 | 39.635 | |
| 6,486.1 | 6,245.7 | 6,208.7 | 6,208.7 | 31.4 | 122.6 | -126.31 | -1,914.5 | -4,006.5 | 5,662.9 | 5,512.3 | 150.63 | 37.595 | |
| 6,500.0 | 6,259.6 | 6,222.6 | 6,222.6 | 31.4 | 122.8 | -126.31 | -1,914.5 | -4,006.5 | 5,662.9 | 5,512.0 | 150.92 | 37.522 | |
| 6,516.1 | 6,275.7 | 6,238.7 | 6,238.7 | 31.4 | 123.2 | -126.31 | -1,914.5 | -4,006.5 | 5,662.9 | 5,511.7 | 151.26 | 37.437 | |
| 6,550.0 | 6,309.5 | 6,272.5 | 6,272.5 | 31.5 | 123.9 | -36.34 | -1,914.5 | -4,006.5 | 5,662.3 | 5,516.5 | 145.80 | 38.835 | |
| 6,600.0 | 6,359.4 | 6,322.4 | 6,322.4 | 31.5 | 124.9 | -36.53 | -1,914.5 | -4,006.5 | 5,659.0 | 5,512.9 | 146.11 | 38.730 | |
| 6,650.0 | 6,408.8 | 6,371.8 | 6,371.8 | 31.5 | 125.8 | -36.87 | -1,914.5 | -4,006.5 | 5,652.9 | 5,507.0 | 145.92 | 38.741 | |
| 6,700.0 | 6,457.5 | 6,420.5 | 6,420.5 | 31.5 | 126.8 | -37.37 | -1,914.5 | -4,006.5 | 5,644.0 | 5,498.8 | 145.23 | 38.862 | |
| 6,716.1 | 6,473.1 | 6,436.1 | 6,436.1 | 31.5 | 127.1 | -37.56 | -1,914.5 | -4,006.5 | 5,640.6 | 5,495.7 | 144.91 | 38.924 | |
| 6,725.0 | 6,481.6 | 6,444.6 | 6,444.6 | 31.5 | 127.3 | -37.73 | -1,914.5 | -4,006.5 | 5,638.6 | 5,494.0 | 144.53 | 39.014 | |
| 6,750.0 | 6,505.3 | 6,468.3 | 6,468.3 | 31.5 | 127.8 | -38.27 | -1,914.5 | -4,006.5 | 5,632.2 | 5,488.9 | 143.28 | 39.309 | |
| 6,775.0 | 6,528.5 | 6,491.5 | 6,491.5 | 31.4 | 128.3 | -38.90 | -1,914.5 | -4,006.5 | 5,624.8 | 5,483.0 | 141.84 | 39.656 | |
| 6,800.0 | 6,551.3 | 6,514.3 | 6,514.3 | 31.4 | 128.7 | -39.64 | -1,914.5 | -4,006.5 | 5,616.5 | 5,476.2 | 140.24 | 40.048 | |
| 6,825.0 | 6,573.4 | 6,536.4 | 6,536.4 | 31.4 | 129.2 | -40.49 | -1,914.5 | -4,006.5 | 5,607.2 | 5,468.6 | 138.54 | 40.474 | |
| 6,850.0 | 6,595.0 | 6,558.0 | 6,558.0 | 31.3 | 129.6 | -41.44 | -1,914.5 | -4,006.5 | 5,597.0 | 5,460.2 | 136.78 | 40.919 | |
| 6,875.0 | 6,615.8 | 6,578.8 | 6,578.8 | 31.3 | 130.0 | -42.52 | -1,914.5 | -4,006.5 | 5,585.9 | 5,450.9 | 135.04 | 41.364 | |
| 6,900.0 | 6,635.9 | 6,598.9 | 6,598.9 | 31.3 | 130.4 | -43.73 | -1,914.5 | -4,006.5 | 5,574.0 | 5,440.6 | 133.39 | 41.787 | |
| 6,925.0 | 6,655.1 | 6,618.1 | 6,618.1 | 31.2 | 130.8 | -45.07 | -1,914.5 | -4,006.5 | 5,561.3 | 5,429.4 | 131.91 | 42.159 | |
| 6,950.0 | 6,673.6 | 6,636.6 | 6,636.6 | 31.2 | 131.2 | -46.56 | -1,914.5 | -4,006.5 | 5,547.8 | 5,417.2 | 130.69 | 42.450 | |
| 6,975.0 | 6,691.1 | 6,654.1 | 6,654.1 | 31.1 | 131.5 | -48.20 | -1,914.5 | -4,006.5 | 5,533.6 | 5,403.8 | 129.82 | 42.625 | |
| 7,000.0 | 6,707.6 | 6,670.6 | 6,670.6 | 31.1 | 131.9 | -50.00 | -1,914.5 | -4,006.5 | 5,518.7 | 5,389.4 | 129.39 | 42.653 | |
| 7,025.0 | 6,723.1 | 6,686.1 | 6,686.1 | 31.0 | 132.2 | -51.97 | -1,914.5 | -4,006.5 | 5,503.2 | 5,373.7 | 129.46 | 42.510 | |
| 7,050.0 | 6,737.6 | 6,700.6 | 6,700.6 | 31.0 | 132.5 | -54.13 | -1,914.5 | -4,006.5 | 5,487.1 | 5,357.0 | 130.09 | 42.180 | |
| 7,075.0 | 6,751.0 | 6,714.0 | 6,714.0 | 30.9 | 132.7 | -56.47 | -1,914.5 | -4,006.5 | 5,470.4 | 5,339.1 | 131.30 | 41.664 | |
| 7,100.0 | 6,763.3 | 6,726.3 | 6,726.3 | 30.8 | 133.0 | -59.00 | -1,914.5 | -4,006.5 | 5,453.2 | 5,320.1 | 133.07 | 40.980 | |
| 7,125.0 | 6,774.5 | 6,737.5 | 6,737.5 | 30.8 | 133.2 | -61.72 | -1,914.5 | -4,006.5 | 5,435.6 | 5,300.2 | 135.34 | 40.163 | |
| 7,150.0 | 6,784.4 | 6,747.4 | 6,747.4 | 30.7 | 133.4 | -64.64 | -1,914.5 | -4,006.5 | 5,417.5 | 5,279.5 | 138.00 | 39.258 | |
| 7,175.0 | 6,793.1 | 6,756.1 | 6,756.1 | 30.7 | 133.6 | -67.73 | -1,914.5 | -4,006.5 | 5,399.2 | 5,258.2 | 140.91 | 38.316 | |
| 7,200.0 | 6,800.6 | 6,763.6 | 6,763.6 | 30.6 | 133.7 | -70.99 | -1,914.5 | -4,006.5 | 5,380.5 | 5,236.6 | 143.91 | 37.388 | |
| 7,225.0 | 6,806.8 | 6,769.8 | 6,769.8 | 30.6 | 133.9 | -74.39 | -1,914.5 | -4,006.5 | 5,361.6 | 5,214.8 | 146.82 | 36.519 | |
| 7,250.0 | 6,811.8 | 6,774.8 | 6,774.8 | 30.5 | 134.0 | -77.92 | -1,914.5 | -4,006.5 | 5,342.5 | 5,193.0 | 149.45 | 35.747 | |
| 7,275.0 | 6,815.5 | 6,778.5 | 6,778.5 | 30.5 | 134.0 | -81.53 | -1,914.5 | -4,006.5 | 5,323.2 | 5,171.6 | 151.66 | 35.099 | |
| 7,300.0 | 6,817.8 | 6,780.8 | 6,780.8 | 30.4 | 134.1 | -85.19 | -1,914.5 | -4,006.5 | 5,303.9 | 5,150.6 | 153.33 | 34.592 | |
| 7,325.0 | 6,818.9 | 6,781.9 | 6,781.9 | 30.4 | 134.1 | -88.86 | -1,914.5 | -4,006.5 | 5,284.6 | 5,130.2 | 154.38 | 34.232 | |
| 7,332.8 | 6,819.0 | 6,782.0 | 6,782.0 | 30.4 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 5,278.6 | 5,124.0 | 154.57 | 34.149 | |
| 7,400.0 | 6,819.0 | 6,782.0 | 6,782.0 | 30.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 5,226.9 | 5,071.6 | 155.25 | 33.668 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT BLOSKAS 1 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,782.0 | 6,782.0 | 30.2 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 5,150.6 | 4,994.1 | 156.51 | 32.910 | |
| 7,600.0 | 6,819.0 | 6,782.0 | 6,782.0 | 30.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 5,075.1 | 4,917.0 | 158.03 | 32.114 | |
| 7,700.0 | 6,819.0 | 6,782.0 | 6,782.0 | 30.6 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 5,000.4 | 4,840.7 | 159.77 | 31.297 | |
| 7,800.0 | 6,819.0 | 6,782.0 | 6,782.0 | 31.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,926.7 | 4,765.0 | 161.69 | 30.469 | |
| 7,900.0 | 6,819.0 | 6,782.0 | 6,782.0 | 32.5 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,853.9 | 4,690.2 | 163.76 | 29.641 | |
| 8,000.0 | 6,819.0 | 6,782.0 | 6,782.0 | 34.2 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,782.1 | 4,616.2 | 165.93 | 28.819 | |
| 8,100.0 | 6,819.0 | 6,782.0 | 6,782.0 | 36.1 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,711.4 | 4,543.1 | 168.21 | 28.010 | |
| 8,200.0 | 6,819.0 | 6,782.0 | 6,782.0 | 38.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,641.7 | 4,471.1 | 170.55 | 27.216 | |
| 8,300.0 | 6,819.0 | 6,782.0 | 6,782.0 | 40.6 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,573.1 | 4,400.1 | 172.96 | 26.440 | |
| 8,400.0 | 6,819.0 | 6,782.0 | 6,782.0 | 42.9 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,505.7 | 4,330.3 | 175.42 | 25.685 | |
| 8,500.0 | 6,819.0 | 6,782.0 | 6,782.0 | 45.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,439.5 | 4,261.6 | 177.92 | 24.952 | |
| 8,600.0 | 6,819.0 | 6,782.0 | 6,782.0 | 47.8 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,374.6 | 4,194.2 | 180.46 | 24.242 | |
| 8,700.0 | 6,819.0 | 6,782.0 | 6,782.0 | 50.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,311.1 | 4,128.1 | 183.02 | 23.555 | |
| 8,800.0 | 6,819.0 | 6,782.0 | 6,782.0 | 52.8 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,248.9 | 4,063.3 | 185.61 | 22.891 | |
| 8,900.0 | 6,819.0 | 6,782.0 | 6,782.0 | 55.4 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,188.3 | 4,000.0 | 188.23 | 22.251 | |
| 9,000.0 | 6,819.0 | 6,782.0 | 6,782.0 | 58.0 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,129.1 | 3,938.3 | 190.86 | 21.634 | |
| 9,100.0 | 6,819.0 | 6,782.0 | 6,782.0 | 60.6 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,071.6 | 3,878.1 | 193.51 | 21.041 | |
| 9,200.0 | 6,819.0 | 6,782.0 | 6,782.0 | 63.2 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,015.7 | 3,819.5 | 196.18 | 20.470 | |
| 9,300.0 | 6,819.0 | 6,782.0 | 6,782.0 | 65.9 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,961.6 | 3,762.7 | 198.85 | 19.922 | |
| 9,400.0 | 6,819.0 | 6,782.0 | 6,782.0 | 68.5 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,909.2 | 3,707.7 | 201.54 | 19.397 | |
| 9,500.0 | 6,819.0 | 6,782.0 | 6,782.0 | 71.2 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,858.8 | 3,654.5 | 204.24 | 18.894 | |
| 9,600.0 | 6,819.0 | 6,782.0 | 6,782.0 | 73.9 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,810.3 | 3,603.3 | 206.94 | 18.412 | |
| 9,700.0 | 6,819.0 | 6,782.0 | 6,782.0 | 76.5 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,763.8 | 3,554.2 | 209.65 | 17.953 | |
| 9,800.0 | 6,819.0 | 6,782.0 | 6,782.0 | 79.2 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,719.5 | 3,507.1 | 212.37 | 17.514 | |
| 9,900.0 | 6,819.0 | 6,782.0 | 6,782.0 | 81.9 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,677.3 | 3,462.2 | 215.10 | 17.096 | |
| 10,000.0 | 6,819.0 | 6,782.0 | 6,782.0 | 84.6 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,637.4 | 3,419.6 | 217.83 | 16.698 | |
| 10,100.0 | 6,819.0 | 6,782.0 | 6,782.0 | 87.4 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,599.8 | 3,379.3 | 220.57 | 16.321 | |
| 10,200.0 | 6,819.0 | 6,782.0 | 6,782.0 | 90.1 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,564.7 | 3,341.4 | 223.31 | 15.963 | |
| 10,300.0 | 6,819.0 | 6,782.0 | 6,782.0 | 92.8 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,532.0 | 3,305.9 | 226.06 | 15.624 | |
| 10,400.0 | 6,819.0 | 6,782.0 | 6,782.0 | 95.5 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,501.9 | 3,273.1 | 228.81 | 15.305 | |
| 10,500.0 | 6,819.0 | 6,782.0 | 6,782.0 | 98.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,474.4 | 3,242.8 | 231.56 | 15.004 | |
| 10,600.0 | 6,819.0 | 6,782.0 | 6,782.0 | 101.0 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,449.5 | 3,215.2 | 234.32 | 14.722 | |
| 10,700.0 | 6,819.0 | 6,782.0 | 6,782.0 | 103.8 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,427.4 | 3,190.4 | 237.08 | 14.457 | |
| 10,800.0 | 6,819.0 | 6,782.0 | 6,782.0 | 106.5 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,408.1 | 3,168.3 | 239.84 | 14.210 | |
| 10,900.0 | 6,819.0 | 6,782.0 | 6,782.0 | 109.2 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,391.7 | 3,149.1 | 242.60 | 13.980 | |
| 11,000.0 | 6,819.0 | 6,782.0 | 6,782.0 | 112.0 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,378.1 | 3,132.7 | 245.37 | 13.767 | |
| 11,100.0 | 6,819.0 | 6,782.0 | 6,782.0 | 114.8 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,367.5 | 3,119.3 | 248.14 | 13.571 | |
| 11,200.0 | 6,819.0 | 6,782.0 | 6,782.0 | 117.5 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,359.7 | 3,108.8 | 250.91 | 13.390 | |
| 11,300.0 | 6,819.0 | 6,782.0 | 6,782.0 | 120.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,355.0 | 3,101.3 | 253.69 | 13.225 | |
| 11,400.0 | 6,819.0 | 6,782.0 | 6,782.0 | 123.0 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,353.2 | 3,096.8 | 256.46 | 13.075 | |
| 11,409.5 | 6,819.0 | 6,782.0 | 6,782.0 | 123.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,353.2 | 3,096.5 | 256.72 | 13.061 | CC |
| 11,500.0 | 6,819.0 | 6,782.0 | 6,782.0 | 125.8 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,354.4 | 3,095.2 | 259.24 | 12.940 | ES |
| 11,600.0 | 6,819.0 | 6,782.0 | 6,782.0 | 128.6 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,358.6 | 3,096.6 | 262.02 | 12.818 | |
| 11,700.0 | 6,819.0 | 6,782.0 | 6,782.0 | 131.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,365.8 | 3,101.0 | 264.79 | 12.711 | |
| 11,800.0 | 6,819.0 | 6,782.0 | 6,782.0 | 134.1 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,375.9 | 3,108.3 | 267.58 | 12.616 | |
| 11,900.0 | 6,819.0 | 6,782.0 | 6,782.0 | 136.9 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,388.9 | 3,118.5 | 270.36 | 12.535 | |
| 12,000.0 | 6,819.0 | 6,782.0 | 6,782.0 | 139.6 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,404.8 | 3,131.7 | 273.14 | 12.465 | |
| 12,100.0 | 6,819.0 | 6,782.0 | 6,782.0 | 142.4 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,423.6 | 3,147.6 | 275.93 | 12.408 | |
| 12,200.0 | 6,819.0 | 6,782.0 | 6,782.0 | 145.2 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,445.1 | 3,166.4 | 278.71 | 12.361 | |
| 12,300.0 | 6,819.0 | 6,782.0 | 6,782.0 | 148.0 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,469.4 | 3,187.9 | 281.50 | 12.325 | |
| 12,400.0 | 6,819.0 | 6,782.0 | 6,782.0 | 150.8 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,496.4 | 3,212.1 | 284.28 | 12.299 | |
| 12,500.0 | 6,819.0 | 6,782.0 | 6,782.0 | 153.5 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,526.1 | 3,239.0 | 287.07 | 12.283 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT BLOSKAS 1 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,782.0 | 6,782.0 | 156.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,558.3 | 3,268.4 | 289.86 | 12.276 | SF |
| 12,700.0 | 6,819.0 | 6,782.0 | 6,782.0 | 159.1 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,593.0 | 3,300.3 | 292.65 | 12.277 | |
| 12,800.0 | 6,819.0 | 6,782.0 | 6,782.0 | 161.9 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,630.1 | 3,334.6 | 295.44 | 12.287 | |
| 12,900.0 | 6,819.0 | 6,782.0 | 6,782.0 | 164.7 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,669.5 | 3,371.3 | 298.23 | 12.304 | |
| 13,000.0 | 6,819.0 | 6,782.0 | 6,782.0 | 167.4 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,711.3 | 3,410.3 | 301.03 | 12.329 | |
| 13,100.0 | 6,819.0 | 6,782.0 | 6,782.0 | 170.2 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,755.2 | 3,451.4 | 303.82 | 12.360 | |
| 13,200.0 | 6,819.0 | 6,782.0 | 6,782.0 | 173.0 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,801.3 | 3,494.7 | 306.61 | 12.398 | |
| 13,300.0 | 6,819.0 | 6,782.0 | 6,782.0 | 175.8 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,849.4 | 3,540.0 | 309.41 | 12.441 | |
| 13,400.0 | 6,819.0 | 6,782.0 | 6,782.0 | 178.6 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,899.5 | 3,587.3 | 312.20 | 12.490 | |
| 13,500.0 | 6,819.0 | 6,782.0 | 6,782.0 | 181.4 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 3,951.5 | 3,636.5 | 315.00 | 12.545 | |
| 13,600.0 | 6,819.0 | 6,782.0 | 6,782.0 | 184.2 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,005.3 | 3,687.5 | 317.79 | 12.603 | |
| 13,700.0 | 6,819.0 | 6,782.0 | 6,782.0 | 187.0 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,060.8 | 3,740.2 | 320.59 | 12.667 | |
| 13,800.0 | 6,819.0 | 6,782.0 | 6,782.0 | 189.7 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,118.1 | 3,794.7 | 323.38 | 12.734 | |
| 13,900.0 | 6,819.0 | 6,782.0 | 6,782.0 | 192.5 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,176.9 | 3,850.7 | 326.18 | 12.806 | |
| 14,000.0 | 6,819.0 | 6,782.0 | 6,782.0 | 195.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,237.3 | 3,908.3 | 328.98 | 12.880 | |
| 14,100.0 | 6,819.0 | 6,782.0 | 6,782.0 | 198.1 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,299.2 | 3,967.4 | 331.77 | 12.958 | |
| 14,200.0 | 6,819.0 | 6,782.0 | 6,782.0 | 200.9 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,362.4 | 4,027.9 | 334.57 | 13.039 | |
| 14,300.0 | 6,819.0 | 6,782.0 | 6,782.0 | 203.7 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,427.1 | 4,089.7 | 337.37 | 13.122 | |
| 14,400.0 | 6,819.0 | 6,782.0 | 6,782.0 | 206.5 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,493.0 | 4,152.8 | 340.17 | 13.208 | |
| 14,500.0 | 6,819.0 | 6,782.0 | 6,782.0 | 209.3 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,560.2 | 4,217.2 | 342.97 | 13.296 | |
| 14,600.0 | 6,819.0 | 6,782.0 | 6,782.0 | 212.1 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,628.5 | 4,282.8 | 345.77 | 13.386 | |
| 14,700.0 | 6,819.0 | 6,782.0 | 6,782.0 | 214.9 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,698.0 | 4,349.4 | 348.57 | 13.478 | |
| 14,720.3 | 6,819.0 | 6,782.0 | 6,782.0 | 215.4 | 134.1 | -90.00 | -1,914.5 | -4,006.5 | 4,712.2 | 4,363.1 | 349.14 | 13.497 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT BOND 21-9 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -125.02 | -1,886.6 | -2,692.0 | 3,287.4 | | | | |
| 100.0 | 100.0 | 71.0 | 71.0 | 0.1 | 0.0 | -125.02 | -1,886.6 | -2,692.0 | 3,287.3 | 3,287.2 | 0.09 | N/A | |
| 200.0 | 200.0 | 171.0 | 171.0 | 0.3 | 0.9 | -125.02 | -1,886.6 | -2,692.0 | 3,287.3 | 3,286.1 | 1.16 | 2,828.882 | |
| 300.0 | 300.0 | 271.0 | 271.0 | 0.5 | 2.8 | -125.02 | -1,886.6 | -2,692.0 | 3,287.3 | 3,283.9 | 3.36 | 978.371 | |
| 400.0 | 400.0 | 371.0 | 371.0 | 0.8 | 5.0 | -125.02 | -1,886.6 | -2,692.0 | 3,287.3 | 3,281.5 | 5.72 | 574.265 | |
| 500.0 | 500.0 | 471.0 | 471.0 | 1.0 | 7.0 | -125.02 | -1,886.6 | -2,692.0 | 3,287.3 | 3,279.3 | 8.00 | 410.819 | |
| 600.0 | 600.0 | 571.0 | 571.0 | 1.2 | 9.0 | -125.02 | -1,886.6 | -2,692.0 | 3,287.3 | 3,277.0 | 10.26 | 320.416 | |
| 700.0 | 700.0 | 671.0 | 671.0 | 1.4 | 11.1 | -125.02 | -1,886.6 | -2,692.0 | 3,287.3 | 3,274.8 | 12.51 | 262.798 | |
| 800.0 | 800.0 | 771.0 | 771.0 | 1.7 | 13.1 | -125.02 | -1,886.6 | -2,692.0 | 3,287.3 | 3,272.5 | 14.75 | 222.808 | CC |
| 900.0 | 900.0 | 871.0 | 871.0 | 1.9 | 15.1 | -146.18 | -1,886.6 | -2,692.0 | 3,288.7 | 3,271.7 | 16.99 | 193.590 | |
| 1,000.0 | 999.8 | 970.8 | 970.8 | 2.1 | 17.1 | -146.19 | -1,886.6 | -2,692.0 | 3,293.1 | 3,273.9 | 19.20 | 171.507 | |
| 1,100.0 | 1,099.5 | 1,070.5 | 1,070.5 | 2.3 | 19.1 | -146.19 | -1,886.6 | -2,692.0 | 3,300.3 | 3,278.9 | 21.39 | 154.308 | |
| 1,200.0 | 1,198.7 | 1,169.7 | 1,169.7 | 2.6 | 21.1 | -146.19 | -1,886.6 | -2,692.0 | 3,310.5 | 3,286.9 | 23.55 | 140.595 | |
| 1,300.0 | 1,297.5 | 1,268.5 | 1,268.5 | 2.9 | 23.1 | -146.20 | -1,886.6 | -2,692.0 | 3,323.5 | 3,297.8 | 25.67 | 129.458 | |
| 1,400.0 | 1,395.6 | 1,366.6 | 1,366.6 | 3.2 | 25.1 | -146.20 | -1,886.6 | -2,692.0 | 3,339.5 | 3,311.7 | 27.77 | 120.275 | |
| 1,500.0 | 1,493.1 | 1,464.1 | 1,464.1 | 3.5 | 27.1 | -146.20 | -1,886.6 | -2,692.0 | 3,358.3 | 3,328.5 | 29.82 | 112.609 | |
| 1,507.2 | 1,500.0 | 1,471.0 | 1,471.0 | 3.6 | 27.2 | -146.20 | -1,886.6 | -2,692.0 | 3,359.8 | 3,329.8 | 29.97 | 112.114 | |
| 1,572.2 | 1,563.0 | 1,534.0 | 1,534.0 | 3.8 | 28.5 | -146.35 | -1,886.6 | -2,692.0 | 3,373.1 | 3,341.7 | 31.39 | 107.463 | |
| 1,600.0 | 1,590.0 | 1,561.0 | 1,561.0 | 3.9 | 29.0 | -146.35 | -1,886.6 | -2,692.0 | 3,378.9 | 3,347.0 | 31.95 | 105.762 | |
| 1,700.0 | 1,686.3 | 1,657.3 | 1,657.3 | 4.4 | 30.9 | -146.34 | -1,886.6 | -2,692.0 | 3,401.7 | 3,367.8 | 33.95 | 100.197 | |
| 1,800.0 | 1,781.5 | 1,752.5 | 1,752.5 | 4.9 | 32.9 | -146.32 | -1,886.6 | -2,692.0 | 3,427.4 | 3,391.5 | 35.91 | 95.446 | |
| 1,817.6 | 1,798.2 | 1,769.2 | 1,769.2 | 5.0 | 33.2 | -146.32 | -1,886.6 | -2,692.0 | 3,432.2 | 3,395.9 | 36.25 | 94.683 | |
| 1,900.0 | 1,876.1 | 1,847.1 | 1,847.1 | 5.5 | 34.8 | -146.56 | -1,886.6 | -2,692.0 | 3,455.0 | 3,416.9 | 38.05 | 90.789 | |
| 2,000.0 | 1,970.6 | 1,941.6 | 1,941.6 | 6.0 | 36.7 | -146.85 | -1,886.6 | -2,692.0 | 3,482.7 | 3,442.5 | 40.25 | 86.519 | |
| 2,100.0 | 2,065.1 | 2,036.1 | 2,036.1 | 6.6 | 38.6 | -147.14 | -1,886.6 | -2,692.0 | 3,510.5 | 3,468.1 | 42.46 | 82.681 | |
| 2,200.0 | 2,159.6 | 2,130.6 | 2,130.6 | 7.2 | 40.5 | -147.42 | -1,886.6 | -2,692.0 | 3,538.4 | 3,493.8 | 44.67 | 79.218 | |
| 2,300.0 | 2,254.1 | 2,225.1 | 2,225.1 | 7.8 | 42.4 | -147.70 | -1,886.6 | -2,692.0 | 3,566.4 | 3,519.5 | 46.88 | 76.078 | |
| 2,400.0 | 2,348.7 | 2,319.7 | 2,319.7 | 8.4 | 44.3 | -147.97 | -1,886.6 | -2,692.0 | 3,594.5 | 3,545.4 | 49.09 | 73.222 | |
| 2,500.0 | 2,443.2 | 2,414.2 | 2,414.2 | 9.1 | 46.2 | -148.24 | -1,886.6 | -2,692.0 | 3,622.6 | 3,571.3 | 51.30 | 70.612 | |
| 2,600.0 | 2,537.7 | 2,508.7 | 2,508.7 | 9.7 | 48.1 | -148.51 | -1,886.6 | -2,692.0 | 3,650.8 | 3,597.3 | 53.52 | 68.220 | |
| 2,700.0 | 2,632.2 | 2,603.2 | 2,603.2 | 10.3 | 50.0 | -148.77 | -1,886.6 | -2,692.0 | 3,679.1 | 3,623.4 | 55.73 | 66.019 | |
| 2,800.0 | 2,726.8 | 2,697.8 | 2,697.8 | 10.9 | 51.9 | -149.03 | -1,886.6 | -2,692.0 | 3,707.5 | 3,649.5 | 57.94 | 63.989 | |
| 2,900.0 | 2,821.3 | 2,792.3 | 2,792.3 | 11.6 | 53.8 | -149.28 | -1,886.6 | -2,692.0 | 3,735.9 | 3,675.7 | 60.15 | 62.111 | |
| 3,000.0 | 2,915.8 | 2,886.8 | 2,886.8 | 12.2 | 55.7 | -149.53 | -1,886.6 | -2,692.0 | 3,764.4 | 3,702.0 | 62.36 | 60.368 | |
| 3,100.0 | 3,010.3 | 2,981.3 | 2,981.3 | 12.8 | 57.6 | -149.78 | -1,886.6 | -2,692.0 | 3,793.0 | 3,728.4 | 64.56 | 58.747 | |
| 3,200.0 | 3,104.8 | 3,075.8 | 3,075.8 | 13.5 | 59.5 | -150.02 | -1,886.6 | -2,692.0 | 3,821.6 | 3,754.8 | 66.77 | 57.235 | |
| 3,300.0 | 3,199.4 | 3,170.4 | 3,170.4 | 14.1 | 61.4 | -150.26 | -1,886.6 | -2,692.0 | 3,850.3 | 3,781.3 | 68.97 | 55.822 | |
| 3,400.0 | 3,293.9 | 3,264.9 | 3,264.9 | 14.8 | 63.3 | -150.50 | -1,886.6 | -2,692.0 | 3,879.0 | 3,807.8 | 71.18 | 54.499 | |
| 3,500.0 | 3,388.4 | 3,359.4 | 3,359.4 | 15.4 | 65.2 | -150.73 | -1,886.6 | -2,692.0 | 3,907.8 | 3,834.5 | 73.38 | 53.258 | |
| 3,600.0 | 3,482.9 | 3,453.9 | 3,453.9 | 16.0 | 67.1 | -150.96 | -1,886.6 | -2,692.0 | 3,936.7 | 3,861.1 | 75.57 | 52.091 | |
| 3,700.0 | 3,577.5 | 3,548.5 | 3,548.5 | 16.7 | 69.0 | -151.19 | -1,886.6 | -2,692.0 | 3,965.6 | 3,887.9 | 77.77 | 50.992 | |
| 3,800.0 | 3,672.0 | 3,643.0 | 3,643.0 | 17.3 | 70.9 | -151.41 | -1,886.6 | -2,692.0 | 3,994.6 | 3,914.7 | 79.97 | 49.955 | |
| 3,900.0 | 3,766.5 | 3,737.5 | 3,737.5 | 18.0 | 72.8 | -151.63 | -1,886.6 | -2,692.0 | 4,023.7 | 3,941.5 | 82.16 | 48.975 | |
| 4,000.0 | 3,861.0 | 3,832.0 | 3,832.0 | 18.6 | 74.7 | -151.84 | -1,886.6 | -2,692.0 | 4,052.8 | 3,968.4 | 84.35 | 48.048 | |
| 4,100.0 | 3,955.5 | 3,926.5 | 3,926.5 | 19.3 | 76.6 | -152.06 | -1,886.6 | -2,692.0 | 4,081.9 | 3,995.4 | 86.54 | 47.170 | |
| 4,200.0 | 4,050.1 | 4,021.1 | 4,021.1 | 19.9 | 78.5 | -152.27 | -1,886.6 | -2,692.0 | 4,111.1 | 4,022.4 | 88.72 | 46.336 | |
| 4,300.0 | 4,144.6 | 4,115.6 | 4,115.6 | 20.5 | 80.4 | -152.48 | -1,886.6 | -2,692.0 | 4,140.4 | 4,049.5 | 90.91 | 45.544 | |
| 4,400.0 | 4,239.1 | 4,210.1 | 4,210.1 | 21.2 | 82.3 | -152.68 | -1,886.6 | -2,692.0 | 4,169.7 | 4,076.6 | 93.09 | 44.791 | |
| 4,500.0 | 4,333.6 | 4,304.6 | 4,304.6 | 21.8 | 84.2 | -152.88 | -1,886.6 | -2,692.0 | 4,199.1 | 4,103.8 | 95.28 | 44.073 | |
| 4,600.0 | 4,428.2 | 4,399.2 | 4,399.2 | 22.5 | 86.1 | -153.08 | -1,886.6 | -2,692.0 | 4,228.5 | 4,131.0 | 97.46 | 43.389 | |
| 4,700.0 | 4,522.7 | 4,493.7 | 4,493.7 | 23.1 | 88.0 | -153.28 | -1,886.6 | -2,692.0 | 4,257.9 | 4,158.3 | 99.63 | 42.736 | |
| 4,800.0 | 4,617.2 | 4,588.2 | 4,588.2 | 23.8 | 89.9 | -153.47 | -1,886.6 | -2,692.0 | 4,287.4 | 4,185.6 | 101.81 | 42.112 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT BOND 21-9 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,682.7 | 4,682.7 | 24.4 | 91.8 | -153.67 | -1,886.6 | -2,692.0 | 4,317.0 | 4,213.0 | 103.99 | 41.515 | |
| 5,000.0 | 4,806.2 | 4,777.2 | 4,777.2 | 25.1 | 93.7 | -153.85 | -1,886.6 | -2,692.0 | 4,346.6 | 4,240.4 | 106.16 | 40.944 | |
| 5,100.0 | 4,900.8 | 4,871.8 | 4,871.8 | 25.7 | 95.6 | -154.04 | -1,886.6 | -2,692.0 | 4,376.2 | 4,267.9 | 108.33 | 40.396 | |
| 5,200.0 | 4,995.3 | 4,966.3 | 4,966.3 | 26.4 | 97.5 | -154.22 | -1,886.6 | -2,692.0 | 4,405.9 | 4,295.4 | 110.50 | 39.872 | |
| 5,300.0 | 5,089.8 | 5,060.8 | 5,060.8 | 27.0 | 99.4 | -154.41 | -1,886.6 | -2,692.0 | 4,435.6 | 4,322.9 | 112.67 | 39.368 | |
| 5,400.0 | 5,184.3 | 5,155.3 | 5,155.3 | 27.7 | 101.3 | -154.59 | -1,886.6 | -2,692.0 | 4,465.3 | 4,350.5 | 114.84 | 38.884 | |
| 5,500.0 | 5,278.9 | 5,249.9 | 5,249.9 | 28.3 | 103.2 | -154.76 | -1,886.6 | -2,692.0 | 4,495.1 | 4,378.1 | 117.00 | 38.419 | |
| 5,533.5 | 5,310.5 | 5,281.5 | 5,281.5 | 28.5 | 103.8 | -154.82 | -1,886.6 | -2,692.0 | 4,505.1 | 4,387.4 | 117.73 | 38.267 | |
| 5,600.0 | 5,373.6 | 5,344.6 | 5,344.6 | 28.9 | 105.1 | -155.10 | -1,886.6 | -2,692.0 | 4,524.3 | 4,404.6 | 119.73 | 37.786 | |
| 5,700.0 | 5,469.4 | 5,440.4 | 5,440.4 | 29.3 | 107.0 | -155.48 | -1,886.6 | -2,692.0 | 4,550.6 | 4,428.0 | 122.67 | 37.096 | |
| 5,800.0 | 5,566.1 | 5,537.1 | 5,537.1 | 29.8 | 109.0 | -155.81 | -1,886.6 | -2,692.0 | 4,573.9 | 4,448.4 | 125.55 | 36.432 | |
| 5,900.0 | 5,663.6 | 5,634.6 | 5,634.6 | 30.1 | 110.9 | -156.09 | -1,886.6 | -2,692.0 | 4,594.1 | 4,465.8 | 128.34 | 35.796 | |
| 6,000.0 | 5,761.9 | 5,732.9 | 5,732.9 | 30.5 | 112.9 | -156.32 | -1,886.6 | -2,692.0 | 4,611.2 | 4,480.1 | 131.04 | 35.188 | |
| 6,100.0 | 5,860.7 | 5,831.7 | 5,831.7 | 30.7 | 114.9 | -156.51 | -1,886.6 | -2,692.0 | 4,625.1 | 4,491.5 | 133.64 | 34.608 | |
| 6,200.0 | 5,960.0 | 5,931.0 | 5,931.0 | 31.0 | 116.9 | -156.65 | -1,886.6 | -2,692.0 | 4,635.9 | 4,499.7 | 136.13 | 34.055 | |
| 6,300.0 | 6,059.7 | 6,030.7 | 6,030.7 | 31.2 | 118.9 | -156.75 | -1,886.6 | -2,692.0 | 4,643.4 | 4,504.9 | 138.49 | 33.529 | |
| 6,400.0 | 6,159.6 | 6,130.6 | 6,130.6 | 31.3 | 120.9 | -156.81 | -1,886.6 | -2,692.0 | 4,647.8 | 4,507.1 | 140.72 | 33.029 | |
| 6,486.1 | 6,245.7 | 6,216.7 | 6,216.7 | 31.4 | 122.6 | -135.67 | -1,886.6 | -2,692.0 | 4,649.0 | 4,496.7 | 152.32 | 30.521 | |
| 6,500.0 | 6,259.6 | 6,230.6 | 6,230.6 | 31.4 | 122.9 | -135.67 | -1,886.6 | -2,692.0 | 4,649.0 | 4,496.4 | 152.61 | 30.462 | |
| 6,516.1 | 6,275.7 | 6,246.7 | 6,246.7 | 31.4 | 123.3 | -135.67 | -1,886.6 | -2,692.0 | 4,649.0 | 4,496.0 | 152.95 | 30.394 | |
| 6,550.0 | 6,309.5 | 6,280.5 | 6,280.5 | 31.5 | 123.9 | -45.71 | -1,886.6 | -2,692.0 | 4,648.4 | 4,504.7 | 143.70 | 32.349 | |
| 6,600.0 | 6,359.4 | 6,330.4 | 6,330.4 | 31.5 | 124.9 | -45.91 | -1,886.6 | -2,692.0 | 4,645.6 | 4,501.4 | 144.15 | 32.227 | |
| 6,650.0 | 6,408.8 | 6,379.8 | 6,379.8 | 31.5 | 125.9 | -46.28 | -1,886.6 | -2,692.0 | 4,640.3 | 4,496.1 | 144.22 | 32.174 | |
| 6,700.0 | 6,457.5 | 6,428.5 | 6,428.5 | 31.5 | 126.9 | -46.83 | -1,886.6 | -2,692.0 | 4,632.6 | 4,488.7 | 143.94 | 32.183 | |
| 6,716.1 | 6,473.1 | 6,444.1 | 6,444.1 | 31.5 | 127.2 | -47.04 | -1,886.6 | -2,692.0 | 4,629.6 | 4,485.9 | 143.79 | 32.198 | |
| 6,725.0 | 6,481.6 | 6,452.6 | 6,452.6 | 31.5 | 127.4 | -47.22 | -1,886.6 | -2,692.0 | 4,627.9 | 4,484.3 | 143.54 | 32.241 | |
| 6,750.0 | 6,505.3 | 6,476.3 | 6,476.3 | 31.5 | 127.9 | -47.79 | -1,886.6 | -2,692.0 | 4,622.4 | 4,479.6 | 142.76 | 32.379 | |
| 6,775.0 | 6,528.5 | 6,499.5 | 6,499.5 | 31.4 | 128.3 | -48.47 | -1,886.6 | -2,692.0 | 4,616.0 | 4,474.1 | 141.86 | 32.540 | |
| 6,800.0 | 6,551.3 | 6,522.3 | 6,522.3 | 31.4 | 128.8 | -49.24 | -1,886.6 | -2,692.0 | 4,608.8 | 4,467.9 | 140.89 | 32.713 | |
| 6,825.0 | 6,573.4 | 6,544.4 | 6,544.4 | 31.4 | 129.2 | -50.11 | -1,886.6 | -2,692.0 | 4,600.8 | 4,460.9 | 139.89 | 32.890 | |
| 6,850.0 | 6,595.0 | 6,566.0 | 6,566.0 | 31.3 | 129.7 | -51.09 | -1,886.6 | -2,692.0 | 4,592.0 | 4,453.1 | 138.91 | 33.058 | |
| 6,875.0 | 6,615.8 | 6,586.8 | 6,586.8 | 31.3 | 130.1 | -52.19 | -1,886.6 | -2,692.0 | 4,582.5 | 4,444.5 | 138.01 | 33.204 | |
| 6,900.0 | 6,635.9 | 6,606.9 | 6,606.9 | 31.3 | 130.5 | -53.39 | -1,886.6 | -2,692.0 | 4,572.2 | 4,435.0 | 137.24 | 33.315 | |
| 6,925.0 | 6,655.1 | 6,626.1 | 6,626.1 | 31.2 | 130.9 | -54.70 | -1,886.6 | -2,692.0 | 4,561.3 | 4,424.7 | 136.67 | 33.376 | |
| 6,950.0 | 6,673.6 | 6,644.6 | 6,644.6 | 31.2 | 131.3 | -56.14 | -1,886.6 | -2,692.0 | 4,549.8 | 4,413.4 | 136.33 | 33.373 | |
| 6,975.0 | 6,691.1 | 6,662.1 | 6,662.1 | 31.1 | 131.6 | -57.69 | -1,886.6 | -2,692.0 | 4,537.6 | 4,401.3 | 136.29 | 33.295 | |
| 7,000.0 | 6,707.6 | 6,678.6 | 6,678.6 | 31.1 | 131.9 | -59.36 | -1,886.6 | -2,692.0 | 4,524.9 | 4,388.3 | 136.56 | 33.135 | |
| 7,025.0 | 6,723.1 | 6,694.1 | 6,694.1 | 31.0 | 132.3 | -61.14 | -1,886.6 | -2,692.0 | 4,511.6 | 4,374.5 | 137.17 | 32.891 | |
| 7,050.0 | 6,737.6 | 6,708.6 | 6,708.6 | 31.0 | 132.5 | -63.05 | -1,886.6 | -2,692.0 | 4,497.9 | 4,359.8 | 138.11 | 32.567 | |
| 7,075.0 | 6,751.0 | 6,722.0 | 6,722.0 | 30.9 | 132.8 | -65.06 | -1,886.6 | -2,692.0 | 4,483.7 | 4,344.3 | 139.37 | 32.172 | |
| 7,100.0 | 6,763.3 | 6,734.3 | 6,734.3 | 30.8 | 133.1 | -67.19 | -1,886.6 | -2,692.0 | 4,469.1 | 4,328.2 | 140.89 | 31.720 | |
| 7,125.0 | 6,774.5 | 6,745.5 | 6,745.5 | 30.8 | 133.3 | -69.41 | -1,886.6 | -2,692.0 | 4,454.2 | 4,311.6 | 142.62 | 31.231 | |
| 7,150.0 | 6,784.4 | 6,755.4 | 6,755.4 | 30.7 | 133.5 | -71.72 | -1,886.6 | -2,692.0 | 4,439.0 | 4,294.5 | 144.48 | 30.724 | |
| 7,175.0 | 6,793.1 | 6,764.1 | 6,764.1 | 30.7 | 133.7 | -74.11 | -1,886.6 | -2,692.0 | 4,423.5 | 4,277.1 | 146.38 | 30.219 | |
| 7,200.0 | 6,800.6 | 6,771.6 | 6,771.6 | 30.6 | 133.8 | -76.56 | -1,886.6 | -2,692.0 | 4,407.8 | 4,259.6 | 148.24 | 29.733 | |
| 7,225.0 | 6,806.8 | 6,777.8 | 6,777.8 | 30.6 | 133.9 | -79.07 | -1,886.6 | -2,692.0 | 4,392.0 | 4,242.0 | 149.99 | 29.283 | |
| 7,250.0 | 6,811.8 | 6,782.8 | 6,782.8 | 30.5 | 134.0 | -81.60 | -1,886.6 | -2,692.0 | 4,376.0 | 4,224.5 | 151.53 | 28.879 | |
| 7,275.0 | 6,815.5 | 6,786.5 | 6,786.5 | 30.5 | 134.1 | -84.15 | -1,886.6 | -2,692.0 | 4,360.0 | 4,207.1 | 152.82 | 28.530 | |
| 7,300.0 | 6,817.8 | 6,788.8 | 6,788.8 | 30.4 | 134.2 | -86.70 | -1,886.6 | -2,692.0 | 4,343.9 | 4,190.1 | 153.82 | 28.240 | |
| 7,325.0 | 6,818.9 | 6,789.9 | 6,789.9 | 30.4 | 134.2 | -89.22 | -1,886.6 | -2,692.0 | 4,327.9 | 4,173.4 | 154.50 | 28.011 | |
| 7,332.8 | 6,819.0 | 6,790.0 | 6,790.0 | 30.4 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,322.9 | 4,168.2 | 154.65 | 27.952 | |
| 7,400.0 | 6,819.0 | 6,790.0 | 6,790.0 | 30.3 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,280.3 | 4,124.9 | 155.33 | 27.557 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT BOND 21-9 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,790.0 | 6,790.0 | 30.2 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,218.0 | 4,061.4 | 156.59 | 26.937 | |
| 7,600.0 | 6,819.0 | 6,790.0 | 6,790.0 | 30.3 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,157.2 | 3,999.1 | 158.11 | 26.293 | |
| 7,700.0 | 6,819.0 | 6,790.0 | 6,790.0 | 30.6 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,098.0 | 3,938.2 | 159.85 | 25.636 | |
| 7,800.0 | 6,819.0 | 6,790.0 | 6,790.0 | 31.3 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,040.4 | 3,878.6 | 161.77 | 24.975 | |
| 7,900.0 | 6,819.0 | 6,790.0 | 6,790.0 | 32.5 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,984.4 | 3,820.6 | 163.84 | 24.319 | |
| 8,000.0 | 6,819.0 | 6,790.0 | 6,790.0 | 34.2 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,930.2 | 3,764.2 | 166.02 | 23.674 | |
| 8,100.0 | 6,819.0 | 6,790.0 | 6,790.0 | 36.1 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,877.9 | 3,709.6 | 168.29 | 23.043 | |
| 8,200.0 | 6,819.0 | 6,790.0 | 6,790.0 | 38.3 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,827.4 | 3,656.7 | 170.63 | 22.431 | |
| 8,300.0 | 6,819.0 | 6,790.0 | 6,790.0 | 40.6 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,778.9 | 3,605.8 | 173.04 | 21.838 | |
| 8,400.0 | 6,819.0 | 6,790.0 | 6,790.0 | 42.9 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,732.4 | 3,556.9 | 175.50 | 21.267 | |
| 8,500.0 | 6,819.0 | 6,790.0 | 6,790.0 | 45.3 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,688.1 | 3,510.1 | 178.00 | 20.720 | |
| 8,600.0 | 6,819.0 | 6,790.0 | 6,790.0 | 47.8 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,645.9 | 3,465.4 | 180.54 | 20.195 | |
| 8,700.0 | 6,819.0 | 6,790.0 | 6,790.0 | 50.3 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,606.1 | 3,423.0 | 183.10 | 19.694 | |
| 8,800.0 | 6,819.0 | 6,790.0 | 6,790.0 | 52.8 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,568.6 | 3,382.9 | 185.70 | 19.217 | |
| 8,900.0 | 6,819.0 | 6,790.0 | 6,790.0 | 55.4 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,533.5 | 3,345.2 | 188.31 | 18.764 | |
| 9,000.0 | 6,819.0 | 6,790.0 | 6,790.0 | 58.0 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,501.0 | 3,310.0 | 190.94 | 18.335 | |
| 9,100.0 | 6,819.0 | 6,790.0 | 6,790.0 | 60.6 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,471.0 | 3,277.4 | 193.59 | 17.929 | |
| 9,200.0 | 6,819.0 | 6,790.0 | 6,790.0 | 63.2 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,443.7 | 3,247.4 | 196.26 | 17.547 | |
| 9,300.0 | 6,819.0 | 6,790.0 | 6,790.0 | 65.9 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,419.0 | 3,220.1 | 198.93 | 17.187 | |
| 9,400.0 | 6,819.0 | 6,790.0 | 6,790.0 | 68.5 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,397.2 | 3,195.6 | 201.62 | 16.849 | |
| 9,500.0 | 6,819.0 | 6,790.0 | 6,790.0 | 71.2 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,378.1 | 3,173.8 | 204.32 | 16.534 | |
| 9,600.0 | 6,819.0 | 6,790.0 | 6,790.0 | 73.9 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,362.0 | 3,154.9 | 207.02 | 16.240 | |
| 9,700.0 | 6,819.0 | 6,790.0 | 6,790.0 | 76.5 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,348.7 | 3,139.0 | 209.73 | 15.966 | |
| 9,800.0 | 6,819.0 | 6,790.0 | 6,790.0 | 79.2 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,338.4 | 3,125.9 | 212.46 | 15.713 | |
| 9,900.0 | 6,819.0 | 6,790.0 | 6,790.0 | 81.9 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,331.0 | 3,115.9 | 215.18 | 15.480 | |
| 10,000.0 | 6,819.0 | 6,790.0 | 6,790.0 | 84.6 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,326.7 | 3,108.8 | 217.91 | 15.266 | |
| 10,095.0 | 6,819.0 | 6,790.0 | 6,790.0 | 87.2 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,325.3 | 3,104.8 | 220.51 | 15.080 | |
| 10,100.0 | 6,819.0 | 6,790.0 | 6,790.0 | 87.4 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,325.3 | 3,104.7 | 220.65 | 15.071 | |
| 10,200.0 | 6,819.0 | 6,790.0 | 6,790.0 | 90.1 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,327.0 | 3,103.6 | 223.39 | 14.893 | ES |
| 10,300.0 | 6,819.0 | 6,790.0 | 6,790.0 | 92.8 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,331.6 | 3,105.5 | 226.14 | 14.733 | |
| 10,400.0 | 6,819.0 | 6,790.0 | 6,790.0 | 95.5 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,339.3 | 3,110.4 | 228.89 | 14.589 | |
| 10,500.0 | 6,819.0 | 6,790.0 | 6,790.0 | 98.3 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,349.9 | 3,118.3 | 231.64 | 14.462 | |
| 10,600.0 | 6,819.0 | 6,790.0 | 6,790.0 | 101.0 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,363.5 | 3,129.1 | 234.40 | 14.349 | |
| 10,700.0 | 6,819.0 | 6,790.0 | 6,790.0 | 103.8 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,379.9 | 3,142.8 | 237.16 | 14.252 | |
| 10,800.0 | 6,819.0 | 6,790.0 | 6,790.0 | 106.5 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,399.2 | 3,159.3 | 239.92 | 14.168 | |
| 10,900.0 | 6,819.0 | 6,790.0 | 6,790.0 | 109.2 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,421.4 | 3,178.7 | 242.69 | 14.098 | |
| 11,000.0 | 6,819.0 | 6,790.0 | 6,790.0 | 112.0 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,446.3 | 3,200.8 | 245.45 | 14.041 | |
| 11,100.0 | 6,819.0 | 6,790.0 | 6,790.0 | 114.8 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,473.9 | 3,225.7 | 248.22 | 13.995 | |
| 11,200.0 | 6,819.0 | 6,790.0 | 6,790.0 | 117.5 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,504.1 | 3,253.1 | 250.99 | 13.961 | |
| 11,300.0 | 6,819.0 | 6,790.0 | 6,790.0 | 120.3 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,536.9 | 3,283.2 | 253.77 | 13.938 | |
| 11,400.0 | 6,819.0 | 6,790.0 | 6,790.0 | 123.0 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,572.2 | 3,315.7 | 256.54 | 13.925 | |
| 11,500.0 | 6,819.0 | 6,790.0 | 6,790.0 | 125.8 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,610.0 | 3,350.7 | 259.32 | 13.921 | SF |
| 11,600.0 | 6,819.0 | 6,790.0 | 6,790.0 | 128.6 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,650.1 | 3,388.0 | 262.10 | 13.926 | |
| 11,700.0 | 6,819.0 | 6,790.0 | 6,790.0 | 131.3 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,692.4 | 3,427.5 | 264.88 | 13.940 | |
| 11,800.0 | 6,819.0 | 6,790.0 | 6,790.0 | 134.1 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,737.0 | 3,469.3 | 267.66 | 13.962 | |
| 11,900.0 | 6,819.0 | 6,790.0 | 6,790.0 | 136.9 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,783.6 | 3,513.2 | 270.44 | 13.991 | |
| 12,000.0 | 6,819.0 | 6,790.0 | 6,790.0 | 139.6 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,832.4 | 3,559.1 | 273.22 | 14.027 | |
| 12,100.0 | 6,819.0 | 6,790.0 | 6,790.0 | 142.4 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,883.0 | 3,607.0 | 276.01 | 14.069 | |
| 12,200.0 | 6,819.0 | 6,790.0 | 6,790.0 | 145.2 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,935.6 | 3,656.8 | 278.79 | 14.117 | |
| 12,300.0 | 6,819.0 | 6,790.0 | 6,790.0 | 148.0 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 3,990.0 | 3,708.4 | 281.58 | 14.170 | |
| 12,400.0 | 6,819.0 | 6,790.0 | 6,790.0 | 150.8 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,046.1 | 3,761.7 | 284.37 | 14.229 | |
| 12,500.0 | 6,819.0 | 6,790.0 | 6,790.0 | 153.5 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,103.9 | 3,816.7 | 287.15 | 14.292 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT BOND 21-9 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,790.0 | 6,790.0 | 156.3 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,163.3 | 3,873.3 | 289.94 | 14.359 | |
| 12,700.0 | 6,819.0 | 6,790.0 | 6,790.0 | 159.1 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,224.2 | 3,931.5 | 292.73 | 14.430 | |
| 12,800.0 | 6,819.0 | 6,790.0 | 6,790.0 | 161.9 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,286.6 | 3,991.1 | 295.52 | 14.505 | |
| 12,900.0 | 6,819.0 | 6,790.0 | 6,790.0 | 164.7 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,350.4 | 4,052.1 | 298.31 | 14.583 | |
| 13,000.0 | 6,819.0 | 6,790.0 | 6,790.0 | 167.4 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,415.5 | 4,114.4 | 301.11 | 14.664 | |
| 13,100.0 | 6,819.0 | 6,790.0 | 6,790.0 | 170.2 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,482.0 | 4,178.1 | 303.90 | 14.748 | |
| 13,200.0 | 6,819.0 | 6,790.0 | 6,790.0 | 173.0 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,549.6 | 4,242.9 | 306.69 | 14.834 | |
| 13,300.0 | 6,819.0 | 6,790.0 | 6,790.0 | 175.8 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,618.4 | 4,309.0 | 309.49 | 14.923 | |
| 13,400.0 | 6,819.0 | 6,790.0 | 6,790.0 | 178.6 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,688.4 | 4,376.1 | 312.28 | 15.013 | |
| 13,500.0 | 6,819.0 | 6,790.0 | 6,790.0 | 181.4 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,759.4 | 4,444.3 | 315.08 | 15.106 | |
| 13,600.0 | 6,819.0 | 6,790.0 | 6,790.0 | 184.2 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,831.5 | 4,513.6 | 317.87 | 15.199 | |
| 13,700.0 | 6,819.0 | 6,790.0 | 6,790.0 | 187.0 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,904.5 | 4,583.8 | 320.67 | 15.295 | |
| 13,800.0 | 6,819.0 | 6,790.0 | 6,790.0 | 189.7 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 4,978.5 | 4,655.0 | 323.46 | 15.391 | |
| 13,900.0 | 6,819.0 | 6,790.0 | 6,790.0 | 192.5 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 5,053.3 | 4,727.1 | 326.26 | 15.489 | |
| 14,000.0 | 6,819.0 | 6,790.0 | 6,790.0 | 195.3 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 5,129.0 | 4,800.0 | 329.06 | 15.587 | |
| 14,100.0 | 6,819.0 | 6,790.0 | 6,790.0 | 198.1 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 5,205.6 | 4,873.7 | 331.86 | 15.686 | |
| 14,200.0 | 6,819.0 | 6,790.0 | 6,790.0 | 200.9 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 5,282.9 | 4,948.2 | 334.65 | 15.786 | |
| 14,300.0 | 6,819.0 | 6,790.0 | 6,790.0 | 203.7 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 5,361.0 | 5,023.5 | 337.45 | 15.887 | |
| 14,400.0 | 6,819.0 | 6,790.0 | 6,790.0 | 206.5 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 5,439.8 | 5,099.5 | 340.25 | 15.988 | |
| 14,500.0 | 6,819.0 | 6,790.0 | 6,790.0 | 209.3 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 5,519.2 | 5,176.2 | 343.05 | 16.089 | |
| 14,600.0 | 6,819.0 | 6,790.0 | 6,790.0 | 212.1 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 5,599.4 | 5,253.5 | 345.85 | 16.190 | |
| 14,700.0 | 6,819.0 | 6,790.0 | 6,790.0 | 214.9 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 5,680.1 | 5,331.5 | 348.65 | 16.292 | |
| 14,720.3 | 6,819.0 | 6,790.0 | 6,790.0 | 215.4 | 134.2 | -90.00 | -1,886.6 | -2,692.0 | 5,696.6 | 5,347.4 | 349.22 | 16.312 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT FLACK 5-3 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 30.39 | 2,110.1 | 1,237.5 | 2,446.3 | | | | |
| 100.0 | 100.0 | 87.0 | 87.0 | 0.1 | 1.0 | 30.39 | 2,110.1 | 1,237.5 | 2,446.2 | 2,445.1 | 1.13 | 2,166.740 | |
| 200.0 | 200.0 | 187.0 | 187.0 | 0.3 | 3.2 | 30.39 | 2,110.1 | 1,237.5 | 2,446.2 | 2,442.7 | 3.50 | 698.618 | |
| 300.0 | 300.0 | 287.0 | 287.0 | 0.5 | 5.3 | 30.39 | 2,110.1 | 1,237.5 | 2,446.2 | 2,440.4 | 5.83 | 419.443 | |
| 400.0 | 400.0 | 387.0 | 387.0 | 0.8 | 7.3 | 30.39 | 2,110.1 | 1,237.5 | 2,446.2 | 2,438.1 | 8.10 | 301.864 | |
| 500.0 | 500.0 | 487.0 | 487.0 | 1.0 | 9.4 | 30.39 | 2,110.1 | 1,237.5 | 2,446.2 | 2,435.9 | 10.36 | 236.139 | |
| 600.0 | 600.0 | 587.0 | 587.0 | 1.2 | 11.4 | 30.39 | 2,110.1 | 1,237.5 | 2,446.2 | 2,433.6 | 12.61 | 194.027 | |
| 700.0 | 700.0 | 687.0 | 687.0 | 1.4 | 13.4 | 30.39 | 2,110.1 | 1,237.5 | 2,446.2 | 2,431.4 | 14.85 | 164.705 | |
| 800.0 | 800.0 | 787.0 | 787.0 | 1.7 | 15.4 | 30.39 | 2,110.1 | 1,237.5 | 2,446.2 | 2,429.1 | 17.09 | 143.102 | |
| 900.0 | 900.0 | 887.0 | 887.0 | 1.9 | 17.4 | 9.24 | 2,110.1 | 1,237.5 | 2,444.5 | 2,425.2 | 19.32 | 126.506 | |
| 1,000.0 | 999.8 | 986.8 | 986.8 | 2.1 | 19.5 | 9.28 | 2,110.1 | 1,237.5 | 2,439.3 | 2,417.8 | 21.52 | 113.345 | |
| 1,100.0 | 1,099.5 | 1,086.5 | 1,086.5 | 2.3 | 21.5 | 9.34 | 2,110.1 | 1,237.5 | 2,430.7 | 2,407.1 | 23.68 | 102.648 | |
| 1,200.0 | 1,198.7 | 1,185.7 | 1,185.7 | 2.6 | 23.5 | 9.43 | 2,110.1 | 1,237.5 | 2,418.7 | 2,392.9 | 25.79 | 93.776 | |
| 1,300.0 | 1,297.5 | 1,284.5 | 1,284.5 | 2.9 | 25.5 | 9.54 | 2,110.1 | 1,237.5 | 2,403.3 | 2,375.4 | 27.85 | 86.293 | |
| 1,400.0 | 1,395.6 | 1,382.6 | 1,382.6 | 3.2 | 27.4 | 9.68 | 2,110.1 | 1,237.5 | 2,384.5 | 2,354.6 | 29.85 | 79.891 | |
| 1,500.0 | 1,493.1 | 1,480.1 | 1,480.1 | 3.5 | 29.4 | 9.85 | 2,110.1 | 1,237.5 | 2,362.3 | 2,330.5 | 31.78 | 74.344 | |
| 1,507.2 | 1,500.0 | 1,487.0 | 1,487.0 | 3.6 | 29.5 | 9.86 | 2,110.1 | 1,237.5 | 2,360.6 | 2,328.6 | 31.91 | 73.976 | |
| 1,572.2 | 1,563.0 | 1,550.0 | 1,550.0 | 3.8 | 30.8 | 9.93 | 2,110.1 | 1,237.5 | 2,344.9 | 2,311.6 | 33.30 | 70.426 | |
| 1,600.0 | 1,590.0 | 1,577.0 | 1,577.0 | 3.9 | 31.3 | 9.98 | 2,110.1 | 1,237.5 | 2,338.1 | 2,304.2 | 33.81 | 69.150 | |
| 1,700.0 | 1,686.3 | 1,673.3 | 1,673.3 | 4.4 | 33.3 | 10.19 | 2,110.1 | 1,237.5 | 2,311.4 | 2,275.8 | 35.63 | 64.870 | |
| 1,800.0 | 1,781.5 | 1,768.5 | 1,768.5 | 4.9 | 35.2 | 10.44 | 2,110.1 | 1,237.5 | 2,281.4 | 2,244.1 | 37.37 | 61.054 | |
| 1,817.6 | 1,798.2 | 1,785.2 | 1,785.2 | 5.0 | 35.5 | 10.49 | 2,110.1 | 1,237.5 | 2,275.8 | 2,238.2 | 37.66 | 60.424 | |
| 1,900.0 | 1,876.1 | 1,863.1 | 1,863.1 | 5.5 | 37.1 | 10.61 | 2,110.1 | 1,237.5 | 2,249.3 | 2,209.9 | 39.39 | 57.104 | |
| 2,000.0 | 1,970.6 | 1,957.6 | 1,957.6 | 6.0 | 39.0 | 10.77 | 2,110.1 | 1,237.5 | 2,217.2 | 2,175.7 | 41.49 | 53.436 | |
| 2,100.0 | 2,065.1 | 2,052.1 | 2,052.1 | 6.6 | 40.9 | 10.93 | 2,110.1 | 1,237.5 | 2,185.1 | 2,141.5 | 43.60 | 50.115 | |
| 2,200.0 | 2,159.6 | 2,146.6 | 2,146.6 | 7.2 | 42.8 | 11.09 | 2,110.1 | 1,237.5 | 2,153.0 | 2,107.3 | 45.72 | 47.095 | |
| 2,300.0 | 2,254.1 | 2,241.1 | 2,241.1 | 7.8 | 44.7 | 11.26 | 2,110.1 | 1,237.5 | 2,120.9 | 2,073.0 | 47.83 | 44.338 | |
| 2,400.0 | 2,348.7 | 2,335.7 | 2,335.7 | 8.4 | 46.6 | 11.44 | 2,110.1 | 1,237.5 | 2,088.8 | 2,038.9 | 49.96 | 41.811 | |
| 2,500.0 | 2,443.2 | 2,430.2 | 2,430.2 | 9.1 | 48.5 | 11.62 | 2,110.1 | 1,237.5 | 2,056.8 | 2,004.7 | 52.09 | 39.488 | |
| 2,600.0 | 2,537.7 | 2,524.7 | 2,524.7 | 9.7 | 50.4 | 11.80 | 2,110.1 | 1,237.5 | 2,024.7 | 1,970.5 | 54.22 | 37.344 | |
| 2,700.0 | 2,632.2 | 2,619.2 | 2,619.2 | 10.3 | 52.3 | 11.99 | 2,110.1 | 1,237.5 | 1,992.7 | 1,936.4 | 56.35 | 35.361 | |
| 2,800.0 | 2,726.8 | 2,713.8 | 2,713.8 | 10.9 | 54.2 | 12.19 | 2,110.1 | 1,237.5 | 1,960.7 | 1,902.2 | 58.49 | 33.521 | |
| 2,900.0 | 2,821.3 | 2,808.3 | 2,808.3 | 11.6 | 56.1 | 12.40 | 2,110.1 | 1,237.5 | 1,928.7 | 1,868.1 | 60.64 | 31.809 | |
| 3,000.0 | 2,915.8 | 2,902.8 | 2,902.8 | 12.2 | 58.0 | 12.61 | 2,110.1 | 1,237.5 | 1,896.8 | 1,834.0 | 62.78 | 30.212 | |
| 3,100.0 | 3,010.3 | 2,997.3 | 2,997.3 | 12.8 | 59.9 | 12.83 | 2,110.1 | 1,237.5 | 1,864.9 | 1,799.9 | 64.93 | 28.720 | |
| 3,200.0 | 3,104.8 | 3,091.8 | 3,091.8 | 13.5 | 61.8 | 13.05 | 2,110.1 | 1,237.5 | 1,833.0 | 1,765.9 | 67.09 | 27.323 | |
| 3,300.0 | 3,199.4 | 3,186.4 | 3,186.4 | 14.1 | 63.7 | 13.28 | 2,110.1 | 1,237.5 | 1,801.1 | 1,731.9 | 69.24 | 26.011 | |
| 3,400.0 | 3,293.9 | 3,280.9 | 3,280.9 | 14.8 | 65.6 | 13.53 | 2,110.1 | 1,237.5 | 1,769.3 | 1,697.9 | 71.40 | 24.778 | |
| 3,500.0 | 3,388.4 | 3,375.4 | 3,375.4 | 15.4 | 67.5 | 13.78 | 2,110.1 | 1,237.5 | 1,737.4 | 1,663.9 | 73.57 | 23.616 | |
| 3,600.0 | 3,482.9 | 3,469.9 | 3,469.9 | 16.0 | 69.4 | 14.04 | 2,110.1 | 1,237.5 | 1,705.7 | 1,629.9 | 75.74 | 22.520 | |
| 3,700.0 | 3,577.5 | 3,564.5 | 3,564.5 | 16.7 | 71.3 | 14.31 | 2,110.1 | 1,237.5 | 1,673.9 | 1,596.0 | 77.91 | 21.485 | |
| 3,800.0 | 3,672.0 | 3,659.0 | 3,659.0 | 17.3 | 73.2 | 14.59 | 2,110.1 | 1,237.5 | 1,642.2 | 1,562.1 | 80.09 | 20.504 | |
| 3,900.0 | 3,766.5 | 3,753.5 | 3,753.5 | 18.0 | 75.1 | 14.88 | 2,110.1 | 1,237.5 | 1,610.5 | 1,528.2 | 82.27 | 19.575 | |
| 4,000.0 | 3,861.0 | 3,848.0 | 3,848.0 | 18.6 | 77.0 | 15.18 | 2,110.1 | 1,237.5 | 1,578.9 | 1,494.4 | 84.46 | 18.693 | |
| 4,100.0 | 3,955.5 | 3,942.5 | 3,942.5 | 19.3 | 78.9 | 15.50 | 2,110.1 | 1,237.5 | 1,547.3 | 1,460.6 | 86.66 | 17.855 | |
| 4,200.0 | 4,050.1 | 4,037.1 | 4,037.1 | 19.9 | 80.8 | 15.83 | 2,110.1 | 1,237.5 | 1,515.7 | 1,426.9 | 88.86 | 17.058 | |
| 4,300.0 | 4,144.6 | 4,131.6 | 4,131.6 | 20.5 | 82.7 | 16.17 | 2,110.1 | 1,237.5 | 1,484.2 | 1,393.2 | 91.06 | 16.299 | |
| 4,400.0 | 4,239.1 | 4,226.1 | 4,226.1 | 21.2 | 84.6 | 16.53 | 2,110.1 | 1,237.5 | 1,452.8 | 1,359.5 | 93.28 | 15.575 | |
| 4,500.0 | 4,333.6 | 4,320.6 | 4,320.6 | 21.8 | 86.5 | 16.90 | 2,110.1 | 1,237.5 | 1,421.4 | 1,325.9 | 95.50 | 14.884 | |
| 4,600.0 | 4,428.2 | 4,415.2 | 4,415.2 | 22.5 | 88.4 | 17.29 | 2,110.1 | 1,237.5 | 1,390.0 | 1,292.3 | 97.72 | 14.224 | |
| 4,700.0 | 4,522.7 | 4,509.7 | 4,509.7 | 23.1 | 90.3 | 17.70 | 2,110.1 | 1,237.5 | 1,358.7 | 1,258.8 | 99.96 | 13.592 | |
| 4,800.0 | 4,617.2 | 4,604.2 | 4,604.2 | 23.8 | 92.2 | 18.12 | 2,110.1 | 1,237.5 | 1,327.5 | 1,225.3 | 102.21 | 12.988 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT FLACK 5-3 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,698.7 | 4,698.7 | 24.4 | 94.1 | 18.57 | 2,110.1 | 1,237.5 | 1,296.4 | 1,191.9 | 104.47 | 12.409 | |
| 5,000.0 | 4,806.2 | 4,793.2 | 4,793.2 | 25.1 | 96.0 | 19.04 | 2,110.1 | 1,237.5 | 1,265.3 | 1,158.5 | 106.74 | 11.854 | |
| 5,100.0 | 4,900.8 | 4,887.8 | 4,887.8 | 25.7 | 97.9 | 19.53 | 2,110.1 | 1,237.5 | 1,234.3 | 1,125.3 | 109.02 | 11.322 | |
| 5,200.0 | 4,995.3 | 4,982.3 | 4,982.3 | 26.4 | 99.8 | 20.04 | 2,110.1 | 1,237.5 | 1,203.4 | 1,092.1 | 111.31 | 10.811 | |
| 5,300.0 | 5,089.8 | 5,076.8 | 5,076.8 | 27.0 | 101.7 | 20.59 | 2,110.1 | 1,237.5 | 1,172.6 | 1,059.0 | 113.62 | 10.320 | |
| 5,400.0 | 5,184.3 | 5,171.3 | 5,171.3 | 27.7 | 103.6 | 21.16 | 2,110.1 | 1,237.5 | 1,141.9 | 1,025.9 | 115.95 | 9.848 | |
| 5,500.0 | 5,278.9 | 5,265.9 | 5,265.9 | 28.3 | 105.5 | 21.76 | 2,110.1 | 1,237.5 | 1,111.3 | 993.0 | 118.29 | 9.394 | |
| 5,533.5 | 5,310.5 | 5,297.5 | 5,297.5 | 28.5 | 106.2 | 21.97 | 2,110.1 | 1,237.5 | 1,101.0 | 981.9 | 119.08 | 9.246 | |
| 5,600.0 | 5,373.6 | 5,360.6 | 5,360.6 | 28.9 | 107.4 | 22.23 | 2,110.1 | 1,237.5 | 1,081.5 | 960.2 | 121.26 | 8.918 | |
| 5,700.0 | 5,469.4 | 5,456.4 | 5,456.4 | 29.3 | 109.4 | 22.60 | 2,110.1 | 1,237.5 | 1,054.7 | 930.3 | 124.44 | 8.476 | |
| 5,800.0 | 5,566.1 | 5,553.1 | 5,553.1 | 29.8 | 111.3 | 22.95 | 2,110.1 | 1,237.5 | 1,031.2 | 903.6 | 127.52 | 8.086 | |
| 5,900.0 | 5,663.6 | 5,650.6 | 5,650.6 | 30.1 | 113.3 | 23.27 | 2,110.1 | 1,237.5 | 1,010.8 | 880.3 | 130.48 | 7.747 | |
| 6,000.0 | 5,761.9 | 5,748.9 | 5,748.9 | 30.5 | 115.3 | 23.56 | 2,110.1 | 1,237.5 | 993.7 | 860.4 | 133.32 | 7.454 | |
| 6,100.0 | 5,860.7 | 5,847.7 | 5,847.7 | 30.7 | 117.2 | 23.80 | 2,110.1 | 1,237.5 | 979.8 | 843.8 | 136.03 | 7.203 | |
| 6,200.0 | 5,960.0 | 5,947.0 | 5,947.0 | 31.0 | 119.2 | 23.99 | 2,110.1 | 1,237.5 | 969.1 | 830.5 | 138.60 | 6.992 | |
| 6,300.0 | 6,059.7 | 6,046.7 | 6,046.7 | 31.2 | 121.2 | 24.12 | 2,110.1 | 1,237.5 | 961.6 | 820.5 | 141.02 | 6.819 | |
| 6,400.0 | 6,159.6 | 6,146.6 | 6,146.6 | 31.3 | 123.2 | 24.20 | 2,110.1 | 1,237.5 | 957.2 | 813.9 | 143.27 | 6.681 | |
| 6,486.1 | 6,245.7 | 6,232.7 | 6,232.7 | 31.4 | 125.0 | 45.39 | 2,110.1 | 1,237.5 | 956.0 | 801.5 | 154.50 | 6.188 | |
| 6,500.0 | 6,259.6 | 6,246.6 | 6,246.6 | 31.4 | 125.3 | 45.39 | 2,110.1 | 1,237.5 | 956.0 | 801.2 | 154.79 | 6.176 | |
| 6,516.1 | 6,275.7 | 6,262.7 | 6,262.7 | 31.4 | 125.6 | 45.39 | 2,110.1 | 1,237.5 | 956.0 | 800.9 | 155.13 | 6.163 | CC, ES, SF |
| 6,550.0 | 6,309.5 | 6,296.5 | 6,296.5 | 31.5 | 126.3 | 135.39 | 2,110.1 | 1,237.5 | 956.6 | 810.3 | 146.27 | 6.540 | |
| 6,600.0 | 6,359.4 | 6,346.4 | 6,346.4 | 31.5 | 127.3 | 135.40 | 2,110.1 | 1,237.5 | 959.5 | 812.8 | 146.74 | 6.539 | |
| 6,650.0 | 6,408.8 | 6,395.8 | 6,395.8 | 31.5 | 128.3 | 135.40 | 2,110.1 | 1,237.5 | 965.0 | 818.1 | 146.82 | 6.572 | |
| 6,700.0 | 6,457.5 | 6,444.5 | 6,444.5 | 31.5 | 129.2 | 135.40 | 2,110.1 | 1,237.5 | 972.9 | 826.4 | 146.52 | 6.640 | |
| 6,716.1 | 6,473.1 | 6,460.1 | 6,460.1 | 31.5 | 129.6 | 135.40 | 2,110.1 | 1,237.5 | 976.0 | 829.6 | 146.34 | 6.669 | |
| 6,725.0 | 6,481.6 | 6,468.6 | 6,468.6 | 31.5 | 129.7 | 135.34 | 2,110.1 | 1,237.5 | 977.8 | 831.7 | 146.07 | 6.694 | |
| 6,750.0 | 6,505.3 | 6,492.3 | 6,492.3 | 31.5 | 130.2 | 135.16 | 2,110.1 | 1,237.5 | 983.6 | 838.5 | 145.15 | 6.776 | |
| 6,775.0 | 6,528.5 | 6,515.5 | 6,515.5 | 31.4 | 130.7 | 134.93 | 2,110.1 | 1,237.5 | 990.3 | 846.3 | 144.06 | 6.874 | |
| 6,800.0 | 6,551.3 | 6,538.3 | 6,538.3 | 31.4 | 131.1 | 134.65 | 2,110.1 | 1,237.5 | 998.0 | 855.2 | 142.81 | 6.988 | |
| 6,825.0 | 6,573.4 | 6,560.4 | 6,560.4 | 31.4 | 131.6 | 134.31 | 2,110.1 | 1,237.5 | 1,006.6 | 865.2 | 141.43 | 7.117 | |
| 6,850.0 | 6,595.0 | 6,582.0 | 6,582.0 | 31.3 | 132.0 | 133.91 | 2,110.1 | 1,237.5 | 1,016.1 | 876.2 | 139.95 | 7.260 | |
| 6,875.0 | 6,615.8 | 6,602.8 | 6,602.8 | 31.3 | 132.4 | 133.43 | 2,110.1 | 1,237.5 | 1,026.5 | 888.1 | 138.42 | 7.416 | |
| 6,900.0 | 6,635.9 | 6,622.9 | 6,622.9 | 31.3 | 132.8 | 132.86 | 2,110.1 | 1,237.5 | 1,037.8 | 901.0 | 136.87 | 7.582 | |
| 6,925.0 | 6,655.1 | 6,642.1 | 6,642.1 | 31.2 | 133.2 | 132.19 | 2,110.1 | 1,237.5 | 1,050.0 | 914.6 | 135.38 | 7.756 | |
| 6,950.0 | 6,673.6 | 6,660.6 | 6,660.6 | 31.2 | 133.6 | 131.41 | 2,110.1 | 1,237.5 | 1,063.1 | 929.1 | 134.01 | 7.933 | |
| 6,975.0 | 6,691.1 | 6,678.1 | 6,678.1 | 31.1 | 133.9 | 130.51 | 2,110.1 | 1,237.5 | 1,077.0 | 944.1 | 132.83 | 8.108 | |
| 7,000.0 | 6,707.6 | 6,694.6 | 6,694.6 | 31.1 | 134.3 | 129.45 | 2,110.1 | 1,237.5 | 1,091.7 | 959.8 | 131.92 | 8.275 | |
| 7,025.0 | 6,723.1 | 6,710.1 | 6,710.1 | 31.0 | 134.6 | 128.24 | 2,110.1 | 1,237.5 | 1,107.2 | 975.8 | 131.37 | 8.428 | |
| 7,050.0 | 6,737.6 | 6,724.6 | 6,724.6 | 31.0 | 134.9 | 126.83 | 2,110.1 | 1,237.5 | 1,123.5 | 992.2 | 131.26 | 8.559 | |
| 7,075.0 | 6,751.0 | 6,738.0 | 6,738.0 | 30.9 | 135.1 | 125.21 | 2,110.1 | 1,237.5 | 1,140.4 | 1,008.8 | 131.67 | 8.661 | |
| 7,100.0 | 6,763.3 | 6,750.3 | 6,750.3 | 30.8 | 135.4 | 123.36 | 2,110.1 | 1,237.5 | 1,158.1 | 1,025.4 | 132.66 | 8.730 | |
| 7,125.0 | 6,774.5 | 6,761.5 | 6,761.5 | 30.8 | 135.6 | 121.24 | 2,110.1 | 1,237.5 | 1,176.4 | 1,042.2 | 134.26 | 8.762 | |
| 7,150.0 | 6,784.4 | 6,771.4 | 6,771.4 | 30.7 | 135.8 | 118.82 | 2,110.1 | 1,237.5 | 1,195.3 | 1,058.8 | 136.47 | 8.759 | |
| 7,175.0 | 6,793.1 | 6,780.1 | 6,780.1 | 30.7 | 136.0 | 116.07 | 2,110.1 | 1,237.5 | 1,214.8 | 1,075.5 | 139.22 | 8.725 | |
| 7,200.0 | 6,800.6 | 6,787.6 | 6,787.6 | 30.6 | 136.1 | 112.96 | 2,110.1 | 1,237.5 | 1,234.7 | 1,092.3 | 142.42 | 8.670 | |
| 7,225.0 | 6,806.8 | 6,793.8 | 6,793.8 | 30.6 | 136.3 | 109.47 | 2,110.1 | 1,237.5 | 1,255.1 | 1,109.2 | 145.87 | 8.604 | |
| 7,250.0 | 6,811.8 | 6,798.8 | 6,798.8 | 30.5 | 136.4 | 105.58 | 2,110.1 | 1,237.5 | 1,275.9 | 1,126.5 | 149.35 | 8.543 | |
| 7,275.0 | 6,815.5 | 6,802.5 | 6,802.5 | 30.5 | 136.4 | 101.29 | 2,110.1 | 1,237.5 | 1,297.0 | 1,144.4 | 152.53 | 8.503 | |
| 7,300.0 | 6,817.8 | 6,804.8 | 6,804.8 | 30.4 | 136.5 | 96.62 | 2,110.1 | 1,237.5 | 1,318.3 | 1,163.2 | 155.10 | 8.500 | |
| 7,325.0 | 6,818.9 | 6,805.9 | 6,805.9 | 30.4 | 136.5 | 91.62 | 2,110.1 | 1,237.5 | 1,339.9 | 1,183.1 | 156.72 | 8.549 | |
| 7,332.8 | 6,819.0 | 6,806.0 | 6,806.0 | 30.4 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 1,346.6 | 1,189.6 | 156.99 | 8.578 | |
| 7,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 30.3 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 1,405.3 | 1,247.6 | 157.66 | 8.913 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT FLACK 5-3 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 30.2 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 1,493.9 | 1,335.0 | 158.92 | 9.400 | |
| 7,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 30.3 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 1,583.8 | 1,423.4 | 160.44 | 9.872 | |
| 7,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 30.6 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 1,675.0 | 1,512.8 | 162.19 | 10.327 | |
| 7,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 31.3 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 1,767.0 | 1,602.9 | 164.11 | 10.767 | |
| 7,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 32.5 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 1,859.9 | 1,693.7 | 166.17 | 11.193 | |
| 8,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 34.2 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 1,953.5 | 1,785.2 | 168.35 | 11.604 | |
| 8,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 36.1 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 2,047.7 | 1,877.1 | 170.62 | 12.002 | |
| 8,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 38.3 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 2,142.4 | 1,969.5 | 172.96 | 12.386 | |
| 8,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 40.6 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 2,237.6 | 2,062.2 | 175.37 | 12.759 | |
| 8,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 42.9 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 2,333.2 | 2,155.4 | 177.83 | 13.120 | |
| 8,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 45.3 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 2,429.1 | 2,248.8 | 180.33 | 13.470 | |
| 8,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 47.8 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 2,525.4 | 2,342.5 | 182.87 | 13.810 | |
| 8,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 50.3 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 2,621.9 | 2,436.5 | 185.44 | 14.139 | |
| 8,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 52.8 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 2,718.7 | 2,530.7 | 188.03 | 14.459 | |
| 8,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 55.4 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 2,815.7 | 2,625.1 | 190.64 | 14.770 | |
| 9,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 58.0 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 2,912.9 | 2,719.6 | 193.28 | 15.071 | |
| 9,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 60.6 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 3,010.3 | 2,814.4 | 195.92 | 15.365 | |
| 9,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 63.2 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 3,107.9 | 2,909.3 | 198.59 | 15.650 | |
| 9,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 65.9 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 3,205.6 | 3,004.3 | 201.26 | 15.927 | |
| 9,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 68.5 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 3,303.4 | 3,099.5 | 203.95 | 16.197 | |
| 9,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 71.2 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 3,401.4 | 3,194.8 | 206.65 | 16.460 | |
| 9,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 73.9 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 3,499.5 | 3,290.1 | 209.35 | 16.716 | |
| 9,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 76.5 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 3,597.7 | 3,385.6 | 212.07 | 16.965 | |
| 9,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 79.2 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 3,696.0 | 3,481.2 | 214.79 | 17.208 | |
| 9,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 81.9 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 3,794.4 | 3,576.8 | 217.51 | 17.444 | |
| 10,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 84.6 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 3,892.8 | 3,672.6 | 220.25 | 17.675 | |
| 10,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 87.4 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 3,991.4 | 3,768.4 | 222.98 | 17.900 | |
| 10,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 90.1 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 4,090.0 | 3,864.2 | 225.73 | 18.119 | |
| 10,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 92.8 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 4,188.6 | 3,960.2 | 228.47 | 18.333 | |
| 10,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 95.5 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 4,287.4 | 4,056.2 | 231.22 | 18.542 | |
| 10,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 98.3 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 4,386.2 | 4,152.2 | 233.97 | 18.746 | |
| 10,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 101.0 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 4,485.0 | 4,248.3 | 236.73 | 18.946 | |
| 10,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 103.8 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 4,583.9 | 4,344.4 | 239.49 | 19.140 | |
| 10,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 106.5 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 4,682.9 | 4,440.6 | 242.25 | 19.330 | |
| 10,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 109.2 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 4,781.9 | 4,536.8 | 245.02 | 19.516 | |
| 11,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 112.0 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 4,880.9 | 4,633.1 | 247.79 | 19.698 | |
| 11,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 114.8 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 4,980.0 | 4,729.4 | 250.55 | 19.876 | |
| 11,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 117.5 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 5,079.1 | 4,825.7 | 253.33 | 20.050 | |
| 11,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 120.3 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 5,178.2 | 4,922.1 | 256.10 | 20.220 | |
| 11,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 123.0 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 5,277.4 | 5,018.5 | 258.87 | 20.386 | |
| 11,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 125.8 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 5,376.6 | 5,114.9 | 261.65 | 20.549 | |
| 11,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 128.6 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 5,475.8 | 5,211.4 | 264.43 | 20.708 | |
| 11,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 131.3 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 5,575.1 | 5,307.9 | 267.21 | 20.864 | |
| 11,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 134.1 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 5,674.3 | 5,404.4 | 269.99 | 21.017 | |
| 11,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 136.9 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 5,773.7 | 5,500.9 | 272.77 | 21.167 | |
| 12,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 139.6 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 5,873.0 | 5,597.4 | 275.55 | 21.313 | |
| 12,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 142.4 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 5,972.3 | 5,694.0 | 278.34 | 21.457 | |
| 12,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 145.2 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 6,071.7 | 5,790.6 | 281.12 | 21.598 | |
| 12,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 148.0 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 6,171.1 | 5,887.2 | 283.91 | 21.736 | |
| 12,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 150.8 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 6,270.5 | 5,983.8 | 286.70 | 21.872 | |
| 12,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 153.5 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 6,370.0 | 6,080.5 | 289.49 | 22.004 | |
| 12,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 156.3 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 6,469.4 | 6,177.1 | 292.28 | 22.135 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT FLACK 5-3 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 159.1 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 6,568.9 | 6,273.8 | 295.07 | 22.262 | |
| 12,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 161.9 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 6,668.4 | 6,370.5 | 297.86 | 22.388 | |
| 12,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 164.7 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 6,767.9 | 6,467.2 | 300.65 | 22.511 | |
| 13,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 167.4 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 6,867.4 | 6,563.9 | 303.44 | 22.632 | |
| 13,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 170.2 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 6,966.9 | 6,660.7 | 306.23 | 22.750 | |
| 13,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 173.0 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 7,066.5 | 6,757.4 | 309.03 | 22.867 | |
| 13,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 175.8 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 7,166.0 | 6,854.2 | 311.82 | 22.981 | |
| 13,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 178.6 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 7,265.6 | 6,951.0 | 314.61 | 23.094 | |
| 13,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 181.4 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 7,365.2 | 7,047.7 | 317.41 | 23.204 | |
| 13,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 184.2 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 7,464.7 | 7,144.5 | 320.20 | 23.312 | |
| 13,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 187.0 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 7,564.3 | 7,241.3 | 323.00 | 23.419 | |
| 13,800.0 | 6,819.0 | 6,806.0 | 6,806.0 | 189.7 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 7,664.0 | 7,338.2 | 325.80 | 23.524 | |
| 13,900.0 | 6,819.0 | 6,806.0 | 6,806.0 | 192.5 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 7,763.6 | 7,435.0 | 328.59 | 23.627 | |
| 14,000.0 | 6,819.0 | 6,806.0 | 6,806.0 | 195.3 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 7,863.2 | 7,531.8 | 331.39 | 23.728 | |
| 14,100.0 | 6,819.0 | 6,806.0 | 6,806.0 | 198.1 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 7,962.8 | 7,628.7 | 334.19 | 23.827 | |
| 14,200.0 | 6,819.0 | 6,806.0 | 6,806.0 | 200.9 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 8,062.5 | 7,725.5 | 336.99 | 23.925 | |
| 14,300.0 | 6,819.0 | 6,806.0 | 6,806.0 | 203.7 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 8,162.1 | 7,822.4 | 339.78 | 24.022 | |
| 14,400.0 | 6,819.0 | 6,806.0 | 6,806.0 | 206.5 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 8,261.8 | 7,919.2 | 342.58 | 24.116 | |
| 14,500.0 | 6,819.0 | 6,806.0 | 6,806.0 | 209.3 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 8,361.5 | 8,016.1 | 345.38 | 24.209 | |
| 14,600.0 | 6,819.0 | 6,806.0 | 6,806.0 | 212.1 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 8,461.2 | 8,113.0 | 348.18 | 24.301 | |
| 14,700.0 | 6,819.0 | 6,806.0 | 6,806.0 | 214.9 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 8,560.9 | 8,209.9 | 350.98 | 24.391 | |
| 14,720.3 | 6,819.0 | 6,806.0 | 6,806.0 | 215.4 | 136.5 | 90.00 | 2,110.1 | 1,237.5 | 8,581.1 | 8,229.6 | 351.55 | 24.409 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT FRENCH 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -2.82 | 2,048.2 | -100.8 | 2,050.7 | | | | |
| 100.0 | 100.0 | 83.7 | 83.7 | 0.1 | 0.1 | -2.81 | 2,048.1 | -100.6 | 2,050.6 | 2,050.4 | 0.17 | N/A | |
| 180.0 | 180.0 | 160.0 | 160.0 | 0.3 | 0.2 | -2.80 | 2,048.0 | -100.2 | 2,050.5 | 2,050.0 | 0.43 | 4,752.589 | |
| 200.0 | 200.0 | 178.6 | 178.6 | 0.3 | 0.2 | -2.80 | 2,048.0 | -100.1 | 2,050.5 | 2,050.0 | 0.50 | 4,135.812 | |
| 300.0 | 300.0 | 275.5 | 275.5 | 0.5 | 0.3 | -2.79 | 2,048.2 | -99.9 | 2,050.6 | 2,049.8 | 0.81 | 2,536.343 | |
| 400.0 | 400.0 | 379.9 | 379.9 | 0.8 | 0.4 | -2.78 | 2,048.4 | -99.5 | 2,050.8 | 2,049.7 | 1.10 | 1,861.155 | |
| 500.0 | 500.0 | 485.5 | 485.5 | 1.0 | 0.4 | -2.77 | 2,048.3 | -99.2 | 2,050.7 | 2,049.3 | 1.38 | 1,482.676 | |
| 600.0 | 600.0 | 582.3 | 582.3 | 1.2 | 0.5 | -2.76 | 2,048.1 | -98.8 | 2,050.4 | 2,048.8 | 1.65 | 1,239.548 | |
| 700.0 | 700.0 | 685.2 | 685.2 | 1.4 | 0.5 | -2.75 | 2,047.9 | -98.4 | 2,050.3 | 2,048.4 | 1.92 | 1,068.923 | |
| 800.0 | 800.0 | 789.1 | 789.1 | 1.7 | 0.6 | -2.75 | 2,047.6 | -98.3 | 2,049.9 | 2,047.8 | 2.19 | 935.200 | |
| 900.0 | 900.0 | 891.9 | 891.9 | 1.9 | 0.6 | -23.94 | 2,047.1 | -97.9 | 2,047.8 | 2,045.4 | 2.45 | 834.558 | |
| 1,000.0 | 999.8 | 983.0 | 983.0 | 2.1 | 0.6 | -24.02 | 2,046.7 | -97.4 | 2,042.7 | 2,039.9 | 2.72 | 750.186 | |
| 1,100.0 | 1,099.5 | 1,084.5 | 1,084.4 | 2.3 | 0.7 | -24.18 | 2,046.6 | -97.1 | 2,034.6 | 2,031.6 | 2.99 | 680.154 | |
| 1,200.0 | 1,198.7 | 1,184.8 | 1,184.8 | 2.6 | 0.7 | -24.41 | 2,046.3 | -96.9 | 2,023.2 | 2,019.9 | 3.27 | 618.172 | |
| 1,300.0 | 1,297.5 | 1,279.7 | 1,279.7 | 2.9 | 0.7 | -24.70 | 2,046.1 | -96.5 | 2,008.7 | 2,005.1 | 3.57 | 563.064 | |
| 1,400.0 | 1,395.6 | 1,382.2 | 1,382.2 | 3.2 | 0.8 | -25.08 | 2,046.0 | -96.3 | 1,991.1 | 1,987.3 | 3.88 | 513.340 | |
| 1,500.0 | 1,493.1 | 1,477.6 | 1,477.6 | 3.5 | 0.8 | -25.52 | 2,045.7 | -95.6 | 1,970.4 | 1,966.2 | 4.20 | 468.871 | |
| 1,507.2 | 1,500.0 | 1,484.3 | 1,484.3 | 3.6 | 0.8 | -25.55 | 2,045.7 | -95.6 | 1,968.8 | 1,964.6 | 4.23 | 465.928 | |
| 1,572.2 | 1,563.0 | 1,546.5 | 1,546.5 | 3.8 | 0.9 | -25.73 | 2,045.6 | -95.0 | 1,954.3 | 1,949.9 | 4.42 | 442.525 | |
| 1,600.0 | 1,590.0 | 1,573.3 | 1,573.3 | 3.9 | 0.9 | -25.86 | 2,045.6 | -94.7 | 1,948.0 | 1,943.4 | 4.51 | 432.241 | |
| 1,700.0 | 1,686.3 | 1,673.1 | 1,673.0 | 4.4 | 0.9 | -26.43 | 2,045.4 | -93.8 | 1,923.3 | 1,918.4 | 4.86 | 395.374 | |
| 1,800.0 | 1,781.5 | 1,775.5 | 1,775.4 | 4.9 | 0.9 | -27.11 | 2,044.9 | -93.2 | 1,895.3 | 1,890.1 | 5.25 | 360.720 | |
| 1,817.6 | 1,798.2 | 1,793.5 | 1,793.5 | 5.0 | 0.9 | -27.24 | 2,044.8 | -93.1 | 1,890.1 | 1,884.8 | 5.33 | 354.845 | |
| 1,900.0 | 1,876.1 | 1,874.2 | 1,874.1 | 5.5 | 1.0 | -27.62 | 2,044.1 | -92.6 | 1,865.2 | 1,859.6 | 5.65 | 330.166 | |
| 2,000.0 | 1,970.6 | 1,965.5 | 1,965.5 | 6.0 | 1.0 | -28.04 | 2,043.3 | -91.7 | 1,835.1 | 1,829.1 | 6.05 | 303.405 | |
| 2,100.0 | 2,065.1 | 2,073.8 | 2,073.8 | 6.6 | 1.1 | -28.57 | 2,042.3 | -90.7 | 1,805.1 | 1,798.6 | 6.47 | 278.959 | |
| 2,200.0 | 2,159.6 | 2,177.9 | 2,177.8 | 7.2 | 1.1 | -29.10 | 2,040.3 | -90.0 | 1,774.2 | 1,767.3 | 6.91 | 256.713 | |
| 2,300.0 | 2,254.1 | 2,271.2 | 2,271.1 | 7.8 | 1.1 | -29.61 | 2,038.3 | -89.7 | 1,743.3 | 1,735.9 | 7.35 | 237.061 | |
| 2,400.0 | 2,348.7 | 2,358.4 | 2,358.3 | 8.4 | 1.1 | -30.11 | 2,036.6 | -89.7 | 1,712.7 | 1,704.9 | 7.80 | 219.607 | |
| 2,500.0 | 2,443.2 | 2,445.3 | 2,445.1 | 9.1 | 1.2 | -30.64 | 2,035.2 | -90.1 | 1,682.7 | 1,674.4 | 8.25 | 203.908 | |
| 2,600.0 | 2,537.7 | 2,533.6 | 2,533.5 | 9.7 | 1.2 | -31.20 | 2,034.2 | -90.6 | 1,653.2 | 1,644.5 | 8.72 | 189.673 | |
| 2,700.0 | 2,632.2 | 2,623.7 | 2,623.5 | 10.3 | 1.2 | -31.78 | 2,033.3 | -91.2 | 1,624.2 | 1,615.0 | 9.19 | 176.702 | |
| 2,800.0 | 2,726.8 | 2,719.1 | 2,718.9 | 10.9 | 1.2 | -32.42 | 2,032.5 | -91.8 | 1,595.4 | 1,585.7 | 9.68 | 164.754 | |
| 2,900.0 | 2,821.3 | 2,814.0 | 2,813.8 | 11.6 | 1.2 | -33.08 | 2,031.7 | -92.3 | 1,566.7 | 1,556.5 | 10.19 | 153.774 | |
| 3,000.0 | 2,915.8 | 2,906.2 | 2,906.0 | 12.2 | 1.3 | -33.73 | 2,031.0 | -92.5 | 1,538.3 | 1,527.6 | 10.70 | 143.739 | |
| 3,100.0 | 3,010.3 | 2,998.8 | 2,998.6 | 12.8 | 1.3 | -34.40 | 2,030.4 | -92.6 | 1,510.2 | 1,499.0 | 11.23 | 134.517 | |
| 3,200.0 | 3,104.8 | 3,091.5 | 3,091.3 | 13.5 | 1.3 | -35.10 | 2,029.9 | -92.7 | 1,482.4 | 1,470.7 | 11.76 | 126.023 | |
| 3,300.0 | 3,199.4 | 3,176.9 | 3,176.8 | 14.1 | 1.3 | -35.77 | 2,029.7 | -92.9 | 1,455.2 | 1,442.9 | 12.29 | 118.424 | |
| 3,400.0 | 3,293.9 | 3,267.2 | 3,267.0 | 14.8 | 1.3 | -36.51 | 2,029.9 | -93.6 | 1,428.7 | 1,415.9 | 12.82 | 111.401 | |
| 3,500.0 | 3,388.4 | 3,360.8 | 3,360.6 | 15.4 | 1.3 | -37.30 | 2,030.2 | -94.4 | 1,402.6 | 1,389.2 | 13.38 | 104.838 | |
| 3,600.0 | 3,482.9 | 3,455.9 | 3,455.7 | 16.0 | 1.3 | -38.14 | 2,030.5 | -95.2 | 1,376.8 | 1,362.8 | 13.95 | 98.710 | |
| 3,700.0 | 3,577.5 | 3,552.6 | 3,552.4 | 16.7 | 1.3 | -39.01 | 2,030.9 | -95.7 | 1,351.2 | 1,336.6 | 14.53 | 92.991 | |
| 3,800.0 | 3,672.0 | 3,650.7 | 3,650.6 | 17.3 | 1.3 | -39.92 | 2,031.1 | -95.8 | 1,325.7 | 1,310.5 | 15.13 | 87.639 | |
| 3,900.0 | 3,766.5 | 3,745.8 | 3,745.6 | 18.0 | 1.3 | -40.82 | 2,031.1 | -95.7 | 1,300.2 | 1,284.5 | 15.74 | 82.630 | |
| 4,000.0 | 3,861.0 | 3,839.8 | 3,839.6 | 18.6 | 1.4 | -41.74 | 2,031.3 | -95.6 | 1,275.3 | 1,258.9 | 16.36 | 77.948 | |
| 4,100.0 | 3,955.5 | 3,936.2 | 3,936.1 | 19.3 | 1.4 | -42.72 | 2,031.4 | -95.2 | 1,250.5 | 1,233.5 | 17.01 | 73.534 | |
| 4,200.0 | 4,050.1 | 4,030.0 | 4,029.9 | 19.9 | 1.4 | -43.70 | 2,031.5 | -95.0 | 1,226.0 | 1,208.4 | 17.67 | 69.405 | |
| 4,300.0 | 4,144.6 | 4,122.6 | 4,122.5 | 20.5 | 1.4 | -44.70 | 2,031.8 | -94.5 | 1,202.1 | 1,183.8 | 18.33 | 65.574 | |
| 4,400.0 | 4,239.1 | 4,217.0 | 4,216.8 | 21.2 | 1.4 | -45.76 | 2,032.2 | -94.1 | 1,178.7 | 1,159.7 | 19.02 | 61.985 | |
| 4,500.0 | 4,333.6 | 4,311.9 | 4,311.8 | 21.8 | 1.4 | -46.88 | 2,032.4 | -94.0 | 1,155.7 | 1,136.0 | 19.71 | 58.623 | |
| 4,600.0 | 4,428.2 | 4,411.4 | 4,411.2 | 22.5 | 1.4 | -48.12 | 2,032.3 | -94.1 | 1,132.9 | 1,112.4 | 20.44 | 55.426 | |
| 4,700.0 | 4,522.7 | 4,506.4 | 4,506.2 | 23.1 | 1.5 | -49.34 | 2,032.0 | -94.0 | 1,110.4 | 1,089.2 | 21.19 | 52.409 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT FRENCH 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,601.5 | 4,601.3 | 23.8 | 1.5 | -50.60 | 2,031.9 | -93.6 | 1,088.3 | 1,066.4 | 21.95 | 49.576 | |
| 4,900.0 | 4,711.7 | 4,700.7 | 4,700.5 | 24.4 | 1.5 | -51.94 | 2,031.7 | -92.7 | 1,066.6 | 1,043.9 | 22.74 | 46.903 | |
| 5,000.0 | 4,806.2 | 4,809.5 | 4,809.3 | 25.1 | 1.5 | -53.42 | 2,031.0 | -90.4 | 1,044.5 | 1,021.0 | 23.57 | 44.317 | |
| 5,100.0 | 4,900.8 | 4,903.0 | 4,902.7 | 25.7 | 1.6 | -54.75 | 2,030.0 | -88.2 | 1,022.5 | 998.1 | 24.37 | 41.948 | |
| 5,200.0 | 4,995.3 | 4,995.7 | 4,995.5 | 26.4 | 1.6 | -56.14 | 2,028.8 | -86.4 | 1,001.1 | 975.9 | 25.19 | 39.740 | |
| 5,300.0 | 5,089.8 | 5,089.9 | 5,089.6 | 27.0 | 1.6 | -57.64 | 2,027.5 | -85.0 | 980.5 | 954.5 | 26.03 | 37.666 | |
| 5,400.0 | 5,184.3 | 5,183.8 | 5,183.5 | 27.7 | 1.7 | -59.22 | 2,025.9 | -83.9 | 960.7 | 933.8 | 26.89 | 35.728 | |
| 5,500.0 | 5,278.9 | 5,276.2 | 5,275.9 | 28.3 | 1.7 | -60.85 | 2,024.2 | -83.2 | 941.7 | 914.0 | 27.75 | 33.931 | |
| 5,533.5 | 5,310.5 | 5,306.9 | 5,306.6 | 28.5 | 1.7 | -61.41 | 2,023.6 | -83.1 | 935.6 | 907.5 | 28.05 | 33.360 | |
| 5,600.0 | 5,373.6 | 5,366.6 | 5,366.2 | 28.9 | 1.7 | -62.28 | 2,022.5 | -83.0 | 924.2 | 895.7 | 28.51 | 32.413 | |
| 5,700.0 | 5,469.4 | 5,456.2 | 5,455.9 | 29.3 | 1.7 | -63.53 | 2,021.1 | -83.2 | 909.6 | 880.5 | 29.11 | 31.243 | |
| 5,800.0 | 5,566.1 | 5,547.1 | 5,546.7 | 29.8 | 1.7 | -64.71 | 2,020.2 | -83.7 | 897.8 | 868.1 | 29.66 | 30.271 | |
| 5,900.0 | 5,663.6 | 5,640.2 | 5,639.8 | 30.1 | 1.7 | -65.79 | 2,019.7 | -84.4 | 888.6 | 858.4 | 30.15 | 29.474 | |
| 6,000.0 | 5,761.9 | 5,734.8 | 5,734.4 | 30.5 | 1.7 | -66.78 | 2,019.4 | -85.6 | 881.6 | 851.1 | 30.58 | 28.830 | |
| 6,100.0 | 5,860.7 | 5,830.6 | 5,830.2 | 30.7 | 1.8 | -67.65 | 2,019.1 | -87.3 | 876.8 | 845.8 | 30.95 | 28.326 | |
| 6,200.0 | 5,960.0 | 5,928.9 | 5,928.5 | 31.0 | 1.8 | -68.39 | 2,018.9 | -89.2 | 873.6 | 842.4 | 31.27 | 27.942 | |
| 6,300.0 | 6,059.7 | 6,029.1 | 6,028.7 | 31.2 | 1.8 | -68.96 | 2,018.7 | -91.2 | 872.0 | 840.4 | 31.52 | 27.667 | |
| 6,400.0 | 6,159.6 | 6,131.0 | 6,130.6 | 31.3 | 1.8 | -69.36 | 2,018.2 | -93.2 | 871.4 | 839.7 | 31.70 | 27.489 | |
| 6,403.0 | 6,162.5 | 6,134.1 | 6,133.6 | 31.3 | 1.8 | -69.36 | 2,018.2 | -93.2 | 871.4 | 839.7 | 31.70 | 27.485 | |
| 6,486.1 | 6,245.7 | 6,218.2 | 6,217.7 | 31.4 | 1.8 | -48.35 | 2,018.0 | -94.5 | 871.8 | 850.9 | 20.88 | 41.743 | |
| 6,500.0 | 6,259.6 | 6,231.7 | 6,231.2 | 31.4 | 1.8 | -48.36 | 2,018.0 | -94.6 | 871.9 | 851.0 | 20.90 | 41.710 | |
| 6,516.1 | 6,275.7 | 6,247.4 | 6,246.9 | 31.4 | 1.8 | -48.36 | 2,018.0 | -94.8 | 872.0 | 851.1 | 20.93 | 41.669 | |
| 6,550.0 | 6,309.5 | 6,280.3 | 6,279.8 | 31.5 | 1.8 | 41.67 | 2,018.2 | -95.2 | 871.8 | 839.9 | 31.87 | 27.351 | |
| 6,600.0 | 6,359.4 | 6,330.3 | 6,329.9 | 31.5 | 1.8 | 41.98 | 2,018.5 | -95.6 | 869.3 | 837.5 | 31.85 | 27.292 | |
| 6,650.0 | 6,408.8 | 6,381.0 | 6,380.6 | 31.5 | 1.8 | 42.61 | 2,019.0 | -95.9 | 864.2 | 832.5 | 31.73 | 27.240 | |
| 6,700.0 | 6,457.5 | 6,431.6 | 6,431.1 | 31.5 | 1.8 | 43.57 | 2,019.5 | -96.1 | 856.5 | 825.0 | 31.49 | 27.201 | |
| 6,716.1 | 6,473.1 | 6,447.8 | 6,447.3 | 31.5 | 1.8 | 43.95 | 2,019.6 | -96.1 | 853.5 | 822.1 | 31.39 | 27.192 | |
| 6,725.0 | 6,481.6 | 6,456.7 | 6,456.2 | 31.5 | 1.8 | 44.22 | 2,019.7 | -96.1 | 851.7 | 820.4 | 31.31 | 27.204 | |
| 6,750.0 | 6,505.3 | 6,481.4 | 6,480.9 | 31.5 | 1.8 | 45.11 | 2,019.9 | -96.1 | 846.0 | 815.0 | 31.04 | 27.254 | |
| 6,775.0 | 6,528.5 | 6,505.4 | 6,504.9 | 31.4 | 1.8 | 46.14 | 2,020.1 | -96.1 | 839.5 | 808.8 | 30.72 | 27.328 | |
| 6,800.0 | 6,551.3 | 6,528.1 | 6,527.7 | 31.4 | 1.8 | 47.32 | 2,020.2 | -96.1 | 832.1 | 801.8 | 30.34 | 27.430 | |
| 6,825.0 | 6,573.4 | 6,550.3 | 6,549.9 | 31.4 | 1.8 | 48.66 | 2,020.4 | -96.0 | 824.0 | 794.1 | 29.90 | 27.560 | |
| 6,850.0 | 6,595.0 | 6,571.9 | 6,571.4 | 31.3 | 1.8 | 50.15 | 2,020.6 | -96.0 | 815.1 | 785.7 | 29.41 | 27.719 | |
| 6,875.0 | 6,615.8 | 6,592.7 | 6,592.2 | 31.3 | 1.8 | 51.80 | 2,020.7 | -96.0 | 805.6 | 776.7 | 28.87 | 27.907 | |
| 6,900.0 | 6,635.9 | 6,613.3 | 6,612.8 | 31.3 | 1.8 | 53.64 | 2,020.9 | -95.9 | 795.5 | 767.2 | 28.29 | 28.121 | |
| 6,925.0 | 6,655.1 | 6,633.3 | 6,632.8 | 31.2 | 1.8 | 55.64 | 2,021.0 | -95.9 | 784.8 | 757.1 | 27.68 | 28.356 | |
| 6,950.0 | 6,673.6 | 6,652.4 | 6,651.9 | 31.2 | 1.8 | 57.79 | 2,021.2 | -95.8 | 773.6 | 746.5 | 27.04 | 28.604 | |
| 6,975.0 | 6,691.1 | 6,670.5 | 6,670.0 | 31.1 | 1.8 | 60.07 | 2,021.2 | -95.8 | 762.0 | 735.6 | 26.41 | 28.857 | |
| 7,000.0 | 6,707.6 | 6,687.6 | 6,687.1 | 31.1 | 1.8 | 62.48 | 2,021.3 | -95.7 | 750.1 | 724.3 | 25.77 | 29.103 | |
| 7,025.0 | 6,723.1 | 6,703.7 | 6,703.2 | 31.0 | 1.8 | 64.97 | 2,021.4 | -95.7 | 737.9 | 712.7 | 25.16 | 29.331 | |
| 7,050.0 | 6,737.6 | 6,718.6 | 6,718.2 | 31.0 | 1.8 | 67.54 | 2,021.4 | -95.6 | 725.6 | 701.0 | 24.57 | 29.526 | |
| 7,075.0 | 6,751.0 | 6,732.4 | 6,732.0 | 30.9 | 1.8 | 70.13 | 2,021.4 | -95.5 | 713.2 | 689.1 | 24.03 | 29.676 | |
| 7,100.0 | 6,763.3 | 6,745.0 | 6,744.6 | 30.8 | 1.8 | 72.72 | 2,021.4 | -95.5 | 700.8 | 677.3 | 23.54 | 29.771 | |
| 7,125.0 | 6,774.5 | 6,756.4 | 6,756.0 | 30.8 | 1.8 | 75.26 | 2,021.4 | -95.4 | 688.6 | 665.5 | 23.11 | 29.800 | |
| 7,150.0 | 6,784.4 | 6,766.6 | 6,766.1 | 30.7 | 1.8 | 77.71 | 2,021.5 | -95.3 | 676.7 | 653.9 | 22.74 | 29.755 | |
| 7,175.0 | 6,793.1 | 6,775.4 | 6,775.0 | 30.7 | 1.8 | 80.05 | 2,021.5 | -95.3 | 665.0 | 642.6 | 22.44 | 29.632 | |
| 7,200.0 | 6,800.6 | 6,783.0 | 6,782.5 | 30.6 | 1.8 | 82.22 | 2,021.5 | -95.2 | 653.9 | 631.7 | 22.22 | 29.428 | |
| 7,225.0 | 6,806.8 | 6,789.2 | 6,788.8 | 30.6 | 1.8 | 84.21 | 2,021.5 | -95.2 | 643.2 | 621.2 | 22.07 | 29.146 | |
| 7,250.0 | 6,811.8 | 6,794.2 | 6,793.7 | 30.5 | 1.8 | 85.99 | 2,021.5 | -95.2 | 633.2 | 611.2 | 21.99 | 28.792 | |
| 7,275.0 | 6,815.5 | 6,797.7 | 6,797.3 | 30.5 | 1.8 | 87.53 | 2,021.5 | -95.1 | 624.0 | 602.0 | 21.99 | 28.379 | |
| 7,300.0 | 6,817.8 | 6,800.0 | 6,799.5 | 30.4 | 1.8 | 88.83 | 2,021.5 | -95.1 | 615.5 | 593.5 | 22.04 | 27.922 | |
| 7,325.0 | 6,818.9 | 6,800.9 | 6,800.4 | 30.4 | 1.8 | 89.87 | 2,021.5 | -95.1 | 607.9 | 585.8 | 22.16 | 27.438 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT FRENCH 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,332.8 | 6,819.0 | 6,800.9 | 6,800.4 | 30.4 | 1.8 | 90.14 | 2,021.5 | -95.1 | 605.8 | 583.6 | 22.20 | 27.285 | |
| 7,400.0 | 6,819.0 | 6,800.4 | 6,799.9 | 30.3 | 1.8 | 90.09 | 2,021.5 | -95.1 | 591.0 | 568.1 | 22.88 | 25.831 | |
| 7,498.1 | 6,819.0 | 6,799.6 | 6,799.1 | 30.2 | 1.8 | 90.02 | 2,021.5 | -95.1 | 582.8 | 558.6 | 24.12 | 24.161 | CC |
| 7,500.0 | 6,819.0 | 6,799.6 | 6,799.1 | 30.2 | 1.8 | 90.02 | 2,021.5 | -95.1 | 582.8 | 558.6 | 24.14 | 24.137 | ES |
| 7,600.0 | 6,819.0 | 6,798.8 | 6,798.4 | 30.3 | 1.8 | 89.94 | 2,021.5 | -95.1 | 591.6 | 565.9 | 25.68 | 23.041 | |
| 7,700.0 | 6,819.0 | 6,798.1 | 6,797.6 | 30.6 | 1.8 | 89.87 | 2,021.5 | -95.1 | 616.7 | 589.3 | 27.43 | 22.488 | |
| 7,800.0 | 6,819.0 | 6,797.3 | 6,796.9 | 31.3 | 1.8 | 89.79 | 2,021.5 | -95.1 | 656.3 | 627.0 | 29.35 | 22.360 | SF |
| 7,900.0 | 6,819.0 | 6,796.6 | 6,796.1 | 32.5 | 1.8 | 89.72 | 2,021.5 | -95.1 | 707.9 | 676.5 | 31.42 | 22.530 | |
| 8,000.0 | 6,819.0 | 6,795.9 | 6,795.4 | 34.2 | 1.8 | 89.65 | 2,021.5 | -95.1 | 769.1 | 735.5 | 33.60 | 22.887 | |
| 8,100.0 | 6,819.0 | 6,795.1 | 6,794.7 | 36.1 | 1.8 | 89.58 | 2,021.5 | -95.2 | 837.8 | 801.9 | 35.88 | 23.350 | |
| 8,200.0 | 6,819.0 | 6,794.4 | 6,794.0 | 38.3 | 1.8 | 89.51 | 2,021.5 | -95.2 | 912.3 | 874.0 | 38.23 | 23.862 | |
| 8,300.0 | 6,819.0 | 6,793.7 | 6,793.2 | 40.6 | 1.8 | 89.44 | 2,021.5 | -95.2 | 991.3 | 950.6 | 40.64 | 24.389 | |
| 8,400.0 | 6,819.0 | 6,793.0 | 6,792.5 | 42.9 | 1.8 | 89.37 | 2,021.5 | -95.2 | 1,073.8 | 1,030.7 | 43.11 | 24.910 | |
| 8,500.0 | 6,819.0 | 6,792.3 | 6,791.8 | 45.3 | 1.8 | 89.30 | 2,021.5 | -95.2 | 1,159.0 | 1,113.4 | 45.61 | 25.411 | |
| 8,600.0 | 6,819.0 | 6,791.6 | 6,791.1 | 47.8 | 1.8 | 89.23 | 2,021.5 | -95.2 | 1,246.5 | 1,198.3 | 48.15 | 25.886 | |
| 8,700.0 | 6,819.0 | 6,790.9 | 6,790.4 | 50.3 | 1.8 | 89.16 | 2,021.5 | -95.2 | 1,335.7 | 1,285.0 | 50.72 | 26.333 | |
| 8,800.0 | 6,819.0 | 6,790.2 | 6,789.7 | 52.8 | 1.8 | 89.09 | 2,021.5 | -95.2 | 1,426.3 | 1,373.0 | 53.32 | 26.751 | |
| 8,900.0 | 6,819.0 | 6,789.5 | 6,789.1 | 55.4 | 1.8 | 89.03 | 2,021.5 | -95.2 | 1,518.2 | 1,462.2 | 55.94 | 27.141 | |
| 9,000.0 | 6,819.0 | 6,788.9 | 6,788.4 | 58.0 | 1.8 | 88.96 | 2,021.5 | -95.2 | 1,610.9 | 1,552.4 | 58.57 | 27.503 | |
| 9,100.0 | 6,819.0 | 6,788.2 | 6,787.7 | 60.6 | 1.8 | 88.89 | 2,021.5 | -95.2 | 1,704.6 | 1,643.3 | 61.23 | 27.841 | |
| 9,200.0 | 6,819.0 | 6,787.5 | 6,787.0 | 63.2 | 1.8 | 88.83 | 2,021.5 | -95.2 | 1,798.9 | 1,735.0 | 63.89 | 28.155 | |
| 9,300.0 | 6,819.0 | 6,786.9 | 6,786.4 | 65.9 | 1.8 | 88.76 | 2,021.5 | -95.2 | 1,893.7 | 1,827.2 | 66.57 | 28.447 | |
| 9,400.0 | 6,819.0 | 6,786.2 | 6,785.7 | 68.5 | 1.8 | 88.70 | 2,021.5 | -95.2 | 1,989.1 | 1,919.9 | 69.26 | 28.720 | |
| 9,500.0 | 6,819.0 | 6,785.5 | 6,785.1 | 71.2 | 1.8 | 88.63 | 2,021.5 | -95.2 | 2,084.9 | 2,013.0 | 71.96 | 28.974 | |
| 9,600.0 | 6,819.0 | 6,784.9 | 6,784.4 | 73.9 | 1.8 | 88.57 | 2,021.5 | -95.2 | 2,181.1 | 2,106.5 | 74.67 | 29.212 | |
| 9,700.0 | 6,819.0 | 6,784.3 | 6,783.8 | 76.5 | 1.8 | 88.51 | 2,021.5 | -95.2 | 2,277.6 | 2,200.3 | 77.38 | 29.434 | |
| 9,800.0 | 6,819.0 | 6,783.6 | 6,783.1 | 79.2 | 1.8 | 88.44 | 2,021.5 | -95.2 | 2,374.5 | 2,294.3 | 80.10 | 29.643 | |
| 9,900.0 | 6,819.0 | 6,783.0 | 6,782.5 | 81.9 | 1.8 | 88.38 | 2,021.5 | -95.2 | 2,471.5 | 2,388.7 | 82.83 | 29.838 | |
| 10,000.0 | 6,819.0 | 6,782.4 | 6,781.9 | 84.6 | 1.8 | 88.32 | 2,021.5 | -95.2 | 2,568.8 | 2,483.2 | 85.56 | 30.022 | |
| 10,100.0 | 6,819.0 | 6,781.7 | 6,781.3 | 87.4 | 1.8 | 88.26 | 2,021.5 | -95.2 | 2,666.3 | 2,578.0 | 88.30 | 30.195 | |
| 10,200.0 | 6,819.0 | 6,781.1 | 6,780.6 | 90.1 | 1.8 | 88.20 | 2,021.5 | -95.3 | 2,764.0 | 2,672.9 | 91.04 | 30.358 | |
| 10,300.0 | 6,819.0 | 6,780.5 | 6,780.0 | 92.8 | 1.8 | 88.14 | 2,021.5 | -95.3 | 2,861.8 | 2,768.0 | 93.79 | 30.513 | |
| 10,400.0 | 6,819.0 | 6,779.9 | 6,779.4 | 95.5 | 1.8 | 88.08 | 2,021.5 | -95.3 | 2,959.8 | 2,863.2 | 96.54 | 30.658 | |
| 10,500.0 | 6,819.0 | 6,779.3 | 6,778.8 | 98.3 | 1.8 | 88.02 | 2,021.5 | -95.3 | 3,057.9 | 2,958.6 | 99.29 | 30.796 | |
| 10,600.0 | 6,819.0 | 6,778.7 | 6,778.2 | 101.0 | 1.8 | 87.96 | 2,021.5 | -95.3 | 3,156.1 | 3,054.0 | 102.05 | 30.927 | |
| 10,700.0 | 6,819.0 | 6,778.1 | 6,777.6 | 103.8 | 1.8 | 87.90 | 2,021.5 | -95.3 | 3,254.4 | 3,149.6 | 104.81 | 31.051 | |
| 10,800.0 | 6,819.0 | 6,777.5 | 6,777.0 | 106.5 | 1.8 | 87.85 | 2,021.5 | -95.3 | 3,352.8 | 3,245.3 | 107.57 | 31.169 | |
| 10,900.0 | 6,819.0 | 6,776.9 | 6,776.5 | 109.2 | 1.8 | 87.79 | 2,021.5 | -95.3 | 3,451.4 | 3,341.0 | 110.33 | 31.281 | |
| 11,000.0 | 6,819.0 | 6,776.3 | 6,775.9 | 112.0 | 1.8 | 87.73 | 2,021.5 | -95.3 | 3,550.0 | 3,436.9 | 113.10 | 31.388 | |
| 11,100.0 | 6,819.0 | 6,775.8 | 6,775.3 | 114.8 | 1.8 | 87.67 | 2,021.5 | -95.3 | 3,648.6 | 3,532.8 | 115.87 | 31.490 | |
| 11,200.0 | 6,819.0 | 6,775.2 | 6,774.7 | 117.5 | 1.8 | 87.62 | 2,021.5 | -95.3 | 3,747.4 | 3,628.8 | 118.63 | 31.588 | |
| 11,300.0 | 6,819.0 | 6,774.6 | 6,774.1 | 120.3 | 1.8 | 87.56 | 2,021.5 | -95.3 | 3,846.2 | 3,724.8 | 121.41 | 31.681 | |
| 11,400.0 | 6,819.0 | 6,774.1 | 6,773.6 | 123.0 | 1.8 | 87.51 | 2,021.5 | -95.3 | 3,945.1 | 3,820.9 | 124.18 | 31.770 | |
| 11,500.0 | 6,819.0 | 6,773.5 | 6,773.0 | 125.8 | 1.8 | 87.45 | 2,021.5 | -95.3 | 4,044.0 | 3,917.0 | 126.95 | 31.855 | |
| 11,600.0 | 6,819.0 | 6,772.9 | 6,772.5 | 128.6 | 1.8 | 87.40 | 2,021.5 | -95.3 | 4,143.0 | 4,013.3 | 129.73 | 31.936 | |
| 11,700.0 | 6,819.0 | 6,772.4 | 6,771.9 | 131.3 | 1.8 | 87.34 | 2,021.5 | -95.3 | 4,242.0 | 4,109.5 | 132.50 | 32.015 | |
| 11,800.0 | 6,819.0 | 6,771.8 | 6,771.4 | 134.1 | 1.8 | 87.29 | 2,021.5 | -95.3 | 4,341.1 | 4,205.8 | 135.28 | 32.090 | |
| 11,900.0 | 6,819.0 | 6,771.3 | 6,770.8 | 136.9 | 1.8 | 87.23 | 2,021.5 | -95.3 | 4,440.2 | 4,302.1 | 138.06 | 32.162 | |
| 12,000.0 | 6,819.0 | 6,770.7 | 6,770.3 | 139.6 | 1.8 | 87.18 | 2,021.5 | -95.3 | 4,539.3 | 4,398.5 | 140.84 | 32.231 | |
| 12,100.0 | 6,819.0 | 6,770.2 | 6,769.7 | 142.4 | 1.8 | 87.13 | 2,021.5 | -95.3 | 4,638.5 | 4,494.9 | 143.62 | 32.298 | |
| 12,200.0 | 6,819.0 | 6,769.7 | 6,769.2 | 145.2 | 1.8 | 87.08 | 2,021.5 | -95.3 | 4,737.8 | 4,591.4 | 146.40 | 32.363 | |
| 12,300.0 | 6,819.0 | 6,769.1 | 6,768.7 | 148.0 | 1.8 | 87.02 | 2,021.5 | -95.3 | 4,837.0 | 4,687.8 | 149.18 | 32.425 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT FRENCH 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,400.0 | 6,819.0 | 6,768.6 | 6,768.1 | 150.8 | 1.8 | 86.97 | 2,021.5 | -95.3 | 4,936.3 | 4,784.3 | 151.96 | 32.484 | |
| 12,500.0 | 6,819.0 | 6,768.1 | 6,767.6 | 153.5 | 1.8 | 86.92 | 2,021.5 | -95.3 | 5,035.6 | 4,880.9 | 154.74 | 32.542 | |
| 12,600.0 | 6,819.0 | 6,767.6 | 6,767.1 | 156.3 | 1.8 | 86.87 | 2,021.5 | -95.3 | 5,134.9 | 4,977.4 | 157.52 | 32.598 | |
| 12,700.0 | 6,819.0 | 6,767.1 | 6,766.6 | 159.1 | 1.8 | 86.82 | 2,021.5 | -95.3 | 5,234.3 | 5,074.0 | 160.31 | 32.652 | |
| 12,800.0 | 6,819.0 | 6,766.5 | 6,766.1 | 161.9 | 1.8 | 86.77 | 2,021.5 | -95.3 | 5,333.7 | 5,170.6 | 163.09 | 32.704 | |
| 12,900.0 | 6,819.0 | 6,766.0 | 6,765.6 | 164.7 | 1.8 | 86.72 | 2,021.5 | -95.4 | 5,433.1 | 5,267.2 | 165.87 | 32.754 | |
| 13,000.0 | 6,819.0 | 6,765.5 | 6,765.1 | 167.4 | 1.8 | 86.67 | 2,021.5 | -95.4 | 5,532.5 | 5,363.9 | 168.66 | 32.803 | |
| 13,100.0 | 6,819.0 | 6,765.0 | 6,764.6 | 170.2 | 1.8 | 86.62 | 2,021.5 | -95.4 | 5,632.0 | 5,460.5 | 171.44 | 32.850 | |
| 13,200.0 | 6,819.0 | 6,764.5 | 6,764.1 | 173.0 | 1.8 | 86.57 | 2,021.5 | -95.4 | 5,731.5 | 5,557.2 | 174.23 | 32.896 | |
| 13,300.0 | 6,819.0 | 6,764.0 | 6,763.6 | 175.8 | 1.8 | 86.52 | 2,021.5 | -95.4 | 5,830.9 | 5,653.9 | 177.01 | 32.941 | |
| 13,400.0 | 6,819.0 | 6,763.5 | 6,763.1 | 178.6 | 1.8 | 86.48 | 2,021.5 | -95.4 | 5,930.5 | 5,750.7 | 179.80 | 32.984 | |
| 13,500.0 | 6,819.0 | 6,763.1 | 6,762.6 | 181.4 | 1.8 | 86.43 | 2,021.5 | -95.4 | 6,030.0 | 5,847.4 | 182.59 | 33.026 | |
| 13,600.0 | 6,819.0 | 6,762.6 | 6,762.1 | 184.2 | 1.8 | 86.38 | 2,021.5 | -95.4 | 6,129.5 | 5,944.1 | 185.37 | 33.066 | |
| 13,700.0 | 6,819.0 | 6,762.1 | 6,761.6 | 187.0 | 1.8 | 86.33 | 2,021.5 | -95.4 | 6,229.1 | 6,040.9 | 188.16 | 33.106 | |
| 13,800.0 | 6,819.0 | 6,761.6 | 6,761.1 | 189.7 | 1.8 | 86.29 | 2,021.5 | -95.4 | 6,328.6 | 6,137.7 | 190.94 | 33.144 | |
| 13,900.0 | 6,819.0 | 6,761.1 | 6,760.7 | 192.5 | 1.8 | 86.24 | 2,021.5 | -95.4 | 6,428.2 | 6,234.5 | 193.73 | 33.181 | |
| 14,000.0 | 6,819.0 | 6,760.7 | 6,760.2 | 195.3 | 1.8 | 86.19 | 2,021.5 | -95.4 | 6,527.8 | 6,331.3 | 196.52 | 33.218 | |
| 14,100.0 | 6,819.0 | 6,760.2 | 6,759.7 | 198.1 | 1.8 | 86.15 | 2,021.5 | -95.4 | 6,627.4 | 6,428.1 | 199.30 | 33.253 | |
| 14,200.0 | 6,819.0 | 6,759.7 | 6,759.3 | 200.9 | 1.8 | 86.10 | 2,021.5 | -95.4 | 6,727.0 | 6,524.9 | 202.09 | 33.288 | |
| 14,300.0 | 6,819.0 | 6,759.3 | 6,758.8 | 203.7 | 1.8 | 86.06 | 2,021.5 | -95.4 | 6,826.7 | 6,621.8 | 204.87 | 33.321 | |
| 14,400.0 | 6,819.0 | 6,758.8 | 6,758.3 | 206.5 | 1.8 | 86.01 | 2,021.5 | -95.4 | 6,926.3 | 6,718.6 | 207.66 | 33.354 | |
| 14,500.0 | 6,819.0 | 6,758.3 | 6,757.9 | 209.3 | 1.8 | 85.97 | 2,021.5 | -95.4 | 7,025.9 | 6,815.5 | 210.45 | 33.386 | |
| 14,600.0 | 6,819.0 | 6,757.9 | 6,757.4 | 212.1 | 1.8 | 85.92 | 2,021.5 | -95.4 | 7,125.6 | 6,912.4 | 213.23 | 33.417 | |
| 14,700.0 | 6,819.0 | 6,757.4 | 6,757.0 | 214.9 | 1.8 | 85.88 | 2,021.5 | -95.4 | 7,225.3 | 7,009.2 | 216.02 | 33.447 | |
| 14,720.3 | 6,819.0 | 6,757.4 | 6,756.9 | 215.4 | 1.8 | 85.87 | 2,021.5 | -95.4 | 7,245.5 | 7,028.9 | 216.59 | 33.453 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT HECKENDORF 1 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -107.64 | -1,709.9 | -5,376.1 | 5,641.6 | | | | |
| 100.0 | 100.0 | 64.0 | 64.0 | 0.1 | 0.0 | -107.64 | -1,709.9 | -5,376.1 | 5,641.5 | 5,641.4 | 0.09 | N/A | |
| 200.0 | 200.0 | 164.0 | 164.0 | 0.3 | 0.8 | -107.64 | -1,709.9 | -5,376.1 | 5,641.5 | 5,640.4 | 1.14 | 4,958.213 | |
| 300.0 | 300.0 | 264.0 | 264.0 | 0.5 | 2.7 | -107.64 | -1,709.9 | -5,376.1 | 5,641.5 | 5,638.2 | 3.28 | 1,719.976 | |
| 400.0 | 400.0 | 364.0 | 364.0 | 0.8 | 4.9 | -107.64 | -1,709.9 | -5,376.1 | 5,641.5 | 5,635.8 | 5.65 | 998.365 | |
| 500.0 | 500.0 | 464.0 | 464.0 | 1.0 | 6.9 | -107.64 | -1,709.9 | -5,376.1 | 5,641.5 | 5,633.6 | 7.93 | 711.438 | |
| 600.0 | 600.0 | 564.0 | 564.0 | 1.2 | 9.0 | -107.64 | -1,709.9 | -5,376.1 | 5,641.5 | 5,631.3 | 10.19 | 553.742 | |
| 700.0 | 700.0 | 664.0 | 664.0 | 1.4 | 11.0 | -107.64 | -1,709.9 | -5,376.1 | 5,641.5 | 5,629.1 | 12.44 | 453.583 | |
| 800.0 | 800.0 | 764.0 | 764.0 | 1.7 | 13.0 | -107.64 | -1,709.9 | -5,376.1 | 5,641.5 | 5,626.8 | 14.68 | 384.223 | |
| 900.0 | 900.0 | 864.0 | 864.0 | 1.9 | 15.0 | -128.80 | -1,709.9 | -5,376.1 | 5,642.6 | 5,625.7 | 16.92 | 333.491 | |
| 1,000.0 | 999.8 | 963.8 | 963.8 | 2.1 | 17.1 | -128.79 | -1,709.9 | -5,376.1 | 5,645.9 | 5,626.7 | 19.14 | 294.937 | |
| 1,100.0 | 1,099.5 | 1,063.5 | 1,063.5 | 2.3 | 19.1 | -128.77 | -1,709.9 | -5,376.1 | 5,651.3 | 5,630.0 | 21.35 | 264.676 | |
| 1,200.0 | 1,198.7 | 1,162.7 | 1,162.7 | 2.6 | 21.1 | -128.75 | -1,709.9 | -5,376.1 | 5,659.0 | 5,635.5 | 23.55 | 240.308 | |
| 1,300.0 | 1,297.5 | 1,261.5 | 1,261.5 | 2.9 | 23.0 | -128.72 | -1,709.9 | -5,376.1 | 5,668.9 | 5,643.1 | 25.74 | 220.268 | |
| 1,400.0 | 1,395.6 | 1,359.6 | 1,359.6 | 3.2 | 25.0 | -128.68 | -1,709.9 | -5,376.1 | 5,680.9 | 5,653.0 | 27.92 | 203.500 | |
| 1,500.0 | 1,493.1 | 1,457.1 | 1,457.1 | 3.5 | 27.0 | -128.63 | -1,709.9 | -5,376.1 | 5,695.2 | 5,665.1 | 30.09 | 189.257 | |
| 1,507.2 | 1,500.0 | 1,464.0 | 1,464.0 | 3.6 | 27.1 | -128.62 | -1,709.9 | -5,376.1 | 5,696.3 | 5,666.1 | 30.25 | 188.329 | |
| 1,572.2 | 1,563.0 | 1,527.0 | 1,527.0 | 3.8 | 28.4 | -128.74 | -1,709.9 | -5,376.1 | 5,706.4 | 5,674.7 | 31.71 | 179.962 | |
| 1,600.0 | 1,590.0 | 1,554.0 | 1,554.0 | 3.9 | 28.9 | -128.73 | -1,709.9 | -5,376.1 | 5,710.8 | 5,678.5 | 32.31 | 176.747 | |
| 1,700.0 | 1,686.3 | 1,650.3 | 1,650.3 | 4.4 | 30.9 | -128.66 | -1,709.9 | -5,376.1 | 5,728.2 | 5,693.7 | 34.49 | 166.097 | |
| 1,800.0 | 1,781.5 | 1,745.5 | 1,745.5 | 4.9 | 32.8 | -128.58 | -1,709.9 | -5,376.1 | 5,747.7 | 5,711.0 | 36.66 | 156.787 | |
| 1,817.6 | 1,798.2 | 1,762.2 | 1,762.2 | 5.0 | 33.1 | -128.56 | -1,709.9 | -5,376.1 | 5,751.4 | 5,714.3 | 37.04 | 155.269 | |
| 1,900.0 | 1,876.1 | 1,840.1 | 1,840.1 | 5.5 | 34.7 | -128.77 | -1,709.9 | -5,376.1 | 5,768.7 | 5,729.8 | 38.95 | 148.125 | |
| 2,000.0 | 1,970.6 | 1,934.6 | 1,934.6 | 6.0 | 36.6 | -129.01 | -1,709.9 | -5,376.1 | 5,789.9 | 5,748.7 | 41.27 | 140.304 | |
| 2,100.0 | 2,065.1 | 2,029.1 | 2,029.1 | 6.6 | 38.5 | -129.25 | -1,709.9 | -5,376.1 | 5,811.2 | 5,767.6 | 43.60 | 133.291 | |
| 2,200.0 | 2,159.6 | 2,123.6 | 2,123.6 | 7.2 | 40.4 | -129.49 | -1,709.9 | -5,376.1 | 5,832.6 | 5,786.7 | 45.93 | 126.976 | |
| 2,300.0 | 2,254.1 | 2,218.1 | 2,218.1 | 7.8 | 42.3 | -129.73 | -1,709.9 | -5,376.1 | 5,854.1 | 5,805.8 | 48.28 | 121.265 | |
| 2,400.0 | 2,348.7 | 2,312.7 | 2,312.7 | 8.4 | 44.2 | -129.97 | -1,709.9 | -5,376.1 | 5,875.7 | 5,825.1 | 50.62 | 116.077 | |
| 2,500.0 | 2,443.2 | 2,407.2 | 2,407.2 | 9.1 | 46.1 | -130.20 | -1,709.9 | -5,376.1 | 5,897.4 | 5,844.5 | 52.96 | 111.348 | |
| 2,600.0 | 2,537.7 | 2,501.7 | 2,501.7 | 9.7 | 48.0 | -130.44 | -1,709.9 | -5,376.1 | 5,919.2 | 5,863.9 | 55.31 | 107.020 | |
| 2,700.0 | 2,632.2 | 2,596.2 | 2,596.2 | 10.3 | 49.9 | -130.67 | -1,709.9 | -5,376.1 | 5,941.2 | 5,883.5 | 57.66 | 103.046 | |
| 2,800.0 | 2,726.8 | 2,690.8 | 2,690.8 | 10.9 | 51.8 | -130.90 | -1,709.9 | -5,376.1 | 5,963.2 | 5,903.2 | 60.00 | 99.385 | |
| 2,900.0 | 2,821.3 | 2,785.3 | 2,785.3 | 11.6 | 53.7 | -131.13 | -1,709.9 | -5,376.1 | 5,985.3 | 5,922.9 | 62.34 | 96.003 | |
| 3,000.0 | 2,915.8 | 2,879.8 | 2,879.8 | 12.2 | 55.6 | -131.35 | -1,709.9 | -5,376.1 | 6,007.5 | 5,942.8 | 64.69 | 92.868 | |
| 3,100.0 | 3,010.3 | 2,974.3 | 2,974.3 | 12.8 | 57.5 | -131.58 | -1,709.9 | -5,376.1 | 6,029.8 | 5,962.7 | 67.03 | 89.956 | |
| 3,200.0 | 3,104.8 | 3,068.8 | 3,068.8 | 13.5 | 59.4 | -131.80 | -1,709.9 | -5,376.1 | 6,052.1 | 5,982.8 | 69.37 | 87.245 | |
| 3,300.0 | 3,199.4 | 3,163.4 | 3,163.4 | 14.1 | 61.3 | -132.03 | -1,709.9 | -5,376.1 | 6,074.6 | 6,002.9 | 71.71 | 84.713 | |
| 3,400.0 | 3,293.9 | 3,257.9 | 3,257.9 | 14.8 | 63.2 | -132.25 | -1,709.9 | -5,376.1 | 6,097.2 | 6,023.1 | 74.04 | 82.345 | |
| 3,500.0 | 3,388.4 | 3,352.4 | 3,352.4 | 15.4 | 65.1 | -132.47 | -1,709.9 | -5,376.1 | 6,119.9 | 6,043.5 | 76.38 | 80.125 | |
| 3,600.0 | 3,482.9 | 3,446.9 | 3,446.9 | 16.0 | 67.0 | -132.69 | -1,709.9 | -5,376.1 | 6,142.6 | 6,063.9 | 78.71 | 78.040 | |
| 3,700.0 | 3,577.5 | 3,541.5 | 3,541.5 | 16.7 | 68.9 | -132.90 | -1,709.9 | -5,376.1 | 6,165.4 | 6,084.4 | 81.04 | 76.078 | |
| 3,800.0 | 3,672.0 | 3,636.0 | 3,636.0 | 17.3 | 70.8 | -133.12 | -1,709.9 | -5,376.1 | 6,188.4 | 6,105.0 | 83.37 | 74.228 | |
| 3,900.0 | 3,766.5 | 3,730.5 | 3,730.5 | 18.0 | 72.7 | -133.33 | -1,709.9 | -5,376.1 | 6,211.4 | 6,125.7 | 85.70 | 72.482 | |
| 4,000.0 | 3,861.0 | 3,825.0 | 3,825.0 | 18.6 | 74.6 | -133.54 | -1,709.9 | -5,376.1 | 6,234.5 | 6,146.5 | 88.02 | 70.832 | |
| 4,100.0 | 3,955.5 | 3,919.5 | 3,919.5 | 19.3 | 76.5 | -133.75 | -1,709.9 | -5,376.1 | 6,257.7 | 6,167.3 | 90.34 | 69.268 | |
| 4,200.0 | 4,050.1 | 4,014.1 | 4,014.1 | 19.9 | 78.4 | -133.96 | -1,709.9 | -5,376.1 | 6,281.0 | 6,188.3 | 92.66 | 67.786 | |
| 4,300.0 | 4,144.6 | 4,108.6 | 4,108.6 | 20.5 | 80.3 | -134.17 | -1,709.9 | -5,376.1 | 6,304.3 | 6,209.3 | 94.97 | 66.379 | |
| 4,400.0 | 4,239.1 | 4,203.1 | 4,203.1 | 21.2 | 82.2 | -134.38 | -1,709.9 | -5,376.1 | 6,327.7 | 6,230.5 | 97.29 | 65.041 | |
| 4,500.0 | 4,333.6 | 4,297.6 | 4,297.6 | 21.8 | 84.1 | -134.58 | -1,709.9 | -5,376.1 | 6,351.3 | 6,251.7 | 99.60 | 63.767 | |
| 4,600.0 | 4,428.2 | 4,392.2 | 4,392.2 | 22.5 | 86.0 | -134.78 | -1,709.9 | -5,376.1 | 6,374.9 | 6,273.0 | 101.91 | 62.554 | |
| 4,700.0 | 4,522.7 | 4,486.7 | 4,486.7 | 23.1 | 87.9 | -134.99 | -1,709.9 | -5,376.1 | 6,398.5 | 6,294.3 | 104.22 | 61.396 | |
| 4,800.0 | 4,617.2 | 4,581.2 | 4,581.2 | 23.8 | 89.8 | -135.19 | -1,709.9 | -5,376.1 | 6,422.3 | 6,315.8 | 106.52 | 60.291 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT HECKENDORF 1 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,675.7 | 4,675.7 | 24.4 | 91.7 | -135.39 | -1,709.9 | -5,376.1 | 6,446.1 | 6,337.3 | 108.82 | 59.235 | |
| 5,000.0 | 4,806.2 | 4,770.2 | 4,770.2 | 25.1 | 93.6 | -135.58 | -1,709.9 | -5,376.1 | 6,470.0 | 6,358.9 | 111.12 | 58.224 | |
| 5,100.0 | 4,900.8 | 4,864.8 | 4,864.8 | 25.7 | 95.5 | -135.78 | -1,709.9 | -5,376.1 | 6,494.0 | 6,380.6 | 113.42 | 57.256 | |
| 5,200.0 | 4,995.3 | 4,959.3 | 4,959.3 | 26.4 | 97.4 | -135.97 | -1,709.9 | -5,376.1 | 6,518.1 | 6,402.4 | 115.72 | 56.328 | |
| 5,300.0 | 5,089.8 | 5,053.8 | 5,053.8 | 27.0 | 99.3 | -136.17 | -1,709.9 | -5,376.1 | 6,542.2 | 6,424.2 | 118.01 | 55.438 | |
| 5,400.0 | 5,184.3 | 5,148.3 | 5,148.3 | 27.7 | 101.2 | -136.36 | -1,709.9 | -5,376.1 | 6,566.4 | 6,446.1 | 120.30 | 54.584 | |
| 5,500.0 | 5,278.9 | 5,242.9 | 5,242.9 | 28.3 | 103.1 | -136.55 | -1,709.9 | -5,376.1 | 6,590.7 | 6,468.1 | 122.59 | 53.763 | |
| 5,533.5 | 5,310.5 | 5,274.5 | 5,274.5 | 28.5 | 103.8 | -136.62 | -1,709.9 | -5,376.1 | 6,598.9 | 6,475.5 | 123.35 | 53.495 | |
| 5,600.0 | 5,373.6 | 5,337.6 | 5,337.6 | 28.9 | 105.0 | -136.96 | -1,709.9 | -5,376.1 | 6,614.5 | 6,489.4 | 125.17 | 52.843 | |
| 5,700.0 | 5,469.4 | 5,433.4 | 5,433.4 | 29.3 | 107.0 | -137.42 | -1,709.9 | -5,376.1 | 6,636.1 | 6,508.2 | 127.84 | 51.908 | |
| 5,800.0 | 5,566.1 | 5,530.1 | 5,530.1 | 29.8 | 108.9 | -137.83 | -1,709.9 | -5,376.1 | 6,655.1 | 6,524.6 | 130.48 | 51.005 | |
| 5,900.0 | 5,663.6 | 5,627.6 | 5,627.6 | 30.1 | 110.9 | -138.18 | -1,709.9 | -5,376.1 | 6,671.7 | 6,538.6 | 133.07 | 50.137 | |
| 6,000.0 | 5,761.9 | 5,725.9 | 5,725.9 | 30.5 | 112.8 | -138.47 | -1,709.9 | -5,376.1 | 6,685.7 | 6,550.1 | 135.60 | 49.303 | |
| 6,100.0 | 5,860.7 | 5,824.7 | 5,824.7 | 30.7 | 114.8 | -138.71 | -1,709.9 | -5,376.1 | 6,697.1 | 6,559.0 | 138.07 | 48.506 | |
| 6,200.0 | 5,960.0 | 5,924.0 | 5,924.0 | 31.0 | 116.8 | -138.89 | -1,709.9 | -5,376.1 | 6,705.9 | 6,565.5 | 140.45 | 47.745 | |
| 6,300.0 | 6,059.7 | 6,023.7 | 6,023.7 | 31.2 | 118.8 | -139.02 | -1,709.9 | -5,376.1 | 6,712.2 | 6,569.4 | 142.75 | 47.020 | |
| 6,400.0 | 6,159.6 | 6,123.6 | 6,123.6 | 31.3 | 120.8 | -139.09 | -1,709.9 | -5,376.1 | 6,715.7 | 6,570.8 | 144.95 | 46.332 | |
| 6,486.1 | 6,245.7 | 6,209.7 | 6,209.7 | 31.4 | 122.6 | -117.95 | -1,709.9 | -5,376.1 | 6,716.7 | 6,567.9 | 148.86 | 45.122 | |
| 6,500.0 | 6,259.6 | 6,223.6 | 6,223.6 | 31.4 | 122.9 | -117.95 | -1,709.9 | -5,376.1 | 6,716.7 | 6,567.6 | 149.15 | 45.033 | |
| 6,516.1 | 6,275.7 | 6,239.7 | 6,239.7 | 31.4 | 123.2 | -117.95 | -1,709.9 | -5,376.1 | 6,716.7 | 6,567.2 | 149.49 | 44.930 | |
| 6,550.0 | 6,309.5 | 6,273.5 | 6,273.5 | 31.5 | 123.9 | -27.98 | -1,709.9 | -5,376.1 | 6,716.0 | 6,568.1 | 147.89 | 45.412 | |
| 6,600.0 | 6,359.4 | 6,323.4 | 6,323.4 | 31.5 | 124.9 | -28.14 | -1,709.9 | -5,376.1 | 6,712.4 | 6,564.3 | 148.10 | 45.323 | |
| 6,650.0 | 6,408.8 | 6,372.8 | 6,372.8 | 31.5 | 125.9 | -28.42 | -1,709.9 | -5,376.1 | 6,705.7 | 6,558.0 | 147.71 | 45.399 | |
| 6,700.0 | 6,457.5 | 6,421.5 | 6,421.5 | 31.5 | 126.8 | -28.85 | -1,709.9 | -5,376.1 | 6,696.0 | 6,549.3 | 146.71 | 45.640 | |
| 6,716.1 | 6,473.1 | 6,437.1 | 6,437.1 | 31.5 | 127.2 | -29.02 | -1,709.9 | -5,376.1 | 6,692.2 | 6,546.0 | 146.27 | 45.752 | |
| 6,725.0 | 6,481.6 | 6,445.6 | 6,445.6 | 31.5 | 127.3 | -29.16 | -1,709.9 | -5,376.1 | 6,690.0 | 6,544.2 | 145.77 | 45.894 | |
| 6,750.0 | 6,505.3 | 6,469.3 | 6,469.3 | 31.5 | 127.8 | -29.62 | -1,709.9 | -5,376.1 | 6,683.0 | 6,538.8 | 144.16 | 46.357 | |
| 6,775.0 | 6,528.5 | 6,492.5 | 6,492.5 | 31.4 | 128.3 | -30.18 | -1,709.9 | -5,376.1 | 6,674.9 | 6,532.6 | 142.28 | 46.914 | |
| 6,800.0 | 6,551.3 | 6,515.3 | 6,515.3 | 31.4 | 128.7 | -30.82 | -1,709.9 | -5,376.1 | 6,665.7 | 6,525.6 | 140.16 | 47.559 | |
| 6,825.0 | 6,573.4 | 6,537.4 | 6,537.4 | 31.4 | 129.2 | -31.56 | -1,709.9 | -5,376.1 | 6,655.5 | 6,517.7 | 137.83 | 48.286 | |
| 6,850.0 | 6,595.0 | 6,559.0 | 6,559.0 | 31.3 | 129.6 | -32.42 | -1,709.9 | -5,376.1 | 6,644.3 | 6,509.0 | 135.36 | 49.085 | |
| 6,875.0 | 6,615.8 | 6,579.8 | 6,579.8 | 31.3 | 130.0 | -33.38 | -1,709.9 | -5,376.1 | 6,632.2 | 6,499.4 | 132.81 | 49.938 | |
| 6,900.0 | 6,635.9 | 6,599.9 | 6,599.9 | 31.3 | 130.4 | -34.48 | -1,709.9 | -5,376.1 | 6,619.1 | 6,488.8 | 130.24 | 50.821 | |
| 6,925.0 | 6,655.1 | 6,619.1 | 6,619.1 | 31.2 | 130.8 | -35.72 | -1,709.9 | -5,376.1 | 6,605.1 | 6,477.3 | 127.76 | 51.700 | |
| 6,950.0 | 6,673.6 | 6,637.6 | 6,637.6 | 31.2 | 131.2 | -37.12 | -1,709.9 | -5,376.1 | 6,590.2 | 6,464.7 | 125.46 | 52.528 | |
| 6,975.0 | 6,691.1 | 6,655.1 | 6,655.1 | 31.1 | 131.5 | -38.69 | -1,709.9 | -5,376.1 | 6,574.5 | 6,451.1 | 123.47 | 53.248 | |
| 7,000.0 | 6,707.6 | 6,671.6 | 6,671.6 | 31.1 | 131.9 | -40.45 | -1,709.9 | -5,376.1 | 6,558.1 | 6,436.2 | 121.92 | 53.790 | |
| 7,025.0 | 6,723.1 | 6,687.1 | 6,687.1 | 31.0 | 132.2 | -42.42 | -1,709.9 | -5,376.1 | 6,540.9 | 6,420.0 | 120.95 | 54.079 | |
| 7,050.0 | 6,737.6 | 6,701.6 | 6,701.6 | 31.0 | 132.5 | -44.63 | -1,709.9 | -5,376.1 | 6,523.1 | 6,402.4 | 120.70 | 54.044 | |
| 7,075.0 | 6,751.0 | 6,715.0 | 6,715.0 | 30.9 | 132.7 | -47.10 | -1,709.9 | -5,376.1 | 6,504.6 | 6,383.3 | 121.29 | 53.630 | |
| 7,100.0 | 6,763.3 | 6,727.3 | 6,727.3 | 30.8 | 133.0 | -49.85 | -1,709.9 | -5,376.1 | 6,485.6 | 6,362.8 | 122.79 | 52.819 | |
| 7,125.0 | 6,774.5 | 6,738.5 | 6,738.5 | 30.8 | 133.2 | -52.90 | -1,709.9 | -5,376.1 | 6,466.0 | 6,340.8 | 125.22 | 51.635 | |
| 7,150.0 | 6,784.4 | 6,748.4 | 6,748.4 | 30.7 | 133.4 | -56.28 | -1,709.9 | -5,376.1 | 6,446.0 | 6,317.4 | 128.53 | 50.153 | |
| 7,175.0 | 6,793.1 | 6,757.1 | 6,757.1 | 30.7 | 133.6 | -60.00 | -1,709.9 | -5,376.1 | 6,425.5 | 6,293.0 | 132.54 | 48.480 | |
| 7,200.0 | 6,800.6 | 6,764.6 | 6,764.6 | 30.6 | 133.7 | -64.06 | -1,709.9 | -5,376.1 | 6,404.8 | 6,267.8 | 137.02 | 46.745 | |
| 7,225.0 | 6,806.8 | 6,770.8 | 6,770.8 | 30.6 | 133.9 | -68.45 | -1,709.9 | -5,376.1 | 6,383.7 | 6,242.1 | 141.63 | 45.073 | |
| 7,250.0 | 6,811.8 | 6,775.8 | 6,775.8 | 30.5 | 134.0 | -73.14 | -1,709.9 | -5,376.1 | 6,362.4 | 6,216.4 | 146.01 | 43.574 | |
| 7,275.0 | 6,815.5 | 6,779.5 | 6,779.5 | 30.5 | 134.0 | -78.08 | -1,709.9 | -5,376.1 | 6,340.9 | 6,191.1 | 149.79 | 42.332 | |
| 7,300.0 | 6,817.8 | 6,781.8 | 6,781.8 | 30.4 | 134.1 | -83.19 | -1,709.9 | -5,376.1 | 6,319.3 | 6,166.7 | 152.64 | 41.401 | |
| 7,325.0 | 6,818.9 | 6,782.9 | 6,782.9 | 30.4 | 134.1 | -88.38 | -1,709.9 | -5,376.1 | 6,297.7 | 6,143.4 | 154.32 | 40.810 | |
| 7,332.8 | 6,819.0 | 6,783.0 | 6,783.0 | 30.4 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 6,290.9 | 6,136.4 | 154.58 | 40.696 | |
| 7,400.0 | 6,819.0 | 6,783.0 | 6,783.0 | 30.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 6,232.9 | 6,077.6 | 155.26 | 40.146 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT HECKENDORF 1 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,783.0 | 6,783.0 | 30.2 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 6,146.8 | 5,990.2 | 156.52 | 39.273 | |
| 7,600.0 | 6,819.0 | 6,783.0 | 6,783.0 | 30.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 6,061.1 | 5,903.0 | 158.04 | 38.351 | |
| 7,700.0 | 6,819.0 | 6,783.0 | 6,783.0 | 30.6 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 5,975.9 | 5,816.1 | 159.78 | 37.400 | |
| 7,800.0 | 6,819.0 | 6,783.0 | 6,783.0 | 31.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 5,891.1 | 5,729.4 | 161.70 | 36.431 | |
| 7,900.0 | 6,819.0 | 6,783.0 | 6,783.0 | 32.5 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 5,806.8 | 5,643.1 | 163.77 | 35.458 | |
| 8,000.0 | 6,819.0 | 6,783.0 | 6,783.0 | 34.2 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 5,723.1 | 5,557.1 | 165.94 | 34.488 | |
| 8,100.0 | 6,819.0 | 6,783.0 | 6,783.0 | 36.1 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 5,639.8 | 5,471.6 | 168.22 | 33.527 | |
| 8,200.0 | 6,819.0 | 6,783.0 | 6,783.0 | 38.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 5,557.1 | 5,386.6 | 170.56 | 32.582 | |
| 8,300.0 | 6,819.0 | 6,783.0 | 6,783.0 | 40.6 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 5,475.0 | 5,302.1 | 172.97 | 31.653 | |
| 8,400.0 | 6,819.0 | 6,783.0 | 6,783.0 | 42.9 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 5,393.5 | 5,218.1 | 175.43 | 30.745 | |
| 8,500.0 | 6,819.0 | 6,783.0 | 6,783.0 | 45.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 5,312.7 | 5,134.7 | 177.93 | 29.858 | |
| 8,600.0 | 6,819.0 | 6,783.0 | 6,783.0 | 47.8 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 5,232.5 | 5,052.0 | 180.47 | 28.994 | |
| 8,700.0 | 6,819.0 | 6,783.0 | 6,783.0 | 50.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 5,152.9 | 4,969.9 | 183.03 | 28.153 | |
| 8,800.0 | 6,819.0 | 6,783.0 | 6,783.0 | 52.8 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 5,074.1 | 4,888.5 | 185.62 | 27.335 | |
| 8,900.0 | 6,819.0 | 6,783.0 | 6,783.0 | 55.4 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,996.1 | 4,807.9 | 188.24 | 26.541 | |
| 9,000.0 | 6,819.0 | 6,783.0 | 6,783.0 | 58.0 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,918.9 | 4,728.0 | 190.87 | 25.770 | |
| 9,100.0 | 6,819.0 | 6,783.0 | 6,783.0 | 60.6 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,842.5 | 4,648.9 | 193.52 | 25.023 | |
| 9,200.0 | 6,819.0 | 6,783.0 | 6,783.0 | 63.2 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,766.9 | 4,570.7 | 196.19 | 24.298 | |
| 9,300.0 | 6,819.0 | 6,783.0 | 6,783.0 | 65.9 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,692.3 | 4,493.4 | 198.86 | 23.596 | |
| 9,400.0 | 6,819.0 | 6,783.0 | 6,783.0 | 68.5 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,618.7 | 4,417.1 | 201.55 | 22.916 | |
| 9,500.0 | 6,819.0 | 6,783.0 | 6,783.0 | 71.2 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,546.0 | 4,341.8 | 204.25 | 22.258 | |
| 9,600.0 | 6,819.0 | 6,783.0 | 6,783.0 | 73.9 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,474.4 | 4,267.5 | 206.95 | 21.621 | |
| 9,700.0 | 6,819.0 | 6,783.0 | 6,783.0 | 76.5 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,403.9 | 4,194.3 | 209.66 | 21.005 | |
| 9,800.0 | 6,819.0 | 6,783.0 | 6,783.0 | 79.2 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,334.6 | 4,122.2 | 212.38 | 20.409 | |
| 9,900.0 | 6,819.0 | 6,783.0 | 6,783.0 | 81.9 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,266.5 | 4,051.4 | 215.11 | 19.834 | |
| 10,000.0 | 6,819.0 | 6,783.0 | 6,783.0 | 84.6 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,199.6 | 3,981.8 | 217.84 | 19.278 | |
| 10,100.0 | 6,819.0 | 6,783.0 | 6,783.0 | 87.4 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,134.1 | 3,913.6 | 220.58 | 18.742 | |
| 10,200.0 | 6,819.0 | 6,783.0 | 6,783.0 | 90.1 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,070.1 | 3,846.7 | 223.32 | 18.225 | |
| 10,300.0 | 6,819.0 | 6,783.0 | 6,783.0 | 92.8 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 4,007.4 | 3,781.4 | 226.07 | 17.727 | |
| 10,400.0 | 6,819.0 | 6,783.0 | 6,783.0 | 95.5 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,946.4 | 3,717.5 | 228.82 | 17.247 | |
| 10,500.0 | 6,819.0 | 6,783.0 | 6,783.0 | 98.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,886.9 | 3,655.3 | 231.57 | 16.785 | |
| 10,600.0 | 6,819.0 | 6,783.0 | 6,783.0 | 101.0 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,829.1 | 3,594.8 | 234.33 | 16.341 | |
| 10,700.0 | 6,819.0 | 6,783.0 | 6,783.0 | 103.8 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,773.1 | 3,536.0 | 237.09 | 15.914 | |
| 10,800.0 | 6,819.0 | 6,783.0 | 6,783.0 | 106.5 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,718.9 | 3,479.1 | 239.85 | 15.505 | |
| 10,900.0 | 6,819.0 | 6,783.0 | 6,783.0 | 109.2 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,666.7 | 3,424.1 | 242.61 | 15.113 | |
| 11,000.0 | 6,819.0 | 6,783.0 | 6,783.0 | 112.0 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,616.5 | 3,371.1 | 245.38 | 14.738 | |
| 11,100.0 | 6,819.0 | 6,783.0 | 6,783.0 | 114.8 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,568.3 | 3,320.2 | 248.15 | 14.380 | |
| 11,200.0 | 6,819.0 | 6,783.0 | 6,783.0 | 117.5 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,522.4 | 3,271.4 | 250.92 | 14.038 | |
| 11,300.0 | 6,819.0 | 6,783.0 | 6,783.0 | 120.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,478.7 | 3,225.0 | 253.70 | 13.712 | |
| 11,400.0 | 6,819.0 | 6,783.0 | 6,783.0 | 123.0 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,437.4 | 3,180.9 | 256.47 | 13.403 | |
| 11,500.0 | 6,819.0 | 6,783.0 | 6,783.0 | 125.8 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,398.5 | 3,139.2 | 259.25 | 13.109 | |
| 11,600.0 | 6,819.0 | 6,783.0 | 6,783.0 | 128.6 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,362.1 | 3,100.1 | 262.03 | 12.831 | |
| 11,700.0 | 6,819.0 | 6,783.0 | 6,783.0 | 131.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,328.4 | 3,063.6 | 264.81 | 12.569 | |
| 11,800.0 | 6,819.0 | 6,783.0 | 6,783.0 | 134.1 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,297.3 | 3,029.7 | 267.59 | 12.322 | |
| 11,900.0 | 6,819.0 | 6,783.0 | 6,783.0 | 136.9 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,269.0 | 2,998.6 | 270.37 | 12.091 | |
| 12,000.0 | 6,819.0 | 6,783.0 | 6,783.0 | 139.6 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,243.5 | 2,970.4 | 273.15 | 11.874 | |
| 12,100.0 | 6,819.0 | 6,783.0 | 6,783.0 | 142.4 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,221.0 | 2,945.0 | 275.94 | 11.673 | |
| 12,200.0 | 6,819.0 | 6,783.0 | 6,783.0 | 145.2 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,201.4 | 2,922.7 | 278.72 | 11.486 | |
| 12,300.0 | 6,819.0 | 6,783.0 | 6,783.0 | 148.0 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,184.8 | 2,903.3 | 281.51 | 11.313 | |
| 12,400.0 | 6,819.0 | 6,783.0 | 6,783.0 | 150.8 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,171.3 | 2,887.0 | 284.30 | 11.155 | |
| 12,500.0 | 6,819.0 | 6,783.0 | 6,783.0 | 153.5 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,160.9 | 2,873.8 | 287.08 | 11.010 | |
| 12,600.0 | 6,819.0 | 6,783.0 | 6,783.0 | 156.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,153.7 | 2,863.8 | 289.87 | 10.879 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT HECKENDORF 1 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 6,819.0 | 6,783.0 | 6,783.0 | 159.1 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,149.6 | 2,856.9 | 292.66 | 10.762 | |
| 12,779.1 | 6,819.0 | 6,783.0 | 6,783.0 | 161.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,148.6 | 2,853.7 | 294.87 | 10.678 | CC |
| 12,800.0 | 6,819.0 | 6,783.0 | 6,783.0 | 161.9 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,148.6 | 2,853.2 | 295.45 | 10.657 | |
| 12,900.0 | 6,819.0 | 6,783.0 | 6,783.0 | 164.7 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,150.9 | 2,852.6 | 298.24 | 10.565 | ES |
| 13,000.0 | 6,819.0 | 6,783.0 | 6,783.0 | 167.4 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,156.3 | 2,855.3 | 301.04 | 10.485 | |
| 13,100.0 | 6,819.0 | 6,783.0 | 6,783.0 | 170.2 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,164.9 | 2,861.0 | 303.83 | 10.417 | |
| 13,200.0 | 6,819.0 | 6,783.0 | 6,783.0 | 173.0 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,176.6 | 2,869.9 | 306.62 | 10.360 | |
| 13,300.0 | 6,819.0 | 6,783.0 | 6,783.0 | 175.8 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,191.4 | 2,881.9 | 309.42 | 10.314 | |
| 13,400.0 | 6,819.0 | 6,783.0 | 6,783.0 | 178.6 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,209.2 | 2,897.0 | 312.21 | 10.279 | |
| 13,500.0 | 6,819.0 | 6,783.0 | 6,783.0 | 181.4 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,230.0 | 2,915.0 | 315.01 | 10.254 | |
| 13,600.0 | 6,819.0 | 6,783.0 | 6,783.0 | 184.2 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,253.8 | 2,936.0 | 317.80 | 10.239 | |
| 13,700.0 | 6,819.0 | 6,783.0 | 6,783.0 | 187.0 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,280.5 | 2,959.9 | 320.60 | 10.232 | SF |
| 13,800.0 | 6,819.0 | 6,783.0 | 6,783.0 | 189.7 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,309.9 | 2,986.5 | 323.39 | 10.235 | |
| 13,900.0 | 6,819.0 | 6,783.0 | 6,783.0 | 192.5 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,342.1 | 3,015.9 | 326.19 | 10.246 | |
| 14,000.0 | 6,819.0 | 6,783.0 | 6,783.0 | 195.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,377.0 | 3,048.0 | 328.99 | 10.265 | |
| 14,100.0 | 6,819.0 | 6,783.0 | 6,783.0 | 198.1 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,414.4 | 3,082.6 | 331.78 | 10.291 | |
| 14,200.0 | 6,819.0 | 6,783.0 | 6,783.0 | 200.9 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,454.3 | 3,119.7 | 334.58 | 10.324 | |
| 14,300.0 | 6,819.0 | 6,783.0 | 6,783.0 | 203.7 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,496.6 | 3,159.3 | 337.38 | 10.364 | |
| 14,400.0 | 6,819.0 | 6,783.0 | 6,783.0 | 206.5 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,541.3 | 3,201.1 | 340.18 | 10.410 | |
| 14,500.0 | 6,819.0 | 6,783.0 | 6,783.0 | 209.3 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,588.2 | 3,245.2 | 342.98 | 10.462 | |
| 14,600.0 | 6,819.0 | 6,783.0 | 6,783.0 | 212.1 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,637.2 | 3,291.4 | 345.78 | 10.519 | |
| 14,700.0 | 6,819.0 | 6,783.0 | 6,783.0 | 214.9 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,688.3 | 3,339.7 | 348.58 | 10.581 | |
| 14,720.3 | 6,819.0 | 6,783.0 | 6,783.0 | 215.4 | 134.1 | -90.00 | -1,709.9 | -5,376.1 | 3,698.9 | 3,349.7 | 349.15 | 10.594 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT HEINRICH 41-9 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 179.74 | -1,844.5 | 8.4 | 1,844.6 | | | | |
| 100.0 | 100.0 | 89.0 | 89.0 | 0.1 | 0.0 | 179.74 | -1,844.5 | 8.4 | 1,844.5 | 1,844.4 | 0.09 | N/A | |
| 200.0 | 200.0 | 189.0 | 189.0 | 0.3 | 0.9 | 179.74 | -1,844.5 | 8.4 | 1,844.5 | 1,843.4 | 1.16 | 1,584.059 | |
| 300.0 | 300.0 | 289.0 | 289.0 | 0.5 | 3.0 | 179.74 | -1,844.5 | 8.4 | 1,844.5 | 1,841.0 | 3.58 | 514.856 | |
| 400.0 | 400.0 | 389.0 | 389.0 | 0.8 | 5.2 | 179.74 | -1,844.5 | 8.4 | 1,844.5 | 1,838.6 | 5.92 | 311.685 | |
| 500.0 | 500.0 | 489.0 | 489.0 | 1.0 | 7.2 | 179.74 | -1,844.5 | 8.4 | 1,844.5 | 1,836.3 | 8.19 | 225.226 | |
| 600.0 | 600.0 | 589.0 | 589.0 | 1.2 | 9.2 | 179.74 | -1,844.5 | 8.4 | 1,844.5 | 1,834.1 | 10.45 | 176.594 | |
| 700.0 | 700.0 | 689.0 | 689.0 | 1.4 | 11.3 | 179.74 | -1,844.5 | 8.4 | 1,844.5 | 1,831.8 | 12.69 | 145.316 | |
| 800.0 | 800.0 | 789.0 | 789.0 | 1.7 | 13.3 | 179.74 | -1,844.5 | 8.4 | 1,844.5 | 1,829.6 | 14.94 | 123.483 | CC |
| 900.0 | 900.0 | 889.0 | 889.0 | 1.9 | 15.3 | 158.59 | -1,844.5 | 8.4 | 1,846.2 | 1,829.0 | 17.17 | 107.520 | ES |
| 1,000.0 | 999.8 | 988.8 | 988.8 | 2.1 | 17.3 | 158.61 | -1,844.5 | 8.4 | 1,851.0 | 1,831.7 | 19.38 | 95.523 | |
| 1,100.0 | 1,099.5 | 1,088.5 | 1,088.5 | 2.3 | 19.3 | 158.65 | -1,844.5 | 8.4 | 1,859.2 | 1,837.6 | 21.55 | 86.258 | |
| 1,200.0 | 1,198.7 | 1,187.7 | 1,187.7 | 2.6 | 21.3 | 158.70 | -1,844.5 | 8.4 | 1,870.5 | 1,846.8 | 23.69 | 78.957 | |
| 1,300.0 | 1,297.5 | 1,286.5 | 1,286.5 | 2.9 | 23.3 | 158.77 | -1,844.5 | 8.4 | 1,885.1 | 1,859.3 | 25.78 | 73.115 | |
| 1,400.0 | 1,395.6 | 1,384.6 | 1,384.6 | 3.2 | 25.3 | 158.85 | -1,844.5 | 8.4 | 1,903.0 | 1,875.1 | 27.83 | 68.389 | |
| 1,500.0 | 1,493.1 | 1,482.1 | 1,482.1 | 3.5 | 27.2 | 158.93 | -1,844.5 | 8.4 | 1,924.0 | 1,894.2 | 29.81 | 64.536 | |
| 1,507.2 | 1,500.0 | 1,489.0 | 1,489.0 | 3.6 | 27.4 | 158.94 | -1,844.5 | 8.4 | 1,925.6 | 1,895.7 | 29.95 | 64.290 | |
| 1,572.2 | 1,563.0 | 1,552.0 | 1,552.0 | 3.8 | 28.6 | 159.11 | -1,844.5 | 8.4 | 1,940.5 | 1,909.2 | 31.35 | 61.895 | |
| 1,600.0 | 1,590.0 | 1,579.0 | 1,579.0 | 3.9 | 29.2 | 159.13 | -1,844.5 | 8.4 | 1,947.0 | 1,915.1 | 31.89 | 61.060 | |
| 1,700.0 | 1,686.3 | 1,675.3 | 1,675.3 | 4.4 | 31.1 | 159.22 | -1,844.5 | 8.4 | 1,972.4 | 1,938.7 | 33.78 | 58.385 | |
| 1,800.0 | 1,781.5 | 1,770.5 | 1,770.5 | 4.9 | 33.0 | 159.32 | -1,844.5 | 8.4 | 2,001.0 | 1,965.4 | 35.61 | 56.195 | |
| 1,817.6 | 1,798.2 | 1,787.2 | 1,787.2 | 5.0 | 33.4 | 159.34 | -1,844.5 | 8.4 | 2,006.4 | 1,970.5 | 35.92 | 55.854 | |
| 1,900.0 | 1,876.1 | 1,865.1 | 1,865.1 | 5.5 | 34.9 | 159.60 | -1,844.5 | 8.4 | 2,031.8 | 1,994.1 | 37.67 | 53.934 | |
| 2,000.0 | 1,970.6 | 1,959.6 | 1,959.6 | 6.0 | 36.8 | 159.92 | -1,844.5 | 8.4 | 2,062.6 | 2,022.8 | 39.80 | 51.825 | |
| 2,100.0 | 2,065.1 | 2,054.1 | 2,054.1 | 6.6 | 38.7 | 160.22 | -1,844.5 | 8.4 | 2,093.5 | 2,051.5 | 41.93 | 49.926 | |
| 2,200.0 | 2,159.6 | 2,148.6 | 2,148.6 | 7.2 | 40.7 | 160.52 | -1,844.5 | 8.4 | 2,124.4 | 2,080.3 | 44.07 | 48.210 | |
| 2,300.0 | 2,254.1 | 2,243.1 | 2,243.1 | 7.8 | 42.6 | 160.81 | -1,844.5 | 8.4 | 2,155.4 | 2,109.2 | 46.20 | 46.651 | |
| 2,400.0 | 2,348.7 | 2,337.7 | 2,337.7 | 8.4 | 44.5 | 161.09 | -1,844.5 | 8.4 | 2,186.4 | 2,138.1 | 48.34 | 45.230 | |
| 2,500.0 | 2,443.2 | 2,432.2 | 2,432.2 | 9.1 | 46.4 | 161.36 | -1,844.5 | 8.4 | 2,217.5 | 2,167.0 | 50.48 | 43.930 | |
| 2,600.0 | 2,537.7 | 2,526.7 | 2,526.7 | 9.7 | 48.3 | 161.62 | -1,844.5 | 8.4 | 2,248.6 | 2,196.0 | 52.62 | 42.736 | |
| 2,700.0 | 2,632.2 | 2,621.2 | 2,621.2 | 10.3 | 50.2 | 161.88 | -1,844.5 | 8.4 | 2,279.8 | 2,225.0 | 54.76 | 41.635 | |
| 2,800.0 | 2,726.8 | 2,715.8 | 2,715.8 | 10.9 | 52.1 | 162.13 | -1,844.5 | 8.4 | 2,311.0 | 2,254.1 | 56.89 | 40.619 | |
| 2,900.0 | 2,821.3 | 2,810.3 | 2,810.3 | 11.6 | 54.0 | 162.38 | -1,844.5 | 8.4 | 2,342.2 | 2,283.2 | 59.03 | 39.677 | |
| 3,000.0 | 2,915.8 | 2,904.8 | 2,904.8 | 12.2 | 55.9 | 162.61 | -1,844.5 | 8.4 | 2,373.5 | 2,312.3 | 61.17 | 38.801 | |
| 3,100.0 | 3,010.3 | 2,999.3 | 2,999.3 | 12.8 | 57.8 | 162.84 | -1,844.5 | 8.4 | 2,404.8 | 2,341.5 | 63.31 | 37.986 | |
| 3,200.0 | 3,104.8 | 3,093.8 | 3,093.8 | 13.5 | 59.7 | 163.07 | -1,844.5 | 8.4 | 2,436.2 | 2,370.7 | 65.44 | 37.225 | |
| 3,300.0 | 3,199.4 | 3,188.4 | 3,188.4 | 14.1 | 61.6 | 163.29 | -1,844.5 | 8.4 | 2,467.6 | 2,400.0 | 67.58 | 36.513 | |
| 3,400.0 | 3,293.9 | 3,282.9 | 3,282.9 | 14.8 | 63.5 | 163.50 | -1,844.5 | 8.4 | 2,499.0 | 2,429.3 | 69.72 | 35.845 | |
| 3,500.0 | 3,388.4 | 3,377.4 | 3,377.4 | 15.4 | 65.4 | 163.71 | -1,844.5 | 8.4 | 2,530.4 | 2,458.6 | 71.85 | 35.218 | |
| 3,600.0 | 3,482.9 | 3,471.9 | 3,471.9 | 16.0 | 67.3 | 163.92 | -1,844.5 | 8.4 | 2,561.9 | 2,487.9 | 73.99 | 34.627 | |
| 3,700.0 | 3,577.5 | 3,566.5 | 3,566.5 | 16.7 | 69.2 | 164.12 | -1,844.5 | 8.4 | 2,593.4 | 2,517.3 | 76.12 | 34.071 | |
| 3,800.0 | 3,672.0 | 3,661.0 | 3,661.0 | 17.3 | 71.1 | 164.31 | -1,844.5 | 8.4 | 2,625.0 | 2,546.7 | 78.25 | 33.545 | |
| 3,900.0 | 3,766.5 | 3,755.5 | 3,755.5 | 18.0 | 73.0 | 164.50 | -1,844.5 | 8.4 | 2,656.5 | 2,576.1 | 80.38 | 33.048 | |
| 4,000.0 | 3,861.0 | 3,850.0 | 3,850.0 | 18.6 | 74.9 | 164.68 | -1,844.5 | 8.4 | 2,688.1 | 2,605.6 | 82.52 | 32.577 | |
| 4,100.0 | 3,955.5 | 3,944.5 | 3,944.5 | 19.3 | 76.8 | 164.87 | -1,844.5 | 8.4 | 2,719.7 | 2,635.1 | 84.65 | 32.131 | |
| 4,200.0 | 4,050.1 | 4,039.1 | 4,039.1 | 19.9 | 78.7 | 165.04 | -1,844.5 | 8.4 | 2,751.4 | 2,664.6 | 86.78 | 31.706 | |
| 4,300.0 | 4,144.6 | 4,133.6 | 4,133.6 | 20.5 | 80.6 | 165.22 | -1,844.5 | 8.4 | 2,783.0 | 2,694.1 | 88.91 | 31.303 | |
| 4,400.0 | 4,239.1 | 4,228.1 | 4,228.1 | 21.2 | 82.5 | 165.38 | -1,844.5 | 8.4 | 2,814.7 | 2,723.7 | 91.03 | 30.919 | |
| 4,500.0 | 4,333.6 | 4,322.6 | 4,322.6 | 21.8 | 84.4 | 165.55 | -1,844.5 | 8.4 | 2,846.4 | 2,753.2 | 93.16 | 30.553 | |
| 4,600.0 | 4,428.2 | 4,417.2 | 4,417.2 | 22.5 | 86.3 | 165.71 | -1,844.5 | 8.4 | 2,878.1 | 2,782.8 | 95.29 | 30.203 | |
| 4,700.0 | 4,522.7 | 4,511.7 | 4,511.7 | 23.1 | 88.2 | 165.87 | -1,844.5 | 8.4 | 2,909.9 | 2,812.5 | 97.42 | 29.870 | |
| 4,800.0 | 4,617.2 | 4,606.2 | 4,606.2 | 23.8 | 90.1 | 166.02 | -1,844.5 | 8.4 | 2,941.6 | 2,842.1 | 99.55 | 29.551 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT HEINRICH 41-9 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,700.7 | 4,700.7 | 24.4 | 92.0 | 166.18 | -1,844.5 | 8.4 | 2,973.4 | 2,871.8 | 101.67 | 29.245 | |
| 5,000.0 | 4,806.2 | 4,795.2 | 4,795.2 | 25.1 | 93.9 | 166.32 | -1,844.5 | 8.4 | 3,005.2 | 2,901.4 | 103.80 | 28.953 | |
| 5,100.0 | 4,900.8 | 4,889.8 | 4,889.8 | 25.7 | 95.8 | 166.47 | -1,844.5 | 8.4 | 3,037.1 | 2,931.1 | 105.92 | 28.672 | |
| 5,200.0 | 4,995.3 | 4,984.3 | 4,984.3 | 26.4 | 97.7 | 166.61 | -1,844.5 | 8.4 | 3,068.9 | 2,960.8 | 108.05 | 28.403 | |
| 5,300.0 | 5,089.8 | 5,078.8 | 5,078.8 | 27.0 | 99.6 | 166.75 | -1,844.5 | 8.4 | 3,100.7 | 2,990.6 | 110.17 | 28.144 | |
| 5,400.0 | 5,184.3 | 5,173.3 | 5,173.3 | 27.7 | 101.5 | 166.89 | -1,844.5 | 8.4 | 3,132.6 | 3,020.3 | 112.30 | 27.895 | |
| 5,500.0 | 5,278.9 | 5,267.9 | 5,267.9 | 28.3 | 103.4 | 167.02 | -1,844.5 | 8.4 | 3,164.5 | 3,050.1 | 114.42 | 27.656 | |
| 5,533.5 | 5,310.5 | 5,299.5 | 5,299.5 | 28.5 | 104.0 | 167.06 | -1,844.5 | 8.4 | 3,175.2 | 3,060.1 | 115.14 | 27.578 | |
| 5,600.0 | 5,373.6 | 5,362.6 | 5,362.6 | 28.9 | 105.3 | 167.24 | -1,844.5 | 8.4 | 3,195.7 | 3,078.4 | 117.25 | 27.254 | |
| 5,700.0 | 5,469.4 | 5,458.4 | 5,458.4 | 29.3 | 107.2 | 167.48 | -1,844.5 | 8.4 | 3,223.8 | 3,103.5 | 120.35 | 26.787 | |
| 5,800.0 | 5,566.1 | 5,555.1 | 5,555.1 | 29.8 | 109.2 | 167.69 | -1,844.5 | 8.4 | 3,248.7 | 3,125.3 | 123.36 | 26.335 | |
| 5,900.0 | 5,663.6 | 5,652.6 | 5,652.6 | 30.1 | 111.1 | 167.87 | -1,844.5 | 8.4 | 3,270.2 | 3,144.0 | 126.26 | 25.900 | |
| 6,000.0 | 5,761.9 | 5,750.9 | 5,750.9 | 30.5 | 113.1 | 168.01 | -1,844.5 | 8.4 | 3,288.4 | 3,159.4 | 129.06 | 25.480 | |
| 6,100.0 | 5,860.7 | 5,849.7 | 5,849.7 | 30.7 | 115.1 | 168.13 | -1,844.5 | 8.4 | 3,303.3 | 3,171.6 | 131.73 | 25.076 | |
| 6,200.0 | 5,960.0 | 5,949.0 | 5,949.0 | 31.0 | 117.1 | 168.22 | -1,844.5 | 8.4 | 3,314.7 | 3,180.5 | 134.26 | 24.688 | |
| 6,300.0 | 6,059.7 | 6,048.7 | 6,048.7 | 31.2 | 119.1 | 168.28 | -1,844.5 | 8.4 | 3,322.8 | 3,186.1 | 136.66 | 24.315 | |
| 6,400.0 | 6,159.6 | 6,148.6 | 6,148.6 | 31.3 | 121.1 | 168.31 | -1,844.5 | 8.4 | 3,327.5 | 3,188.6 | 138.89 | 23.957 | |
| 6,486.1 | 6,245.7 | 6,234.7 | 6,234.7 | 31.4 | 122.8 | -170.51 | -1,844.5 | 8.4 | 3,328.7 | 3,175.0 | 153.76 | 21.649 | |
| 6,500.0 | 6,259.6 | 6,248.6 | 6,248.6 | 31.4 | 123.1 | -170.51 | -1,844.5 | 8.4 | 3,328.7 | 3,174.7 | 154.05 | 21.608 | |
| 6,516.1 | 6,275.7 | 6,264.7 | 6,264.7 | 31.4 | 123.4 | -170.51 | -1,844.5 | 8.4 | 3,328.7 | 3,174.3 | 154.39 | 21.561 | |
| 6,550.0 | 6,309.5 | 6,298.5 | 6,298.5 | 31.5 | 124.1 | -80.54 | -1,844.5 | 8.4 | 3,328.6 | 3,186.6 | 142.04 | 23.435 | |
| 6,600.0 | 6,359.4 | 6,348.4 | 6,348.4 | 31.5 | 125.1 | -80.66 | -1,844.5 | 8.4 | 3,327.9 | 3,184.9 | 143.05 | 23.264 | |
| 6,650.0 | 6,408.8 | 6,397.8 | 6,397.8 | 31.5 | 126.1 | -80.89 | -1,844.5 | 8.4 | 3,326.7 | 3,182.6 | 144.04 | 23.095 | |
| 6,700.0 | 6,457.5 | 6,446.5 | 6,446.5 | 31.5 | 127.1 | -81.21 | -1,844.5 | 8.4 | 3,324.9 | 3,179.9 | 145.02 | 22.928 | |
| 6,716.1 | 6,473.1 | 6,462.1 | 6,462.1 | 31.5 | 127.4 | -81.33 | -1,844.5 | 8.4 | 3,324.3 | 3,178.9 | 145.33 | 22.874 | |
| 6,725.0 | 6,481.6 | 6,470.6 | 6,470.6 | 31.5 | 127.6 | -81.42 | -1,844.5 | 8.4 | 3,323.9 | 3,178.4 | 145.50 | 22.845 | |
| 6,750.0 | 6,505.3 | 6,494.3 | 6,494.3 | 31.5 | 128.1 | -81.69 | -1,844.5 | 8.4 | 3,322.6 | 3,176.7 | 145.96 | 22.763 | |
| 6,775.0 | 6,528.5 | 6,517.5 | 6,517.5 | 31.4 | 128.5 | -82.01 | -1,844.5 | 8.4 | 3,321.2 | 3,174.8 | 146.43 | 22.682 | |
| 6,800.0 | 6,551.3 | 6,540.3 | 6,540.3 | 31.4 | 129.0 | -82.35 | -1,844.5 | 8.4 | 3,319.7 | 3,172.8 | 146.89 | 22.600 | |
| 6,825.0 | 6,573.4 | 6,562.4 | 6,562.4 | 31.4 | 129.4 | -82.73 | -1,844.5 | 8.4 | 3,318.0 | 3,170.6 | 147.35 | 22.517 | |
| 6,850.0 | 6,595.0 | 6,584.0 | 6,584.0 | 31.3 | 129.9 | -83.13 | -1,844.5 | 8.4 | 3,316.2 | 3,168.4 | 147.82 | 22.434 | |
| 6,875.0 | 6,615.8 | 6,604.8 | 6,604.8 | 31.3 | 130.3 | -83.56 | -1,844.5 | 8.4 | 3,314.3 | 3,166.0 | 148.28 | 22.352 | |
| 6,900.0 | 6,635.9 | 6,624.9 | 6,624.9 | 31.3 | 130.7 | -84.01 | -1,844.5 | 8.4 | 3,312.3 | 3,163.5 | 148.74 | 22.269 | |
| 6,925.0 | 6,655.1 | 6,644.1 | 6,644.1 | 31.2 | 131.1 | -84.47 | -1,844.5 | 8.4 | 3,310.2 | 3,161.0 | 149.19 | 22.188 | |
| 6,950.0 | 6,673.6 | 6,662.6 | 6,662.6 | 31.2 | 131.4 | -84.94 | -1,844.5 | 8.4 | 3,308.1 | 3,158.4 | 149.64 | 22.107 | |
| 6,975.0 | 6,691.1 | 6,680.1 | 6,680.1 | 31.1 | 131.8 | -85.41 | -1,844.5 | 8.4 | 3,306.0 | 3,155.9 | 150.09 | 22.027 | |
| 7,000.0 | 6,707.6 | 6,696.6 | 6,696.6 | 31.1 | 132.1 | -85.88 | -1,844.5 | 8.4 | 3,303.8 | 3,153.3 | 150.52 | 21.950 | |
| 7,025.0 | 6,723.1 | 6,712.1 | 6,712.1 | 31.0 | 132.4 | -86.35 | -1,844.5 | 8.4 | 3,301.7 | 3,150.7 | 150.94 | 21.874 | |
| 7,050.0 | 6,737.6 | 6,726.6 | 6,726.6 | 31.0 | 132.7 | -86.80 | -1,844.5 | 8.4 | 3,299.6 | 3,148.3 | 151.35 | 21.801 | |
| 7,075.0 | 6,751.0 | 6,740.0 | 6,740.0 | 30.9 | 133.0 | -87.25 | -1,844.5 | 8.4 | 3,297.6 | 3,145.8 | 151.74 | 21.732 | |
| 7,100.0 | 6,763.3 | 6,752.3 | 6,752.3 | 30.8 | 133.2 | -87.67 | -1,844.5 | 8.4 | 3,295.6 | 3,143.5 | 152.11 | 21.665 | |
| 7,125.0 | 6,774.5 | 6,763.5 | 6,763.5 | 30.8 | 133.5 | -88.06 | -1,844.5 | 8.4 | 3,293.7 | 3,141.3 | 152.47 | 21.602 | |
| 7,150.0 | 6,784.4 | 6,773.4 | 6,773.4 | 30.7 | 133.7 | -88.43 | -1,844.5 | 8.4 | 3,292.0 | 3,139.2 | 152.81 | 21.543 | |
| 7,175.0 | 6,793.1 | 6,782.1 | 6,782.1 | 30.7 | 133.8 | -88.77 | -1,844.5 | 8.4 | 3,290.4 | 3,137.2 | 153.14 | 21.487 | |
| 7,200.0 | 6,800.6 | 6,789.6 | 6,789.6 | 30.6 | 134.0 | -89.08 | -1,844.5 | 8.4 | 3,288.9 | 3,135.4 | 153.44 | 21.434 | |
| 7,225.0 | 6,806.8 | 6,795.8 | 6,795.8 | 30.6 | 134.1 | -89.34 | -1,844.5 | 8.4 | 3,287.5 | 3,133.8 | 153.73 | 21.385 | |
| 7,250.0 | 6,811.8 | 6,800.8 | 6,800.8 | 30.5 | 134.2 | -89.57 | -1,844.5 | 8.4 | 3,286.4 | 3,132.4 | 154.01 | 21.339 | |
| 7,275.0 | 6,815.5 | 6,804.5 | 6,804.5 | 30.5 | 134.3 | -89.75 | -1,844.5 | 8.4 | 3,285.4 | 3,131.1 | 154.28 | 21.296 | |
| 7,300.0 | 6,817.8 | 6,806.8 | 6,806.8 | 30.4 | 134.3 | -89.89 | -1,844.5 | 8.4 | 3,284.6 | 3,130.1 | 154.53 | 21.256 | |
| 7,325.0 | 6,818.9 | 6,807.9 | 6,807.9 | 30.4 | 134.4 | -89.98 | -1,844.5 | 8.4 | 3,284.0 | 3,129.2 | 154.76 | 21.219 | |
| 7,332.8 | 6,819.0 | 6,808.0 | 6,808.0 | 30.4 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,283.8 | 3,129.0 | 154.83 | 21.208 | |
| 7,394.6 | 6,819.0 | 6,808.0 | 6,808.0 | 30.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,283.2 | 3,127.8 | 155.45 | 21.120 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT HEINRICH 41-9 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,808.0 | 6,808.0 | 30.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,283.2 | 3,127.7 | 155.51 | 21.113 | |
| 7,500.0 | 6,819.0 | 6,808.0 | 6,808.0 | 30.2 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,284.9 | 3,128.1 | 156.77 | 20.954 | |
| 7,600.0 | 6,819.0 | 6,808.0 | 6,808.0 | 30.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,289.6 | 3,131.3 | 158.29 | 20.782 | |
| 7,700.0 | 6,819.0 | 6,808.0 | 6,808.0 | 30.6 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,297.4 | 3,137.3 | 160.04 | 20.604 | |
| 7,800.0 | 6,819.0 | 6,808.0 | 6,808.0 | 31.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,308.1 | 3,146.2 | 161.96 | 20.426 | |
| 7,900.0 | 6,819.0 | 6,808.0 | 6,808.0 | 32.5 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,321.9 | 3,157.9 | 164.02 | 20.253 | |
| 8,000.0 | 6,819.0 | 6,808.0 | 6,808.0 | 34.2 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,338.6 | 3,172.4 | 166.20 | 20.088 | |
| 8,100.0 | 6,819.0 | 6,808.0 | 6,808.0 | 36.1 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,358.1 | 3,189.7 | 168.47 | 19.933 | |
| 8,200.0 | 6,819.0 | 6,808.0 | 6,808.0 | 38.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,380.5 | 3,209.7 | 170.81 | 19.791 | |
| 8,300.0 | 6,819.0 | 6,808.0 | 6,808.0 | 40.6 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,405.8 | 3,232.5 | 173.22 | 19.661 | |
| 8,400.0 | 6,819.0 | 6,808.0 | 6,808.0 | 42.9 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,433.7 | 3,258.0 | 175.68 | 19.545 | |
| 8,500.0 | 6,819.0 | 6,808.0 | 6,808.0 | 45.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,464.3 | 3,286.1 | 178.18 | 19.443 | |
| 8,600.0 | 6,819.0 | 6,808.0 | 6,808.0 | 47.8 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,497.5 | 3,316.8 | 180.72 | 19.353 | |
| 8,700.0 | 6,819.0 | 6,808.0 | 6,808.0 | 50.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,533.2 | 3,349.9 | 183.28 | 19.277 | |
| 8,800.0 | 6,819.0 | 6,808.0 | 6,808.0 | 52.8 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,571.3 | 3,385.5 | 185.88 | 19.214 | |
| 8,900.0 | 6,819.0 | 6,808.0 | 6,808.0 | 55.4 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,611.9 | 3,423.4 | 188.49 | 19.162 | |
| 9,000.0 | 6,819.0 | 6,808.0 | 6,808.0 | 58.0 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,654.7 | 3,463.6 | 191.12 | 19.122 | |
| 9,100.0 | 6,819.0 | 6,808.0 | 6,808.0 | 60.6 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,699.7 | 3,505.9 | 193.77 | 19.093 | |
| 9,200.0 | 6,819.0 | 6,808.0 | 6,808.0 | 63.2 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,746.8 | 3,550.4 | 196.44 | 19.074 | |
| 9,300.0 | 6,819.0 | 6,808.0 | 6,808.0 | 65.9 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,796.0 | 3,596.9 | 199.11 | 19.065 | |
| 9,400.0 | 6,819.0 | 6,808.0 | 6,808.0 | 68.5 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,847.2 | 3,645.4 | 201.80 | 19.064 | SF |
| 9,500.0 | 6,819.0 | 6,808.0 | 6,808.0 | 71.2 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,900.3 | 3,695.8 | 204.50 | 19.072 | |
| 9,600.0 | 6,819.0 | 6,808.0 | 6,808.0 | 73.9 | 134.4 | -90.00 | -1,844.5 | 8.4 | 3,955.1 | 3,747.9 | 207.20 | 19.088 | |
| 9,700.0 | 6,819.0 | 6,808.0 | 6,808.0 | 76.5 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,011.8 | 3,801.8 | 209.92 | 19.111 | |
| 9,800.0 | 6,819.0 | 6,808.0 | 6,808.0 | 79.2 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,070.0 | 3,857.4 | 212.64 | 19.141 | |
| 9,900.0 | 6,819.0 | 6,808.0 | 6,808.0 | 81.9 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,129.9 | 3,914.6 | 215.36 | 19.177 | |
| 10,000.0 | 6,819.0 | 6,808.0 | 6,808.0 | 84.6 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,191.3 | 3,973.3 | 218.09 | 19.218 | |
| 10,100.0 | 6,819.0 | 6,808.0 | 6,808.0 | 87.4 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,254.2 | 4,033.4 | 220.83 | 19.265 | |
| 10,200.0 | 6,819.0 | 6,808.0 | 6,808.0 | 90.1 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,318.5 | 4,094.9 | 223.57 | 19.316 | |
| 10,300.0 | 6,819.0 | 6,808.0 | 6,808.0 | 92.8 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,384.1 | 4,157.8 | 226.32 | 19.371 | |
| 10,400.0 | 6,819.0 | 6,808.0 | 6,808.0 | 95.5 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,451.0 | 4,222.0 | 229.07 | 19.431 | |
| 10,500.0 | 6,819.0 | 6,808.0 | 6,808.0 | 98.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,519.2 | 4,287.3 | 231.82 | 19.494 | |
| 10,600.0 | 6,819.0 | 6,808.0 | 6,808.0 | 101.0 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,588.4 | 4,353.9 | 234.58 | 19.560 | |
| 10,700.0 | 6,819.0 | 6,808.0 | 6,808.0 | 103.8 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,658.9 | 4,421.5 | 237.34 | 19.630 | |
| 10,800.0 | 6,819.0 | 6,808.0 | 6,808.0 | 106.5 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,730.3 | 4,490.2 | 240.10 | 19.701 | |
| 10,900.0 | 6,819.0 | 6,808.0 | 6,808.0 | 109.2 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,802.8 | 4,560.0 | 242.87 | 19.776 | |
| 11,000.0 | 6,819.0 | 6,808.0 | 6,808.0 | 112.0 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,876.3 | 4,630.6 | 245.63 | 19.852 | |
| 11,100.0 | 6,819.0 | 6,808.0 | 6,808.0 | 114.8 | 134.4 | -90.00 | -1,844.5 | 8.4 | 4,950.7 | 4,702.3 | 248.40 | 19.930 | |
| 11,200.0 | 6,819.0 | 6,808.0 | 6,808.0 | 117.5 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,026.0 | 4,774.8 | 251.17 | 20.010 | |
| 11,300.0 | 6,819.0 | 6,808.0 | 6,808.0 | 120.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,102.1 | 4,848.1 | 253.95 | 20.091 | |
| 11,400.0 | 6,819.0 | 6,808.0 | 6,808.0 | 123.0 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,179.0 | 4,922.3 | 256.72 | 20.174 | |
| 11,500.0 | 6,819.0 | 6,808.0 | 6,808.0 | 125.8 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,256.8 | 4,997.3 | 259.50 | 20.257 | |
| 11,600.0 | 6,819.0 | 6,808.0 | 6,808.0 | 128.6 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,335.2 | 5,072.9 | 262.28 | 20.342 | |
| 11,700.0 | 6,819.0 | 6,808.0 | 6,808.0 | 131.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,414.4 | 5,149.3 | 265.06 | 20.427 | |
| 11,800.0 | 6,819.0 | 6,808.0 | 6,808.0 | 134.1 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,494.2 | 5,226.4 | 267.84 | 20.513 | |
| 11,900.0 | 6,819.0 | 6,808.0 | 6,808.0 | 136.9 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,574.7 | 5,304.1 | 270.62 | 20.600 | |
| 12,000.0 | 6,819.0 | 6,808.0 | 6,808.0 | 139.6 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,655.9 | 5,382.5 | 273.40 | 20.687 | |
| 12,100.0 | 6,819.0 | 6,808.0 | 6,808.0 | 142.4 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,737.6 | 5,461.4 | 276.19 | 20.774 | |
| 12,200.0 | 6,819.0 | 6,808.0 | 6,808.0 | 145.2 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,819.9 | 5,540.9 | 278.97 | 20.862 | |
| 12,300.0 | 6,819.0 | 6,808.0 | 6,808.0 | 148.0 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,902.7 | 5,621.0 | 281.76 | 20.950 | |
| 12,400.0 | 6,819.0 | 6,808.0 | 6,808.0 | 150.8 | 134.4 | -90.00 | -1,844.5 | 8.4 | 5,986.1 | 5,701.5 | 284.55 | 21.037 | |
| 12,500.0 | 6,819.0 | 6,808.0 | 6,808.0 | 153.5 | 134.4 | -90.00 | -1,844.5 | 8.4 | 6,069.9 | 5,782.6 | 287.33 | 21.125 | |

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|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT HEINRICH 41-9 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,808.0 | 6,808.0 | 156.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 6,154.3 | 5,864.2 | 290.12 | 21.213 | |
| 12,700.0 | 6,819.0 | 6,808.0 | 6,808.0 | 159.1 | 134.4 | -90.00 | -1,844.5 | 8.4 | 6,239.1 | 5,946.2 | 292.91 | 21.300 | |
| 12,800.0 | 6,819.0 | 6,808.0 | 6,808.0 | 161.9 | 134.4 | -90.00 | -1,844.5 | 8.4 | 6,324.4 | 6,028.6 | 295.70 | 21.387 | |
| 12,900.0 | 6,819.0 | 6,808.0 | 6,808.0 | 164.7 | 134.4 | -90.00 | -1,844.5 | 8.4 | 6,410.0 | 6,111.5 | 298.50 | 21.474 | |
| 13,000.0 | 6,819.0 | 6,808.0 | 6,808.0 | 167.4 | 134.4 | -90.00 | -1,844.5 | 8.4 | 6,496.1 | 6,194.8 | 301.29 | 21.561 | |
| 13,100.0 | 6,819.0 | 6,808.0 | 6,808.0 | 170.2 | 134.4 | -90.00 | -1,844.5 | 8.4 | 6,582.6 | 6,278.5 | 304.08 | 21.648 | |
| 13,200.0 | 6,819.0 | 6,808.0 | 6,808.0 | 173.0 | 134.4 | -90.00 | -1,844.5 | 8.4 | 6,669.5 | 6,362.6 | 306.87 | 21.734 | |
| 13,300.0 | 6,819.0 | 6,808.0 | 6,808.0 | 175.8 | 134.4 | -90.00 | -1,844.5 | 8.4 | 6,756.7 | 6,447.0 | 309.67 | 21.819 | |
| 13,400.0 | 6,819.0 | 6,808.0 | 6,808.0 | 178.6 | 134.4 | -90.00 | -1,844.5 | 8.4 | 6,844.3 | 6,531.8 | 312.46 | 21.904 | |
| 13,500.0 | 6,819.0 | 6,808.0 | 6,808.0 | 181.4 | 134.4 | -90.00 | -1,844.5 | 8.4 | 6,932.2 | 6,616.9 | 315.26 | 21.989 | |
| 13,600.0 | 6,819.0 | 6,808.0 | 6,808.0 | 184.2 | 134.4 | -90.00 | -1,844.5 | 8.4 | 7,020.4 | 6,702.3 | 318.05 | 22.073 | |
| 13,700.0 | 6,819.0 | 6,808.0 | 6,808.0 | 187.0 | 134.4 | -90.00 | -1,844.5 | 8.4 | 7,108.9 | 6,788.1 | 320.85 | 22.157 | |
| 13,800.0 | 6,819.0 | 6,808.0 | 6,808.0 | 189.7 | 134.4 | -90.00 | -1,844.5 | 8.4 | 7,197.8 | 6,874.1 | 323.64 | 22.240 | |
| 13,900.0 | 6,819.0 | 6,808.0 | 6,808.0 | 192.5 | 134.4 | -90.00 | -1,844.5 | 8.4 | 7,286.9 | 6,960.5 | 326.44 | 22.322 | |
| 14,000.0 | 6,819.0 | 6,808.0 | 6,808.0 | 195.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 7,376.3 | 7,047.1 | 329.24 | 22.404 | |
| 14,100.0 | 6,819.0 | 6,808.0 | 6,808.0 | 198.1 | 134.4 | -90.00 | -1,844.5 | 8.4 | 7,466.0 | 7,134.0 | 332.04 | 22.486 | |
| 14,200.0 | 6,819.0 | 6,808.0 | 6,808.0 | 200.9 | 134.4 | -90.00 | -1,844.5 | 8.4 | 7,556.0 | 7,221.1 | 334.83 | 22.566 | |
| 14,300.0 | 6,819.0 | 6,808.0 | 6,808.0 | 203.7 | 134.4 | -90.00 | -1,844.5 | 8.4 | 7,646.1 | 7,308.5 | 337.63 | 22.646 | |
| 14,400.0 | 6,819.0 | 6,808.0 | 6,808.0 | 206.5 | 134.4 | -90.00 | -1,844.5 | 8.4 | 7,736.6 | 7,396.1 | 340.43 | 22.726 | |
| 14,500.0 | 6,819.0 | 6,808.0 | 6,808.0 | 209.3 | 134.4 | -90.00 | -1,844.5 | 8.4 | 7,827.2 | 7,484.0 | 343.23 | 22.805 | |
| 14,600.0 | 6,819.0 | 6,808.0 | 6,808.0 | 212.1 | 134.4 | -90.00 | -1,844.5 | 8.4 | 7,918.1 | 7,572.1 | 346.03 | 22.883 | |
| 14,700.0 | 6,819.0 | 6,808.0 | 6,808.0 | 214.9 | 134.4 | -90.00 | -1,844.5 | 8.4 | 8,009.2 | 7,660.4 | 348.83 | 22.960 | |
| 14,720.3 | 6,819.0 | 6,808.0 | 6,808.0 | 215.4 | 134.4 | -90.00 | -1,844.5 | 8.4 | 8,027.8 | 7,678.4 | 349.40 | 22.976 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT MILLAGE 11-10 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 142.33 | -1,509.3 | 1,165.3 | 1,906.9 | | | | |
| 100.0 | 100.0 | 80.0 | 80.0 | 0.1 | 0.0 | 142.33 | -1,509.3 | 1,165.3 | 1,906.8 | 1,906.7 | 0.09 | N/A | |
| 200.0 | 200.0 | 180.0 | 180.0 | 0.3 | 0.9 | 142.33 | -1,509.3 | 1,165.3 | 1,906.8 | 1,905.6 | 1.17 | 1,624.162 | |
| 300.0 | 300.0 | 280.0 | 280.0 | 0.5 | 2.9 | 142.33 | -1,509.3 | 1,165.3 | 1,906.8 | 1,903.3 | 3.47 | 549.821 | |
| 400.0 | 400.0 | 380.0 | 380.0 | 0.8 | 5.1 | 142.33 | -1,509.3 | 1,165.3 | 1,906.8 | 1,901.0 | 5.82 | 327.609 | |
| 500.0 | 500.0 | 480.0 | 480.0 | 1.0 | 7.1 | 142.33 | -1,509.3 | 1,165.3 | 1,906.8 | 1,898.7 | 8.10 | 235.546 | |
| 600.0 | 600.0 | 580.0 | 580.0 | 1.2 | 9.1 | 142.33 | -1,509.3 | 1,165.3 | 1,906.8 | 1,896.4 | 10.35 | 184.199 | |
| 700.0 | 700.0 | 680.0 | 680.0 | 1.4 | 11.2 | 142.33 | -1,509.3 | 1,165.3 | 1,906.8 | 1,894.2 | 12.60 | 151.325 | |
| 800.0 | 800.0 | 780.0 | 780.0 | 1.7 | 13.2 | 142.33 | -1,509.3 | 1,165.3 | 1,906.8 | 1,892.0 | 14.85 | 128.443 | CC |
| 900.0 | 900.0 | 880.0 | 880.0 | 1.9 | 15.2 | 121.20 | -1,509.3 | 1,165.3 | 1,907.7 | 1,890.6 | 17.08 | 111.668 | ES |
| 1,000.0 | 999.8 | 979.8 | 979.8 | 2.1 | 17.2 | 121.29 | -1,509.3 | 1,165.3 | 1,910.4 | 1,891.1 | 19.31 | 98.924 | |
| 1,100.0 | 1,099.5 | 1,079.5 | 1,079.5 | 2.3 | 19.2 | 121.43 | -1,509.3 | 1,165.3 | 1,915.0 | 1,893.4 | 21.53 | 88.934 | |
| 1,200.0 | 1,198.7 | 1,178.7 | 1,178.7 | 2.6 | 21.2 | 121.63 | -1,509.3 | 1,165.3 | 1,921.4 | 1,897.6 | 23.75 | 80.909 | |
| 1,300.0 | 1,297.5 | 1,277.5 | 1,277.5 | 2.9 | 23.2 | 121.88 | -1,509.3 | 1,165.3 | 1,929.7 | 1,903.7 | 25.96 | 74.334 | |
| 1,400.0 | 1,395.6 | 1,375.6 | 1,375.6 | 3.2 | 25.2 | 122.18 | -1,509.3 | 1,165.3 | 1,939.9 | 1,911.8 | 28.17 | 68.861 | |
| 1,500.0 | 1,493.1 | 1,473.1 | 1,473.1 | 3.5 | 27.1 | 122.52 | -1,509.3 | 1,165.3 | 1,952.2 | 1,921.8 | 30.39 | 64.246 | |
| 1,507.2 | 1,500.0 | 1,480.0 | 1,480.0 | 3.6 | 27.3 | 122.55 | -1,509.3 | 1,165.3 | 1,953.2 | 1,922.6 | 30.54 | 63.946 | |
| 1,572.2 | 1,563.0 | 1,543.0 | 1,543.0 | 3.8 | 28.6 | 122.93 | -1,509.3 | 1,165.3 | 1,961.9 | 1,929.9 | 32.02 | 61.275 | |
| 1,600.0 | 1,590.0 | 1,570.0 | 1,570.0 | 3.9 | 29.1 | 123.03 | -1,509.3 | 1,165.3 | 1,965.8 | 1,933.2 | 32.63 | 60.241 | |
| 1,700.0 | 1,686.3 | 1,666.3 | 1,666.3 | 4.4 | 31.0 | 123.41 | -1,509.3 | 1,165.3 | 1,981.0 | 1,946.2 | 34.85 | 56.844 | |
| 1,800.0 | 1,781.5 | 1,761.5 | 1,761.5 | 4.9 | 33.0 | 123.82 | -1,509.3 | 1,165.3 | 1,998.4 | 1,961.4 | 37.06 | 53.919 | |
| 1,817.6 | 1,798.2 | 1,778.2 | 1,778.2 | 5.0 | 33.3 | 123.90 | -1,509.3 | 1,165.3 | 2,001.7 | 1,964.3 | 37.45 | 53.447 | |
| 1,900.0 | 1,876.1 | 1,856.1 | 1,856.1 | 5.5 | 34.9 | 124.51 | -1,509.3 | 1,165.3 | 2,017.4 | 1,978.0 | 39.36 | 51.251 | |
| 2,000.0 | 1,970.6 | 1,950.6 | 1,950.6 | 6.0 | 36.8 | 125.24 | -1,509.3 | 1,165.3 | 2,036.8 | 1,995.1 | 41.69 | 48.856 | |
| 2,100.0 | 2,065.1 | 2,045.1 | 2,045.1 | 6.6 | 38.7 | 125.95 | -1,509.3 | 1,165.3 | 2,056.5 | 2,012.5 | 44.02 | 46.718 | |
| 2,200.0 | 2,159.6 | 2,139.6 | 2,139.6 | 7.2 | 40.6 | 126.66 | -1,509.3 | 1,165.3 | 2,076.5 | 2,030.2 | 46.35 | 44.802 | |
| 2,300.0 | 2,254.1 | 2,234.1 | 2,234.1 | 7.8 | 42.5 | 127.35 | -1,509.3 | 1,165.3 | 2,096.9 | 2,048.2 | 48.68 | 43.076 | |
| 2,400.0 | 2,348.7 | 2,328.7 | 2,328.7 | 8.4 | 44.4 | 128.03 | -1,509.3 | 1,165.3 | 2,117.5 | 2,066.5 | 51.00 | 41.517 | |
| 2,500.0 | 2,443.2 | 2,423.2 | 2,423.2 | 9.1 | 46.3 | 128.69 | -1,509.3 | 1,165.3 | 2,138.5 | 2,085.2 | 53.33 | 40.102 | |
| 2,600.0 | 2,537.7 | 2,517.7 | 2,517.7 | 9.7 | 48.2 | 129.35 | -1,509.3 | 1,165.3 | 2,159.7 | 2,104.1 | 55.64 | 38.813 | |
| 2,700.0 | 2,632.2 | 2,612.2 | 2,612.2 | 10.3 | 50.1 | 129.99 | -1,509.3 | 1,165.3 | 2,181.3 | 2,123.3 | 57.96 | 37.635 | |
| 2,800.0 | 2,726.8 | 2,706.8 | 2,706.8 | 10.9 | 52.0 | 130.62 | -1,509.3 | 1,165.3 | 2,203.1 | 2,142.8 | 60.27 | 36.556 | |
| 2,900.0 | 2,821.3 | 2,801.3 | 2,801.3 | 11.6 | 53.9 | 131.24 | -1,509.3 | 1,165.3 | 2,225.1 | 2,162.6 | 62.57 | 35.563 | |
| 3,000.0 | 2,915.8 | 2,895.8 | 2,895.8 | 12.2 | 55.8 | 131.84 | -1,509.3 | 1,165.3 | 2,247.5 | 2,182.6 | 64.86 | 34.649 | |
| 3,100.0 | 3,010.3 | 2,990.3 | 2,990.3 | 12.8 | 57.7 | 132.44 | -1,509.3 | 1,165.3 | 2,270.0 | 2,202.9 | 67.16 | 33.803 | |
| 3,200.0 | 3,104.8 | 3,084.8 | 3,084.8 | 13.5 | 59.6 | 133.02 | -1,509.3 | 1,165.3 | 2,292.8 | 2,223.4 | 69.44 | 33.019 | |
| 3,300.0 | 3,199.4 | 3,179.4 | 3,179.4 | 14.1 | 61.5 | 133.60 | -1,509.3 | 1,165.3 | 2,315.9 | 2,244.2 | 71.72 | 32.291 | |
| 3,400.0 | 3,293.9 | 3,273.9 | 3,273.9 | 14.8 | 63.4 | 134.16 | -1,509.3 | 1,165.3 | 2,339.2 | 2,265.2 | 73.99 | 31.614 | |
| 3,500.0 | 3,388.4 | 3,368.4 | 3,368.4 | 15.4 | 65.3 | 134.71 | -1,509.3 | 1,165.3 | 2,362.7 | 2,286.4 | 76.26 | 30.982 | |
| 3,600.0 | 3,482.9 | 3,462.9 | 3,462.9 | 16.0 | 67.2 | 135.26 | -1,509.3 | 1,165.3 | 2,386.4 | 2,307.9 | 78.52 | 30.391 | |
| 3,700.0 | 3,577.5 | 3,557.5 | 3,557.5 | 16.7 | 69.1 | 135.79 | -1,509.3 | 1,165.3 | 2,410.3 | 2,329.5 | 80.78 | 29.839 | |
| 3,800.0 | 3,672.0 | 3,652.0 | 3,652.0 | 17.3 | 71.0 | 136.31 | -1,509.3 | 1,165.3 | 2,434.4 | 2,351.4 | 83.03 | 29.320 | |
| 3,900.0 | 3,766.5 | 3,746.5 | 3,746.5 | 18.0 | 72.9 | 136.82 | -1,509.3 | 1,165.3 | 2,458.8 | 2,373.5 | 85.27 | 28.834 | |
| 4,000.0 | 3,861.0 | 3,841.0 | 3,841.0 | 18.6 | 74.8 | 137.32 | -1,509.3 | 1,165.3 | 2,483.3 | 2,395.8 | 87.51 | 28.376 | |
| 4,100.0 | 3,955.5 | 3,935.5 | 3,935.5 | 19.3 | 76.7 | 137.82 | -1,509.3 | 1,165.3 | 2,508.0 | 2,418.2 | 89.75 | 27.944 | |
| 4,200.0 | 4,050.1 | 4,030.1 | 4,030.1 | 19.9 | 78.6 | 138.30 | -1,509.3 | 1,165.3 | 2,532.9 | 2,440.9 | 91.98 | 27.537 | |
| 4,300.0 | 4,144.6 | 4,124.6 | 4,124.6 | 20.5 | 80.5 | 138.78 | -1,509.3 | 1,165.3 | 2,557.9 | 2,463.7 | 94.21 | 27.153 | |
| 4,400.0 | 4,239.1 | 4,219.1 | 4,219.1 | 21.2 | 82.4 | 139.24 | -1,509.3 | 1,165.3 | 2,583.1 | 2,486.7 | 96.43 | 26.789 | |
| 4,500.0 | 4,333.6 | 4,313.6 | 4,313.6 | 21.8 | 84.3 | 139.70 | -1,509.3 | 1,165.3 | 2,608.5 | 2,509.9 | 98.64 | 26.444 | |
| 4,600.0 | 4,428.2 | 4,408.2 | 4,408.2 | 22.5 | 86.2 | 140.15 | -1,509.3 | 1,165.3 | 2,634.1 | 2,533.2 | 100.85 | 26.118 | |
| 4,700.0 | 4,522.7 | 4,502.7 | 4,502.7 | 23.1 | 88.1 | 140.59 | -1,509.3 | 1,165.3 | 2,659.8 | 2,556.7 | 103.06 | 25.808 | |
| 4,800.0 | 4,617.2 | 4,597.2 | 4,597.2 | 23.8 | 90.0 | 141.02 | -1,509.3 | 1,165.3 | 2,685.6 | 2,580.4 | 105.26 | 25.513 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT MILLAGE 11-10 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,691.7 | 4,691.7 | 24.4 | 91.9 | 141.45 | -1,509.3 | 1,165.3 | 2,711.6 | 2,604.2 | 107.46 | 25.233 | |
| 5,000.0 | 4,806.2 | 4,786.2 | 4,786.2 | 25.1 | 93.8 | 141.86 | -1,509.3 | 1,165.3 | 2,737.8 | 2,628.1 | 109.66 | 24.966 | |
| 5,100.0 | 4,900.8 | 4,880.8 | 4,880.8 | 25.7 | 95.7 | 142.27 | -1,509.3 | 1,165.3 | 2,764.1 | 2,652.2 | 111.85 | 24.712 | |
| 5,200.0 | 4,995.3 | 4,975.3 | 4,975.3 | 26.4 | 97.6 | 142.68 | -1,509.3 | 1,165.3 | 2,790.5 | 2,676.4 | 114.04 | 24.470 | |
| 5,300.0 | 5,089.8 | 5,069.8 | 5,069.8 | 27.0 | 99.5 | 143.07 | -1,509.3 | 1,165.3 | 2,817.0 | 2,700.8 | 116.22 | 24.238 | |
| 5,400.0 | 5,184.3 | 5,164.3 | 5,164.3 | 27.7 | 101.4 | 143.46 | -1,509.3 | 1,165.3 | 2,843.7 | 2,725.3 | 118.40 | 24.017 | |
| 5,500.0 | 5,278.9 | 5,258.9 | 5,258.9 | 28.3 | 103.3 | 143.84 | -1,509.3 | 1,165.3 | 2,870.5 | 2,749.9 | 120.58 | 23.805 | |
| 5,533.5 | 5,310.5 | 5,290.5 | 5,290.5 | 28.5 | 103.9 | 143.96 | -1,509.3 | 1,165.3 | 2,879.5 | 2,758.2 | 121.31 | 23.737 | |
| 5,600.0 | 5,373.6 | 5,353.6 | 5,353.6 | 28.9 | 105.2 | 144.41 | -1,509.3 | 1,165.3 | 2,896.8 | 2,773.7 | 123.16 | 23.520 | |
| 5,700.0 | 5,469.4 | 5,449.4 | 5,449.4 | 29.3 | 107.1 | 145.02 | -1,509.3 | 1,165.3 | 2,920.6 | 2,794.8 | 125.89 | 23.200 | |
| 5,800.0 | 5,566.1 | 5,546.1 | 5,546.1 | 29.8 | 109.1 | 145.55 | -1,509.3 | 1,165.3 | 2,941.8 | 2,813.2 | 128.58 | 22.879 | |
| 5,900.0 | 5,663.6 | 5,643.6 | 5,643.6 | 30.1 | 111.0 | 145.99 | -1,509.3 | 1,165.3 | 2,960.1 | 2,828.9 | 131.22 | 22.559 | |
| 6,000.0 | 5,761.9 | 5,741.9 | 5,741.9 | 30.5 | 113.0 | 146.37 | -1,509.3 | 1,165.3 | 2,975.6 | 2,841.8 | 133.79 | 22.240 | |
| 6,100.0 | 5,860.7 | 5,840.7 | 5,840.7 | 30.7 | 115.0 | 146.67 | -1,509.3 | 1,165.3 | 2,988.3 | 2,852.0 | 136.30 | 21.925 | |
| 6,200.0 | 5,960.0 | 5,940.0 | 5,940.0 | 31.0 | 117.0 | 146.90 | -1,509.3 | 1,165.3 | 2,998.1 | 2,859.4 | 138.71 | 21.615 | |
| 6,300.0 | 6,059.7 | 6,039.7 | 6,039.7 | 31.2 | 119.0 | 147.06 | -1,509.3 | 1,165.3 | 3,005.1 | 2,864.0 | 141.02 | 21.309 | |
| 6,400.0 | 6,159.6 | 6,139.6 | 6,139.6 | 31.3 | 121.0 | 147.15 | -1,509.3 | 1,165.3 | 3,009.0 | 2,865.8 | 143.22 | 21.009 | |
| 6,486.1 | 6,245.7 | 6,225.7 | 6,225.7 | 31.4 | 122.7 | 168.34 | -1,509.3 | 1,165.3 | 3,010.1 | 2,859.5 | 150.65 | 19.982 | |
| 6,500.0 | 6,259.6 | 6,239.6 | 6,239.6 | 31.4 | 123.0 | 168.34 | -1,509.3 | 1,165.3 | 3,010.1 | 2,859.2 | 150.94 | 19.943 | |
| 6,516.1 | 6,275.7 | 6,255.7 | 6,255.7 | 31.4 | 123.3 | 168.34 | -1,509.3 | 1,165.3 | 3,010.1 | 2,858.9 | 151.28 | 19.898 | SF |
| 6,550.0 | 6,309.5 | 6,289.5 | 6,289.5 | 31.5 | 124.0 | -101.66 | -1,509.3 | 1,165.3 | 3,010.3 | 2,863.9 | 146.40 | 20.562 | |
| 6,600.0 | 6,359.4 | 6,339.4 | 6,339.4 | 31.5 | 125.0 | -101.67 | -1,509.3 | 1,165.3 | 3,011.1 | 2,863.7 | 147.41 | 20.427 | |
| 6,650.0 | 6,408.8 | 6,388.8 | 6,388.8 | 31.5 | 126.0 | -101.69 | -1,509.3 | 1,165.3 | 3,012.7 | 2,864.3 | 148.34 | 20.309 | |
| 6,700.0 | 6,457.5 | 6,437.5 | 6,437.5 | 31.5 | 127.0 | -101.71 | -1,509.3 | 1,165.3 | 3,015.0 | 2,865.8 | 149.19 | 20.209 | |
| 6,716.1 | 6,473.1 | 6,453.1 | 6,453.1 | 31.5 | 127.3 | -101.72 | -1,509.3 | 1,165.3 | 3,015.9 | 2,866.4 | 149.45 | 20.180 | |
| 6,725.0 | 6,481.6 | 6,461.6 | 6,461.6 | 31.5 | 127.5 | -101.70 | -1,509.3 | 1,165.3 | 3,016.4 | 2,866.8 | 149.57 | 20.168 | |
| 6,750.0 | 6,505.3 | 6,485.3 | 6,485.3 | 31.5 | 128.0 | -101.64 | -1,509.3 | 1,165.3 | 3,018.1 | 2,868.2 | 149.88 | 20.137 | |
| 6,775.0 | 6,528.5 | 6,508.5 | 6,508.5 | 31.4 | 128.4 | -101.57 | -1,509.3 | 1,165.3 | 3,020.1 | 2,869.9 | 150.15 | 20.113 | |
| 6,800.0 | 6,551.3 | 6,531.3 | 6,531.3 | 31.4 | 128.9 | -101.47 | -1,509.3 | 1,165.3 | 3,022.4 | 2,872.0 | 150.39 | 20.096 | |
| 6,825.0 | 6,573.4 | 6,553.4 | 6,553.4 | 31.4 | 129.3 | -101.36 | -1,509.3 | 1,165.3 | 3,024.9 | 2,874.3 | 150.60 | 20.085 | |
| 6,850.0 | 6,595.0 | 6,575.0 | 6,575.0 | 31.3 | 129.8 | -101.23 | -1,509.3 | 1,165.3 | 3,027.8 | 2,877.0 | 150.78 | 20.080 | |
| 6,875.0 | 6,615.8 | 6,595.8 | 6,595.8 | 31.3 | 130.2 | -101.06 | -1,509.3 | 1,165.3 | 3,031.0 | 2,880.0 | 150.94 | 20.080 | |
| 6,900.0 | 6,635.9 | 6,615.9 | 6,615.9 | 31.3 | 130.6 | -100.87 | -1,509.3 | 1,165.3 | 3,034.5 | 2,883.4 | 151.08 | 20.085 | |
| 6,925.0 | 6,655.1 | 6,635.1 | 6,635.1 | 31.2 | 131.0 | -100.65 | -1,509.3 | 1,165.3 | 3,038.3 | 2,887.1 | 151.22 | 20.092 | |
| 6,950.0 | 6,673.6 | 6,653.6 | 6,653.6 | 31.2 | 131.3 | -100.39 | -1,509.3 | 1,165.3 | 3,042.4 | 2,891.1 | 151.34 | 20.103 | |
| 6,975.0 | 6,691.1 | 6,671.1 | 6,671.1 | 31.1 | 131.7 | -100.09 | -1,509.3 | 1,165.3 | 3,046.9 | 2,895.4 | 151.47 | 20.115 | |
| 7,000.0 | 6,707.6 | 6,687.6 | 6,687.6 | 31.1 | 132.0 | -99.74 | -1,509.3 | 1,165.3 | 3,051.7 | 2,900.1 | 151.61 | 20.129 | |
| 7,025.0 | 6,723.1 | 6,703.1 | 6,703.1 | 31.0 | 132.3 | -99.35 | -1,509.3 | 1,165.3 | 3,056.8 | 2,905.0 | 151.76 | 20.142 | |
| 7,050.0 | 6,737.6 | 6,717.6 | 6,717.6 | 31.0 | 132.6 | -98.92 | -1,509.3 | 1,165.3 | 3,062.2 | 2,910.3 | 151.93 | 20.155 | |
| 7,075.0 | 6,751.0 | 6,731.0 | 6,731.0 | 30.9 | 132.9 | -98.43 | -1,509.3 | 1,165.3 | 3,068.0 | 2,915.9 | 152.13 | 20.167 | |
| 7,100.0 | 6,763.3 | 6,743.3 | 6,743.3 | 30.8 | 133.1 | -97.88 | -1,509.3 | 1,165.3 | 3,074.1 | 2,921.8 | 152.35 | 20.178 | |
| 7,125.0 | 6,774.5 | 6,754.5 | 6,754.5 | 30.8 | 133.4 | -97.28 | -1,509.3 | 1,165.3 | 3,080.5 | 2,927.9 | 152.59 | 20.188 | |
| 7,150.0 | 6,784.4 | 6,764.4 | 6,764.4 | 30.7 | 133.6 | -96.63 | -1,509.3 | 1,165.3 | 3,087.3 | 2,934.4 | 152.86 | 20.197 | |
| 7,175.0 | 6,793.1 | 6,773.1 | 6,773.1 | 30.7 | 133.7 | -95.91 | -1,509.3 | 1,165.3 | 3,094.3 | 2,941.1 | 153.15 | 20.205 | |
| 7,200.0 | 6,800.6 | 6,780.6 | 6,780.6 | 30.6 | 133.9 | -95.13 | -1,509.3 | 1,165.3 | 3,101.6 | 2,948.2 | 153.44 | 20.213 | |
| 7,225.0 | 6,806.8 | 6,786.8 | 6,786.8 | 30.6 | 134.0 | -94.29 | -1,509.3 | 1,165.3 | 3,109.2 | 2,955.5 | 153.74 | 20.224 | |
| 7,250.0 | 6,811.8 | 6,791.8 | 6,791.8 | 30.5 | 134.1 | -93.39 | -1,509.3 | 1,165.3 | 3,117.1 | 2,963.1 | 154.03 | 20.237 | |
| 7,275.0 | 6,815.5 | 6,795.5 | 6,795.5 | 30.5 | 134.2 | -92.43 | -1,509.3 | 1,165.3 | 3,125.2 | 2,970.9 | 154.29 | 20.255 | |
| 7,300.0 | 6,817.8 | 6,797.8 | 6,797.8 | 30.4 | 134.2 | -91.42 | -1,509.3 | 1,165.3 | 3,133.6 | 2,979.1 | 154.52 | 20.279 | |
| 7,325.0 | 6,818.9 | 6,798.9 | 6,798.9 | 30.4 | 134.3 | -90.35 | -1,509.3 | 1,165.3 | 3,142.1 | 2,987.4 | 154.70 | 20.311 | |
| 7,332.8 | 6,819.0 | 6,799.0 | 6,799.0 | 30.4 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,144.8 | 2,990.1 | 154.74 | 20.323 | |
| 7,400.0 | 6,819.0 | 6,799.0 | 6,799.0 | 30.3 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,168.9 | 3,013.4 | 155.42 | 20.389 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT MILLAGE 11-10 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,799.0 | 6,799.0 | 30.2 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,206.9 | 3,050.2 | 156.68 | 20.468 | |
| 7,600.0 | 6,819.0 | 6,799.0 | 6,799.0 | 30.3 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,247.6 | 3,089.4 | 158.20 | 20.528 | |
| 7,700.0 | 6,819.0 | 6,799.0 | 6,799.0 | 30.6 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,290.8 | 3,130.8 | 159.95 | 20.574 | |
| 7,800.0 | 6,819.0 | 6,799.0 | 6,799.0 | 31.3 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,336.4 | 3,174.5 | 161.87 | 20.612 | |
| 7,900.0 | 6,819.0 | 6,799.0 | 6,799.0 | 32.5 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,384.4 | 3,220.4 | 163.93 | 20.645 | |
| 8,000.0 | 6,819.0 | 6,799.0 | 6,799.0 | 34.2 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,434.6 | 3,268.5 | 166.11 | 20.677 | |
| 8,100.0 | 6,819.0 | 6,799.0 | 6,799.0 | 36.1 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,487.0 | 3,318.6 | 168.38 | 20.709 | |
| 8,200.0 | 6,819.0 | 6,799.0 | 6,799.0 | 38.3 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,541.4 | 3,370.7 | 170.72 | 20.744 | |
| 8,300.0 | 6,819.0 | 6,799.0 | 6,799.0 | 40.6 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,597.7 | 3,424.6 | 173.13 | 20.781 | |
| 8,400.0 | 6,819.0 | 6,799.0 | 6,799.0 | 42.9 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,656.0 | 3,480.4 | 175.59 | 20.821 | |
| 8,500.0 | 6,819.0 | 6,799.0 | 6,799.0 | 45.3 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,716.0 | 3,537.9 | 178.09 | 20.866 | |
| 8,600.0 | 6,819.0 | 6,799.0 | 6,799.0 | 47.8 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,777.7 | 3,597.1 | 180.63 | 20.915 | |
| 8,700.0 | 6,819.0 | 6,799.0 | 6,799.0 | 50.3 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,841.0 | 3,657.8 | 183.19 | 20.967 | |
| 8,800.0 | 6,819.0 | 6,799.0 | 6,799.0 | 52.8 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,905.9 | 3,720.1 | 185.79 | 21.024 | |
| 8,900.0 | 6,819.0 | 6,799.0 | 6,799.0 | 55.4 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 3,972.2 | 3,783.8 | 188.40 | 21.084 | |
| 9,000.0 | 6,819.0 | 6,799.0 | 6,799.0 | 58.0 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,039.9 | 3,848.9 | 191.03 | 21.148 | |
| 9,100.0 | 6,819.0 | 6,799.0 | 6,799.0 | 60.6 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,108.9 | 3,915.3 | 193.68 | 21.215 | |
| 9,200.0 | 6,819.0 | 6,799.0 | 6,799.0 | 63.2 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,179.2 | 3,982.9 | 196.35 | 21.285 | |
| 9,300.0 | 6,819.0 | 6,799.0 | 6,799.0 | 65.9 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,250.7 | 4,051.7 | 199.02 | 21.358 | |
| 9,400.0 | 6,819.0 | 6,799.0 | 6,799.0 | 68.5 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,323.3 | 4,121.6 | 201.71 | 21.433 | |
| 9,500.0 | 6,819.0 | 6,799.0 | 6,799.0 | 71.2 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,397.0 | 4,192.6 | 204.41 | 21.511 | |
| 9,600.0 | 6,819.0 | 6,799.0 | 6,799.0 | 73.9 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,471.7 | 4,264.5 | 207.11 | 21.590 | |
| 9,700.0 | 6,819.0 | 6,799.0 | 6,799.0 | 76.5 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,547.3 | 4,337.5 | 209.83 | 21.672 | |
| 9,800.0 | 6,819.0 | 6,799.0 | 6,799.0 | 79.2 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,623.9 | 4,411.4 | 212.55 | 21.755 | |
| 9,900.0 | 6,819.0 | 6,799.0 | 6,799.0 | 81.9 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,701.4 | 4,486.1 | 215.27 | 21.839 | |
| 10,000.0 | 6,819.0 | 6,799.0 | 6,799.0 | 84.6 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,779.7 | 4,561.7 | 218.00 | 21.925 | |
| 10,100.0 | 6,819.0 | 6,799.0 | 6,799.0 | 87.4 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,858.8 | 4,638.1 | 220.74 | 22.011 | |
| 10,200.0 | 6,819.0 | 6,799.0 | 6,799.0 | 90.1 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 4,938.7 | 4,715.2 | 223.48 | 22.099 | |
| 10,300.0 | 6,819.0 | 6,799.0 | 6,799.0 | 92.8 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 5,019.3 | 4,793.0 | 226.23 | 22.187 | |
| 10,400.0 | 6,819.0 | 6,799.0 | 6,799.0 | 95.5 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 5,100.5 | 4,871.5 | 228.98 | 22.275 | |
| 10,500.0 | 6,819.0 | 6,799.0 | 6,799.0 | 98.3 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 5,182.5 | 4,950.7 | 231.73 | 22.364 | |
| 10,600.0 | 6,819.0 | 6,799.0 | 6,799.0 | 101.0 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 5,265.0 | 5,030.5 | 234.49 | 22.453 | |
| 10,700.0 | 6,819.0 | 6,799.0 | 6,799.0 | 103.8 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 5,348.1 | 5,110.9 | 237.25 | 22.542 | |
| 10,800.0 | 6,819.0 | 6,799.0 | 6,799.0 | 106.5 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 5,431.9 | 5,191.9 | 240.01 | 22.632 | |
| 10,900.0 | 6,819.0 | 6,799.0 | 6,799.0 | 109.2 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 5,516.1 | 5,273.3 | 242.78 | 22.721 | |
| 11,000.0 | 6,819.0 | 6,799.0 | 6,799.0 | 112.0 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 5,600.9 | 5,355.4 | 245.54 | 22.810 | |
| 11,100.0 | 6,819.0 | 6,799.0 | 6,799.0 | 114.8 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 5,686.2 | 5,437.9 | 248.31 | 22.899 | |
| 11,200.0 | 6,819.0 | 6,799.0 | 6,799.0 | 117.5 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 5,771.9 | 5,520.8 | 251.08 | 22.988 | |
| 11,300.0 | 6,819.0 | 6,799.0 | 6,799.0 | 120.3 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 5,858.1 | 5,604.3 | 253.86 | 23.076 | |
| 11,400.0 | 6,819.0 | 6,799.0 | 6,799.0 | 123.0 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 5,944.7 | 5,688.1 | 256.63 | 23.164 | |
| 11,500.0 | 6,819.0 | 6,799.0 | 6,799.0 | 125.8 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 6,031.8 | 5,772.4 | 259.41 | 23.252 | |
| 11,600.0 | 6,819.0 | 6,799.0 | 6,799.0 | 128.6 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 6,119.2 | 5,857.0 | 262.19 | 23.339 | |
| 11,700.0 | 6,819.0 | 6,799.0 | 6,799.0 | 131.3 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 6,207.0 | 5,942.1 | 264.97 | 23.426 | |
| 11,800.0 | 6,819.0 | 6,799.0 | 6,799.0 | 134.1 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 6,295.2 | 6,027.5 | 267.75 | 23.512 | |
| 11,900.0 | 6,819.0 | 6,799.0 | 6,799.0 | 136.9 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 6,383.7 | 6,113.2 | 270.53 | 23.597 | |
| 12,000.0 | 6,819.0 | 6,799.0 | 6,799.0 | 139.6 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 6,472.6 | 6,199.3 | 273.31 | 23.682 | |
| 12,100.0 | 6,819.0 | 6,799.0 | 6,799.0 | 142.4 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 6,561.8 | 6,285.7 | 276.10 | 23.766 | |
| 12,200.0 | 6,819.0 | 6,799.0 | 6,799.0 | 145.2 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 6,651.3 | 6,372.4 | 278.88 | 23.850 | |
| 12,300.0 | 6,819.0 | 6,799.0 | 6,799.0 | 148.0 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 6,741.1 | 6,459.4 | 281.67 | 23.933 | |
| 12,400.0 | 6,819.0 | 6,799.0 | 6,799.0 | 150.8 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 6,831.1 | 6,546.7 | 284.46 | 24.015 | |
| 12,500.0 | 6,819.0 | 6,799.0 | 6,799.0 | 153.5 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 6,921.5 | 6,634.2 | 287.24 | 24.096 | |
| 12,600.0 | 6,819.0 | 6,799.0 | 6,799.0 | 156.3 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 7,012.1 | 6,722.1 | 290.03 | 24.177 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT MILLAGE 11-10 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 6,819.0 | 6,799.0 | 6,799.0 | 159.1 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 7,102.9 | 6,810.1 | 292.82 | 24.257 | |
| 12,800.0 | 6,819.0 | 6,799.0 | 6,799.0 | 161.9 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 7,194.0 | 6,898.4 | 295.61 | 24.336 | |
| 12,900.0 | 6,819.0 | 6,799.0 | 6,799.0 | 164.7 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 7,285.4 | 6,987.0 | 298.41 | 24.414 | |
| 13,000.0 | 6,819.0 | 6,799.0 | 6,799.0 | 167.4 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 7,376.9 | 7,075.7 | 301.20 | 24.492 | |
| 13,100.0 | 6,819.0 | 6,799.0 | 6,799.0 | 170.2 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 7,468.7 | 7,164.7 | 303.99 | 24.569 | |
| 13,200.0 | 6,819.0 | 6,799.0 | 6,799.0 | 173.0 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 7,560.7 | 7,253.9 | 306.78 | 24.645 | |
| 13,300.0 | 6,819.0 | 6,799.0 | 6,799.0 | 175.8 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 7,652.9 | 7,343.3 | 309.58 | 24.720 | |
| 13,400.0 | 6,819.0 | 6,799.0 | 6,799.0 | 178.6 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 7,745.3 | 7,432.9 | 312.37 | 24.795 | |
| 13,500.0 | 6,819.0 | 6,799.0 | 6,799.0 | 181.4 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 7,837.8 | 7,522.7 | 315.17 | 24.869 | |
| 13,600.0 | 6,819.0 | 6,799.0 | 6,799.0 | 184.2 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 7,930.6 | 7,612.6 | 317.96 | 24.942 | |
| 13,700.0 | 6,819.0 | 6,799.0 | 6,799.0 | 187.0 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 8,023.5 | 7,702.7 | 320.76 | 25.014 | |
| 13,800.0 | 6,819.0 | 6,799.0 | 6,799.0 | 189.7 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 8,116.6 | 7,793.0 | 323.55 | 25.086 | |
| 13,900.0 | 6,819.0 | 6,799.0 | 6,799.0 | 192.5 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 8,209.8 | 7,883.5 | 326.35 | 25.156 | |
| 14,000.0 | 6,819.0 | 6,799.0 | 6,799.0 | 195.3 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 8,303.2 | 7,974.1 | 329.15 | 25.226 | |
| 14,100.0 | 6,819.0 | 6,799.0 | 6,799.0 | 198.1 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 8,396.8 | 8,064.8 | 331.95 | 25.296 | |
| 14,200.0 | 6,819.0 | 6,799.0 | 6,799.0 | 200.9 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 8,490.5 | 8,155.8 | 334.74 | 25.364 | |
| 14,300.0 | 6,819.0 | 6,799.0 | 6,799.0 | 203.7 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 8,584.3 | 8,246.8 | 337.54 | 25.432 | |
| 14,400.0 | 6,819.0 | 6,799.0 | 6,799.0 | 206.5 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 8,678.3 | 8,338.0 | 340.34 | 25.499 | |
| 14,500.0 | 6,819.0 | 6,799.0 | 6,799.0 | 209.3 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 8,772.5 | 8,429.3 | 343.14 | 25.565 | |
| 14,600.0 | 6,819.0 | 6,799.0 | 6,799.0 | 212.1 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 8,866.7 | 8,520.8 | 345.94 | 25.631 | |
| 14,700.0 | 6,819.0 | 6,799.0 | 6,799.0 | 214.9 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 8,961.1 | 8,612.3 | 348.74 | 25.696 | |
| 14,720.3 | 6,819.0 | 6,799.0 | 6,799.0 | 215.4 | 134.3 | -90.00 | -1,509.3 | 1,165.3 | 8,980.3 | 8,630.9 | 349.31 | 25.709 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -63.89 | 738.9 | -1,507.3 | 1,678.7 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -63.89 | 738.7 | -1,507.3 | 1,678.6 | 1,678.4 | 0.17 | 9,847.525 | |
| 200.0 | 200.0 | 198.7 | 198.7 | 0.3 | 0.2 | -63.90 | 738.3 | -1,507.3 | 1,678.4 | 1,677.9 | 0.53 | 3,165.697 | |
| 300.0 | 300.0 | 299.4 | 299.4 | 0.5 | 0.3 | -63.92 | 737.9 | -1,507.4 | 1,678.3 | 1,677.4 | 0.84 | 2,002.016 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.4 | -63.92 | 737.7 | -1,507.3 | 1,678.1 | 1,677.0 | 1.12 | 1,499.140 | |
| 500.0 | 500.0 | 498.7 | 498.7 | 1.0 | 0.4 | -63.91 | 737.9 | -1,507.0 | 1,678.0 | 1,676.6 | 1.37 | 1,221.984 | |
| 600.0 | 600.0 | 598.7 | 598.7 | 1.2 | 0.4 | -63.89 | 738.5 | -1,506.6 | 1,677.9 | 1,676.2 | 1.65 | 1,015.349 | |
| 665.0 | 665.0 | 662.0 | 662.0 | 1.4 | 0.5 | -63.87 | 739.0 | -1,506.3 | 1,677.8 | 1,676.0 | 1.83 | 917.247 | |
| 700.0 | 700.0 | 696.1 | 696.1 | 1.4 | 0.5 | -63.86 | 739.2 | -1,506.2 | 1,677.8 | 1,675.9 | 1.92 | 871.853 | |
| 800.0 | 800.0 | 791.3 | 791.3 | 1.7 | 0.5 | -63.84 | 739.9 | -1,506.1 | 1,678.0 | 1,675.9 | 2.19 | 767.427 | |
| 900.0 | 900.0 | 893.3 | 893.2 | 1.9 | 0.6 | -85.04 | 740.3 | -1,506.2 | 1,678.2 | 1,675.7 | 2.45 | 685.567 | |
| 1,000.0 | 999.8 | 993.5 | 993.5 | 2.1 | 0.6 | -85.22 | 740.7 | -1,506.3 | 1,678.0 | 1,675.2 | 2.71 | 619.670 | |
| 1,100.0 | 1,099.5 | 1,096.1 | 1,096.1 | 2.3 | 0.6 | -85.53 | 740.9 | -1,506.3 | 1,677.4 | 1,674.4 | 2.97 | 563.896 | |
| 1,200.0 | 1,198.7 | 1,197.5 | 1,197.5 | 2.6 | 0.7 | -85.97 | 740.9 | -1,506.3 | 1,676.4 | 1,673.2 | 3.25 | 516.282 | |
| 1,300.0 | 1,297.5 | 1,295.5 | 1,295.5 | 2.9 | 0.7 | -86.51 | 740.9 | -1,506.2 | 1,675.3 | 1,671.7 | 3.56 | 470.921 | |
| 1,400.0 | 1,395.6 | 1,394.1 | 1,394.1 | 3.2 | 0.7 | -87.17 | 741.0 | -1,506.1 | 1,674.1 | 1,670.2 | 3.91 | 428.510 | |
| 1,500.0 | 1,493.1 | 1,492.0 | 1,492.0 | 3.5 | 0.8 | -87.95 | 741.0 | -1,505.9 | 1,673.0 | 1,668.7 | 4.30 | 388.844 | |
| 1,507.2 | 1,500.0 | 1,499.0 | 1,499.0 | 3.6 | 0.8 | -88.00 | 741.0 | -1,505.9 | 1,673.0 | 1,668.6 | 4.33 | 386.266 | |
| 1,572.2 | 1,563.0 | 1,561.3 | 1,561.3 | 3.8 | 0.8 | -88.53 | 741.0 | -1,505.9 | 1,672.4 | 1,667.8 | 4.60 | 363.526 | |
| 1,600.0 | 1,590.0 | 1,588.0 | 1,588.0 | 3.9 | 0.8 | -88.76 | 741.0 | -1,505.9 | 1,672.2 | 1,667.5 | 4.72 | 354.269 | |
| 1,700.0 | 1,686.3 | 1,685.6 | 1,685.5 | 4.4 | 0.8 | -89.67 | 740.9 | -1,505.8 | 1,671.7 | 1,666.5 | 5.20 | 321.502 | |
| 1,768.6 | 1,751.8 | 1,751.9 | 1,751.9 | 4.7 | 0.9 | -90.35 | 741.0 | -1,505.6 | 1,671.6 | 1,666.1 | 5.57 | 300.169 | |
| 1,800.0 | 1,781.5 | 1,782.1 | 1,782.1 | 4.9 | 0.9 | -90.67 | 741.0 | -1,505.6 | 1,671.7 | 1,665.9 | 5.74 | 291.321 | |
| 1,817.6 | 1,798.2 | 1,799.0 | 1,799.0 | 5.0 | 0.9 | -90.86 | 741.1 | -1,505.5 | 1,671.7 | 1,665.9 | 5.84 | 286.286 | |
| 1,900.0 | 1,876.1 | 1,879.1 | 1,879.0 | 5.5 | 0.9 | -91.74 | 741.3 | -1,505.2 | 1,672.1 | 1,665.8 | 6.32 | 264.421 | |
| 2,000.0 | 1,970.6 | 1,971.5 | 1,971.5 | 6.0 | 0.9 | -92.75 | 741.9 | -1,504.7 | 1,673.1 | 1,666.2 | 6.92 | 241.652 | |
| 2,100.0 | 2,065.1 | 2,066.7 | 2,066.7 | 6.6 | 1.0 | -93.79 | 742.6 | -1,504.2 | 1,674.8 | 1,667.3 | 7.54 | 222.255 | |
| 2,200.0 | 2,159.6 | 2,166.6 | 2,166.6 | 7.2 | 1.0 | -94.88 | 743.2 | -1,503.6 | 1,677.0 | 1,668.9 | 8.16 | 205.581 | |
| 2,300.0 | 2,254.1 | 2,267.6 | 2,267.6 | 7.8 | 1.0 | -95.98 | 743.4 | -1,502.7 | 1,679.5 | 1,670.7 | 8.79 | 191.136 | |
| 2,400.0 | 2,348.7 | 2,364.8 | 2,364.8 | 8.4 | 1.1 | -97.05 | 743.3 | -1,501.7 | 1,682.2 | 1,672.8 | 9.42 | 178.564 | |
| 2,500.0 | 2,443.2 | 2,462.4 | 2,462.4 | 9.1 | 1.1 | -98.13 | 743.1 | -1,500.5 | 1,685.5 | 1,675.4 | 10.06 | 167.588 | |
| 2,600.0 | 2,537.7 | 2,558.6 | 2,558.6 | 9.7 | 1.1 | -99.18 | 742.9 | -1,499.2 | 1,689.2 | 1,678.5 | 10.69 | 157.962 | |
| 2,700.0 | 2,632.2 | 2,653.5 | 2,653.5 | 10.3 | 1.2 | -100.22 | 742.6 | -1,497.9 | 1,693.5 | 1,682.2 | 11.33 | 149.484 | |
| 2,800.0 | 2,726.8 | 2,747.7 | 2,747.6 | 10.9 | 1.2 | -101.24 | 742.3 | -1,496.5 | 1,698.4 | 1,686.5 | 11.96 | 141.979 | |
| 2,900.0 | 2,821.3 | 2,841.4 | 2,841.3 | 11.6 | 1.2 | -102.25 | 742.0 | -1,495.3 | 1,704.0 | 1,691.4 | 12.59 | 135.311 | |
| 3,000.0 | 2,915.8 | 2,936.7 | 2,936.7 | 12.2 | 1.2 | -103.27 | 741.8 | -1,494.0 | 1,710.2 | 1,697.0 | 13.22 | 129.359 | |
| 3,100.0 | 3,010.3 | 3,030.9 | 3,030.8 | 12.8 | 1.3 | -104.28 | 741.6 | -1,492.7 | 1,716.9 | 1,703.0 | 13.84 | 124.020 | |
| 3,200.0 | 3,104.8 | 3,121.9 | 3,121.8 | 13.5 | 1.3 | -105.24 | 741.4 | -1,491.6 | 1,724.4 | 1,709.9 | 14.46 | 119.231 | |
| 3,300.0 | 3,199.4 | 3,218.2 | 3,218.0 | 14.1 | 1.3 | -106.24 | 741.3 | -1,490.4 | 1,732.4 | 1,717.3 | 15.08 | 114.911 | |
| 3,400.0 | 3,293.9 | 3,308.0 | 3,307.9 | 14.8 | 1.4 | -107.17 | 741.3 | -1,489.4 | 1,741.1 | 1,725.4 | 15.68 | 111.006 | |
| 3,500.0 | 3,388.4 | 3,400.0 | 3,399.9 | 15.4 | 1.4 | -108.12 | 741.1 | -1,488.6 | 1,750.6 | 1,734.3 | 16.29 | 107.482 | |
| 3,600.0 | 3,482.9 | 3,490.4 | 3,490.3 | 16.0 | 1.4 | -109.05 | 740.8 | -1,488.0 | 1,760.8 | 1,744.0 | 16.88 | 104.294 | |
| 3,700.0 | 3,577.5 | 3,584.1 | 3,584.0 | 16.7 | 1.4 | -110.00 | 740.5 | -1,487.5 | 1,771.7 | 1,754.2 | 17.47 | 101.412 | |
| 3,800.0 | 3,672.0 | 3,675.8 | 3,675.7 | 17.3 | 1.5 | -110.92 | 740.0 | -1,487.1 | 1,783.2 | 1,765.2 | 18.05 | 98.801 | |
| 3,900.0 | 3,766.5 | 3,766.1 | 3,766.0 | 18.0 | 1.5 | -111.83 | 739.4 | -1,486.8 | 1,795.4 | 1,776.8 | 18.62 | 96.446 | |
| 4,000.0 | 3,861.0 | 3,858.5 | 3,858.3 | 18.6 | 1.5 | -112.74 | 738.6 | -1,486.7 | 1,808.4 | 1,789.2 | 19.17 | 94.327 | |
| 4,100.0 | 3,955.5 | 3,951.3 | 3,951.2 | 19.3 | 1.5 | -113.65 | 737.9 | -1,486.7 | 1,821.9 | 1,802.1 | 19.72 | 92.404 | |
| 4,200.0 | 4,050.1 | 4,044.0 | 4,043.8 | 19.9 | 1.5 | -114.55 | 737.2 | -1,486.8 | 1,836.0 | 1,815.7 | 20.25 | 90.652 | |
| 4,300.0 | 4,144.6 | 4,136.5 | 4,136.3 | 20.5 | 1.5 | -115.43 | 736.5 | -1,486.9 | 1,850.6 | 1,829.8 | 20.78 | 89.057 | |
| 4,400.0 | 4,239.1 | 4,228.0 | 4,227.9 | 21.2 | 1.5 | -116.29 | 735.8 | -1,487.2 | 1,865.9 | 1,844.6 | 21.30 | 87.602 | |
| 4,500.0 | 4,333.6 | 4,320.6 | 4,320.5 | 21.8 | 1.6 | -117.14 | 735.1 | -1,487.6 | 1,881.8 | 1,859.9 | 21.81 | 86.281 | |
| 4,600.0 | 4,428.2 | 4,416.4 | 4,416.3 | 22.5 | 1.6 | -118.01 | 734.6 | -1,488.0 | 1,898.1 | 1,875.8 | 22.31 | 85.087 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,700.0 | 4,522.7 | 4,518.7 | 4,518.6 | 23.1 | 1.6 | -118.91 | 734.4 | -1,488.3 | 1,914.6 | 1,891.8 | 22.79 | 84.015 | |
| 4,800.0 | 4,617.2 | 4,624.0 | 4,623.8 | 23.8 | 1.6 | -119.80 | 734.9 | -1,488.1 | 1,931.1 | 1,907.8 | 23.27 | 82.989 | |
| 4,900.0 | 4,711.7 | 4,731.6 | 4,731.5 | 24.4 | 1.6 | -120.67 | 736.2 | -1,487.4 | 1,947.4 | 1,923.6 | 23.76 | 81.967 | |
| 5,000.0 | 4,806.2 | 4,836.1 | 4,836.0 | 25.1 | 1.6 | -121.51 | 737.7 | -1,486.2 | 1,963.4 | 1,939.2 | 24.25 | 80.981 | |
| 5,100.0 | 4,900.8 | 4,934.0 | 4,933.8 | 25.7 | 1.6 | -122.27 | 739.2 | -1,484.7 | 1,979.6 | 1,954.8 | 24.73 | 80.033 | |
| 5,200.0 | 4,995.3 | 5,029.8 | 5,029.6 | 26.4 | 1.7 | -123.01 | 740.7 | -1,483.2 | 1,996.0 | 1,970.7 | 25.22 | 79.140 | |
| 5,300.0 | 5,089.8 | 5,124.8 | 5,124.5 | 27.0 | 1.7 | -123.73 | 742.0 | -1,481.7 | 2,012.7 | 1,987.0 | 25.70 | 78.311 | |
| 5,400.0 | 5,184.3 | 5,220.2 | 5,219.9 | 27.7 | 1.7 | -124.46 | 743.2 | -1,480.2 | 2,029.8 | 2,003.6 | 26.18 | 77.542 | |
| 5,500.0 | 5,278.9 | 5,312.2 | 5,311.9 | 28.3 | 1.7 | -125.14 | 744.1 | -1,478.7 | 2,047.3 | 2,020.6 | 26.65 | 76.823 | |
| 5,533.5 | 5,310.5 | 5,344.9 | 5,344.6 | 28.5 | 1.7 | -125.39 | 744.5 | -1,478.2 | 2,053.2 | 2,026.4 | 26.80 | 76.600 | |
| 5,600.0 | 5,373.6 | 5,409.3 | 5,409.0 | 28.9 | 1.8 | -126.03 | 745.1 | -1,477.1 | 2,064.6 | 2,037.6 | 27.01 | 76.448 | |
| 5,700.0 | 5,469.4 | 5,501.1 | 5,500.8 | 29.3 | 1.8 | -126.87 | 745.9 | -1,475.7 | 2,080.4 | 2,053.2 | 27.24 | 76.381 | |
| 5,800.0 | 5,566.1 | 5,596.7 | 5,596.4 | 29.8 | 1.8 | -127.63 | 746.6 | -1,474.3 | 2,094.5 | 2,067.1 | 27.44 | 76.325 | |
| 5,900.0 | 5,663.6 | 5,697.3 | 5,696.9 | 30.1 | 1.8 | -128.30 | 747.1 | -1,472.7 | 2,106.6 | 2,079.0 | 27.62 | 76.268 | |
| 6,000.0 | 5,761.9 | 5,795.1 | 5,794.7 | 30.5 | 1.9 | -128.85 | 747.5 | -1,471.0 | 2,116.6 | 2,088.8 | 27.78 | 76.185 | |
| 6,100.0 | 5,860.7 | 5,891.3 | 5,891.0 | 30.7 | 1.9 | -129.29 | 747.7 | -1,469.4 | 2,124.6 | 2,096.7 | 27.93 | 76.079 | |
| 6,200.0 | 5,960.0 | 5,989.0 | 5,988.6 | 31.0 | 1.9 | -129.63 | 747.8 | -1,467.9 | 2,130.5 | 2,102.5 | 28.05 | 75.944 | |
| 6,300.0 | 6,059.7 | 6,086.5 | 6,086.1 | 31.2 | 2.0 | -129.87 | 747.9 | -1,466.5 | 2,134.4 | 2,106.2 | 28.17 | 75.769 | |
| 6,400.0 | 6,159.6 | 6,189.3 | 6,188.9 | 31.3 | 2.0 | -130.00 | 748.0 | -1,465.0 | 2,136.0 | 2,107.7 | 28.27 | 75.547 | |
| 6,486.1 | 6,245.7 | 6,284.4 | 6,284.0 | 31.4 | 2.0 | -108.88 | 748.0 | -1,463.2 | 2,135.4 | 2,109.6 | 25.73 | 82.984 | |
| 6,500.0 | 6,259.6 | 6,299.9 | 6,299.4 | 31.4 | 2.0 | -108.88 | 748.0 | -1,462.9 | 2,135.1 | 2,109.3 | 25.75 | 82.914 | |
| 6,516.1 | 6,275.7 | 6,316.0 | 6,315.6 | 31.4 | 2.0 | -108.88 | 748.0 | -1,462.6 | 2,134.8 | 2,109.0 | 25.77 | 82.828 | |
| 6,550.0 | 6,309.5 | 6,349.8 | 6,349.4 | 31.5 | 2.0 | -18.93 | 747.9 | -1,461.9 | 2,133.3 | 2,105.0 | 28.36 | 75.228 | |
| 6,600.0 | 6,359.4 | 6,399.5 | 6,399.0 | 31.5 | 2.1 | -19.11 | 747.9 | -1,460.8 | 2,128.5 | 2,100.2 | 28.25 | 75.355 | |
| 6,650.0 | 6,408.8 | 6,444.8 | 6,444.4 | 31.5 | 2.1 | -19.40 | 747.9 | -1,459.9 | 2,120.4 | 2,092.3 | 28.06 | 75.559 | |
| 6,700.0 | 6,457.5 | 6,489.5 | 6,489.0 | 31.5 | 2.1 | -19.81 | 747.8 | -1,459.0 | 2,109.1 | 2,081.3 | 27.79 | 75.882 | |
| 6,716.1 | 6,473.1 | 6,500.0 | 6,499.5 | 31.5 | 2.1 | -19.96 | 747.8 | -1,458.8 | 2,104.8 | 2,077.1 | 27.69 | 76.018 | |
| 6,725.0 | 6,481.6 | 6,511.0 | 6,510.5 | 31.5 | 2.1 | -20.10 | 747.8 | -1,458.6 | 2,102.3 | 2,074.7 | 27.58 | 76.213 | |
| 6,750.0 | 6,505.3 | 6,531.6 | 6,531.1 | 31.5 | 2.1 | -20.51 | 747.7 | -1,458.3 | 2,094.5 | 2,067.2 | 27.25 | 76.853 | |
| 6,775.0 | 6,528.5 | 6,551.8 | 6,551.3 | 31.4 | 2.1 | -21.00 | 747.7 | -1,458.0 | 2,085.5 | 2,058.6 | 26.86 | 77.653 | |
| 6,800.0 | 6,551.3 | 6,571.6 | 6,571.1 | 31.4 | 2.1 | -21.57 | 747.6 | -1,457.8 | 2,075.4 | 2,049.0 | 26.39 | 78.632 | |
| 6,825.0 | 6,573.4 | 6,590.9 | 6,590.4 | 31.4 | 2.1 | -22.24 | 747.5 | -1,457.5 | 2,064.3 | 2,038.4 | 25.86 | 79.813 | |
| 6,850.0 | 6,595.0 | 6,610.1 | 6,609.6 | 31.3 | 2.1 | -23.00 | 747.5 | -1,457.3 | 2,052.1 | 2,026.9 | 25.27 | 81.217 | |
| 6,875.0 | 6,615.8 | 6,629.0 | 6,628.5 | 31.3 | 2.1 | -23.89 | 747.4 | -1,457.1 | 2,039.0 | 2,014.3 | 24.61 | 82.867 | |
| 6,900.0 | 6,635.9 | 6,647.3 | 6,646.8 | 31.3 | 2.1 | -24.89 | 747.4 | -1,457.0 | 2,024.8 | 2,000.9 | 23.88 | 84.784 | |
| 6,925.0 | 6,655.1 | 6,664.8 | 6,664.4 | 31.2 | 2.1 | -26.04 | 747.4 | -1,456.8 | 2,009.7 | 1,986.6 | 23.10 | 86.988 | |
| 6,950.0 | 6,673.6 | 6,681.6 | 6,681.2 | 31.2 | 2.1 | -27.36 | 747.3 | -1,456.7 | 1,993.7 | 1,971.5 | 22.28 | 89.489 | |
| 6,975.0 | 6,691.1 | 6,700.0 | 6,699.5 | 31.1 | 2.1 | -28.89 | 747.3 | -1,456.6 | 1,976.9 | 1,955.5 | 21.42 | 92.295 | |
| 7,000.0 | 6,707.6 | 6,714.8 | 6,714.3 | 31.1 | 2.2 | -30.59 | 747.3 | -1,456.5 | 1,959.3 | 1,938.8 | 20.55 | 95.327 | |
| 7,025.0 | 6,723.1 | 6,731.3 | 6,730.8 | 31.0 | 2.2 | -32.60 | 747.3 | -1,456.5 | 1,940.9 | 1,921.2 | 19.70 | 98.512 | |
| 7,050.0 | 6,737.6 | 6,746.6 | 6,746.1 | 31.0 | 2.2 | -34.89 | 747.3 | -1,456.4 | 1,921.8 | 1,902.9 | 18.91 | 101.617 | |
| 7,075.0 | 6,751.0 | 6,760.8 | 6,760.3 | 30.9 | 2.2 | -37.52 | 747.3 | -1,456.3 | 1,902.1 | 1,883.8 | 18.24 | 104.282 | |
| 7,100.0 | 6,763.3 | 6,773.7 | 6,773.2 | 30.8 | 2.2 | -40.54 | 747.3 | -1,456.2 | 1,881.7 | 1,864.0 | 17.75 | 106.007 | |
| 7,125.0 | 6,774.5 | 6,785.4 | 6,784.9 | 30.8 | 2.2 | -43.99 | 747.3 | -1,456.1 | 1,860.8 | 1,843.3 | 17.51 | 106.264 | |
| 7,150.0 | 6,784.4 | 6,795.8 | 6,795.3 | 30.7 | 2.2 | -47.94 | 747.4 | -1,456.0 | 1,839.5 | 1,821.9 | 17.56 | 104.726 | |
| 7,175.0 | 6,793.1 | 6,800.0 | 6,799.5 | 30.7 | 2.2 | -52.18 | 747.4 | -1,456.0 | 1,817.8 | 1,799.9 | 17.88 | 101.649 | |
| 7,200.0 | 6,800.6 | 6,800.0 | 6,799.5 | 30.6 | 2.2 | -56.75 | 747.4 | -1,456.0 | 1,795.7 | 1,777.3 | 18.41 | 97.549 | |
| 7,225.0 | 6,806.8 | 6,800.0 | 6,799.5 | 30.6 | 2.2 | -61.86 | 747.4 | -1,456.0 | 1,773.4 | 1,754.3 | 19.08 | 92.927 | |
| 7,250.0 | 6,811.8 | 6,800.0 | 6,799.5 | 30.5 | 2.2 | -67.47 | 747.4 | -1,456.0 | 1,750.9 | 1,731.0 | 19.82 | 88.346 | |
| 7,275.0 | 6,815.5 | 6,800.0 | 6,799.5 | 30.5 | 2.2 | -73.55 | 747.4 | -1,456.0 | 1,728.2 | 1,707.7 | 20.53 | 84.179 | |
| 7,300.0 | 6,817.8 | 6,800.0 | 6,799.5 | 30.4 | 2.2 | -79.97 | 747.4 | -1,456.0 | 1,705.4 | 1,684.3 | 21.18 | 80.516 | |
| 7,325.0 | 6,818.9 | 6,800.0 | 6,799.5 | 30.4 | 2.2 | -86.57 | 747.4 | -1,456.0 | 1,682.7 | 1,660.8 | 21.83 | 77.087 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,332.8 | 6,819.0 | 6,800.0 | 6,799.5 | 30.4 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,675.5 | 1,653.5 | 22.05 | 75.988 | |
| 7,400.0 | 6,819.0 | 6,800.0 | 6,799.5 | 30.3 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,614.6 | 1,591.9 | 22.72 | 71.063 | |
| 7,500.0 | 6,819.0 | 6,800.0 | 6,799.5 | 30.2 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,524.8 | 1,500.8 | 23.98 | 63.592 | |
| 7,600.0 | 6,819.0 | 6,800.0 | 6,799.5 | 30.3 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,436.4 | 1,410.9 | 25.50 | 56.323 | |
| 7,700.0 | 6,819.0 | 6,800.0 | 6,799.5 | 30.6 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,349.6 | 1,322.4 | 27.25 | 49.533 | |
| 7,800.0 | 6,819.0 | 6,800.0 | 6,799.5 | 31.3 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,264.8 | 1,235.6 | 29.17 | 43.362 | |
| 7,900.0 | 6,819.0 | 6,800.0 | 6,799.5 | 32.5 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,182.3 | 1,151.1 | 31.23 | 37.856 | |
| 8,000.0 | 6,819.0 | 6,800.0 | 6,799.5 | 34.2 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,102.8 | 1,069.3 | 33.41 | 33.006 | |
| 8,100.0 | 6,819.0 | 6,800.0 | 6,799.5 | 36.1 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,026.8 | 991.1 | 35.68 | 28.775 | |
| 8,200.0 | 6,819.0 | 6,800.0 | 6,799.5 | 38.3 | 2.2 | -88.64 | 747.4 | -1,456.0 | 955.2 | 917.2 | 38.03 | 25.118 | |
| 8,300.0 | 6,819.0 | 6,800.0 | 6,799.5 | 40.6 | 2.2 | -88.64 | 747.4 | -1,456.0 | 889.2 | 848.8 | 40.44 | 21.989 | |
| 8,400.0 | 6,819.0 | 6,800.0 | 6,799.5 | 42.9 | 2.2 | -88.64 | 747.4 | -1,456.0 | 830.0 | 787.1 | 42.90 | 19.348 | |
| 8,500.0 | 6,819.0 | 6,800.0 | 6,799.5 | 45.3 | 2.2 | -88.64 | 747.4 | -1,456.0 | 779.2 | 733.8 | 45.40 | 17.162 | |
| 8,600.0 | 6,819.0 | 6,800.0 | 6,799.5 | 47.8 | 2.2 | -88.64 | 747.4 | -1,456.0 | 738.4 | 690.5 | 47.94 | 15.404 | |
| 8,700.0 | 6,819.0 | 6,800.0 | 6,799.5 | 50.3 | 2.2 | -88.64 | 747.4 | -1,456.0 | 709.6 | 659.1 | 50.51 | 14.049 | |
| 8,800.0 | 6,819.0 | 6,800.0 | 6,799.5 | 52.8 | 2.2 | -88.64 | 747.4 | -1,456.0 | 694.0 | 640.9 | 53.10 | 13.071 | |
| 8,859.0 | 6,819.0 | 6,800.0 | 6,799.5 | 54.4 | 2.2 | -88.64 | 747.4 | -1,456.0 | 691.5 | 636.9 | 54.64 | 12.656 | CC, ES |
| 8,900.0 | 6,819.0 | 6,800.0 | 6,799.5 | 55.4 | 2.2 | -88.64 | 747.4 | -1,456.0 | 692.8 | 637.0 | 55.71 | 12.434 | |
| 9,000.0 | 6,819.0 | 6,800.0 | 6,799.5 | 58.0 | 2.2 | -88.64 | 747.4 | -1,456.0 | 705.8 | 647.4 | 58.35 | 12.096 | |
| 9,100.0 | 6,819.0 | 6,800.0 | 6,799.5 | 60.6 | 2.2 | -88.64 | 747.4 | -1,456.0 | 732.3 | 671.3 | 61.00 | 12.006 | SF |
| 9,200.0 | 6,819.0 | 6,800.0 | 6,799.5 | 63.2 | 2.2 | -88.64 | 747.4 | -1,456.0 | 771.1 | 707.4 | 63.66 | 12.112 | |
| 9,300.0 | 6,819.0 | 6,800.0 | 6,799.5 | 65.9 | 2.2 | -88.64 | 747.4 | -1,456.0 | 820.2 | 753.9 | 66.34 | 12.364 | |
| 9,400.0 | 6,819.0 | 6,800.0 | 6,799.5 | 68.5 | 2.2 | -88.64 | 747.4 | -1,456.0 | 878.0 | 809.0 | 69.03 | 12.720 | |
| 9,500.0 | 6,819.0 | 6,800.0 | 6,799.5 | 71.2 | 2.2 | -88.64 | 747.4 | -1,456.0 | 942.9 | 871.2 | 71.72 | 13.147 | |
| 9,600.0 | 6,819.0 | 6,800.0 | 6,799.5 | 73.9 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,013.6 | 939.1 | 74.43 | 13.618 | |
| 9,700.0 | 6,819.0 | 6,800.0 | 6,799.5 | 76.5 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,088.8 | 1,011.7 | 77.14 | 14.115 | |
| 9,800.0 | 6,819.0 | 6,800.0 | 6,799.5 | 79.2 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,167.8 | 1,087.9 | 79.86 | 14.623 | |
| 9,900.0 | 6,819.0 | 6,800.0 | 6,799.5 | 81.9 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,249.8 | 1,167.2 | 82.59 | 15.133 | |
| 10,000.0 | 6,819.0 | 6,800.0 | 6,799.5 | 84.6 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,334.2 | 1,248.9 | 85.32 | 15.638 | |
| 10,100.0 | 6,819.0 | 6,800.0 | 6,799.5 | 87.4 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,420.7 | 1,332.6 | 88.06 | 16.134 | |
| 10,200.0 | 6,819.0 | 6,800.0 | 6,799.5 | 90.1 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,508.8 | 1,418.0 | 90.80 | 16.617 | |
| 10,300.0 | 6,819.0 | 6,800.0 | 6,799.5 | 92.8 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,598.4 | 1,504.8 | 93.54 | 17.087 | |
| 10,400.0 | 6,819.0 | 6,800.0 | 6,799.5 | 95.5 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,689.1 | 1,592.8 | 96.29 | 17.541 | |
| 10,500.0 | 6,819.0 | 6,800.0 | 6,799.5 | 98.3 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,780.8 | 1,681.7 | 99.05 | 17.979 | |
| 10,600.0 | 6,819.0 | 6,800.0 | 6,799.5 | 101.0 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,873.3 | 1,771.5 | 101.80 | 18.402 | |
| 10,700.0 | 6,819.0 | 6,800.0 | 6,799.5 | 103.8 | 2.2 | -88.64 | 747.4 | -1,456.0 | 1,966.6 | 1,862.1 | 104.56 | 18.808 | |
| 10,800.0 | 6,819.0 | 6,800.0 | 6,799.5 | 106.5 | 2.2 | -88.64 | 747.4 | -1,456.0 | 2,060.5 | 1,953.2 | 107.32 | 19.199 | |
| 10,900.0 | 6,819.0 | 6,800.0 | 6,799.5 | 109.2 | 2.2 | -88.64 | 747.4 | -1,456.0 | 2,155.0 | 2,044.9 | 110.09 | 19.575 | |
| 11,000.0 | 6,819.0 | 6,800.0 | 6,799.5 | 112.0 | 2.2 | -88.64 | 747.4 | -1,456.0 | 2,249.9 | 2,137.1 | 112.85 | 19.937 | |
| 11,100.0 | 6,819.0 | 6,800.0 | 6,799.5 | 114.8 | 2.2 | -88.64 | 747.4 | -1,456.0 | 2,345.3 | 2,229.7 | 115.62 | 20.284 | |
| 11,200.0 | 6,819.0 | 6,800.0 | 6,799.5 | 117.5 | 2.2 | -88.64 | 747.4 | -1,456.0 | 2,441.0 | 2,322.6 | 118.39 | 20.618 | |
| 11,300.0 | 6,819.0 | 6,800.0 | 6,799.5 | 120.3 | 2.2 | -88.64 | 747.4 | -1,456.0 | 2,537.1 | 2,415.9 | 121.17 | 20.939 | |
| 11,400.0 | 6,819.0 | 6,800.0 | 6,799.5 | 123.0 | 2.2 | -88.64 | 747.4 | -1,456.0 | 2,633.4 | 2,509.5 | 123.94 | 21.248 | |
| 11,500.0 | 6,819.0 | 6,797.3 | 6,796.8 | 125.8 | 2.2 | -88.42 | 747.4 | -1,456.0 | 2,730.1 | 2,603.4 | 126.70 | 21.548 | |
| 11,600.0 | 6,819.0 | 6,796.6 | 6,796.1 | 128.6 | 2.2 | -88.36 | 747.4 | -1,456.0 | 2,826.9 | 2,697.4 | 129.47 | 21.835 | |
| 11,700.0 | 6,819.0 | 6,795.9 | 6,795.4 | 131.3 | 2.2 | -88.30 | 747.4 | -1,456.0 | 2,924.0 | 2,791.7 | 132.24 | 22.111 | |
| 11,800.0 | 6,819.0 | 6,795.2 | 6,794.7 | 134.1 | 2.2 | -88.24 | 747.4 | -1,456.0 | 3,021.2 | 2,886.2 | 135.01 | 22.377 | |
| 11,900.0 | 6,819.0 | 6,794.5 | 6,794.0 | 136.9 | 2.2 | -88.18 | 747.3 | -1,456.0 | 3,118.7 | 2,980.9 | 137.79 | 22.634 | |
| 12,000.0 | 6,819.0 | 6,793.8 | 6,793.3 | 139.6 | 2.2 | -88.12 | 747.3 | -1,456.0 | 3,216.2 | 3,075.7 | 140.56 | 22.881 | |
| 12,100.0 | 6,819.0 | 6,793.1 | 6,792.6 | 142.4 | 2.2 | -88.06 | 747.3 | -1,456.0 | 3,314.0 | 3,170.6 | 143.34 | 23.120 | |
| 12,200.0 | 6,819.0 | 6,792.4 | 6,791.9 | 145.2 | 2.2 | -88.00 | 747.3 | -1,456.0 | 3,411.8 | 3,265.7 | 146.11 | 23.350 | |
| 12,300.0 | 6,819.0 | 6,791.7 | 6,791.2 | 148.0 | 2.2 | -87.95 | 747.3 | -1,456.1 | 3,509.8 | 3,360.9 | 148.89 | 23.573 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,400.0 | 6,819.0 | 6,791.0 | 6,790.5 | 150.8 | 2.2 | -87.89 | 747.3 | -1,456.1 | 3,607.9 | 3,456.2 | 151.67 | 23.788 | |
| 12,500.0 | 6,819.0 | 6,790.3 | 6,789.8 | 153.5 | 2.2 | -87.83 | 747.3 | -1,456.1 | 3,706.1 | 3,551.6 | 154.45 | 23.995 | |
| 12,600.0 | 6,819.0 | 6,789.6 | 6,789.1 | 156.3 | 2.2 | -87.78 | 747.3 | -1,456.1 | 3,804.4 | 3,647.2 | 157.23 | 24.196 | |
| 12,700.0 | 6,819.0 | 6,788.9 | 6,788.4 | 159.1 | 2.2 | -87.72 | 747.3 | -1,456.1 | 3,902.8 | 3,742.7 | 160.01 | 24.391 | |
| 12,800.0 | 6,819.0 | 6,788.2 | 6,787.7 | 161.9 | 2.2 | -87.66 | 747.3 | -1,456.1 | 4,001.2 | 3,838.4 | 162.79 | 24.579 | |
| 12,900.0 | 6,819.0 | 6,787.6 | 6,787.1 | 164.7 | 2.2 | -87.61 | 747.3 | -1,456.1 | 4,099.7 | 3,934.2 | 165.57 | 24.761 | |
| 13,000.0 | 6,819.0 | 6,786.9 | 6,786.4 | 167.4 | 2.2 | -87.55 | 747.3 | -1,456.1 | 4,198.3 | 4,030.0 | 168.35 | 24.938 | |
| 13,100.0 | 6,819.0 | 6,786.2 | 6,785.7 | 170.2 | 2.2 | -87.50 | 747.3 | -1,456.1 | 4,297.0 | 4,125.9 | 171.13 | 25.109 | |
| 13,200.0 | 6,819.0 | 6,785.5 | 6,785.1 | 173.0 | 2.2 | -87.44 | 747.3 | -1,456.1 | 4,395.7 | 4,221.8 | 173.92 | 25.275 | |
| 13,300.0 | 6,819.0 | 6,784.9 | 6,784.4 | 175.8 | 2.2 | -87.39 | 747.3 | -1,456.1 | 4,494.5 | 4,317.8 | 176.70 | 25.436 | |
| 13,400.0 | 6,819.0 | 6,784.2 | 6,783.7 | 178.6 | 2.2 | -87.33 | 747.3 | -1,456.1 | 4,593.3 | 4,413.9 | 179.48 | 25.592 | |
| 13,500.0 | 6,819.0 | 6,783.6 | 6,783.1 | 181.4 | 2.2 | -87.28 | 747.3 | -1,456.1 | 4,692.2 | 4,510.0 | 182.26 | 25.744 | |
| 13,600.0 | 6,819.0 | 6,782.9 | 6,782.4 | 184.2 | 2.2 | -87.22 | 747.3 | -1,456.1 | 4,791.2 | 4,606.1 | 185.05 | 25.892 | |
| 13,700.0 | 6,819.0 | 6,782.3 | 6,781.8 | 187.0 | 2.2 | -87.17 | 747.3 | -1,456.1 | 4,890.1 | 4,702.3 | 187.83 | 26.035 | |
| 13,800.0 | 6,819.0 | 6,781.6 | 6,781.1 | 189.7 | 2.2 | -87.12 | 747.3 | -1,456.1 | 4,989.1 | 4,798.5 | 190.61 | 26.174 | |
| 13,900.0 | 6,819.0 | 6,781.0 | 6,780.5 | 192.5 | 2.2 | -87.06 | 747.3 | -1,456.1 | 5,088.2 | 4,894.8 | 193.40 | 26.310 | |
| 14,000.0 | 6,819.0 | 6,780.3 | 6,779.9 | 195.3 | 2.2 | -87.01 | 747.3 | -1,456.1 | 5,187.3 | 4,991.1 | 196.18 | 26.441 | |
| 14,100.0 | 6,819.0 | 6,779.7 | 6,779.2 | 198.1 | 2.2 | -86.96 | 747.3 | -1,456.1 | 5,286.4 | 5,087.4 | 198.96 | 26.570 | |
| 14,200.0 | 6,819.0 | 6,779.1 | 6,778.6 | 200.9 | 2.2 | -86.90 | 747.3 | -1,456.1 | 5,385.6 | 5,183.8 | 201.75 | 26.695 | |
| 14,300.0 | 6,819.0 | 6,778.4 | 6,777.9 | 203.7 | 2.2 | -86.85 | 747.3 | -1,456.1 | 5,484.7 | 5,280.2 | 204.53 | 26.816 | |
| 14,400.0 | 6,819.0 | 6,777.8 | 6,777.3 | 206.5 | 2.2 | -86.80 | 747.3 | -1,456.2 | 5,584.0 | 5,376.6 | 207.31 | 26.935 | |
| 14,500.0 | 6,819.0 | 6,777.2 | 6,776.7 | 209.3 | 2.2 | -86.75 | 747.3 | -1,456.2 | 5,683.2 | 5,473.1 | 210.10 | 27.050 | |
| 14,600.0 | 6,819.0 | 6,776.6 | 6,776.1 | 212.1 | 2.2 | -86.70 | 747.3 | -1,456.2 | 5,782.5 | 5,569.6 | 212.88 | 27.163 | |
| 14,700.0 | 6,819.0 | 6,775.9 | 6,775.5 | 214.9 | 2.2 | -86.65 | 747.3 | -1,456.2 | 5,881.8 | 5,666.1 | 215.67 | 27.273 | |
| 14,720.3 | 6,819.0 | 6,775.8 | 6,775.4 | 215.4 | 2.2 | -86.64 | 747.3 | -1,456.2 | 5,901.9 | 5,685.7 | 216.23 | 27.295 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -173.22 | -496.2 | -59.0 | 499.7 | | | | |
| 100.0 | 100.0 | 94.8 | 94.8 | 0.1 | 0.1 | -173.20 | -496.0 | -59.1 | 499.5 | 499.4 | 0.17 | 2,912.857 | |
| 200.0 | 200.0 | 194.0 | 194.0 | 0.3 | 0.2 | -173.18 | -495.7 | -59.3 | 499.2 | 498.7 | 0.53 | 935.790 | |
| 253.1 | 253.1 | 246.1 | 246.1 | 0.4 | 0.3 | -173.16 | -495.6 | -59.5 | 499.2 | 498.5 | 0.69 | 722.428 | CC |
| 300.0 | 300.0 | 292.0 | 292.0 | 0.5 | 0.3 | -173.13 | -495.6 | -59.7 | 499.2 | 498.4 | 0.83 | 604.246 | ES |
| 400.0 | 400.0 | 390.5 | 390.5 | 0.8 | 0.4 | -173.05 | -495.9 | -60.5 | 499.6 | 498.4 | 1.11 | 448.459 | |
| 500.0 | 500.0 | 491.3 | 491.3 | 1.0 | 0.4 | -172.99 | -496.3 | -61.1 | 500.0 | 498.6 | 1.40 | 358.334 | |
| 600.0 | 600.0 | 592.1 | 592.1 | 1.2 | 0.5 | -172.93 | -496.5 | -61.6 | 500.3 | 498.6 | 1.67 | 299.657 | |
| 700.0 | 700.0 | 692.4 | 692.4 | 1.4 | 0.5 | -172.85 | -496.5 | -62.2 | 500.4 | 498.5 | 1.94 | 257.937 | |
| 800.0 | 800.0 | 790.8 | 790.8 | 1.7 | 0.6 | -172.79 | -496.7 | -62.9 | 500.7 | 498.5 | 2.20 | 227.317 | |
| 900.0 | 900.0 | 891.8 | 891.8 | 1.9 | 0.6 | 166.14 | -497.0 | -63.3 | 502.7 | 500.3 | 2.47 | 203.389 | |
| 1,000.0 | 999.8 | 992.3 | 992.3 | 2.1 | 0.7 | 166.29 | -497.1 | -63.7 | 508.0 | 505.2 | 2.74 | 185.162 | |
| 1,100.0 | 1,099.5 | 1,090.2 | 1,090.2 | 2.3 | 0.7 | 166.52 | -497.3 | -64.1 | 516.7 | 513.7 | 3.02 | 171.152 | |
| 1,200.0 | 1,198.7 | 1,190.0 | 1,190.0 | 2.6 | 0.7 | 166.80 | -497.7 | -64.4 | 529.0 | 525.7 | 3.31 | 160.032 | |
| 1,300.0 | 1,297.5 | 1,290.8 | 1,290.8 | 2.9 | 0.8 | 167.14 | -497.8 | -64.6 | 544.4 | 540.8 | 3.58 | 152.053 | |
| 1,400.0 | 1,395.6 | 1,389.1 | 1,389.1 | 3.2 | 0.8 | 167.51 | -497.7 | -64.8 | 562.9 | 559.0 | 3.87 | 145.443 | |
| 1,500.0 | 1,493.1 | 1,484.8 | 1,484.7 | 3.5 | 0.8 | 167.91 | -497.7 | -65.1 | 585.0 | 580.8 | 4.17 | 140.271 | |
| 1,507.2 | 1,500.0 | 1,491.6 | 1,491.5 | 3.6 | 0.8 | 167.94 | -497.7 | -65.1 | 586.7 | 582.5 | 4.19 | 139.969 | |
| 1,572.2 | 1,563.0 | 1,554.1 | 1,554.0 | 3.8 | 0.9 | 168.27 | -497.9 | -65.3 | 602.4 | 598.1 | 4.37 | 137.957 | |
| 1,600.0 | 1,590.0 | 1,580.8 | 1,580.8 | 3.9 | 0.9 | 168.37 | -498.0 | -65.3 | 609.3 | 604.9 | 4.45 | 136.905 | |
| 1,700.0 | 1,686.3 | 1,676.9 | 1,676.9 | 4.4 | 0.9 | 168.76 | -498.3 | -65.5 | 636.2 | 631.5 | 4.77 | 133.297 | |
| 1,800.0 | 1,781.5 | 1,771.7 | 1,771.7 | 4.9 | 0.9 | 169.15 | -498.7 | -65.5 | 666.5 | 661.4 | 5.11 | 130.551 | |
| 1,817.6 | 1,798.2 | 1,788.2 | 1,788.2 | 5.0 | 0.9 | 169.22 | -498.7 | -65.5 | 672.2 | 667.0 | 5.16 | 130.146 | |
| 1,900.0 | 1,876.1 | 1,865.5 | 1,865.4 | 5.5 | 1.0 | 169.63 | -499.1 | -65.6 | 699.0 | 693.6 | 5.43 | 128.813 | |
| 2,000.0 | 1,970.6 | 1,958.7 | 1,958.7 | 6.0 | 1.0 | 170.09 | -499.6 | -65.9 | 731.8 | 726.0 | 5.75 | 127.267 | |
| 2,100.0 | 2,065.1 | 2,052.2 | 2,052.2 | 6.6 | 1.0 | 170.51 | -500.3 | -66.0 | 764.7 | 758.6 | 6.08 | 125.823 | |
| 2,200.0 | 2,159.6 | 2,149.1 | 2,149.1 | 7.2 | 1.0 | 170.88 | -501.0 | -65.8 | 797.6 | 791.2 | 6.40 | 124.539 | |
| 2,300.0 | 2,254.1 | 2,246.7 | 2,246.7 | 7.8 | 1.1 | 171.22 | -501.3 | -65.5 | 830.1 | 823.4 | 6.73 | 123.374 | |
| 2,400.0 | 2,348.7 | 2,340.8 | 2,340.8 | 8.4 | 1.1 | 171.53 | -501.4 | -65.2 | 862.4 | 855.4 | 7.06 | 122.228 | |
| 2,500.0 | 2,443.2 | 2,434.8 | 2,434.7 | 9.1 | 1.1 | 171.80 | -501.7 | -64.7 | 894.9 | 887.6 | 7.39 | 121.125 | |
| 2,600.0 | 2,537.7 | 2,531.0 | 2,530.9 | 9.7 | 1.1 | 172.05 | -501.9 | -64.1 | 927.4 | 919.6 | 7.72 | 120.107 | |
| 2,700.0 | 2,632.2 | 2,626.7 | 2,626.7 | 10.3 | 1.1 | 172.28 | -501.9 | -63.4 | 959.6 | 951.6 | 8.05 | 119.173 | |
| 2,800.0 | 2,726.8 | 2,719.9 | 2,719.9 | 10.9 | 1.1 | 172.50 | -502.0 | -62.9 | 991.9 | 983.5 | 8.39 | 118.285 | |
| 2,900.0 | 2,821.3 | 2,813.2 | 2,813.2 | 11.6 | 1.1 | 172.71 | -502.1 | -62.5 | 1,024.4 | 1,015.7 | 8.72 | 117.424 | |
| 3,000.0 | 2,915.8 | 2,906.4 | 2,906.4 | 12.2 | 1.1 | 172.90 | -502.4 | -62.1 | 1,057.0 | 1,047.9 | 9.06 | 116.610 | |
| 3,100.0 | 3,010.3 | 3,001.8 | 3,001.8 | 12.8 | 1.2 | 173.08 | -502.7 | -61.5 | 1,089.6 | 1,080.2 | 9.40 | 115.849 | |
| 3,200.0 | 3,104.8 | 3,096.7 | 3,096.7 | 13.5 | 1.2 | 173.26 | -503.0 | -61.1 | 1,122.1 | 1,112.4 | 9.75 | 115.143 | |
| 3,300.0 | 3,199.4 | 3,193.6 | 3,193.6 | 14.1 | 1.2 | 173.44 | -503.0 | -60.9 | 1,154.6 | 1,144.5 | 10.07 | 114.628 | |
| 3,400.0 | 3,293.9 | 3,289.7 | 3,289.6 | 14.8 | 1.2 | 173.64 | -502.8 | -61.1 | 1,186.9 | 1,176.5 | 10.40 | 114.083 | |
| 3,500.0 | 3,388.4 | 3,386.0 | 3,386.0 | 15.4 | 1.2 | 173.83 | -502.4 | -61.4 | 1,219.0 | 1,208.3 | 10.74 | 113.520 | |
| 3,600.0 | 3,482.9 | 3,482.8 | 3,482.7 | 16.0 | 1.2 | 174.02 | -501.9 | -61.8 | 1,251.1 | 1,240.0 | 11.07 | 112.971 | |
| 3,700.0 | 3,577.5 | 3,580.6 | 3,580.6 | 16.7 | 1.2 | 174.20 | -501.1 | -62.1 | 1,282.9 | 1,271.5 | 11.41 | 112.435 | |
| 3,800.0 | 3,672.0 | 3,675.2 | 3,675.2 | 17.3 | 1.2 | 174.36 | -500.2 | -62.4 | 1,314.7 | 1,302.9 | 11.75 | 111.904 | |
| 3,900.0 | 3,766.5 | 3,766.5 | 3,766.5 | 18.0 | 1.3 | 174.52 | -499.5 | -62.7 | 1,346.6 | 1,334.5 | 12.09 | 111.384 | |
| 4,000.0 | 3,861.0 | 3,859.3 | 3,859.3 | 18.6 | 1.3 | 174.67 | -499.0 | -63.1 | 1,378.7 | 1,366.2 | 12.43 | 110.900 | |
| 4,100.0 | 3,955.5 | 3,952.7 | 3,952.6 | 19.3 | 1.3 | 174.79 | -498.7 | -63.0 | 1,410.9 | 1,398.1 | 12.77 | 110.454 | |
| 4,200.0 | 4,050.1 | 4,045.8 | 4,045.7 | 19.9 | 1.3 | 174.89 | -498.6 | -62.6 | 1,443.2 | 1,430.1 | 13.12 | 110.016 | |
| 4,300.0 | 4,144.6 | 4,139.8 | 4,139.7 | 20.5 | 1.3 | 174.98 | -498.6 | -62.0 | 1,475.5 | 1,462.1 | 13.47 | 109.571 | |
| 4,400.0 | 4,239.1 | 4,233.3 | 4,233.3 | 21.2 | 1.3 | 175.06 | -498.6 | -61.4 | 1,508.0 | 1,494.1 | 13.82 | 109.144 | |
| 4,500.0 | 4,333.6 | 4,326.0 | 4,325.9 | 21.8 | 1.3 | 175.14 | -498.8 | -60.8 | 1,540.5 | 1,526.3 | 14.17 | 108.735 | |
| 4,600.0 | 4,428.2 | 4,419.3 | 4,419.2 | 22.5 | 1.3 | 175.23 | -498.9 | -60.6 | 1,573.1 | 1,558.6 | 14.52 | 108.352 | |
| 4,700.0 | 4,522.7 | 4,510.2 | 4,510.2 | 23.1 | 1.3 | 175.33 | -499.1 | -60.7 | 1,605.9 | 1,591.0 | 14.87 | 108.026 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,600.0 | 4,599.9 | 23.8 | 1.4 | 175.44 | -499.4 | -61.4 | 1,638.9 | 1,623.7 | 15.22 | 107.679 | |
| 4,900.0 | 4,711.7 | 4,688.5 | 4,688.4 | 24.4 | 1.4 | 175.55 | -499.8 | -62.4 | 1,672.2 | 1,656.6 | 15.57 | 107.365 | |
| 5,000.0 | 4,806.2 | 4,791.3 | 4,791.2 | 25.1 | 1.4 | 175.69 | -500.2 | -63.8 | 1,705.5 | 1,689.6 | 15.93 | 107.053 | |
| 5,100.0 | 4,900.8 | 4,884.0 | 4,883.9 | 25.7 | 1.4 | 175.81 | -500.3 | -65.0 | 1,738.5 | 1,722.2 | 16.28 | 106.763 | |
| 5,200.0 | 4,995.3 | 4,976.7 | 4,976.6 | 26.4 | 1.4 | 175.92 | -500.6 | -66.3 | 1,771.7 | 1,755.0 | 16.64 | 106.472 | |
| 5,300.0 | 5,089.8 | 5,071.8 | 5,071.7 | 27.0 | 1.5 | 176.04 | -500.8 | -67.6 | 1,804.9 | 1,787.9 | 17.00 | 106.188 | |
| 5,400.0 | 5,184.3 | 5,167.7 | 5,167.5 | 27.7 | 1.5 | 176.15 | -500.9 | -69.1 | 1,838.0 | 1,820.6 | 17.35 | 105.910 | |
| 5,500.0 | 5,278.9 | 5,267.4 | 5,267.3 | 28.3 | 1.5 | 176.27 | -500.9 | -70.6 | 1,871.0 | 1,853.2 | 17.71 | 105.635 | |
| 5,533.5 | 5,310.5 | 5,301.5 | 5,301.4 | 28.5 | 1.5 | 176.31 | -500.8 | -71.1 | 1,881.9 | 1,864.1 | 17.83 | 105.536 | |
| 5,600.0 | 5,373.6 | 5,367.6 | 5,367.4 | 28.9 | 1.5 | 176.42 | -500.4 | -72.2 | 1,902.9 | 1,884.9 | 17.98 | 105.805 | |
| 5,700.0 | 5,469.4 | 5,469.4 | 5,469.2 | 29.3 | 1.5 | 176.57 | -499.7 | -73.9 | 1,931.4 | 1,913.3 | 18.16 | 106.328 | |
| 5,800.0 | 5,566.1 | 5,563.3 | 5,563.1 | 29.8 | 1.6 | 176.69 | -498.9 | -75.3 | 1,956.5 | 1,938.2 | 18.31 | 106.836 | |
| 5,900.0 | 5,663.6 | 5,660.9 | 5,660.7 | 30.1 | 1.6 | 176.79 | -498.3 | -76.5 | 1,978.3 | 1,959.9 | 18.43 | 107.329 | |
| 6,000.0 | 5,761.9 | 5,762.1 | 5,761.9 | 30.5 | 1.6 | 176.87 | -497.7 | -77.5 | 1,996.6 | 1,978.1 | 18.52 | 107.792 | |
| 6,100.0 | 5,860.7 | 5,862.5 | 5,862.3 | 30.7 | 1.6 | 176.93 | -497.1 | -78.0 | 2,011.4 | 1,992.8 | 18.58 | 108.225 | |
| 6,200.0 | 5,960.0 | 5,958.3 | 5,958.1 | 31.0 | 1.6 | 176.96 | -496.8 | -78.0 | 2,022.7 | 2,004.1 | 18.62 | 108.621 | |
| 6,300.0 | 6,059.7 | 6,052.4 | 6,052.2 | 31.2 | 1.6 | 176.97 | -496.8 | -77.6 | 2,030.8 | 2,012.1 | 18.64 | 108.924 | |
| 6,400.0 | 6,159.6 | 6,146.9 | 6,146.7 | 31.3 | 1.6 | 176.96 | -497.2 | -76.8 | 2,035.7 | 2,017.0 | 18.66 | 109.091 | |
| 6,486.1 | 6,245.7 | 6,228.4 | 6,228.1 | 31.4 | 1.6 | -161.90 | -497.8 | -75.9 | 2,037.3 | 2,004.3 | 32.99 | 61.765 | |
| 6,500.0 | 6,259.6 | 6,241.6 | 6,241.3 | 31.4 | 1.6 | -161.91 | -498.0 | -75.7 | 2,037.4 | 2,004.4 | 33.00 | 61.743 | |
| 6,516.1 | 6,275.7 | 6,256.9 | 6,256.7 | 31.4 | 1.6 | -161.92 | -498.1 | -75.5 | 2,037.5 | 2,004.5 | 33.01 | 61.717 | |
| 6,550.0 | 6,309.5 | 6,289.1 | 6,288.9 | 31.5 | 1.6 | -71.95 | -498.5 | -75.1 | 2,037.5 | 2,018.7 | 18.72 | 108.817 | |
| 6,600.0 | 6,359.4 | 6,336.0 | 6,335.8 | 31.5 | 1.6 | -72.15 | -499.1 | -74.4 | 2,036.6 | 2,017.8 | 18.73 | 108.753 | |
| 6,650.0 | 6,408.8 | 6,382.3 | 6,382.0 | 31.5 | 1.7 | -72.51 | -499.7 | -73.6 | 2,034.7 | 2,016.0 | 18.74 | 108.569 | |
| 6,700.0 | 6,457.5 | 6,429.2 | 6,428.9 | 31.5 | 1.7 | -73.02 | -500.5 | -72.9 | 2,031.9 | 2,013.1 | 18.77 | 108.244 | |
| 6,716.1 | 6,473.1 | 6,444.4 | 6,444.1 | 31.5 | 1.7 | -73.23 | -500.7 | -72.7 | 2,030.8 | 2,012.0 | 18.79 | 108.106 | |
| 6,725.0 | 6,481.6 | 6,452.7 | 6,452.5 | 31.5 | 1.7 | -73.37 | -500.9 | -72.6 | 2,030.1 | 2,011.3 | 18.79 | 108.036 | |
| 6,750.0 | 6,505.3 | 6,475.9 | 6,475.6 | 31.5 | 1.7 | -73.82 | -501.2 | -72.3 | 2,028.1 | 2,009.2 | 18.82 | 107.784 | |
| 6,775.0 | 6,528.5 | 6,498.7 | 6,498.4 | 31.4 | 1.7 | -74.34 | -501.6 | -72.0 | 2,025.7 | 2,006.8 | 18.85 | 107.450 | |
| 6,800.0 | 6,551.3 | 6,520.8 | 6,520.5 | 31.4 | 1.7 | -74.91 | -501.9 | -71.7 | 2,023.0 | 2,004.1 | 18.90 | 107.034 | |
| 6,825.0 | 6,573.4 | 6,542.4 | 6,542.1 | 31.4 | 1.7 | -75.54 | -502.2 | -71.5 | 2,020.0 | 2,001.0 | 18.96 | 106.538 | |
| 6,850.0 | 6,595.0 | 6,563.3 | 6,563.0 | 31.3 | 1.7 | -76.22 | -502.6 | -71.3 | 2,016.8 | 1,997.7 | 19.03 | 105.964 | |
| 6,875.0 | 6,615.8 | 6,583.6 | 6,583.3 | 31.3 | 1.7 | -76.95 | -502.9 | -71.1 | 2,013.3 | 1,994.2 | 19.12 | 105.319 | |
| 6,900.0 | 6,635.9 | 6,603.5 | 6,603.2 | 31.3 | 1.7 | -77.71 | -503.2 | -70.9 | 2,009.7 | 1,990.5 | 19.21 | 104.604 | |
| 6,925.0 | 6,655.1 | 6,624.4 | 6,624.1 | 31.2 | 1.7 | -78.55 | -503.5 | -70.8 | 2,005.9 | 1,986.6 | 19.32 | 103.809 | |
| 6,950.0 | 6,673.6 | 6,644.3 | 6,644.0 | 31.2 | 1.7 | -79.40 | -503.8 | -70.6 | 2,002.0 | 1,982.5 | 19.44 | 102.964 | |
| 6,975.0 | 6,691.1 | 6,663.2 | 6,662.9 | 31.1 | 1.7 | -80.28 | -504.0 | -70.4 | 1,997.9 | 1,978.4 | 19.57 | 102.082 | |
| 7,000.0 | 6,707.6 | 6,681.1 | 6,680.8 | 31.1 | 1.7 | -81.16 | -504.3 | -70.3 | 1,993.8 | 1,974.1 | 19.71 | 101.172 | |
| 7,025.0 | 6,723.1 | 6,697.9 | 6,697.6 | 31.0 | 1.7 | -82.04 | -504.5 | -70.2 | 1,989.7 | 1,969.8 | 19.85 | 100.243 | |
| 7,050.0 | 6,737.6 | 6,700.0 | 6,699.7 | 31.0 | 1.7 | -82.59 | -504.5 | -70.2 | 1,985.6 | 1,965.6 | 19.96 | 99.501 | |
| 7,075.0 | 6,751.0 | 6,700.0 | 6,699.7 | 30.9 | 1.7 | -83.06 | -504.5 | -70.2 | 1,981.6 | 1,961.5 | 20.06 | 98.765 | |
| 7,100.0 | 6,763.3 | 6,700.0 | 6,699.7 | 30.8 | 1.7 | -83.52 | -504.5 | -70.2 | 1,977.8 | 1,957.6 | 20.18 | 98.000 | |
| 7,125.0 | 6,774.5 | 6,700.0 | 6,699.7 | 30.8 | 1.7 | -83.96 | -504.5 | -70.2 | 1,974.2 | 1,953.8 | 20.31 | 97.204 | |
| 7,150.0 | 6,784.4 | 6,700.0 | 6,699.7 | 30.7 | 1.7 | -84.38 | -504.5 | -70.2 | 1,970.7 | 1,950.2 | 20.45 | 96.372 | |
| 7,175.0 | 6,793.1 | 6,700.0 | 6,699.7 | 30.7 | 1.7 | -84.78 | -504.5 | -70.2 | 1,967.4 | 1,946.8 | 20.60 | 95.502 | |
| 7,200.0 | 6,800.6 | 6,700.0 | 6,699.7 | 30.6 | 1.7 | -85.15 | -504.5 | -70.2 | 1,964.3 | 1,943.5 | 20.77 | 94.594 | |
| 7,225.0 | 6,806.8 | 6,700.0 | 6,699.7 | 30.6 | 1.7 | -85.50 | -504.5 | -70.2 | 1,961.4 | 1,940.5 | 20.94 | 93.648 | |
| 7,250.0 | 6,811.8 | 6,700.0 | 6,699.7 | 30.5 | 1.7 | -85.82 | -504.5 | -70.2 | 1,958.7 | 1,937.6 | 21.14 | 92.665 | |
| 7,275.0 | 6,815.5 | 6,700.0 | 6,699.7 | 30.5 | 1.7 | -86.12 | -504.5 | -70.2 | 1,956.3 | 1,934.9 | 21.35 | 91.650 | |
| 7,300.0 | 6,817.8 | 6,700.0 | 6,699.7 | 30.4 | 1.7 | -86.38 | -504.5 | -70.2 | 1,954.0 | 1,932.5 | 21.57 | 90.606 | |
| 7,325.0 | 6,818.9 | 6,700.0 | 6,699.7 | 30.4 | 1.7 | -86.62 | -504.5 | -70.2 | 1,952.0 | 1,930.2 | 21.80 | 89.539 | |
| 7,332.8 | 6,819.0 | 6,700.0 | 6,699.7 | 30.4 | 1.7 | -86.69 | -504.5 | -70.2 | 1,951.5 | 1,929.6 | 21.88 | 89.203 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,700.0 | 6,699.7 | 30.3 | 1.7 | -86.69 | -504.5 | -70.2 | 1,947.8 | 1,925.3 | 22.54 | 86.402 | |
| 7,473.2 | 6,819.0 | 6,700.0 | 6,699.7 | 30.2 | 1.7 | -86.69 | -504.5 | -70.2 | 1,946.4 | 1,923.0 | 23.46 | 82.964 | |
| 7,500.0 | 6,819.0 | 6,700.0 | 6,699.7 | 30.2 | 1.7 | -86.69 | -504.5 | -70.2 | 1,946.6 | 1,922.8 | 23.80 | 81.798 | |
| 7,600.0 | 6,819.0 | 6,700.0 | 6,699.7 | 30.3 | 1.7 | -86.69 | -504.5 | -70.2 | 1,950.6 | 1,925.2 | 25.32 | 77.034 | |
| 7,700.0 | 6,819.0 | 6,700.0 | 6,699.7 | 30.6 | 1.7 | -86.69 | -504.5 | -70.2 | 1,959.6 | 1,932.5 | 27.06 | 72.407 | |
| 7,800.0 | 6,819.0 | 6,700.0 | 6,699.7 | 31.3 | 1.7 | -86.69 | -504.5 | -70.2 | 1,973.7 | 1,944.7 | 28.98 | 68.094 | |
| 7,900.0 | 6,819.0 | 6,700.0 | 6,699.7 | 32.5 | 1.7 | -86.69 | -504.5 | -70.2 | 1,992.7 | 1,961.6 | 31.05 | 64.179 | |
| 8,000.0 | 6,819.0 | 6,700.0 | 6,699.7 | 34.2 | 1.7 | -86.69 | -504.5 | -70.2 | 2,016.5 | 1,983.2 | 33.23 | 60.686 | |
| 8,100.0 | 6,819.0 | 6,700.0 | 6,699.7 | 36.1 | 1.7 | -86.69 | -504.5 | -70.2 | 2,044.9 | 2,009.4 | 35.50 | 57.603 | |
| 8,200.0 | 6,819.0 | 6,700.0 | 6,699.7 | 38.3 | 1.7 | -86.69 | -504.5 | -70.2 | 2,077.7 | 2,039.9 | 37.85 | 54.898 | |
| 8,300.0 | 6,819.0 | 6,700.0 | 6,699.7 | 40.6 | 1.7 | -86.69 | -504.5 | -70.2 | 2,114.8 | 2,074.5 | 40.26 | 52.534 | |
| 8,400.0 | 6,819.0 | 6,700.0 | 6,699.7 | 42.9 | 1.7 | -86.69 | -504.5 | -70.2 | 2,155.8 | 2,113.1 | 42.71 | 50.471 | |
| 8,500.0 | 6,819.0 | 6,700.0 | 6,699.7 | 45.3 | 1.7 | -86.69 | -504.5 | -70.2 | 2,200.7 | 2,155.5 | 45.22 | 48.671 | |
| 8,600.0 | 6,819.0 | 6,700.0 | 6,699.7 | 47.8 | 1.7 | -86.69 | -504.5 | -70.2 | 2,249.1 | 2,201.3 | 47.75 | 47.099 | |
| 8,700.0 | 6,819.0 | 6,700.0 | 6,699.7 | 50.3 | 1.7 | -86.69 | -504.5 | -70.2 | 2,300.8 | 2,250.5 | 50.32 | 45.725 | |
| 8,800.0 | 6,819.0 | 6,700.0 | 6,699.7 | 52.8 | 1.7 | -86.69 | -504.5 | -70.2 | 2,355.6 | 2,302.7 | 52.91 | 44.522 | |
| 8,900.0 | 6,819.0 | 6,700.0 | 6,699.7 | 55.4 | 1.7 | -86.69 | -504.5 | -70.2 | 2,413.4 | 2,357.9 | 55.52 | 43.466 | |
| 9,000.0 | 6,819.0 | 6,700.0 | 6,699.7 | 58.0 | 1.7 | -86.69 | -504.5 | -70.2 | 2,473.8 | 2,415.7 | 58.15 | 42.539 | |
| 9,100.0 | 6,819.0 | 6,700.0 | 6,699.7 | 60.6 | 1.7 | -86.69 | -504.5 | -70.2 | 2,536.8 | 2,476.0 | 60.80 | 41.721 | |
| 9,200.0 | 6,819.0 | 6,700.0 | 6,699.7 | 63.2 | 1.7 | -86.69 | -504.5 | -70.2 | 2,602.0 | 2,538.6 | 63.46 | 41.000 | |
| 9,300.0 | 6,819.0 | 6,700.0 | 6,699.7 | 65.9 | 1.7 | -86.69 | -504.5 | -70.2 | 2,669.4 | 2,603.3 | 66.14 | 40.361 | |
| 9,400.0 | 6,819.0 | 6,700.0 | 6,699.7 | 68.5 | 1.7 | -86.69 | -504.5 | -70.2 | 2,738.9 | 2,670.0 | 68.82 | 39.795 | |
| 9,500.0 | 6,819.0 | 6,700.0 | 6,699.7 | 71.2 | 1.7 | -86.69 | -504.5 | -70.2 | 2,810.1 | 2,738.6 | 71.52 | 39.292 | |
| 9,600.0 | 6,819.0 | 6,700.0 | 6,699.7 | 73.9 | 1.7 | -86.69 | -504.5 | -70.2 | 2,883.1 | 2,808.8 | 74.22 | 38.844 | |
| 9,700.0 | 6,819.0 | 6,700.0 | 6,699.7 | 76.5 | 1.7 | -86.69 | -504.5 | -70.2 | 2,957.6 | 2,880.7 | 76.93 | 38.444 | |
| 9,800.0 | 6,819.0 | 6,700.0 | 6,699.7 | 79.2 | 1.7 | -86.69 | -504.5 | -70.2 | 3,033.6 | 2,954.0 | 79.65 | 38.087 | |
| 9,900.0 | 6,819.0 | 6,700.0 | 6,699.7 | 81.9 | 1.7 | -86.69 | -504.5 | -70.2 | 3,111.0 | 3,028.6 | 82.37 | 37.767 | |
| 10,000.0 | 6,819.0 | 6,700.0 | 6,699.7 | 84.6 | 1.7 | -86.69 | -504.5 | -70.2 | 3,189.6 | 3,104.5 | 85.10 | 37.480 | |
| 10,100.0 | 6,819.0 | 6,700.0 | 6,699.7 | 87.4 | 1.7 | -86.69 | -504.5 | -70.2 | 3,269.4 | 3,181.6 | 87.84 | 37.221 | |
| 10,200.0 | 6,819.0 | 6,700.0 | 6,699.7 | 90.1 | 1.7 | -86.69 | -504.5 | -70.2 | 3,350.3 | 3,259.7 | 90.57 | 36.989 | |
| 10,300.0 | 6,819.0 | 6,700.0 | 6,699.7 | 92.8 | 1.7 | -86.69 | -504.5 | -70.2 | 3,432.1 | 3,338.8 | 93.32 | 36.779 | |
| 10,400.0 | 6,819.0 | 6,700.0 | 6,699.7 | 95.5 | 1.7 | -86.69 | -504.5 | -70.2 | 3,515.0 | 3,418.9 | 96.06 | 36.590 | |
| 10,500.0 | 6,819.0 | 6,700.0 | 6,699.7 | 98.3 | 1.7 | -86.69 | -504.5 | -70.2 | 3,598.7 | 3,499.8 | 98.81 | 36.419 | |
| 10,600.0 | 6,819.0 | 6,700.0 | 6,699.7 | 101.0 | 1.7 | -86.69 | -504.5 | -70.2 | 3,683.2 | 3,581.6 | 101.57 | 36.263 | |
| 10,700.0 | 6,819.0 | 6,700.0 | 6,699.7 | 103.8 | 1.7 | -86.69 | -504.5 | -70.2 | 3,768.4 | 3,664.1 | 104.32 | 36.123 | |
| 10,800.0 | 6,819.0 | 6,700.0 | 6,699.7 | 106.5 | 1.7 | -86.69 | -504.5 | -70.2 | 3,854.4 | 3,747.3 | 107.08 | 35.995 | |
| 10,900.0 | 6,819.0 | 6,700.0 | 6,699.7 | 109.2 | 1.7 | -86.69 | -504.5 | -70.2 | 3,941.0 | 3,831.2 | 109.84 | 35.879 | |
| 11,000.0 | 6,819.0 | 6,700.0 | 6,699.7 | 112.0 | 1.7 | -86.69 | -504.5 | -70.2 | 4,028.3 | 3,915.7 | 112.61 | 35.773 | |
| 11,100.0 | 6,819.0 | 6,700.0 | 6,699.7 | 114.8 | 1.7 | -86.69 | -504.5 | -70.2 | 4,116.1 | 4,000.8 | 115.37 | 35.677 | |
| 11,200.0 | 6,819.0 | 6,700.0 | 6,699.7 | 117.5 | 1.7 | -86.69 | -504.5 | -70.2 | 4,204.5 | 4,086.4 | 118.14 | 35.589 | |
| 11,300.0 | 6,819.0 | 6,700.0 | 6,699.7 | 120.3 | 1.7 | -86.69 | -504.5 | -70.2 | 4,293.4 | 4,172.5 | 120.91 | 35.509 | |
| 11,400.0 | 6,819.0 | 6,700.0 | 6,699.7 | 123.0 | 1.7 | -86.69 | -504.5 | -70.2 | 4,382.8 | 4,259.1 | 123.68 | 35.436 | |
| 11,500.0 | 6,819.0 | 6,700.0 | 6,699.7 | 125.8 | 1.7 | -86.69 | -504.5 | -70.2 | 4,472.6 | 4,346.1 | 126.45 | 35.370 | |
| 11,600.0 | 6,819.0 | 6,700.0 | 6,699.7 | 128.6 | 1.7 | -86.69 | -504.5 | -70.2 | 4,562.8 | 4,433.6 | 129.23 | 35.309 | |
| 11,700.0 | 6,819.0 | 6,700.0 | 6,699.7 | 131.3 | 1.7 | -86.69 | -504.5 | -70.2 | 4,653.5 | 4,521.5 | 132.00 | 35.253 | |
| 11,800.0 | 6,819.0 | 6,700.0 | 6,699.7 | 134.1 | 1.7 | -86.69 | -504.5 | -70.2 | 4,744.5 | 4,609.7 | 134.78 | 35.202 | |
| 11,900.0 | 6,819.0 | 6,700.0 | 6,699.7 | 136.9 | 1.7 | -86.69 | -504.5 | -70.2 | 4,835.9 | 4,698.3 | 137.56 | 35.155 | |
| 12,000.0 | 6,819.0 | 6,700.0 | 6,699.7 | 139.6 | 1.7 | -86.69 | -504.5 | -70.2 | 4,927.6 | 4,787.2 | 140.34 | 35.112 | |
| 12,100.0 | 6,819.0 | 6,700.0 | 6,699.7 | 142.4 | 1.7 | -86.69 | -504.5 | -70.2 | 5,019.6 | 4,876.5 | 143.12 | 35.073 | |
| 12,200.0 | 6,819.0 | 6,700.0 | 6,699.7 | 145.2 | 1.7 | -86.69 | -504.5 | -70.2 | 5,111.9 | 4,966.0 | 145.90 | 35.037 | |
| 12,300.0 | 6,819.0 | 6,700.0 | 6,699.7 | 148.0 | 1.7 | -86.69 | -504.5 | -70.2 | 5,204.5 | 5,055.8 | 148.68 | 35.005 | |
| 12,400.0 | 6,819.0 | 6,700.0 | 6,699.7 | 150.8 | 1.7 | -86.69 | -504.5 | -70.2 | 5,297.4 | 5,145.9 | 151.46 | 34.975 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 2 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,500.0 | 6,819.0 | 6,700.0 | 6,699.7 | 153.5 | 1.7 | -86.69 | -504.5 | -70.2 | 5,390.5 | 5,236.3 | 154.25 | 34.947 | |
| 12,600.0 | 6,819.0 | 6,700.0 | 6,699.7 | 156.3 | 1.7 | -86.69 | -504.5 | -70.2 | 5,483.9 | 5,326.9 | 157.03 | 34.922 | |
| 12,700.0 | 6,819.0 | 6,700.0 | 6,699.7 | 159.1 | 1.7 | -86.69 | -504.5 | -70.2 | 5,577.5 | 5,417.7 | 159.82 | 34.899 | |
| 12,800.0 | 6,819.0 | 6,700.0 | 6,699.7 | 161.9 | 1.7 | -86.69 | -504.5 | -70.2 | 5,671.3 | 5,508.7 | 162.61 | 34.878 | |
| 12,900.0 | 6,819.0 | 6,700.0 | 6,699.7 | 164.7 | 1.7 | -86.69 | -504.5 | -70.2 | 5,765.3 | 5,600.0 | 165.39 | 34.859 | |
| 13,000.0 | 6,819.0 | 6,700.0 | 6,699.7 | 167.4 | 1.7 | -86.69 | -504.5 | -70.2 | 5,859.6 | 5,691.4 | 168.18 | 34.841 | |
| 13,100.0 | 6,819.0 | 6,700.0 | 6,699.7 | 170.2 | 1.7 | -86.69 | -504.5 | -70.2 | 5,954.0 | 5,783.0 | 170.97 | 34.825 | |
| 13,200.0 | 6,819.0 | 6,700.0 | 6,699.7 | 173.0 | 1.7 | -86.69 | -504.5 | -70.2 | 6,048.6 | 5,874.8 | 173.76 | 34.810 | |
| 13,300.0 | 6,819.0 | 6,700.0 | 6,699.7 | 175.8 | 1.7 | -86.69 | -504.5 | -70.2 | 6,143.3 | 5,966.8 | 176.55 | 34.797 | |
| 13,400.0 | 6,819.0 | 6,700.0 | 6,699.7 | 178.6 | 1.7 | -86.69 | -504.5 | -70.2 | 6,238.3 | 6,058.9 | 179.34 | 34.785 | |
| 13,500.0 | 6,819.0 | 6,700.0 | 6,699.7 | 181.4 | 1.7 | -86.69 | -504.5 | -70.2 | 6,333.4 | 6,151.2 | 182.13 | 34.774 | |
| 13,600.0 | 6,819.0 | 6,700.0 | 6,699.7 | 184.2 | 1.7 | -86.69 | -504.5 | -70.2 | 6,428.6 | 6,243.7 | 184.92 | 34.764 | |
| 13,700.0 | 6,819.0 | 6,700.0 | 6,699.7 | 187.0 | 1.7 | -86.69 | -504.5 | -70.2 | 6,524.0 | 6,336.3 | 187.71 | 34.755 | |
| 13,800.0 | 6,819.0 | 6,700.0 | 6,699.7 | 189.7 | 1.7 | -86.69 | -504.5 | -70.2 | 6,619.5 | 6,429.0 | 190.50 | 34.747 | |
| 13,900.0 | 6,819.0 | 6,700.0 | 6,699.7 | 192.5 | 1.7 | -86.69 | -504.5 | -70.2 | 6,715.1 | 6,521.8 | 193.30 | 34.740 | |
| 14,000.0 | 6,819.0 | 6,700.0 | 6,699.7 | 195.3 | 1.7 | -86.69 | -504.5 | -70.2 | 6,810.9 | 6,614.8 | 196.09 | 34.734 | |
| 14,100.0 | 6,819.0 | 6,700.0 | 6,699.7 | 198.1 | 1.7 | -86.69 | -504.5 | -70.2 | 6,906.8 | 6,707.9 | 198.88 | 34.728 | |
| 14,200.0 | 6,819.0 | 6,700.0 | 6,699.7 | 200.9 | 1.7 | -86.69 | -504.5 | -70.2 | 7,002.8 | 6,801.1 | 201.68 | 34.723 | |
| 14,300.0 | 6,819.0 | 6,700.0 | 6,699.7 | 203.7 | 1.7 | -86.69 | -504.5 | -70.2 | 7,098.9 | 6,894.4 | 204.47 | 34.719 | |
| 14,400.0 | 6,819.0 | 6,700.0 | 6,699.7 | 206.5 | 1.7 | -86.69 | -504.5 | -70.2 | 7,195.1 | 6,987.9 | 207.26 | 34.715 | |
| 14,500.0 | 6,819.0 | 6,700.0 | 6,699.7 | 209.3 | 1.7 | -86.69 | -504.5 | -70.2 | 7,291.4 | 7,081.4 | 210.06 | 34.711 | |
| 14,600.0 | 6,819.0 | 6,700.0 | 6,699.7 | 212.1 | 1.7 | -86.69 | -504.5 | -70.2 | 7,387.9 | 7,175.0 | 212.85 | 34.709 | |
| 14,700.0 | 6,819.0 | 6,700.0 | 6,699.7 | 214.9 | 1.7 | -86.69 | -504.5 | -70.2 | 7,484.4 | 7,268.7 | 215.65 | 34.706 | |
| 14,720.3 | 6,819.0 | 6,700.0 | 6,699.7 | 215.4 | 1.7 | -86.69 | -504.5 | -70.2 | 7,504.0 | 7,287.8 | 216.22 | 34.706 | SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 31-9 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -144.36 | -1,656.1 | -1,187.3 | 2,037.8 | | | | |
| 100.0 | 100.0 | 81.0 | 81.0 | 0.1 | 0.0 | -144.36 | -1,656.1 | -1,187.3 | 2,037.7 | 2,037.7 | 0.09 | N/A | |
| 200.0 | 200.0 | 181.0 | 181.0 | 0.3 | 0.9 | -144.36 | -1,656.1 | -1,187.3 | 2,037.7 | 2,036.6 | 1.17 | 1,735.696 | |
| 300.0 | 300.0 | 281.0 | 281.0 | 0.5 | 2.9 | -144.36 | -1,656.1 | -1,187.3 | 2,037.7 | 2,034.3 | 3.48 | 585.484 | |
| 400.0 | 400.0 | 381.0 | 381.0 | 0.8 | 5.1 | -144.36 | -1,656.1 | -1,187.3 | 2,037.7 | 2,031.9 | 5.83 | 349.459 | |
| 500.0 | 500.0 | 481.0 | 481.0 | 1.0 | 7.1 | -144.36 | -1,656.1 | -1,187.3 | 2,037.7 | 2,029.6 | 8.11 | 251.396 | |
| 600.0 | 600.0 | 581.0 | 581.0 | 1.2 | 9.2 | -144.36 | -1,656.1 | -1,187.3 | 2,037.7 | 2,027.4 | 10.36 | 196.652 | |
| 700.0 | 700.0 | 681.0 | 681.0 | 1.4 | 11.2 | -144.36 | -1,656.1 | -1,187.3 | 2,037.7 | 2,025.1 | 12.61 | 161.585 | |
| 800.0 | 800.0 | 781.0 | 781.0 | 1.7 | 13.2 | -144.36 | -1,656.1 | -1,187.3 | 2,037.7 | 2,022.9 | 14.86 | 137.169 | CC |
| 900.0 | 900.0 | 881.0 | 881.0 | 1.9 | 15.2 | -165.53 | -1,656.1 | -1,187.3 | 2,039.4 | 2,022.3 | 17.09 | 119.351 | ES |
| 1,000.0 | 999.8 | 980.8 | 980.8 | 2.1 | 17.2 | -165.54 | -1,656.1 | -1,187.3 | 2,044.5 | 2,025.2 | 19.29 | 105.976 | |
| 1,100.0 | 1,099.5 | 1,080.5 | 1,080.5 | 2.3 | 19.2 | -165.56 | -1,656.1 | -1,187.3 | 2,052.9 | 2,031.5 | 21.46 | 95.659 | |
| 1,200.0 | 1,198.7 | 1,179.7 | 1,179.7 | 2.6 | 21.2 | -165.58 | -1,656.1 | -1,187.3 | 2,064.7 | 2,041.2 | 23.59 | 87.537 | |
| 1,300.0 | 1,297.5 | 1,278.5 | 1,278.5 | 2.9 | 23.2 | -165.61 | -1,656.1 | -1,187.3 | 2,079.9 | 2,054.2 | 25.66 | 81.045 | |
| 1,400.0 | 1,395.6 | 1,376.6 | 1,376.6 | 3.2 | 25.2 | -165.65 | -1,656.1 | -1,187.3 | 2,098.4 | 2,070.7 | 27.68 | 75.800 | |
| 1,500.0 | 1,493.1 | 1,474.1 | 1,474.1 | 3.5 | 27.2 | -165.69 | -1,656.1 | -1,187.3 | 2,120.2 | 2,090.6 | 29.64 | 71.530 | |
| 1,507.2 | 1,500.0 | 1,481.0 | 1,481.0 | 3.6 | 27.3 | -165.69 | -1,656.1 | -1,187.3 | 2,121.9 | 2,092.2 | 29.78 | 71.258 | |
| 1,572.2 | 1,563.0 | 1,544.0 | 1,544.0 | 3.8 | 28.6 | -165.80 | -1,656.1 | -1,187.3 | 2,137.4 | 2,106.2 | 31.17 | 68.578 | |
| 1,600.0 | 1,590.0 | 1,571.0 | 1,571.0 | 3.9 | 29.1 | -165.81 | -1,656.1 | -1,187.3 | 2,144.1 | 2,112.4 | 31.69 | 67.654 | |
| 1,700.0 | 1,686.3 | 1,667.3 | 1,667.3 | 4.4 | 31.0 | -165.85 | -1,656.1 | -1,187.3 | 2,170.4 | 2,136.8 | 33.55 | 64.698 | |
| 1,800.0 | 1,781.5 | 1,762.5 | 1,762.5 | 4.9 | 33.0 | -165.90 | -1,656.1 | -1,187.3 | 2,199.9 | 2,164.6 | 35.32 | 62.283 | |
| 1,817.6 | 1,798.2 | 1,779.2 | 1,779.2 | 5.0 | 33.3 | -165.90 | -1,656.1 | -1,187.3 | 2,205.5 | 2,169.9 | 35.63 | 61.907 | |
| 1,900.0 | 1,876.1 | 1,857.1 | 1,857.1 | 5.5 | 34.9 | -166.07 | -1,656.1 | -1,187.3 | 2,231.7 | 2,194.3 | 37.35 | 59.743 | |
| 2,000.0 | 1,970.6 | 1,951.6 | 1,951.6 | 6.0 | 36.8 | -166.27 | -1,656.1 | -1,187.3 | 2,263.5 | 2,224.0 | 39.46 | 57.365 | |
| 2,100.0 | 2,065.1 | 2,046.1 | 2,046.1 | 6.6 | 38.7 | -166.46 | -1,656.1 | -1,187.3 | 2,295.3 | 2,253.7 | 41.57 | 55.221 | |
| 2,200.0 | 2,159.6 | 2,140.6 | 2,140.6 | 7.2 | 40.6 | -166.65 | -1,656.1 | -1,187.3 | 2,327.1 | 2,283.4 | 43.68 | 53.281 | |
| 2,300.0 | 2,254.1 | 2,235.1 | 2,235.1 | 7.8 | 42.5 | -166.83 | -1,656.1 | -1,187.3 | 2,359.0 | 2,313.2 | 45.79 | 51.517 | |
| 2,400.0 | 2,348.7 | 2,329.7 | 2,329.7 | 8.4 | 44.4 | -167.01 | -1,656.1 | -1,187.3 | 2,390.9 | 2,343.0 | 47.91 | 49.907 | |
| 2,500.0 | 2,443.2 | 2,424.2 | 2,424.2 | 9.1 | 46.3 | -167.18 | -1,656.1 | -1,187.3 | 2,422.8 | 2,372.7 | 50.02 | 48.431 | |
| 2,600.0 | 2,537.7 | 2,518.7 | 2,518.7 | 9.7 | 48.2 | -167.35 | -1,656.1 | -1,187.3 | 2,454.7 | 2,402.5 | 52.14 | 47.075 | |
| 2,700.0 | 2,632.2 | 2,613.2 | 2,613.2 | 10.3 | 50.1 | -167.52 | -1,656.1 | -1,187.3 | 2,486.6 | 2,432.4 | 54.26 | 45.825 | |
| 2,800.0 | 2,726.8 | 2,707.8 | 2,707.8 | 10.9 | 52.0 | -167.68 | -1,656.1 | -1,187.3 | 2,518.6 | 2,462.2 | 56.38 | 44.668 | |
| 2,900.0 | 2,821.3 | 2,802.3 | 2,802.3 | 11.6 | 53.9 | -167.83 | -1,656.1 | -1,187.3 | 2,550.6 | 2,492.1 | 58.51 | 43.595 | |
| 3,000.0 | 2,915.8 | 2,896.8 | 2,896.8 | 12.2 | 55.8 | -167.98 | -1,656.1 | -1,187.3 | 2,582.6 | 2,521.9 | 60.63 | 42.597 | |
| 3,100.0 | 3,010.3 | 2,991.3 | 2,991.3 | 12.8 | 57.7 | -168.13 | -1,656.1 | -1,187.3 | 2,614.6 | 2,551.8 | 62.75 | 41.666 | |
| 3,200.0 | 3,104.8 | 3,085.8 | 3,085.8 | 13.5 | 59.6 | -168.28 | -1,656.1 | -1,187.3 | 2,646.6 | 2,581.7 | 64.87 | 40.796 | |
| 3,300.0 | 3,199.4 | 3,180.4 | 3,180.4 | 14.1 | 61.5 | -168.42 | -1,656.1 | -1,187.3 | 2,678.6 | 2,611.6 | 67.00 | 39.982 | |
| 3,400.0 | 3,293.9 | 3,274.9 | 3,274.9 | 14.8 | 63.4 | -168.56 | -1,656.1 | -1,187.3 | 2,710.7 | 2,641.6 | 69.12 | 39.218 | |
| 3,500.0 | 3,388.4 | 3,369.4 | 3,369.4 | 15.4 | 65.3 | -168.69 | -1,656.1 | -1,187.3 | 2,742.8 | 2,671.5 | 71.24 | 38.500 | |
| 3,600.0 | 3,482.9 | 3,463.9 | 3,463.9 | 16.0 | 67.2 | -168.82 | -1,656.1 | -1,187.3 | 2,774.8 | 2,701.5 | 73.36 | 37.823 | |
| 3,700.0 | 3,577.5 | 3,558.5 | 3,558.5 | 16.7 | 69.1 | -168.95 | -1,656.1 | -1,187.3 | 2,806.9 | 2,731.4 | 75.49 | 37.185 | |
| 3,800.0 | 3,672.0 | 3,653.0 | 3,653.0 | 17.3 | 71.0 | -169.08 | -1,656.1 | -1,187.3 | 2,839.0 | 2,761.4 | 77.61 | 36.581 | |
| 3,900.0 | 3,766.5 | 3,747.5 | 3,747.5 | 18.0 | 72.9 | -169.20 | -1,656.1 | -1,187.3 | 2,871.2 | 2,791.4 | 79.73 | 36.010 | |
| 4,000.0 | 3,861.0 | 3,842.0 | 3,842.0 | 18.6 | 74.8 | -169.32 | -1,656.1 | -1,187.3 | 2,903.3 | 2,821.4 | 81.85 | 35.469 | |
| 4,100.0 | 3,955.5 | 3,936.5 | 3,936.5 | 19.3 | 76.7 | -169.44 | -1,656.1 | -1,187.3 | 2,935.4 | 2,851.5 | 83.98 | 34.955 | |
| 4,200.0 | 4,050.1 | 4,031.1 | 4,031.1 | 19.9 | 78.6 | -169.56 | -1,656.1 | -1,187.3 | 2,967.6 | 2,881.5 | 86.10 | 34.467 | |
| 4,300.0 | 4,144.6 | 4,125.6 | 4,125.6 | 20.5 | 80.5 | -169.67 | -1,656.1 | -1,187.3 | 2,999.8 | 2,911.5 | 88.22 | 34.003 | |
| 4,400.0 | 4,239.1 | 4,220.1 | 4,220.1 | 21.2 | 82.4 | -169.78 | -1,656.1 | -1,187.3 | 3,031.9 | 2,941.6 | 90.34 | 33.560 | |
| 4,500.0 | 4,333.6 | 4,314.6 | 4,314.6 | 21.8 | 84.3 | -169.89 | -1,656.1 | -1,187.3 | 3,064.1 | 2,971.6 | 92.46 | 33.138 | |
| 4,600.0 | 4,428.2 | 4,409.2 | 4,409.2 | 22.5 | 86.2 | -169.99 | -1,656.1 | -1,187.3 | 3,096.3 | 3,001.7 | 94.59 | 32.735 | |
| 4,700.0 | 4,522.7 | 4,503.7 | 4,503.7 | 23.1 | 88.1 | -170.10 | -1,656.1 | -1,187.3 | 3,128.5 | 3,031.8 | 96.71 | 32.350 | |
| 4,800.0 | 4,617.2 | 4,598.2 | 4,598.2 | 23.8 | 90.0 | -170.20 | -1,656.1 | -1,187.3 | 3,160.7 | 3,061.9 | 98.83 | 31.982 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 31-9 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,692.7 | 4,692.7 | 24.4 | 91.9 | -170.30 | -1,656.1 | -1,187.3 | 3,192.9 | 3,092.0 | 100.95 | 31.629 | |
| 5,000.0 | 4,806.2 | 4,787.2 | 4,787.2 | 25.1 | 93.8 | -170.40 | -1,656.1 | -1,187.3 | 3,225.2 | 3,122.1 | 103.07 | 31.290 | |
| 5,100.0 | 4,900.8 | 4,881.8 | 4,881.8 | 25.7 | 95.7 | -170.49 | -1,656.1 | -1,187.3 | 3,257.4 | 3,152.2 | 105.19 | 30.966 | |
| 5,200.0 | 4,995.3 | 4,976.3 | 4,976.3 | 26.4 | 97.6 | -170.59 | -1,656.1 | -1,187.3 | 3,289.6 | 3,182.3 | 107.31 | 30.654 | |
| 5,300.0 | 5,089.8 | 5,070.8 | 5,070.8 | 27.0 | 99.5 | -170.68 | -1,656.1 | -1,187.3 | 3,321.9 | 3,212.5 | 109.44 | 30.355 | |
| 5,400.0 | 5,184.3 | 5,165.3 | 5,165.3 | 27.7 | 101.4 | -170.77 | -1,656.1 | -1,187.3 | 3,354.2 | 3,242.6 | 111.56 | 30.067 | |
| 5,500.0 | 5,278.9 | 5,259.9 | 5,259.9 | 28.3 | 103.3 | -170.86 | -1,656.1 | -1,187.3 | 3,386.4 | 3,272.8 | 113.68 | 29.790 | |
| 5,533.5 | 5,310.5 | 5,291.5 | 5,291.5 | 28.5 | 103.9 | -170.89 | -1,656.1 | -1,187.3 | 3,397.3 | 3,282.9 | 114.39 | 29.700 | |
| 5,600.0 | 5,373.6 | 5,354.6 | 5,354.6 | 28.9 | 105.2 | -171.01 | -1,656.1 | -1,187.3 | 3,418.0 | 3,301.4 | 116.54 | 29.330 | |
| 5,700.0 | 5,469.4 | 5,450.4 | 5,450.4 | 29.3 | 107.1 | -171.18 | -1,656.1 | -1,187.3 | 3,446.4 | 3,326.8 | 119.67 | 28.798 | |
| 5,800.0 | 5,566.1 | 5,547.1 | 5,547.1 | 29.8 | 109.1 | -171.32 | -1,656.1 | -1,187.3 | 3,471.6 | 3,348.9 | 122.72 | 28.289 | |
| 5,900.0 | 5,663.6 | 5,644.6 | 5,644.6 | 30.1 | 111.0 | -171.44 | -1,656.1 | -1,187.3 | 3,493.4 | 3,367.7 | 125.65 | 27.802 | |
| 6,000.0 | 5,761.9 | 5,742.9 | 5,742.9 | 30.5 | 113.0 | -171.54 | -1,656.1 | -1,187.3 | 3,511.8 | 3,383.3 | 128.47 | 27.335 | |
| 6,100.0 | 5,860.7 | 5,841.7 | 5,841.7 | 30.7 | 115.0 | -171.62 | -1,656.1 | -1,187.3 | 3,526.8 | 3,395.6 | 131.16 | 26.889 | |
| 6,200.0 | 5,960.0 | 5,941.0 | 5,941.0 | 31.0 | 117.0 | -171.68 | -1,656.1 | -1,187.3 | 3,538.4 | 3,404.6 | 133.71 | 26.463 | |
| 6,300.0 | 6,059.7 | 6,040.7 | 6,040.7 | 31.2 | 119.0 | -171.73 | -1,656.1 | -1,187.3 | 3,546.5 | 3,410.4 | 136.11 | 26.056 | |
| 6,400.0 | 6,159.6 | 6,140.6 | 6,140.6 | 31.3 | 121.0 | -171.75 | -1,656.1 | -1,187.3 | 3,551.2 | 3,412.9 | 138.35 | 25.668 | |
| 6,486.1 | 6,245.7 | 6,226.7 | 6,226.7 | 31.4 | 122.7 | -150.60 | -1,656.1 | -1,187.3 | 3,552.5 | 3,398.5 | 153.94 | 23.077 | |
| 6,500.0 | 6,259.6 | 6,240.6 | 6,240.6 | 31.4 | 123.0 | -150.60 | -1,656.1 | -1,187.3 | 3,552.5 | 3,398.3 | 154.23 | 23.034 | |
| 6,516.1 | 6,275.7 | 6,256.7 | 6,256.7 | 31.4 | 123.4 | -150.60 | -1,656.1 | -1,187.3 | 3,552.5 | 3,397.9 | 154.57 | 22.983 | |
| 6,550.0 | 6,309.5 | 6,290.5 | 6,290.5 | 31.5 | 124.0 | -60.63 | -1,656.1 | -1,187.3 | 3,552.1 | 3,410.7 | 141.39 | 25.122 | |
| 6,600.0 | 6,359.4 | 6,340.4 | 6,340.4 | 31.5 | 125.0 | -60.83 | -1,656.1 | -1,187.3 | 3,550.1 | 3,408.0 | 142.12 | 24.980 | |
| 6,650.0 | 6,408.8 | 6,389.8 | 6,389.8 | 31.5 | 126.0 | -61.20 | -1,656.1 | -1,187.3 | 3,546.4 | 3,403.7 | 142.67 | 24.857 | |
| 6,700.0 | 6,457.5 | 6,438.5 | 6,438.5 | 31.5 | 127.0 | -61.73 | -1,656.1 | -1,187.3 | 3,541.0 | 3,397.9 | 143.08 | 24.749 | |
| 6,716.1 | 6,473.1 | 6,454.1 | 6,454.1 | 31.5 | 127.3 | -61.94 | -1,656.1 | -1,187.3 | 3,538.9 | 3,395.8 | 143.18 | 24.717 | |
| 6,725.0 | 6,481.6 | 6,462.6 | 6,462.6 | 31.5 | 127.5 | -62.10 | -1,656.1 | -1,187.3 | 3,537.7 | 3,394.6 | 143.17 | 24.710 | |
| 6,750.0 | 6,505.3 | 6,486.3 | 6,486.3 | 31.5 | 128.0 | -62.63 | -1,656.1 | -1,187.3 | 3,533.9 | 3,390.8 | 143.10 | 24.695 | |
| 6,775.0 | 6,528.5 | 6,509.5 | 6,509.5 | 31.4 | 128.4 | -63.23 | -1,656.1 | -1,187.3 | 3,529.4 | 3,386.4 | 143.01 | 24.679 | |
| 6,800.0 | 6,551.3 | 6,532.3 | 6,532.3 | 31.4 | 128.9 | -63.92 | -1,656.1 | -1,187.3 | 3,524.5 | 3,381.5 | 142.93 | 24.659 | |
| 6,825.0 | 6,573.4 | 6,554.4 | 6,554.4 | 31.4 | 129.3 | -64.68 | -1,656.1 | -1,187.3 | 3,518.9 | 3,376.1 | 142.86 | 24.631 | |
| 6,850.0 | 6,595.0 | 6,576.0 | 6,576.0 | 31.3 | 129.8 | -65.53 | -1,656.1 | -1,187.3 | 3,512.9 | 3,370.1 | 142.85 | 24.591 | |
| 6,875.0 | 6,615.8 | 6,596.8 | 6,596.8 | 31.3 | 130.2 | -66.45 | -1,656.1 | -1,187.3 | 3,506.4 | 3,363.5 | 142.91 | 24.535 | |
| 6,900.0 | 6,635.9 | 6,616.9 | 6,616.9 | 31.3 | 130.6 | -67.44 | -1,656.1 | -1,187.3 | 3,499.4 | 3,356.4 | 143.07 | 24.460 | |
| 6,925.0 | 6,655.1 | 6,636.1 | 6,636.1 | 31.2 | 131.0 | -68.49 | -1,656.1 | -1,187.3 | 3,492.0 | 3,348.7 | 143.33 | 24.364 | |
| 6,950.0 | 6,673.6 | 6,654.6 | 6,654.6 | 31.2 | 131.4 | -69.61 | -1,656.1 | -1,187.3 | 3,484.2 | 3,340.5 | 143.70 | 24.246 | |
| 6,975.0 | 6,691.1 | 6,672.1 | 6,672.1 | 31.1 | 131.7 | -70.79 | -1,656.1 | -1,187.3 | 3,476.1 | 3,331.9 | 144.20 | 24.106 | |
| 7,000.0 | 6,707.6 | 6,688.6 | 6,688.6 | 31.1 | 132.0 | -72.03 | -1,656.1 | -1,187.3 | 3,467.6 | 3,322.8 | 144.81 | 23.946 | |
| 7,025.0 | 6,723.1 | 6,704.1 | 6,704.1 | 31.0 | 132.4 | -73.31 | -1,656.1 | -1,187.3 | 3,458.8 | 3,313.3 | 145.52 | 23.768 | |
| 7,050.0 | 6,737.6 | 6,718.6 | 6,718.6 | 31.0 | 132.6 | -74.63 | -1,656.1 | -1,187.3 | 3,449.7 | 3,303.4 | 146.33 | 23.575 | |
| 7,075.0 | 6,751.0 | 6,732.0 | 6,732.0 | 30.9 | 132.9 | -75.98 | -1,656.1 | -1,187.3 | 3,440.5 | 3,293.3 | 147.20 | 23.372 | |
| 7,100.0 | 6,763.3 | 6,744.3 | 6,744.3 | 30.8 | 133.2 | -77.36 | -1,656.1 | -1,187.3 | 3,431.0 | 3,282.9 | 148.12 | 23.164 | |
| 7,125.0 | 6,774.5 | 6,755.5 | 6,755.5 | 30.8 | 133.4 | -78.76 | -1,656.1 | -1,187.3 | 3,421.4 | 3,272.3 | 149.06 | 22.954 | |
| 7,150.0 | 6,784.4 | 6,765.4 | 6,765.4 | 30.7 | 133.6 | -80.17 | -1,656.1 | -1,187.3 | 3,411.7 | 3,261.7 | 149.98 | 22.747 | |
| 7,175.0 | 6,793.1 | 6,774.1 | 6,774.1 | 30.7 | 133.8 | -81.58 | -1,656.1 | -1,187.3 | 3,401.9 | 3,251.0 | 150.88 | 22.547 | |
| 7,200.0 | 6,800.6 | 6,781.6 | 6,781.6 | 30.6 | 133.9 | -82.98 | -1,656.1 | -1,187.3 | 3,392.1 | 3,240.3 | 151.72 | 22.358 | |
| 7,225.0 | 6,806.8 | 6,787.8 | 6,787.8 | 30.6 | 134.0 | -84.36 | -1,656.1 | -1,187.3 | 3,382.2 | 3,229.7 | 152.49 | 22.180 | |
| 7,250.0 | 6,811.8 | 6,792.8 | 6,792.8 | 30.5 | 134.1 | -85.73 | -1,656.1 | -1,187.3 | 3,372.4 | 3,219.2 | 153.17 | 22.018 | |
| 7,275.0 | 6,815.5 | 6,796.5 | 6,796.5 | 30.5 | 134.2 | -87.06 | -1,656.1 | -1,187.3 | 3,362.7 | 3,208.9 | 153.76 | 21.870 | |
| 7,300.0 | 6,817.8 | 6,798.8 | 6,798.8 | 30.4 | 134.3 | -88.36 | -1,656.1 | -1,187.3 | 3,353.0 | 3,198.8 | 154.25 | 21.737 | |
| 7,325.0 | 6,818.9 | 6,799.9 | 6,799.9 | 30.4 | 134.3 | -89.62 | -1,656.1 | -1,187.3 | 3,343.5 | 3,188.8 | 154.65 | 21.620 | |
| 7,332.8 | 6,819.0 | 6,800.0 | 6,800.0 | 30.4 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,340.5 | 3,185.8 | 154.75 | 21.586 | |
| 7,400.0 | 6,819.0 | 6,800.0 | 6,800.0 | 30.3 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,315.8 | 3,160.4 | 155.43 | 21.334 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 31-9 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,800.0 | 6,800.0 | 30.2 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,281.3 | 3,124.6 | 156.69 | 20.942 | |
| 7,600.0 | 6,819.0 | 6,800.0 | 6,800.0 | 30.3 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,249.4 | 3,091.2 | 158.21 | 20.538 | |
| 7,700.0 | 6,819.0 | 6,800.0 | 6,800.0 | 30.6 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,220.3 | 3,060.4 | 159.96 | 20.133 | |
| 7,800.0 | 6,819.0 | 6,800.0 | 6,800.0 | 31.3 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,194.1 | 3,032.3 | 161.88 | 19.732 | |
| 7,900.0 | 6,819.0 | 6,800.0 | 6,800.0 | 32.5 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,170.9 | 3,006.9 | 163.94 | 19.342 | |
| 8,000.0 | 6,819.0 | 6,800.0 | 6,800.0 | 34.2 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,150.6 | 2,984.5 | 166.12 | 18.966 | |
| 8,100.0 | 6,819.0 | 6,800.0 | 6,800.0 | 36.1 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,133.4 | 2,965.0 | 168.39 | 18.609 | |
| 8,200.0 | 6,819.0 | 6,800.0 | 6,800.0 | 38.3 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,119.3 | 2,948.6 | 170.73 | 18.270 | |
| 8,300.0 | 6,819.0 | 6,800.0 | 6,800.0 | 40.6 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,108.4 | 2,935.3 | 173.14 | 17.953 | |
| 8,400.0 | 6,819.0 | 6,800.0 | 6,800.0 | 42.9 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,100.7 | 2,925.1 | 175.60 | 17.658 | |
| 8,500.0 | 6,819.0 | 6,800.0 | 6,800.0 | 45.3 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,096.2 | 2,918.1 | 178.10 | 17.384 | |
| 8,590.3 | 6,819.0 | 6,800.0 | 6,800.0 | 47.6 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,094.8 | 2,914.4 | 180.39 | 17.156 | |
| 8,600.0 | 6,819.0 | 6,800.0 | 6,800.0 | 47.8 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,094.9 | 2,914.2 | 180.64 | 17.133 | |
| 8,700.0 | 6,819.0 | 6,800.0 | 6,800.0 | 50.3 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,096.8 | 2,913.6 | 183.20 | 16.904 | |
| 8,800.0 | 6,819.0 | 6,800.0 | 6,800.0 | 52.8 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,101.9 | 2,916.1 | 185.80 | 16.695 | |
| 8,900.0 | 6,819.0 | 6,800.0 | 6,800.0 | 55.4 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,110.3 | 2,921.9 | 188.41 | 16.508 | |
| 9,000.0 | 6,819.0 | 6,800.0 | 6,800.0 | 58.0 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,121.8 | 2,930.8 | 191.04 | 16.341 | |
| 9,100.0 | 6,819.0 | 6,800.0 | 6,800.0 | 60.6 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,136.5 | 2,942.8 | 193.69 | 16.193 | |
| 9,200.0 | 6,819.0 | 6,800.0 | 6,800.0 | 63.2 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,154.3 | 2,958.0 | 196.36 | 16.064 | |
| 9,300.0 | 6,819.0 | 6,800.0 | 6,800.0 | 65.9 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,175.2 | 2,976.1 | 199.03 | 15.953 | |
| 9,400.0 | 6,819.0 | 6,800.0 | 6,800.0 | 68.5 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,199.0 | 2,997.3 | 201.72 | 15.859 | |
| 9,500.0 | 6,819.0 | 6,800.0 | 6,800.0 | 71.2 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,225.8 | 3,021.4 | 204.42 | 15.780 | |
| 9,600.0 | 6,819.0 | 6,800.0 | 6,800.0 | 73.9 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,255.4 | 3,048.3 | 207.12 | 15.717 | |
| 9,700.0 | 6,819.0 | 6,800.0 | 6,800.0 | 76.5 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,287.8 | 3,078.0 | 209.84 | 15.668 | |
| 9,800.0 | 6,819.0 | 6,800.0 | 6,800.0 | 79.2 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,322.9 | 3,110.3 | 212.56 | 15.633 | |
| 9,900.0 | 6,819.0 | 6,800.0 | 6,800.0 | 81.9 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,360.6 | 3,145.3 | 215.28 | 15.610 | |
| 10,000.0 | 6,819.0 | 6,800.0 | 6,800.0 | 84.6 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,400.8 | 3,182.8 | 218.01 | 15.599 | |
| 10,100.0 | 6,819.0 | 6,800.0 | 6,800.0 | 87.4 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,443.4 | 3,222.7 | 220.75 | 15.599 | SF |
| 10,200.0 | 6,819.0 | 6,800.0 | 6,800.0 | 90.1 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,488.4 | 3,265.0 | 223.49 | 15.609 | |
| 10,300.0 | 6,819.0 | 6,800.0 | 6,800.0 | 92.8 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,535.7 | 3,309.5 | 226.24 | 15.628 | |
| 10,400.0 | 6,819.0 | 6,800.0 | 6,800.0 | 95.5 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,585.1 | 3,356.1 | 228.99 | 15.656 | |
| 10,500.0 | 6,819.0 | 6,800.0 | 6,800.0 | 98.3 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,636.6 | 3,404.9 | 231.74 | 15.693 | |
| 10,600.0 | 6,819.0 | 6,800.0 | 6,800.0 | 101.0 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,690.1 | 3,455.6 | 234.50 | 15.736 | |
| 10,700.0 | 6,819.0 | 6,800.0 | 6,800.0 | 103.8 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,745.5 | 3,508.3 | 237.26 | 15.787 | |
| 10,800.0 | 6,819.0 | 6,800.0 | 6,800.0 | 106.5 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,802.8 | 3,562.7 | 240.02 | 15.843 | |
| 10,900.0 | 6,819.0 | 6,800.0 | 6,800.0 | 109.2 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,861.7 | 3,618.9 | 242.79 | 15.906 | |
| 11,000.0 | 6,819.0 | 6,800.0 | 6,800.0 | 112.0 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,922.4 | 3,676.8 | 245.55 | 15.974 | |
| 11,100.0 | 6,819.0 | 6,800.0 | 6,800.0 | 114.8 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 3,984.6 | 3,736.2 | 248.32 | 16.046 | |
| 11,200.0 | 6,819.0 | 6,800.0 | 6,800.0 | 117.5 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,048.3 | 3,797.2 | 251.09 | 16.123 | |
| 11,300.0 | 6,819.0 | 6,800.0 | 6,800.0 | 120.3 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,113.5 | 3,859.6 | 253.87 | 16.203 | |
| 11,400.0 | 6,819.0 | 6,800.0 | 6,800.0 | 123.0 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,180.0 | 3,923.4 | 256.64 | 16.287 | |
| 11,500.0 | 6,819.0 | 6,800.0 | 6,800.0 | 125.8 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,247.9 | 3,988.5 | 259.42 | 16.375 | |
| 11,600.0 | 6,819.0 | 6,800.0 | 6,800.0 | 128.6 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,317.0 | 4,054.8 | 262.20 | 16.465 | |
| 11,700.0 | 6,819.0 | 6,800.0 | 6,800.0 | 131.3 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,387.3 | 4,122.3 | 264.98 | 16.557 | |
| 11,800.0 | 6,819.0 | 6,800.0 | 6,800.0 | 134.1 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,458.7 | 4,191.0 | 267.76 | 16.652 | |
| 11,900.0 | 6,819.0 | 6,800.0 | 6,800.0 | 136.9 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,531.3 | 4,260.7 | 270.54 | 16.749 | |
| 12,000.0 | 6,819.0 | 6,800.0 | 6,800.0 | 139.6 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,604.8 | 4,331.5 | 273.32 | 16.848 | |
| 12,100.0 | 6,819.0 | 6,800.0 | 6,800.0 | 142.4 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,679.3 | 4,403.2 | 276.11 | 16.948 | |
| 12,200.0 | 6,819.0 | 6,800.0 | 6,800.0 | 145.2 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,754.8 | 4,475.9 | 278.89 | 17.049 | |
| 12,300.0 | 6,819.0 | 6,800.0 | 6,800.0 | 148.0 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,831.2 | 4,549.5 | 281.68 | 17.151 | |
| 12,400.0 | 6,819.0 | 6,800.0 | 6,800.0 | 150.8 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,908.4 | 4,623.9 | 284.47 | 17.255 | |
| 12,500.0 | 6,819.0 | 6,800.0 | 6,800.0 | 153.5 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 4,986.4 | 4,699.1 | 287.25 | 17.359 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 31-9 - Wellbore #1 - Design #1

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,800.0 | 6,800.0 | 156.3 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 5,065.2 | 4,775.1 | 290.04 | 17.464 | |
| 12,700.0 | 6,819.0 | 6,800.0 | 6,800.0 | 159.1 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 5,144.7 | 4,851.9 | 292.83 | 17.569 | |
| 12,800.0 | 6,819.0 | 6,800.0 | 6,800.0 | 161.9 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 5,224.9 | 4,929.3 | 295.62 | 17.674 | |
| 12,900.0 | 6,819.0 | 6,800.0 | 6,800.0 | 164.7 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 5,305.8 | 5,007.4 | 298.42 | 17.780 | |
| 13,000.0 | 6,819.0 | 6,800.0 | 6,800.0 | 167.4 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 5,387.4 | 5,086.2 | 301.21 | 17.886 | |
| 13,100.0 | 6,819.0 | 6,800.0 | 6,800.0 | 170.2 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 5,469.5 | 5,165.5 | 304.00 | 17.992 | |
| 13,200.0 | 6,819.0 | 6,800.0 | 6,800.0 | 173.0 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 5,552.3 | 5,245.5 | 306.79 | 18.098 | |
| 13,300.0 | 6,819.0 | 6,800.0 | 6,800.0 | 175.8 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 5,635.6 | 5,326.0 | 309.59 | 18.204 | |
| 13,400.0 | 6,819.0 | 6,800.0 | 6,800.0 | 178.6 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 5,719.4 | 5,407.0 | 312.38 | 18.309 | |
| 13,500.0 | 6,819.0 | 6,800.0 | 6,800.0 | 181.4 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 5,803.8 | 5,488.6 | 315.18 | 18.414 | |
| 13,600.0 | 6,819.0 | 6,800.0 | 6,800.0 | 184.2 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 5,888.6 | 5,570.6 | 317.97 | 18.519 | |
| 13,700.0 | 6,819.0 | 6,800.0 | 6,800.0 | 187.0 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 5,973.9 | 5,653.1 | 320.77 | 18.624 | |
| 13,800.0 | 6,819.0 | 6,800.0 | 6,800.0 | 189.7 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 6,059.7 | 5,736.1 | 323.56 | 18.728 | |
| 13,900.0 | 6,819.0 | 6,800.0 | 6,800.0 | 192.5 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 6,145.8 | 5,819.5 | 326.36 | 18.831 | |
| 14,000.0 | 6,819.0 | 6,800.0 | 6,800.0 | 195.3 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 6,232.4 | 5,903.3 | 329.16 | 18.934 | |
| 14,100.0 | 6,819.0 | 6,800.0 | 6,800.0 | 198.1 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 6,319.4 | 5,987.5 | 331.96 | 19.037 | |
| 14,200.0 | 6,819.0 | 6,800.0 | 6,800.0 | 200.9 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 6,406.8 | 6,072.1 | 334.75 | 19.139 | |
| 14,300.0 | 6,819.0 | 6,800.0 | 6,800.0 | 203.7 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 6,494.5 | 6,157.0 | 337.55 | 19.240 | |
| 14,400.0 | 6,819.0 | 6,800.0 | 6,800.0 | 206.5 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 6,582.6 | 6,242.3 | 340.35 | 19.341 | |
| 14,500.0 | 6,819.0 | 6,800.0 | 6,800.0 | 209.3 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 6,671.1 | 6,327.9 | 343.15 | 19.441 | |
| 14,600.0 | 6,819.0 | 6,800.0 | 6,800.0 | 212.1 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 6,759.8 | 6,413.9 | 345.95 | 19.540 | |
| 14,700.0 | 6,819.0 | 6,800.0 | 6,800.0 | 214.9 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 6,848.9 | 6,500.1 | 348.75 | 19.638 | |
| 14,720.3 | 6,819.0 | 6,800.0 | 6,800.0 | 215.4 | 134.3 | -90.00 | -1,656.1 | -1,187.3 | 6,867.0 | 6,517.7 | 349.32 | 19.658 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 34-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -111.04 | -535.5 | -1,392.4 | 1,491.9 | | | | |
| 100.0 | 100.0 | 87.7 | 87.7 | 0.1 | 0.1 | -111.04 | -535.5 | -1,392.5 | 1,491.9 | 1,491.7 | 0.17 | 8,881.937 | |
| 200.0 | 200.0 | 188.6 | 188.6 | 0.3 | 0.2 | -111.03 | -535.4 | -1,392.6 | 1,491.9 | 1,491.4 | 0.50 | 3,005.642 | |
| 300.0 | 300.0 | 287.2 | 287.2 | 0.5 | 0.3 | -111.02 | -535.1 | -1,392.7 | 1,492.0 | 1,491.2 | 0.81 | 1,851.463 | |
| 400.0 | 400.0 | 393.2 | 393.2 | 0.8 | 0.3 | -111.01 | -535.0 | -1,392.7 | 1,492.0 | 1,490.9 | 1.07 | 1,399.558 | |
| 500.0 | 500.0 | 493.1 | 493.1 | 1.0 | 0.4 | -111.00 | -534.6 | -1,392.6 | 1,491.7 | 1,490.3 | 1.35 | 1,106.545 | |
| 600.0 | 600.0 | 591.5 | 591.5 | 1.2 | 0.4 | -110.99 | -534.3 | -1,392.5 | 1,491.4 | 1,489.8 | 1.63 | 915.869 | |
| 700.0 | 700.0 | 693.9 | 693.9 | 1.4 | 0.5 | -110.99 | -534.1 | -1,392.3 | 1,491.2 | 1,489.3 | 1.91 | 781.642 | |
| 800.0 | 800.0 | 791.3 | 791.3 | 1.7 | 0.5 | -110.98 | -533.8 | -1,392.1 | 1,491.0 | 1,488.8 | 2.17 | 685.703 | |
| 806.2 | 806.2 | 797.4 | 797.4 | 1.7 | 0.5 | -132.14 | -533.7 | -1,392.1 | 1,491.0 | 1,488.8 | 2.18 | 683.362 | CC, ES |
| 900.0 | 900.0 | 890.7 | 890.7 | 1.9 | 0.6 | -132.16 | -533.4 | -1,392.1 | 1,492.0 | 1,489.6 | 2.43 | 613.202 | |
| 1,000.0 | 999.8 | 995.2 | 995.2 | 2.1 | 0.6 | -132.26 | -533.1 | -1,392.0 | 1,495.3 | 1,492.6 | 2.70 | 553.224 | |
| 1,100.0 | 1,099.5 | 1,090.8 | 1,090.8 | 2.3 | 0.7 | -132.40 | -532.8 | -1,391.8 | 1,500.8 | 1,497.9 | 2.97 | 504.655 | |
| 1,200.0 | 1,198.7 | 1,191.0 | 1,191.0 | 2.6 | 0.7 | -132.62 | -532.6 | -1,391.7 | 1,508.9 | 1,505.7 | 3.25 | 463.927 | |
| 1,300.0 | 1,297.5 | 1,291.1 | 1,291.1 | 2.9 | 0.7 | -132.90 | -532.5 | -1,391.4 | 1,519.4 | 1,515.8 | 3.56 | 427.123 | |
| 1,400.0 | 1,395.6 | 1,391.5 | 1,391.5 | 3.2 | 0.8 | -133.24 | -532.2 | -1,391.1 | 1,532.2 | 1,528.3 | 3.88 | 394.635 | |
| 1,500.0 | 1,493.1 | 1,485.4 | 1,485.4 | 3.5 | 0.8 | -133.58 | -531.8 | -1,390.9 | 1,547.5 | 1,543.2 | 4.23 | 365.452 | |
| 1,507.2 | 1,500.0 | 1,492.1 | 1,492.1 | 3.6 | 0.8 | -133.61 | -531.8 | -1,390.9 | 1,548.7 | 1,544.4 | 4.26 | 363.601 | |
| 1,572.2 | 1,563.0 | 1,555.5 | 1,555.5 | 3.8 | 0.8 | -134.02 | -531.6 | -1,390.9 | 1,559.7 | 1,555.2 | 4.48 | 348.111 | |
| 1,600.0 | 1,590.0 | 1,582.9 | 1,582.8 | 3.9 | 0.8 | -134.13 | -531.5 | -1,390.9 | 1,564.6 | 1,560.0 | 4.58 | 341.436 | |
| 1,700.0 | 1,686.3 | 1,682.7 | 1,682.7 | 4.4 | 0.9 | -134.56 | -531.2 | -1,390.6 | 1,583.5 | 1,578.5 | 4.99 | 317.484 | |
| 1,800.0 | 1,781.5 | 1,780.6 | 1,780.6 | 4.9 | 0.9 | -135.01 | -530.6 | -1,390.3 | 1,604.9 | 1,599.5 | 5.42 | 295.830 | |
| 1,817.6 | 1,798.2 | 1,797.7 | 1,797.7 | 5.0 | 0.9 | -135.09 | -530.4 | -1,390.3 | 1,608.9 | 1,603.4 | 5.51 | 292.233 | |
| 1,900.0 | 1,876.1 | 1,876.5 | 1,876.5 | 5.5 | 1.0 | -135.73 | -529.6 | -1,390.1 | 1,628.0 | 1,622.2 | 5.87 | 277.185 | |
| 2,000.0 | 1,970.6 | 1,974.6 | 1,974.6 | 6.0 | 1.0 | -136.50 | -528.5 | -1,389.8 | 1,651.4 | 1,645.1 | 6.33 | 261.027 | |
| 2,100.0 | 2,065.1 | 2,069.9 | 2,069.9 | 6.6 | 1.0 | -137.22 | -527.4 | -1,389.3 | 1,674.9 | 1,668.1 | 6.78 | 246.897 | |
| 2,200.0 | 2,159.6 | 2,159.8 | 2,159.7 | 7.2 | 1.1 | -137.89 | -526.2 | -1,389.1 | 1,698.7 | 1,691.5 | 7.24 | 234.520 | |
| 2,300.0 | 2,254.1 | 2,248.4 | 2,248.3 | 7.8 | 1.1 | -138.52 | -525.2 | -1,389.2 | 1,723.2 | 1,715.5 | 7.70 | 223.717 | |
| 2,400.0 | 2,348.7 | 2,341.2 | 2,341.2 | 8.4 | 1.1 | -139.18 | -524.5 | -1,389.3 | 1,748.2 | 1,740.0 | 8.16 | 214.255 | |
| 2,500.0 | 2,443.2 | 2,437.7 | 2,437.7 | 9.1 | 1.2 | -139.85 | -523.9 | -1,389.4 | 1,773.3 | 1,764.7 | 8.61 | 205.914 | |
| 2,600.0 | 2,537.7 | 2,530.6 | 2,530.5 | 9.7 | 1.2 | -140.47 | -523.2 | -1,389.5 | 1,798.7 | 1,789.6 | 9.06 | 198.487 | |
| 2,700.0 | 2,632.2 | 2,622.5 | 2,622.5 | 10.3 | 1.2 | -141.07 | -522.6 | -1,389.7 | 1,824.4 | 1,814.9 | 9.51 | 191.868 | |
| 2,800.0 | 2,726.8 | 2,718.0 | 2,717.9 | 10.9 | 1.3 | -141.68 | -522.1 | -1,389.9 | 1,850.3 | 1,840.4 | 9.95 | 185.952 | |
| 2,900.0 | 2,821.3 | 2,808.3 | 2,808.3 | 11.6 | 1.3 | -142.24 | -521.5 | -1,390.3 | 1,876.6 | 1,866.2 | 10.39 | 180.624 | |
| 3,000.0 | 2,915.8 | 2,900.0 | 2,899.9 | 12.2 | 1.3 | -142.79 | -520.9 | -1,390.9 | 1,903.2 | 1,892.4 | 10.82 | 175.835 | |
| 3,100.0 | 3,010.3 | 2,989.9 | 2,989.8 | 12.8 | 1.3 | -143.31 | -520.6 | -1,391.6 | 1,930.2 | 1,919.0 | 11.25 | 171.547 | |
| 3,200.0 | 3,104.8 | 3,073.2 | 3,073.1 | 13.5 | 1.3 | -143.79 | -520.6 | -1,392.4 | 1,957.7 | 1,946.1 | 11.68 | 167.636 | |
| 3,300.0 | 3,199.4 | 3,157.3 | 3,157.2 | 14.1 | 1.4 | -144.27 | -520.8 | -1,393.6 | 1,986.0 | 1,973.9 | 12.10 | 164.096 | |
| 3,400.0 | 3,293.9 | 3,246.9 | 3,246.8 | 14.8 | 1.4 | -144.76 | -521.3 | -1,395.1 | 2,014.7 | 2,002.2 | 12.52 | 160.899 | |
| 3,500.0 | 3,388.4 | 3,350.2 | 3,350.1 | 15.4 | 1.4 | -145.32 | -521.9 | -1,396.8 | 2,043.6 | 2,030.7 | 12.93 | 158.081 | |
| 3,600.0 | 3,482.9 | 3,454.1 | 3,454.0 | 16.0 | 1.4 | -145.88 | -522.8 | -1,397.4 | 2,072.0 | 2,058.7 | 13.32 | 155.512 | |
| 3,700.0 | 3,577.5 | 3,549.6 | 3,549.4 | 16.7 | 1.4 | -146.40 | -523.7 | -1,397.8 | 2,100.4 | 2,086.6 | 13.72 | 153.041 | |
| 3,800.0 | 3,672.0 | 3,641.7 | 3,641.6 | 17.3 | 1.4 | -146.87 | -524.4 | -1,398.2 | 2,128.9 | 2,114.7 | 14.13 | 150.706 | |
| 3,900.0 | 3,766.5 | 3,731.3 | 3,731.1 | 18.0 | 1.4 | -147.32 | -525.2 | -1,398.8 | 2,157.7 | 2,143.2 | 14.53 | 148.526 | |
| 4,000.0 | 3,861.0 | 3,826.5 | 3,826.3 | 18.6 | 1.4 | -147.79 | -526.1 | -1,399.4 | 2,186.8 | 2,171.9 | 14.92 | 146.529 | |
| 4,100.0 | 3,955.5 | 3,932.3 | 3,932.1 | 19.3 | 1.4 | -148.30 | -527.1 | -1,399.8 | 2,215.8 | 2,200.5 | 15.31 | 144.721 | |
| 4,200.0 | 4,050.1 | 4,037.5 | 4,037.4 | 19.9 | 1.4 | -148.79 | -527.5 | -1,399.8 | 2,244.3 | 2,228.6 | 15.70 | 142.992 | |
| 4,300.0 | 4,144.6 | 4,132.2 | 4,132.1 | 20.5 | 1.4 | -149.22 | -527.7 | -1,399.7 | 2,272.7 | 2,256.6 | 16.08 | 141.301 | |
| 4,400.0 | 4,239.1 | 4,223.5 | 4,223.4 | 21.2 | 1.4 | -149.61 | -527.8 | -1,399.8 | 2,301.3 | 2,284.9 | 16.47 | 139.714 | |
| 4,500.0 | 4,333.6 | 4,315.3 | 4,315.1 | 21.8 | 1.4 | -150.00 | -527.9 | -1,400.0 | 2,330.2 | 2,313.4 | 16.86 | 138.200 | |
| 4,600.0 | 4,428.2 | 4,409.2 | 4,409.1 | 22.5 | 1.4 | -150.40 | -528.2 | -1,400.2 | 2,359.3 | 2,342.0 | 17.25 | 136.787 | |
| 4,700.0 | 4,522.7 | 4,509.5 | 4,509.3 | 23.1 | 1.4 | -150.80 | -528.4 | -1,400.3 | 2,388.3 | 2,370.6 | 17.63 | 135.474 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 34-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,605.0 | 4,604.8 | 23.8 | 1.4 | -151.18 | -528.4 | -1,400.4 | 2,417.3 | 2,399.2 | 18.01 | 134.214 | |
| 4,900.0 | 4,711.7 | 4,696.4 | 4,696.3 | 24.4 | 1.5 | -151.53 | -528.4 | -1,400.5 | 2,446.4 | 2,428.0 | 18.39 | 132.996 | |
| 5,000.0 | 4,806.2 | 4,789.2 | 4,789.1 | 25.1 | 1.5 | -151.88 | -528.5 | -1,400.7 | 2,475.7 | 2,456.9 | 18.78 | 131.841 | |
| 5,100.0 | 4,900.8 | 4,880.5 | 4,880.4 | 25.7 | 1.5 | -152.22 | -528.7 | -1,400.9 | 2,505.2 | 2,486.0 | 19.16 | 130.754 | |
| 5,200.0 | 4,995.3 | 4,975.6 | 4,975.4 | 26.4 | 1.5 | -152.56 | -529.2 | -1,400.9 | 2,534.8 | 2,515.2 | 19.54 | 129.734 | |
| 5,300.0 | 5,089.8 | 5,076.5 | 5,076.3 | 27.0 | 1.5 | -152.93 | -529.7 | -1,400.8 | 2,564.4 | 2,544.5 | 19.91 | 128.786 | |
| 5,400.0 | 5,184.3 | 5,172.2 | 5,172.1 | 27.7 | 1.5 | -153.27 | -530.1 | -1,400.5 | 2,593.8 | 2,573.6 | 20.29 | 127.861 | |
| 5,500.0 | 5,278.9 | 5,262.2 | 5,262.1 | 28.3 | 1.5 | -153.58 | -530.5 | -1,400.3 | 2,623.5 | 2,602.8 | 20.66 | 126.961 | |
| 5,533.5 | 5,310.5 | 5,291.8 | 5,291.7 | 28.5 | 1.5 | -153.68 | -530.7 | -1,400.2 | 2,633.5 | 2,612.7 | 20.79 | 126.670 | |
| 5,600.0 | 5,373.6 | 5,347.3 | 5,347.1 | 28.9 | 1.5 | -154.05 | -531.2 | -1,400.0 | 2,652.7 | 2,631.8 | 20.92 | 126.799 | |
| 5,700.0 | 5,469.4 | 5,436.3 | 5,436.1 | 29.3 | 1.5 | -154.57 | -532.6 | -1,399.6 | 2,679.6 | 2,658.6 | 21.06 | 127.231 | |
| 5,800.0 | 5,566.1 | 5,539.7 | 5,539.6 | 29.8 | 1.5 | -155.06 | -534.6 | -1,398.7 | 2,703.5 | 2,682.3 | 21.17 | 127.685 | |
| 5,900.0 | 5,663.6 | 5,638.4 | 5,638.1 | 30.1 | 1.5 | -155.50 | -537.1 | -1,396.8 | 2,724.0 | 2,702.8 | 21.26 | 128.141 | |
| 6,000.0 | 5,761.9 | 5,726.5 | 5,726.3 | 30.5 | 1.5 | -155.85 | -539.4 | -1,395.5 | 2,741.8 | 2,720.4 | 21.33 | 128.552 | |
| 6,100.0 | 5,860.7 | 5,824.1 | 5,823.8 | 30.7 | 1.5 | -156.15 | -541.9 | -1,394.3 | 2,756.6 | 2,735.2 | 21.38 | 128.934 | |
| 6,200.0 | 5,960.0 | 5,929.8 | 5,929.4 | 31.0 | 1.6 | -156.40 | -544.1 | -1,393.3 | 2,768.1 | 2,746.7 | 21.42 | 129.255 | |
| 6,300.0 | 6,059.7 | 6,038.2 | 6,037.9 | 31.2 | 1.6 | -156.57 | -545.7 | -1,392.6 | 2,776.3 | 2,754.8 | 21.44 | 129.462 | |
| 6,400.0 | 6,159.6 | 6,144.9 | 6,144.5 | 31.3 | 1.6 | -156.68 | -546.8 | -1,391.8 | 2,780.8 | 2,759.3 | 21.47 | 129.526 | |
| 6,486.1 | 6,245.7 | 6,229.0 | 6,228.6 | 31.4 | 1.6 | -135.55 | -547.5 | -1,391.3 | 2,782.2 | 2,750.9 | 31.25 | 89.025 | |
| 6,500.0 | 6,259.6 | 6,242.5 | 6,242.2 | 31.4 | 1.6 | -135.56 | -547.6 | -1,391.2 | 2,782.2 | 2,750.9 | 31.27 | 88.984 | |
| 6,516.1 | 6,275.7 | 6,258.3 | 6,258.0 | 31.4 | 1.6 | -135.56 | -547.8 | -1,391.1 | 2,782.2 | 2,750.9 | 31.28 | 88.933 | |
| 6,550.0 | 6,309.5 | 6,291.5 | 6,291.1 | 31.5 | 1.6 | -45.61 | -548.1 | -1,390.9 | 2,781.8 | 2,760.3 | 21.47 | 129.588 | |
| 6,600.0 | 6,359.4 | 6,340.3 | 6,339.9 | 31.5 | 1.6 | -45.83 | -548.5 | -1,390.7 | 2,779.0 | 2,757.7 | 21.33 | 130.294 | |
| 6,650.0 | 6,408.8 | 6,388.7 | 6,388.3 | 31.5 | 1.6 | -46.25 | -548.9 | -1,390.5 | 2,773.9 | 2,752.8 | 21.15 | 131.155 | |
| 6,700.0 | 6,457.5 | 6,436.6 | 6,436.2 | 31.5 | 1.6 | -46.86 | -549.3 | -1,390.3 | 2,766.4 | 2,745.5 | 20.93 | 132.204 | |
| 6,716.1 | 6,473.1 | 6,451.9 | 6,451.5 | 31.5 | 1.6 | -47.09 | -549.5 | -1,390.2 | 2,763.5 | 2,742.7 | 20.84 | 132.588 | |
| 6,725.0 | 6,481.6 | 6,460.2 | 6,459.9 | 31.5 | 1.6 | -47.29 | -549.6 | -1,390.2 | 2,761.8 | 2,741.0 | 20.76 | 133.014 | |
| 6,750.0 | 6,505.3 | 6,483.5 | 6,483.1 | 31.5 | 1.6 | -47.90 | -549.8 | -1,390.1 | 2,756.4 | 2,735.8 | 20.52 | 134.328 | |
| 6,775.0 | 6,528.5 | 6,506.7 | 6,506.3 | 31.4 | 1.6 | -48.62 | -550.0 | -1,390.0 | 2,750.1 | 2,729.9 | 20.25 | 135.798 | |
| 6,800.0 | 6,551.3 | 6,530.1 | 6,529.7 | 31.4 | 1.6 | -49.45 | -550.3 | -1,389.9 | 2,743.0 | 2,723.1 | 19.96 | 137.403 | |
| 6,825.0 | 6,573.4 | 6,552.9 | 6,552.5 | 31.4 | 1.6 | -50.40 | -550.5 | -1,389.7 | 2,735.2 | 2,715.5 | 19.66 | 139.096 | |
| 6,850.0 | 6,595.0 | 6,575.1 | 6,574.7 | 31.3 | 1.6 | -51.46 | -550.7 | -1,389.6 | 2,726.5 | 2,707.2 | 19.36 | 140.811 | |
| 6,875.0 | 6,615.8 | 6,596.5 | 6,596.1 | 31.3 | 1.6 | -52.63 | -550.9 | -1,389.5 | 2,717.2 | 2,698.1 | 19.07 | 142.461 | |
| 6,900.0 | 6,635.9 | 6,617.8 | 6,617.4 | 31.3 | 1.6 | -53.92 | -551.1 | -1,389.4 | 2,707.1 | 2,688.3 | 18.81 | 143.938 | |
| 6,925.0 | 6,655.1 | 6,638.4 | 6,638.0 | 31.2 | 1.7 | -55.34 | -551.3 | -1,389.2 | 2,696.4 | 2,677.8 | 18.58 | 145.114 | |
| 6,950.0 | 6,673.6 | 6,658.0 | 6,657.6 | 31.2 | 1.7 | -56.88 | -551.5 | -1,389.1 | 2,685.0 | 2,666.6 | 18.41 | 145.862 | |
| 6,975.0 | 6,691.1 | 6,676.7 | 6,676.3 | 31.1 | 1.7 | -58.53 | -551.7 | -1,388.9 | 2,673.1 | 2,654.8 | 18.30 | 146.068 | |
| 7,000.0 | 6,707.6 | 6,694.3 | 6,693.9 | 31.1 | 1.7 | -60.30 | -551.9 | -1,388.8 | 2,660.7 | 2,642.4 | 18.27 | 145.655 | |
| 7,025.0 | 6,723.1 | 6,709.9 | 6,709.5 | 31.0 | 1.7 | -62.16 | -552.0 | -1,388.6 | 2,647.7 | 2,629.4 | 18.31 | 144.603 | |
| 7,050.0 | 6,737.6 | 6,724.1 | 6,723.7 | 31.0 | 1.7 | -64.13 | -552.1 | -1,388.5 | 2,634.4 | 2,615.9 | 18.43 | 142.947 | |
| 7,075.0 | 6,751.0 | 6,737.2 | 6,736.8 | 30.9 | 1.7 | -66.18 | -552.3 | -1,388.4 | 2,620.6 | 2,602.0 | 18.62 | 140.766 | |
| 7,100.0 | 6,763.3 | 6,749.2 | 6,748.8 | 30.8 | 1.7 | -68.33 | -552.4 | -1,388.3 | 2,606.5 | 2,587.7 | 18.86 | 138.182 | |
| 7,125.0 | 6,774.5 | 6,760.0 | 6,759.6 | 30.8 | 1.7 | -70.55 | -552.5 | -1,388.2 | 2,592.2 | 2,573.0 | 19.15 | 135.330 | |
| 7,150.0 | 6,784.4 | 6,769.6 | 6,769.2 | 30.7 | 1.7 | -72.83 | -552.6 | -1,388.1 | 2,577.6 | 2,558.1 | 19.48 | 132.339 | |
| 7,175.0 | 6,793.1 | 6,778.0 | 6,777.6 | 30.7 | 1.7 | -75.16 | -552.7 | -1,388.0 | 2,562.8 | 2,542.9 | 19.82 | 129.316 | |
| 7,200.0 | 6,800.6 | 6,785.2 | 6,784.8 | 30.6 | 1.7 | -77.51 | -552.7 | -1,387.9 | 2,547.8 | 2,527.7 | 20.17 | 126.331 | |
| 7,225.0 | 6,806.8 | 6,791.2 | 6,790.8 | 30.6 | 1.7 | -79.88 | -552.8 | -1,387.9 | 2,532.8 | 2,512.3 | 20.52 | 123.423 | |
| 7,250.0 | 6,811.8 | 6,795.9 | 6,795.4 | 30.5 | 1.7 | -82.25 | -552.8 | -1,387.8 | 2,517.8 | 2,496.9 | 20.88 | 120.595 | |
| 7,275.0 | 6,815.5 | 6,799.2 | 6,798.8 | 30.5 | 1.7 | -84.59 | -552.9 | -1,387.8 | 2,502.7 | 2,481.5 | 21.24 | 117.826 | |
| 7,300.0 | 6,817.8 | 6,800.0 | 6,799.6 | 30.4 | 1.7 | -86.85 | -552.9 | -1,387.8 | 2,487.7 | 2,466.1 | 21.61 | 115.103 | |
| 7,325.0 | 6,818.9 | 6,800.0 | 6,799.6 | 30.4 | 1.7 | -89.07 | -552.9 | -1,387.8 | 2,472.8 | 2,450.8 | 22.00 | 112.379 | |
| 7,332.8 | 6,819.0 | 6,800.0 | 6,799.6 | 30.4 | 1.7 | -89.76 | -552.9 | -1,387.8 | 2,468.2 | 2,446.1 | 22.13 | 111.525 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 34-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,800.0 | 6,799.6 | 30.3 | 1.7 | -89.76 | -552.9 | -1,387.8 | 2,429.1 | 2,406.3 | 22.80 | 106.524 | |
| 7,500.0 | 6,819.0 | 6,800.0 | 6,799.6 | 30.2 | 1.7 | -89.76 | -552.9 | -1,387.8 | 2,373.3 | 2,349.2 | 24.06 | 98.628 | |
| 7,600.0 | 6,819.0 | 6,800.0 | 6,799.6 | 30.3 | 1.7 | -89.76 | -552.9 | -1,387.8 | 2,320.4 | 2,294.8 | 25.59 | 90.683 | |
| 7,700.0 | 6,819.0 | 6,798.7 | 6,798.3 | 30.6 | 1.7 | -89.72 | -552.9 | -1,387.8 | 2,270.7 | 2,243.4 | 27.33 | 83.091 | |
| 7,800.0 | 6,819.0 | 6,797.7 | 6,797.3 | 31.3 | 1.7 | -89.69 | -552.9 | -1,387.8 | 2,224.4 | 2,195.2 | 29.25 | 76.058 | |
| 7,900.0 | 6,819.0 | 6,796.8 | 6,796.4 | 32.5 | 1.7 | -89.67 | -552.8 | -1,387.8 | 2,181.7 | 2,150.4 | 31.31 | 69.688 | |
| 8,000.0 | 6,819.0 | 6,795.8 | 6,795.4 | 34.2 | 1.7 | -89.64 | -552.8 | -1,387.8 | 2,142.8 | 2,109.4 | 33.48 | 63.998 | |
| 8,100.0 | 6,819.0 | 6,794.9 | 6,794.5 | 36.1 | 1.7 | -89.61 | -552.8 | -1,387.8 | 2,108.0 | 2,072.2 | 35.75 | 58.963 | |
| 8,200.0 | 6,819.0 | 6,794.0 | 6,793.6 | 38.3 | 1.7 | -89.59 | -552.8 | -1,387.9 | 2,077.4 | 2,039.3 | 38.10 | 54.531 | |
| 8,300.0 | 6,819.0 | 6,793.0 | 6,792.6 | 40.6 | 1.7 | -89.56 | -552.8 | -1,387.9 | 2,051.2 | 2,010.7 | 40.50 | 50.644 | |
| 8,400.0 | 6,819.0 | 6,792.1 | 6,791.7 | 42.9 | 1.7 | -89.53 | -552.8 | -1,387.9 | 2,029.6 | 1,986.6 | 42.96 | 47.245 | |
| 8,500.0 | 6,819.0 | 6,791.2 | 6,790.7 | 45.3 | 1.7 | -89.50 | -552.8 | -1,387.9 | 2,012.7 | 1,967.2 | 45.46 | 44.276 | |
| 8,600.0 | 6,819.0 | 6,790.2 | 6,789.8 | 47.8 | 1.7 | -89.48 | -552.8 | -1,387.9 | 2,000.7 | 1,952.7 | 47.99 | 41.687 | |
| 8,700.0 | 6,819.0 | 6,789.3 | 6,788.9 | 50.3 | 1.7 | -89.45 | -552.8 | -1,387.9 | 1,993.6 | 1,943.1 | 50.56 | 39.433 | |
| 8,790.9 | 6,819.0 | 6,788.5 | 6,788.0 | 52.6 | 1.7 | -89.43 | -552.8 | -1,387.9 | 1,991.6 | 1,938.6 | 52.91 | 37.639 | |
| 8,800.0 | 6,819.0 | 6,788.4 | 6,788.0 | 52.8 | 1.7 | -89.42 | -552.8 | -1,387.9 | 1,991.6 | 1,938.4 | 53.15 | 37.472 | |
| 8,900.0 | 6,819.0 | 6,787.4 | 6,787.0 | 55.4 | 1.7 | -89.40 | -552.7 | -1,387.9 | 1,994.5 | 1,938.8 | 55.76 | 35.770 | |
| 9,000.0 | 6,819.0 | 6,786.5 | 6,786.1 | 58.0 | 1.7 | -89.37 | -552.7 | -1,387.9 | 2,002.5 | 1,944.1 | 58.39 | 34.294 | |
| 9,100.0 | 6,819.0 | 6,785.6 | 6,785.2 | 60.6 | 1.7 | -89.34 | -552.7 | -1,387.9 | 2,015.4 | 1,954.4 | 61.04 | 33.018 | |
| 9,200.0 | 6,819.0 | 6,784.7 | 6,784.3 | 63.2 | 1.7 | -89.32 | -552.7 | -1,387.9 | 2,033.1 | 1,969.4 | 63.70 | 31.917 | |
| 9,300.0 | 6,819.0 | 6,783.7 | 6,783.3 | 65.9 | 1.7 | -89.29 | -552.7 | -1,388.0 | 2,055.6 | 1,989.2 | 66.38 | 30.969 | |
| 9,400.0 | 6,819.0 | 6,782.8 | 6,782.4 | 68.5 | 1.7 | -89.26 | -552.7 | -1,388.0 | 2,082.6 | 2,013.6 | 69.06 | 30.156 | |
| 9,500.0 | 6,819.0 | 6,781.9 | 6,781.5 | 71.2 | 1.7 | -89.24 | -552.7 | -1,388.0 | 2,114.0 | 2,042.3 | 71.76 | 29.461 | |
| 9,600.0 | 6,819.0 | 6,781.0 | 6,780.6 | 73.9 | 1.7 | -89.21 | -552.7 | -1,388.0 | 2,149.6 | 2,075.2 | 74.46 | 28.870 | |
| 9,700.0 | 6,819.0 | 6,780.1 | 6,779.7 | 76.5 | 1.7 | -89.19 | -552.7 | -1,388.0 | 2,189.2 | 2,112.1 | 77.17 | 28.369 | |
| 9,800.0 | 6,819.0 | 6,779.1 | 6,778.7 | 79.2 | 1.7 | -89.16 | -552.7 | -1,388.0 | 2,232.6 | 2,152.7 | 79.89 | 27.946 | |
| 9,900.0 | 6,819.0 | 6,778.2 | 6,777.8 | 81.9 | 1.7 | -89.13 | -552.7 | -1,388.0 | 2,279.5 | 2,196.9 | 82.61 | 27.593 | |
| 10,000.0 | 6,819.0 | 6,777.3 | 6,776.9 | 84.6 | 1.7 | -89.11 | -552.6 | -1,388.0 | 2,329.8 | 2,244.5 | 85.34 | 27.300 | |
| 10,100.0 | 6,819.0 | 6,776.4 | 6,776.0 | 87.4 | 1.7 | -89.08 | -552.6 | -1,388.0 | 2,383.3 | 2,295.2 | 88.08 | 27.058 | |
| 10,200.0 | 6,819.0 | 6,775.5 | 6,775.1 | 90.1 | 1.7 | -89.05 | -552.6 | -1,388.0 | 2,439.6 | 2,348.8 | 90.82 | 26.863 | |
| 10,300.0 | 6,819.0 | 6,774.6 | 6,774.2 | 92.8 | 1.7 | -89.03 | -552.6 | -1,388.0 | 2,498.7 | 2,405.1 | 93.56 | 26.707 | |
| 10,400.0 | 6,819.0 | 6,773.7 | 6,773.3 | 95.5 | 1.7 | -89.00 | -552.6 | -1,388.0 | 2,560.3 | 2,464.0 | 96.31 | 26.585 | |
| 10,500.0 | 6,819.0 | 6,772.8 | 6,772.4 | 98.3 | 1.7 | -88.98 | -552.6 | -1,388.1 | 2,624.3 | 2,525.3 | 99.06 | 26.492 | |
| 10,600.0 | 6,819.0 | 6,771.9 | 6,771.5 | 101.0 | 1.7 | -88.95 | -552.6 | -1,388.1 | 2,690.5 | 2,588.7 | 101.81 | 26.426 | |
| 10,700.0 | 6,819.0 | 6,771.0 | 6,770.6 | 103.8 | 1.7 | -88.92 | -552.6 | -1,388.1 | 2,758.7 | 2,654.2 | 104.57 | 26.382 | |
| 10,800.0 | 6,819.0 | 6,770.1 | 6,769.7 | 106.5 | 1.7 | -88.90 | -552.6 | -1,388.1 | 2,828.9 | 2,721.5 | 107.33 | 26.357 | |
| 10,900.0 | 6,819.0 | 6,769.2 | 6,768.8 | 109.2 | 1.7 | -88.87 | -552.6 | -1,388.1 | 2,900.7 | 2,790.6 | 110.09 | 26.348 | SF |
| 11,000.0 | 6,819.0 | 6,768.3 | 6,767.9 | 112.0 | 1.7 | -88.85 | -552.6 | -1,388.1 | 2,974.2 | 2,861.4 | 112.86 | 26.354 | |
| 11,100.0 | 6,819.0 | 6,767.4 | 6,767.0 | 114.8 | 1.7 | -88.82 | -552.6 | -1,388.1 | 3,049.2 | 2,933.6 | 115.62 | 26.372 | |
| 11,200.0 | 6,819.0 | 6,766.5 | 6,766.1 | 117.5 | 1.7 | -88.79 | -552.5 | -1,388.1 | 3,125.6 | 3,007.2 | 118.39 | 26.401 | |
| 11,300.0 | 6,819.0 | 6,765.6 | 6,765.2 | 120.3 | 1.7 | -88.77 | -552.5 | -1,388.1 | 3,203.3 | 3,082.2 | 121.16 | 26.438 | |
| 11,400.0 | 6,819.0 | 6,764.7 | 6,764.3 | 123.0 | 1.7 | -88.74 | -552.5 | -1,388.1 | 3,282.2 | 3,158.3 | 123.93 | 26.484 | |
| 11,500.0 | 6,819.0 | 6,763.8 | 6,763.4 | 125.8 | 1.7 | -88.72 | -552.5 | -1,388.1 | 3,362.3 | 3,235.6 | 126.71 | 26.536 | |
| 11,600.0 | 6,819.0 | 6,762.9 | 6,762.5 | 128.6 | 1.7 | -88.69 | -552.5 | -1,388.1 | 3,443.4 | 3,313.9 | 129.48 | 26.593 | |
| 11,700.0 | 6,819.0 | 6,762.0 | 6,761.6 | 131.3 | 1.7 | -88.67 | -552.5 | -1,388.2 | 3,525.4 | 3,393.1 | 132.26 | 26.655 | |
| 11,800.0 | 6,819.0 | 6,761.1 | 6,760.7 | 134.1 | 1.7 | -88.64 | -552.5 | -1,388.2 | 3,608.4 | 3,473.3 | 135.04 | 26.721 | |
| 11,900.0 | 6,819.0 | 6,760.3 | 6,759.8 | 136.9 | 1.7 | -88.62 | -552.5 | -1,388.2 | 3,692.2 | 3,554.3 | 137.82 | 26.791 | |
| 12,000.0 | 6,819.0 | 6,759.4 | 6,759.0 | 139.6 | 1.7 | -88.59 | -552.5 | -1,388.2 | 3,776.7 | 3,636.1 | 140.59 | 26.863 | |
| 12,100.0 | 6,819.0 | 6,758.5 | 6,758.1 | 142.4 | 1.7 | -88.56 | -552.5 | -1,388.2 | 3,862.1 | 3,718.7 | 143.38 | 26.937 | |
| 12,200.0 | 6,819.0 | 6,757.6 | 6,757.2 | 145.2 | 1.7 | -88.54 | -552.5 | -1,388.2 | 3,948.1 | 3,801.9 | 146.16 | 27.012 | |
| 12,300.0 | 6,819.0 | 6,756.7 | 6,756.3 | 148.0 | 1.7 | -88.51 | -552.4 | -1,388.2 | 4,034.7 | 3,885.8 | 148.94 | 27.090 | |
| 12,400.0 | 6,819.0 | 6,755.8 | 6,755.4 | 150.8 | 1.7 | -88.49 | -552.4 | -1,388.2 | 4,122.0 | 3,970.3 | 151.72 | 27.168 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 34-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,500.0 | 6,819.0 | 6,755.0 | 6,754.6 | 153.5 | 1.7 | -88.46 | -552.4 | -1,388.2 | 4,209.8 | 4,055.3 | 154.51 | 27.247 | |
| 12,600.0 | 6,819.0 | 6,754.1 | 6,753.7 | 156.3 | 1.7 | -88.44 | -552.4 | -1,388.2 | 4,298.2 | 4,140.9 | 157.29 | 27.326 | |
| 12,700.0 | 6,819.0 | 6,753.2 | 6,752.8 | 159.1 | 1.7 | -88.41 | -552.4 | -1,388.2 | 4,387.0 | 4,227.0 | 160.08 | 27.405 | |
| 12,800.0 | 6,819.0 | 6,752.3 | 6,751.9 | 161.9 | 1.7 | -88.39 | -552.4 | -1,388.2 | 4,476.4 | 4,313.5 | 162.87 | 27.485 | |
| 12,900.0 | 6,819.0 | 6,751.5 | 6,751.1 | 164.7 | 1.7 | -88.36 | -552.4 | -1,388.3 | 4,566.1 | 4,400.5 | 165.65 | 27.564 | |
| 13,000.0 | 6,819.0 | 6,750.6 | 6,750.2 | 167.4 | 1.7 | -88.34 | -552.4 | -1,388.3 | 4,656.3 | 4,487.9 | 168.44 | 27.644 | |
| 13,100.0 | 6,819.0 | 6,749.7 | 6,749.3 | 170.2 | 1.7 | -88.31 | -552.4 | -1,388.3 | 4,746.9 | 4,575.7 | 171.23 | 27.722 | |
| 13,200.0 | 6,819.0 | 6,748.9 | 6,748.5 | 173.0 | 1.7 | -88.29 | -552.4 | -1,388.3 | 4,837.9 | 4,663.8 | 174.02 | 27.801 | |
| 13,300.0 | 6,819.0 | 6,748.0 | 6,747.6 | 175.8 | 1.7 | -88.26 | -552.4 | -1,388.3 | 4,929.2 | 4,752.3 | 176.81 | 27.879 | |
| 13,400.0 | 6,819.0 | 6,747.1 | 6,746.7 | 178.6 | 1.7 | -88.24 | -552.4 | -1,388.3 | 5,020.8 | 4,841.2 | 179.60 | 27.956 | |
| 13,500.0 | 6,819.0 | 6,746.3 | 6,745.9 | 181.4 | 1.7 | -88.21 | -552.3 | -1,388.3 | 5,112.7 | 4,930.3 | 182.39 | 28.032 | |
| 13,600.0 | 6,819.0 | 6,745.4 | 6,745.0 | 184.2 | 1.7 | -88.19 | -552.3 | -1,388.3 | 5,205.0 | 5,019.8 | 185.18 | 28.108 | |
| 13,700.0 | 6,819.0 | 6,744.5 | 6,744.1 | 187.0 | 1.7 | -88.16 | -552.3 | -1,388.3 | 5,297.5 | 5,109.5 | 187.97 | 28.183 | |
| 13,800.0 | 6,819.0 | 6,743.7 | 6,743.3 | 189.7 | 1.7 | -88.14 | -552.3 | -1,388.3 | 5,390.3 | 5,199.5 | 190.76 | 28.257 | |
| 13,900.0 | 6,819.0 | 6,742.8 | 6,742.4 | 192.5 | 1.7 | -88.11 | -552.3 | -1,388.3 | 5,483.3 | 5,289.8 | 193.55 | 28.330 | |
| 14,000.0 | 6,819.0 | 6,742.0 | 6,741.6 | 195.3 | 1.7 | -88.09 | -552.3 | -1,388.3 | 5,576.6 | 5,380.3 | 196.34 | 28.402 | |
| 14,100.0 | 6,819.0 | 6,741.1 | 6,740.7 | 198.1 | 1.7 | -88.06 | -552.3 | -1,388.3 | 5,670.1 | 5,471.0 | 199.14 | 28.474 | |
| 14,200.0 | 6,819.0 | 6,740.3 | 6,739.8 | 200.9 | 1.7 | -88.04 | -552.3 | -1,388.4 | 5,763.9 | 5,561.9 | 201.93 | 28.544 | |
| 14,300.0 | 6,819.0 | 6,739.4 | 6,739.0 | 203.7 | 1.7 | -88.02 | -552.3 | -1,388.4 | 5,857.8 | 5,653.1 | 204.72 | 28.614 | |
| 14,400.0 | 6,819.0 | 6,738.5 | 6,738.1 | 206.5 | 1.7 | -87.99 | -552.3 | -1,388.4 | 5,951.9 | 5,744.4 | 207.51 | 28.682 | |
| 14,500.0 | 6,819.0 | 6,737.7 | 6,737.3 | 209.3 | 1.7 | -87.97 | -552.3 | -1,388.4 | 6,046.3 | 5,836.0 | 210.31 | 28.750 | |
| 14,600.0 | 6,819.0 | 6,736.8 | 6,736.4 | 212.1 | 1.7 | -87.94 | -552.3 | -1,388.4 | 6,140.8 | 5,927.7 | 213.10 | 28.816 | |
| 14,700.0 | 6,819.0 | 6,736.0 | 6,735.6 | 214.9 | 1.7 | -87.92 | -552.3 | -1,388.4 | 6,235.5 | 6,019.6 | 215.90 | 28.882 | |
| 14,720.3 | 6,819.0 | 6,735.9 | 6,735.4 | 215.4 | 1.7 | -87.91 | -552.2 | -1,388.4 | 6,254.7 | 6,038.2 | 216.46 | 28.895 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 43-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -10.94 | 617.9 | -119.4 | 629.5 | | | | |
| 100.0 | 100.0 | 76.7 | 76.7 | 0.1 | 0.1 | -10.91 | 618.4 | -119.2 | 629.8 | 629.6 | 0.16 | 3,849.418 | |
| 200.0 | 200.0 | 177.5 | 177.5 | 0.3 | 0.2 | -10.83 | 619.8 | -118.5 | 631.1 | 630.6 | 0.51 | 1,227.657 | |
| 300.0 | 300.0 | 278.3 | 278.2 | 0.5 | 0.3 | -10.79 | 620.8 | -118.3 | 632.0 | 631.2 | 0.83 | 758.110 | |
| 400.0 | 400.0 | 378.3 | 378.3 | 0.8 | 0.4 | -10.75 | 621.8 | -118.1 | 632.9 | 631.8 | 1.13 | 560.578 | |
| 500.0 | 500.0 | 477.1 | 477.0 | 1.0 | 0.4 | -10.72 | 622.8 | -117.9 | 633.9 | 632.5 | 1.41 | 448.569 | |
| 600.0 | 600.0 | 576.9 | 576.9 | 1.2 | 0.5 | -10.70 | 624.0 | -117.9 | 635.0 | 633.3 | 1.69 | 375.165 | |
| 700.0 | 700.0 | 677.8 | 677.7 | 1.4 | 0.6 | -10.67 | 625.1 | -117.8 | 636.1 | 634.1 | 1.97 | 323.208 | |
| 800.0 | 800.0 | 778.1 | 778.0 | 1.7 | 0.6 | -10.64 | 626.1 | -117.6 | 637.0 | 634.8 | 2.24 | 284.450 | |
| 900.0 | 900.0 | 879.7 | 879.6 | 1.9 | 0.7 | -31.86 | 627.0 | -117.4 | 636.4 | 633.9 | 2.53 | 251.680 | |
| 1,000.0 | 999.8 | 981.1 | 981.1 | 2.1 | 0.7 | -32.14 | 627.6 | -117.3 | 632.5 | 629.7 | 2.81 | 225.414 | |
| 1,100.0 | 1,099.5 | 1,081.9 | 1,081.8 | 2.3 | 0.7 | -32.62 | 627.9 | -117.2 | 625.5 | 622.4 | 3.09 | 202.567 | |
| 1,200.0 | 1,198.7 | 1,182.3 | 1,182.3 | 2.6 | 0.8 | -33.34 | 628.1 | -117.1 | 615.4 | 612.0 | 3.37 | 182.524 | |
| 1,300.0 | 1,297.5 | 1,281.1 | 1,281.1 | 2.9 | 0.8 | -34.29 | 628.2 | -117.0 | 602.4 | 598.8 | 3.67 | 164.356 | |
| 1,400.0 | 1,395.6 | 1,378.8 | 1,378.8 | 3.2 | 0.9 | -35.50 | 628.3 | -116.9 | 586.8 | 582.8 | 3.98 | 147.556 | |
| 1,500.0 | 1,493.1 | 1,476.9 | 1,476.9 | 3.5 | 0.9 | -37.02 | 628.5 | -116.8 | 568.6 | 564.3 | 4.30 | 132.276 | |
| 1,507.2 | 1,500.0 | 1,483.9 | 1,483.9 | 3.6 | 0.9 | -37.15 | 628.5 | -116.8 | 567.2 | 562.9 | 4.32 | 131.244 | |
| 1,572.2 | 1,563.0 | 1,548.0 | 1,548.0 | 3.8 | 0.9 | -38.15 | 628.4 | -116.9 | 554.4 | 549.9 | 4.53 | 122.481 | |
| 1,600.0 | 1,590.0 | 1,575.5 | 1,575.5 | 3.9 | 0.9 | -38.68 | 628.3 | -116.9 | 548.9 | 544.2 | 4.62 | 118.705 | |
| 1,700.0 | 1,686.3 | 1,672.9 | 1,672.8 | 4.4 | 0.9 | -40.83 | 627.9 | -117.1 | 527.3 | 522.3 | 5.02 | 105.103 | |
| 1,800.0 | 1,781.5 | 1,765.4 | 1,765.3 | 4.9 | 0.9 | -43.32 | 627.5 | -117.1 | 504.0 | 498.5 | 5.45 | 92.451 | |
| 1,817.6 | 1,798.2 | 1,781.4 | 1,781.3 | 5.0 | 0.9 | -43.80 | 627.6 | -117.1 | 499.8 | 494.2 | 5.53 | 90.316 | |
| 1,900.0 | 1,876.1 | 1,857.2 | 1,857.1 | 5.5 | 0.9 | -45.88 | 627.9 | -117.1 | 480.5 | 474.6 | 5.94 | 80.947 | |
| 2,000.0 | 1,970.6 | 1,950.1 | 1,950.0 | 6.0 | 1.0 | -48.59 | 628.8 | -116.9 | 458.5 | 452.0 | 6.46 | 70.922 | |
| 2,100.0 | 2,065.1 | 2,044.4 | 2,044.4 | 6.6 | 1.0 | -51.53 | 630.3 | -116.3 | 437.9 | 430.9 | 7.04 | 62.233 | |
| 2,200.0 | 2,159.6 | 2,140.8 | 2,140.7 | 7.2 | 1.0 | -54.66 | 632.2 | -114.8 | 418.6 | 410.9 | 7.65 | 54.717 | |
| 2,300.0 | 2,254.1 | 2,239.8 | 2,239.6 | 7.8 | 1.1 | -58.10 | 634.1 | -112.6 | 400.1 | 391.8 | 8.30 | 48.183 | |
| 2,400.0 | 2,348.7 | 2,338.6 | 2,338.4 | 8.4 | 1.1 | -61.87 | 634.9 | -109.8 | 381.9 | 372.9 | 8.99 | 42.480 | |
| 2,500.0 | 2,443.2 | 2,432.7 | 2,432.5 | 9.1 | 1.1 | -65.87 | 635.0 | -107.3 | 365.3 | 355.6 | 9.70 | 37.666 | |
| 2,600.0 | 2,537.7 | 2,524.5 | 2,524.2 | 9.7 | 1.1 | -70.20 | 635.0 | -105.8 | 351.3 | 340.8 | 10.42 | 33.721 | |
| 2,700.0 | 2,632.2 | 2,615.8 | 2,615.5 | 10.3 | 1.1 | -74.88 | 635.2 | -105.5 | 340.8 | 329.6 | 11.14 | 30.587 | |
| 2,800.0 | 2,726.8 | 2,710.5 | 2,710.3 | 10.9 | 1.2 | -80.05 | 635.2 | -105.7 | 333.5 | 321.6 | 11.87 | 28.099 | |
| 2,900.0 | 2,821.3 | 2,806.0 | 2,805.7 | 11.6 | 1.2 | -85.49 | 634.7 | -106.0 | 329.1 | 316.5 | 12.58 | 26.164 | |
| 2,982.1 | 2,898.9 | 2,883.1 | 2,882.8 | 12.1 | 1.2 | -89.97 | 634.2 | -106.2 | 327.9 | 314.8 | 13.13 | 24.975 CC | |
| 3,000.0 | 2,915.8 | 2,900.0 | 2,899.8 | 12.2 | 1.2 | -90.96 | 634.0 | -106.2 | 328.0 | 314.7 | 13.25 | 24.762 ES | |
| 3,100.0 | 3,010.3 | 2,991.8 | 2,991.6 | 12.8 | 1.2 | -96.29 | 633.5 | -106.8 | 330.6 | 316.8 | 13.85 | 23.872 | |
| 3,200.0 | 3,104.8 | 3,086.2 | 3,086.0 | 13.5 | 1.2 | -101.61 | 633.2 | -107.7 | 336.9 | 322.5 | 14.39 | 23.419 | |
| 3,300.0 | 3,199.4 | 3,180.0 | 3,179.8 | 14.1 | 1.2 | -106.61 | 633.2 | -108.6 | 346.3 | 331.4 | 14.85 | 23.313 SF | |
| 3,400.0 | 3,293.9 | 3,273.0 | 3,272.8 | 14.8 | 1.2 | -111.28 | 633.5 | -109.7 | 358.7 | 343.5 | 15.26 | 23.507 | |
| 3,500.0 | 3,388.4 | 3,373.0 | 3,372.7 | 15.4 | 1.2 | -115.99 | 633.6 | -110.7 | 373.4 | 357.9 | 15.57 | 23.979 | |
| 3,600.0 | 3,482.9 | 3,472.3 | 3,472.0 | 16.0 | 1.2 | -120.29 | 634.0 | -109.9 | 388.6 | 372.8 | 15.85 | 24.527 | |
| 3,700.0 | 3,577.5 | 3,568.8 | 3,568.5 | 16.7 | 1.2 | -124.19 | 634.4 | -108.4 | 405.2 | 389.1 | 16.09 | 25.185 | |
| 3,800.0 | 3,672.0 | 3,664.3 | 3,664.0 | 17.3 | 1.3 | -127.77 | 634.6 | -106.7 | 423.2 | 406.9 | 16.31 | 25.953 | |
| 3,900.0 | 3,766.5 | 3,759.1 | 3,758.8 | 18.0 | 1.3 | -131.06 | 634.8 | -104.8 | 442.7 | 426.2 | 16.50 | 26.823 | |
| 4,000.0 | 3,861.0 | 3,853.8 | 3,853.4 | 18.6 | 1.3 | -134.10 | 634.7 | -102.9 | 463.6 | 446.9 | 16.69 | 27.783 | |
| 4,100.0 | 3,955.5 | 3,948.2 | 3,947.8 | 19.3 | 1.3 | -136.88 | 634.7 | -101.0 | 485.7 | 468.9 | 16.86 | 28.810 | |
| 4,200.0 | 4,050.1 | 4,041.2 | 4,040.8 | 19.9 | 1.4 | -139.38 | 634.6 | -99.3 | 509.1 | 492.1 | 17.04 | 29.879 | |
| 4,300.0 | 4,144.6 | 4,132.9 | 4,132.6 | 20.5 | 1.4 | -141.60 | 634.7 | -98.3 | 533.8 | 516.6 | 17.23 | 30.984 | |
| 4,400.0 | 4,239.1 | 4,225.0 | 4,224.6 | 21.2 | 1.4 | -143.57 | 635.0 | -97.9 | 559.8 | 542.4 | 17.43 | 32.118 | |
| 4,500.0 | 4,333.6 | 4,317.7 | 4,317.3 | 21.8 | 1.4 | -145.32 | 635.6 | -98.3 | 586.8 | 569.2 | 17.64 | 33.265 | |
| 4,600.0 | 4,428.2 | 4,412.3 | 4,411.9 | 22.5 | 1.4 | -146.92 | 636.5 | -99.0 | 614.4 | 596.6 | 17.85 | 34.412 | |
| 4,700.0 | 4,522.7 | 4,507.3 | 4,506.9 | 23.1 | 1.5 | -148.42 | 637.2 | -99.5 | 642.4 | 624.3 | 18.07 | 35.549 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 43-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,600.0 | 4,599.6 | 23.8 | 1.5 | -149.79 | 637.5 | -99.8 | 670.9 | 652.6 | 18.29 | 36.676 | |
| 4,900.0 | 4,711.7 | 4,692.5 | 4,692.1 | 24.4 | 1.5 | -151.07 | 637.5 | -100.3 | 700.0 | 681.5 | 18.52 | 37.802 | |
| 5,000.0 | 4,806.2 | 4,785.4 | 4,785.0 | 25.1 | 1.5 | -152.25 | 637.3 | -100.9 | 729.7 | 710.9 | 18.75 | 38.917 | |
| 5,100.0 | 4,900.8 | 4,879.4 | 4,879.0 | 25.7 | 1.5 | -153.36 | 637.0 | -101.6 | 759.8 | 740.8 | 18.99 | 40.017 | |
| 5,200.0 | 4,995.3 | 4,973.8 | 4,973.4 | 26.4 | 1.5 | -154.39 | 636.7 | -102.3 | 790.1 | 770.9 | 19.23 | 41.090 | |
| 5,300.0 | 5,089.8 | 5,070.6 | 5,070.2 | 27.0 | 1.5 | -155.39 | 636.3 | -102.8 | 820.6 | 801.1 | 19.47 | 42.143 | |
| 5,400.0 | 5,184.3 | 5,168.7 | 5,168.3 | 27.7 | 1.5 | -156.35 | 636.0 | -102.8 | 850.9 | 831.1 | 19.71 | 43.159 | |
| 5,500.0 | 5,278.9 | 5,265.0 | 5,264.6 | 28.3 | 1.5 | -157.24 | 635.8 | -102.3 | 881.0 | 861.0 | 19.97 | 44.114 | |
| 5,533.5 | 5,310.5 | 5,297.0 | 5,296.6 | 28.5 | 1.5 | -157.53 | 635.7 | -102.1 | 891.1 | 871.0 | 20.06 | 44.424 | |
| 5,600.0 | 5,373.6 | 5,363.5 | 5,363.1 | 28.9 | 1.5 | -158.23 | 635.7 | -101.7 | 910.4 | 890.3 | 20.13 | 45.237 | |
| 5,700.0 | 5,469.4 | 5,458.7 | 5,458.3 | 29.3 | 1.5 | -159.09 | 635.9 | -101.0 | 936.7 | 916.5 | 20.20 | 46.371 | |
| 5,800.0 | 5,566.1 | 5,547.1 | 5,546.6 | 29.8 | 1.6 | -159.79 | 635.6 | -100.4 | 960.4 | 940.2 | 20.27 | 47.386 | |
| 5,900.0 | 5,663.6 | 5,638.1 | 5,637.7 | 30.1 | 1.6 | -160.41 | 634.4 | -100.2 | 982.0 | 961.7 | 20.31 | 48.343 | |
| 6,000.0 | 5,761.9 | 5,738.4 | 5,738.0 | 30.5 | 1.6 | -160.96 | 633.1 | -100.0 | 1,000.5 | 980.2 | 20.34 | 49.187 | |
| 6,100.0 | 5,860.7 | 5,837.8 | 5,837.3 | 30.7 | 1.6 | -161.41 | 631.7 | -99.5 | 1,015.6 | 995.2 | 20.35 | 49.898 | |
| 6,200.0 | 5,960.0 | 5,936.7 | 5,936.2 | 31.0 | 1.6 | -161.79 | 630.0 | -98.6 | 1,027.5 | 1,007.1 | 20.36 | 50.475 | |
| 6,300.0 | 6,059.7 | 6,036.4 | 6,035.9 | 31.2 | 1.6 | -162.09 | 628.2 | -97.7 | 1,036.1 | 1,015.7 | 20.35 | 50.910 | |
| 6,400.0 | 6,159.6 | 6,137.0 | 6,136.5 | 31.3 | 1.6 | -162.30 | 626.5 | -96.7 | 1,041.3 | 1,020.9 | 20.35 | 51.181 | |
| 6,486.1 | 6,245.7 | 6,224.3 | 6,223.8 | 31.4 | 1.6 | -141.25 | 625.2 | -95.9 | 1,043.1 | 1,011.1 | 31.96 | 32.640 | |
| 6,500.0 | 6,259.6 | 6,238.9 | 6,238.4 | 31.4 | 1.6 | -141.27 | 625.0 | -95.8 | 1,043.2 | 1,011.2 | 31.97 | 32.626 | |
| 6,516.1 | 6,275.7 | 6,256.0 | 6,255.4 | 31.4 | 1.6 | -141.28 | 624.8 | -95.6 | 1,043.2 | 1,011.2 | 31.99 | 32.608 | |
| 6,550.0 | 6,309.5 | 6,291.7 | 6,291.2 | 31.5 | 1.6 | -51.37 | 624.3 | -95.3 | 1,042.8 | 1,022.5 | 20.32 | 51.322 | |
| 6,600.0 | 6,359.4 | 6,342.3 | 6,341.8 | 31.5 | 1.6 | -51.75 | 623.8 | -94.8 | 1,040.4 | 1,020.2 | 20.18 | 51.566 | |
| 6,650.0 | 6,408.8 | 6,392.1 | 6,391.5 | 31.5 | 1.6 | -52.41 | 623.3 | -94.2 | 1,035.8 | 1,015.8 | 19.99 | 51.820 | |
| 6,700.0 | 6,457.5 | 6,440.4 | 6,439.8 | 31.5 | 1.6 | -53.36 | 622.7 | -93.7 | 1,029.1 | 1,009.3 | 19.76 | 52.075 | |
| 6,716.1 | 6,473.1 | 6,455.7 | 6,455.2 | 31.5 | 1.6 | -53.72 | 622.6 | -93.5 | 1,026.5 | 1,006.8 | 19.68 | 52.155 | |
| 6,725.0 | 6,481.6 | 6,464.1 | 6,463.5 | 31.5 | 1.6 | -53.99 | 622.5 | -93.4 | 1,025.0 | 1,005.4 | 19.61 | 52.264 | |
| 6,750.0 | 6,505.3 | 6,487.5 | 6,486.9 | 31.5 | 1.7 | -54.82 | 622.2 | -93.1 | 1,020.3 | 1,000.9 | 19.41 | 52.573 | |
| 6,775.0 | 6,528.5 | 6,510.5 | 6,510.0 | 31.4 | 1.7 | -55.79 | 622.0 | -92.9 | 1,014.8 | 995.6 | 19.20 | 52.869 | |
| 6,800.0 | 6,551.3 | 6,533.3 | 6,532.7 | 31.4 | 1.7 | -56.89 | 621.7 | -92.7 | 1,008.8 | 989.8 | 18.99 | 53.128 | |
| 6,825.0 | 6,573.4 | 6,555.5 | 6,554.9 | 31.4 | 1.7 | -58.13 | 621.5 | -92.4 | 1,002.1 | 983.3 | 18.79 | 53.320 | |
| 6,850.0 | 6,595.0 | 6,577.0 | 6,576.4 | 31.3 | 1.7 | -59.48 | 621.3 | -92.2 | 994.8 | 976.2 | 18.63 | 53.410 | |
| 6,875.0 | 6,615.8 | 6,597.8 | 6,597.2 | 31.3 | 1.7 | -60.95 | 621.1 | -92.0 | 987.1 | 968.6 | 18.50 | 53.364 | |
| 6,900.0 | 6,635.9 | 6,617.9 | 6,617.3 | 31.3 | 1.7 | -62.54 | 620.9 | -91.8 | 978.9 | 960.5 | 18.42 | 53.152 | |
| 6,925.0 | 6,655.1 | 6,637.2 | 6,636.6 | 31.2 | 1.7 | -64.22 | 620.7 | -91.6 | 970.3 | 951.9 | 18.39 | 52.756 | |
| 6,950.0 | 6,673.6 | 6,655.6 | 6,655.0 | 31.2 | 1.7 | -65.99 | 620.5 | -91.4 | 961.3 | 942.9 | 18.43 | 52.173 | |
| 6,975.0 | 6,691.1 | 6,673.0 | 6,672.5 | 31.1 | 1.7 | -67.83 | 620.3 | -91.2 | 952.1 | 933.6 | 18.52 | 51.415 | |
| 7,000.0 | 6,707.6 | 6,689.5 | 6,688.9 | 31.1 | 1.7 | -69.73 | 620.2 | -91.1 | 942.7 | 924.1 | 18.66 | 50.509 | |
| 7,025.0 | 6,723.1 | 6,700.0 | 6,699.4 | 31.0 | 1.7 | -71.40 | 620.1 | -90.9 | 933.2 | 914.4 | 18.83 | 49.549 | |
| 7,050.0 | 6,737.6 | 6,700.0 | 6,699.4 | 31.0 | 1.7 | -72.56 | 620.1 | -90.9 | 923.9 | 904.9 | 18.99 | 48.651 | |
| 7,075.0 | 6,751.0 | 6,700.0 | 6,699.4 | 30.9 | 1.7 | -73.69 | 620.1 | -90.9 | 914.7 | 895.5 | 19.16 | 47.731 | |
| 7,100.0 | 6,763.3 | 6,700.0 | 6,699.4 | 30.8 | 1.7 | -74.79 | 620.1 | -90.9 | 905.8 | 886.5 | 19.35 | 46.804 | |
| 7,125.0 | 6,774.5 | 6,700.0 | 6,699.4 | 30.8 | 1.7 | -75.85 | 620.1 | -90.9 | 897.2 | 877.6 | 19.56 | 45.878 | |
| 7,150.0 | 6,784.4 | 6,700.0 | 6,699.4 | 30.7 | 1.7 | -76.88 | 620.1 | -90.9 | 888.9 | 869.1 | 19.77 | 44.962 | |
| 7,175.0 | 6,793.1 | 6,700.0 | 6,699.4 | 30.7 | 1.7 | -77.86 | 620.1 | -90.9 | 880.9 | 860.9 | 19.99 | 44.062 | |
| 7,200.0 | 6,800.6 | 6,700.0 | 6,699.4 | 30.6 | 1.7 | -78.80 | 620.1 | -90.9 | 873.4 | 853.1 | 20.22 | 43.183 | |
| 7,225.0 | 6,806.8 | 6,700.0 | 6,699.4 | 30.6 | 1.7 | -79.68 | 620.1 | -90.9 | 866.2 | 845.7 | 20.46 | 42.328 | |
| 7,250.0 | 6,811.8 | 6,700.0 | 6,699.4 | 30.5 | 1.7 | -80.50 | 620.1 | -90.9 | 859.5 | 838.8 | 20.71 | 41.499 | |
| 7,275.0 | 6,815.5 | 6,700.0 | 6,699.4 | 30.5 | 1.7 | -81.27 | 620.1 | -90.9 | 853.2 | 832.3 | 20.97 | 40.697 | |
| 7,300.0 | 6,817.8 | 6,700.0 | 6,699.4 | 30.4 | 1.7 | -81.97 | 620.1 | -90.9 | 847.5 | 826.2 | 21.23 | 39.925 | |
| 7,325.0 | 6,818.9 | 6,700.0 | 6,699.4 | 30.4 | 1.7 | -82.61 | 620.1 | -90.9 | 842.2 | 820.7 | 21.50 | 39.183 | |
| 7,332.8 | 6,819.0 | 6,700.0 | 6,699.4 | 30.4 | 1.7 | -82.79 | 620.1 | -90.9 | 840.7 | 819.1 | 21.58 | 38.957 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 43-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 30.3 | 1.7 | -82.79 | 620.1 | -90.9 | 830.5 | 808.2 | 22.24 | 37.345 | |
| 7,493.9 | 6,819.0 | 6,700.0 | 6,699.4 | 30.2 | 1.7 | -82.79 | 620.1 | -90.9 | 825.1 | 801.7 | 23.41 | 35.253 | |
| 7,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 30.2 | 1.7 | -82.79 | 620.1 | -90.9 | 825.1 | 801.7 | 23.48 | 35.141 | |
| 7,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 30.3 | 1.7 | -82.79 | 620.1 | -90.9 | 831.9 | 806.9 | 25.00 | 33.282 | |
| 7,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 30.6 | 1.7 | -82.79 | 620.1 | -90.9 | 850.5 | 823.7 | 26.73 | 31.815 | |
| 7,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 31.3 | 1.7 | -82.79 | 620.1 | -90.9 | 880.1 | 851.4 | 28.65 | 30.722 | |
| 7,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 32.5 | 1.7 | -82.79 | 620.1 | -90.9 | 919.6 | 888.9 | 30.70 | 29.952 | |
| 8,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 34.2 | 1.7 | -82.79 | 620.1 | -90.9 | 968.0 | 935.1 | 32.88 | 29.442 | |
| 8,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 36.1 | 1.7 | -82.79 | 620.1 | -90.9 | 1,023.8 | 988.6 | 35.14 | 29.134 | |
| 8,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 38.3 | 1.7 | -82.79 | 620.1 | -90.9 | 1,086.0 | 1,048.5 | 37.48 | 28.975 | |
| 8,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 40.6 | 1.7 | -82.79 | 620.1 | -90.9 | 1,153.5 | 1,113.6 | 39.88 | 28.925 | |
| 8,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 42.9 | 1.7 | -82.79 | 620.1 | -90.9 | 1,225.5 | 1,183.1 | 42.33 | 28.951 | |
| 8,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 45.3 | 1.7 | -82.79 | 620.1 | -90.9 | 1,301.2 | 1,256.3 | 44.82 | 29.030 | |
| 8,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 47.8 | 1.7 | -82.79 | 620.1 | -90.9 | 1,379.9 | 1,332.6 | 47.35 | 29.145 | |
| 8,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 50.3 | 1.7 | -82.79 | 620.1 | -90.9 | 1,461.3 | 1,411.4 | 49.90 | 29.283 | |
| 8,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 52.8 | 1.7 | -82.79 | 620.1 | -90.9 | 1,544.9 | 1,492.4 | 52.48 | 29.436 | |
| 8,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 55.4 | 1.7 | -82.79 | 620.1 | -90.9 | 1,630.3 | 1,575.2 | 55.08 | 29.597 | |
| 9,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 58.0 | 1.7 | -82.79 | 620.1 | -90.9 | 1,717.3 | 1,659.6 | 57.70 | 29.761 | |
| 9,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 60.6 | 1.7 | -82.79 | 620.1 | -90.9 | 1,805.6 | 1,745.3 | 60.34 | 29.925 | |
| 9,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 63.2 | 1.7 | -82.79 | 620.1 | -90.9 | 1,895.1 | 1,832.1 | 62.99 | 30.087 | |
| 9,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 65.9 | 1.7 | -82.79 | 620.1 | -90.9 | 1,985.6 | 1,920.0 | 65.65 | 30.246 | |
| 9,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 68.5 | 1.7 | -82.79 | 620.1 | -90.9 | 2,077.0 | 2,008.7 | 68.32 | 30.401 | |
| 9,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 71.2 | 1.7 | -82.79 | 620.1 | -90.9 | 2,169.1 | 2,098.1 | 71.00 | 30.551 | |
| 9,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 73.9 | 1.7 | -82.79 | 620.1 | -90.9 | 2,261.9 | 2,188.2 | 73.69 | 30.695 | |
| 9,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 76.5 | 1.7 | -82.79 | 620.1 | -90.9 | 2,355.3 | 2,278.9 | 76.39 | 30.834 | |
| 9,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 79.2 | 1.7 | -82.79 | 620.1 | -90.9 | 2,449.2 | 2,370.1 | 79.09 | 30.968 | |
| 9,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 81.9 | 1.7 | -82.79 | 620.1 | -90.9 | 2,543.6 | 2,461.8 | 81.80 | 31.096 | |
| 10,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 84.6 | 1.7 | -82.79 | 620.1 | -90.9 | 2,638.4 | 2,553.9 | 84.51 | 31.219 | |
| 10,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 87.4 | 1.7 | -82.79 | 620.1 | -90.9 | 2,733.6 | 2,646.3 | 87.23 | 31.336 | |
| 10,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 90.1 | 1.7 | -82.79 | 620.1 | -90.9 | 2,829.1 | 2,739.1 | 89.96 | 31.449 | |
| 10,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 92.8 | 1.7 | -82.79 | 620.1 | -90.9 | 2,924.9 | 2,832.2 | 92.69 | 31.557 | |
| 10,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 95.5 | 1.7 | -82.79 | 620.1 | -90.9 | 3,020.9 | 2,925.5 | 95.42 | 31.660 | |
| 10,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 98.3 | 1.7 | -82.79 | 620.1 | -90.9 | 3,117.3 | 3,019.1 | 98.15 | 31.760 | |
| 10,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 101.0 | 1.7 | -82.79 | 620.1 | -90.9 | 3,213.8 | 3,112.9 | 100.89 | 31.854 | |
| 10,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 103.8 | 1.7 | -82.79 | 620.1 | -90.9 | 3,310.5 | 3,206.9 | 103.63 | 31.946 | |
| 10,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 106.5 | 1.7 | -82.79 | 620.1 | -90.9 | 3,407.5 | 3,301.1 | 106.37 | 32.033 | |
| 10,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 109.2 | 1.7 | -82.79 | 620.1 | -90.9 | 3,504.6 | 3,395.5 | 109.12 | 32.117 | |
| 11,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 112.0 | 1.7 | -82.79 | 620.1 | -90.9 | 3,601.8 | 3,490.0 | 111.87 | 32.197 | |
| 11,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 114.8 | 1.7 | -82.79 | 620.1 | -90.9 | 3,699.3 | 3,584.6 | 114.62 | 32.275 | |
| 11,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 117.5 | 1.7 | -82.79 | 620.1 | -90.9 | 3,796.8 | 3,679.4 | 117.37 | 32.349 | |
| 11,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 120.3 | 1.7 | -82.79 | 620.1 | -90.9 | 3,894.5 | 3,774.4 | 120.12 | 32.420 | |
| 11,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 123.0 | 1.7 | -82.79 | 620.1 | -90.9 | 3,992.3 | 3,869.4 | 122.88 | 32.489 | |
| 11,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 125.8 | 1.7 | -82.79 | 620.1 | -90.9 | 4,090.2 | 3,964.5 | 125.64 | 32.555 | |
| 11,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 128.6 | 1.7 | -82.79 | 620.1 | -90.9 | 4,188.1 | 4,059.8 | 128.39 | 32.619 | |
| 11,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 131.3 | 1.7 | -82.79 | 620.1 | -90.9 | 4,286.2 | 4,155.1 | 131.15 | 32.681 | |
| 11,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 134.1 | 1.7 | -82.79 | 620.1 | -90.9 | 4,384.4 | 4,250.5 | 133.92 | 32.740 | |
| 11,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 136.9 | 1.7 | -82.79 | 620.1 | -90.9 | 4,482.7 | 4,346.0 | 136.68 | 32.797 | |
| 12,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 139.6 | 1.7 | -82.79 | 620.1 | -90.9 | 4,581.0 | 4,441.5 | 139.44 | 32.852 | |
| 12,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 142.4 | 1.7 | -82.79 | 620.1 | -90.9 | 4,679.4 | 4,537.2 | 142.21 | 32.906 | |
| 12,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 145.2 | 1.7 | -82.79 | 620.1 | -90.9 | 4,777.9 | 4,632.9 | 144.97 | 32.957 | |
| 12,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 148.0 | 1.7 | -82.79 | 620.1 | -90.9 | 4,876.4 | 4,728.6 | 147.74 | 33.007 | |
| 12,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 150.8 | 1.7 | -82.79 | 620.1 | -90.9 | 4,975.0 | 4,824.5 | 150.51 | 33.055 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT OGRADY 43-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 153.5 | 1.7 | -82.79 | 620.1 | -90.9 | 5,073.6 | 4,920.3 | 153.27 | 33.102 | |
| 12,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 156.3 | 1.7 | -82.79 | 620.1 | -90.9 | 5,172.3 | 5,016.3 | 156.04 | 33.147 | |
| 12,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 159.1 | 1.7 | -82.79 | 620.1 | -90.9 | 5,271.0 | 5,112.2 | 158.81 | 33.190 | |
| 12,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 161.9 | 1.7 | -82.79 | 620.1 | -90.9 | 5,369.8 | 5,208.3 | 161.58 | 33.233 | |
| 12,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 164.7 | 1.7 | -82.79 | 620.1 | -90.9 | 5,468.7 | 5,304.3 | 164.35 | 33.274 | |
| 13,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 167.4 | 1.7 | -82.79 | 620.1 | -90.9 | 5,567.5 | 5,400.4 | 167.13 | 33.314 | |
| 13,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 170.2 | 1.7 | -82.79 | 620.1 | -90.9 | 5,666.5 | 5,496.6 | 169.90 | 33.352 | |
| 13,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 173.0 | 1.7 | -82.79 | 620.1 | -90.9 | 5,765.4 | 5,592.7 | 172.67 | 33.390 | |
| 13,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 175.8 | 1.7 | -82.79 | 620.1 | -90.9 | 5,864.4 | 5,689.0 | 175.44 | 33.426 | |
| 13,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 178.6 | 1.7 | -82.79 | 620.1 | -90.9 | 5,963.4 | 5,785.2 | 178.22 | 33.461 | |
| 13,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 181.4 | 1.7 | -82.79 | 620.1 | -90.9 | 6,062.5 | 5,881.5 | 180.99 | 33.496 | |
| 13,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 184.2 | 1.7 | -82.79 | 620.1 | -90.9 | 6,161.6 | 5,977.8 | 183.77 | 33.529 | |
| 13,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 187.0 | 1.7 | -82.79 | 620.1 | -90.9 | 6,260.7 | 6,074.1 | 186.54 | 33.562 | |
| 13,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 189.7 | 1.7 | -82.79 | 620.1 | -90.9 | 6,359.8 | 6,170.5 | 189.32 | 33.593 | |
| 13,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 192.5 | 1.7 | -82.79 | 620.1 | -90.9 | 6,459.0 | 6,266.9 | 192.09 | 33.624 | |
| 14,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 195.3 | 1.7 | -82.79 | 620.1 | -90.9 | 6,558.2 | 6,363.3 | 194.87 | 33.654 | |
| 14,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 198.1 | 1.7 | -82.79 | 620.1 | -90.9 | 6,657.4 | 6,459.7 | 197.65 | 33.683 | |
| 14,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 200.9 | 1.7 | -82.79 | 620.1 | -90.9 | 6,756.6 | 6,556.2 | 200.43 | 33.711 | |
| 14,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 203.7 | 1.7 | -82.79 | 620.1 | -90.9 | 6,855.9 | 6,652.7 | 203.20 | 33.739 | |
| 14,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 206.5 | 1.7 | -82.79 | 620.1 | -90.9 | 6,955.2 | 6,749.2 | 205.98 | 33.766 | |
| 14,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 209.3 | 1.7 | -82.79 | 620.1 | -90.9 | 7,054.5 | 6,845.7 | 208.76 | 33.792 | |
| 14,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 212.1 | 1.7 | -82.79 | 620.1 | -90.9 | 7,153.8 | 6,942.3 | 211.54 | 33.818 | |
| 14,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 214.9 | 1.7 | -82.79 | 620.1 | -90.9 | 7,253.1 | 7,038.8 | 214.32 | 33.843 | |
| 14,720.3 | 6,819.0 | 6,700.0 | 6,699.4 | 215.4 | 1.7 | -82.79 | 620.1 | -90.9 | 7,273.3 | 7,058.5 | 214.88 | 33.848 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -105.03 | -736.5 | -2,742.5 | 2,839.7 | | | | |
| 100.0 | 100.0 | 92.7 | 92.7 | 0.1 | 0.1 | -105.03 | -736.3 | -2,742.6 | 2,839.8 | 2,839.6 | 0.17 | N/A | |
| 200.0 | 200.0 | 191.2 | 191.2 | 0.3 | 0.2 | -105.02 | -735.8 | -2,742.9 | 2,839.9 | 2,839.4 | 0.53 | 5,409.200 | |
| 300.0 | 300.0 | 290.1 | 290.1 | 0.5 | 0.3 | -105.00 | -735.2 | -2,743.3 | 2,840.1 | 2,839.3 | 0.84 | 3,398.823 | |
| 400.0 | 400.0 | 395.0 | 395.0 | 0.8 | 0.4 | -105.00 | -734.9 | -2,743.5 | 2,840.2 | 2,839.1 | 1.13 | 2,517.738 | |
| 500.0 | 500.0 | 492.6 | 492.6 | 1.0 | 0.4 | -104.99 | -734.7 | -2,743.6 | 2,840.3 | 2,838.9 | 1.40 | 2,027.586 | |
| 600.0 | 600.0 | 591.2 | 591.2 | 1.2 | 0.5 | -104.99 | -734.7 | -2,743.8 | 2,840.4 | 2,838.8 | 1.67 | 1,697.314 | |
| 700.0 | 700.0 | 688.3 | 688.3 | 1.4 | 0.5 | -104.99 | -734.7 | -2,744.0 | 2,840.7 | 2,838.7 | 1.94 | 1,467.172 | |
| 800.0 | 800.0 | 791.3 | 791.3 | 1.7 | 0.6 | -104.99 | -734.9 | -2,744.2 | 2,840.9 | 2,838.7 | 2.21 | 1,287.923 | |
| 900.0 | 900.0 | 887.8 | 887.8 | 1.9 | 0.6 | -126.16 | -735.0 | -2,744.4 | 2,842.1 | 2,839.7 | 2.48 | 1,144.246 | |
| 1,000.0 | 999.8 | 985.6 | 985.6 | 2.1 | 0.7 | -126.19 | -735.3 | -2,744.6 | 2,845.6 | 2,842.8 | 2.75 | 1,033.488 | |
| 1,100.0 | 1,099.5 | 1,080.2 | 1,080.1 | 2.3 | 0.7 | -126.24 | -735.7 | -2,745.0 | 2,851.2 | 2,848.1 | 3.03 | 941.687 | |
| 1,200.0 | 1,198.7 | 1,181.0 | 1,181.0 | 2.6 | 0.7 | -126.33 | -736.3 | -2,745.3 | 2,858.9 | 2,855.6 | 3.32 | 862.261 | |
| 1,300.0 | 1,297.5 | 1,280.3 | 1,280.3 | 2.9 | 0.8 | -126.43 | -736.9 | -2,745.7 | 2,868.8 | 2,865.1 | 3.62 | 792.418 | |
| 1,400.0 | 1,395.6 | 1,376.1 | 1,376.0 | 3.2 | 0.8 | -126.54 | -737.5 | -2,746.0 | 2,880.7 | 2,876.8 | 3.95 | 729.073 | |
| 1,500.0 | 1,493.1 | 1,469.8 | 1,469.8 | 3.5 | 0.8 | -126.66 | -738.1 | -2,746.4 | 2,895.0 | 2,890.7 | 4.32 | 670.675 | |
| 1,507.2 | 1,500.0 | 1,476.5 | 1,476.5 | 3.6 | 0.8 | -126.67 | -738.2 | -2,746.4 | 2,896.1 | 2,891.7 | 4.34 | 666.921 | |
| 1,572.2 | 1,563.0 | 1,535.1 | 1,535.1 | 3.8 | 0.8 | -126.90 | -738.6 | -2,746.7 | 2,906.3 | 2,901.7 | 4.58 | 635.015 | |
| 1,600.0 | 1,590.0 | 1,559.6 | 1,559.6 | 3.9 | 0.9 | -126.93 | -738.8 | -2,746.9 | 2,910.8 | 2,906.1 | 4.68 | 621.483 | |
| 1,700.0 | 1,686.3 | 1,648.7 | 1,648.7 | 4.4 | 0.9 | -127.03 | -739.3 | -2,747.7 | 2,928.5 | 2,923.4 | 5.11 | 572.861 | |
| 1,800.0 | 1,781.5 | 1,737.5 | 1,737.4 | 4.9 | 0.9 | -127.13 | -739.6 | -2,748.8 | 2,948.6 | 2,943.0 | 5.58 | 527.979 | |
| 1,817.6 | 1,798.2 | 1,752.8 | 1,752.7 | 5.0 | 0.9 | -127.14 | -739.6 | -2,749.0 | 2,952.4 | 2,946.8 | 5.67 | 520.468 | |
| 1,900.0 | 1,876.1 | 1,826.6 | 1,826.5 | 5.5 | 1.0 | -127.52 | -739.7 | -2,750.1 | 2,970.6 | 2,964.5 | 6.08 | 488.639 | |
| 2,000.0 | 1,970.6 | 1,922.2 | 1,922.1 | 6.0 | 1.0 | -128.00 | -739.7 | -2,751.6 | 2,992.8 | 2,986.2 | 6.58 | 454.591 | |
| 2,100.0 | 2,065.1 | 2,022.5 | 2,022.5 | 6.6 | 1.0 | -128.49 | -739.5 | -2,753.2 | 3,015.1 | 3,008.0 | 7.09 | 425.037 | |
| 2,200.0 | 2,159.6 | 2,125.9 | 2,125.8 | 7.2 | 1.1 | -128.98 | -739.2 | -2,754.5 | 3,037.3 | 3,029.7 | 7.61 | 399.268 | |
| 2,300.0 | 2,254.1 | 2,220.7 | 2,220.6 | 7.8 | 1.1 | -129.44 | -738.9 | -2,755.6 | 3,059.7 | 3,051.6 | 8.12 | 376.672 | |
| 2,400.0 | 2,348.7 | 2,320.7 | 2,320.6 | 8.4 | 1.1 | -129.91 | -738.8 | -2,756.6 | 3,082.1 | 3,073.4 | 8.64 | 356.661 | |
| 2,500.0 | 2,443.2 | 2,413.5 | 2,413.4 | 9.1 | 1.2 | -130.34 | -738.5 | -2,757.5 | 3,104.6 | 3,095.4 | 9.16 | 338.952 | |
| 2,600.0 | 2,537.7 | 2,504.7 | 2,504.6 | 9.7 | 1.2 | -130.76 | -738.4 | -2,758.4 | 3,127.4 | 3,117.7 | 9.68 | 323.141 | |
| 2,700.0 | 2,632.2 | 2,607.8 | 2,607.7 | 10.3 | 1.2 | -131.22 | -738.2 | -2,759.3 | 3,150.3 | 3,140.1 | 10.20 | 308.997 | |
| 2,800.0 | 2,726.8 | 2,704.2 | 2,704.1 | 10.9 | 1.3 | -131.66 | -738.0 | -2,760.0 | 3,173.2 | 3,162.5 | 10.71 | 296.304 | |
| 2,900.0 | 2,821.3 | 2,801.4 | 2,801.3 | 11.6 | 1.3 | -132.09 | -737.9 | -2,760.7 | 3,196.2 | 3,185.0 | 11.22 | 284.804 | |
| 3,000.0 | 2,915.8 | 2,895.0 | 2,894.9 | 12.2 | 1.3 | -132.50 | -737.9 | -2,761.2 | 3,219.3 | 3,207.6 | 11.73 | 274.368 | |
| 3,100.0 | 3,010.3 | 2,987.8 | 2,987.6 | 12.8 | 1.4 | -132.90 | -737.8 | -2,761.8 | 3,242.7 | 3,230.4 | 12.24 | 264.853 | |
| 3,200.0 | 3,104.8 | 3,084.7 | 3,084.6 | 13.5 | 1.4 | -133.31 | -737.8 | -2,762.4 | 3,266.2 | 3,253.5 | 12.75 | 256.160 | |
| 3,300.0 | 3,199.4 | 3,181.6 | 3,181.5 | 14.1 | 1.4 | -133.72 | -737.9 | -2,762.8 | 3,289.8 | 3,276.5 | 13.25 | 248.225 | |
| 3,400.0 | 3,293.9 | 3,283.6 | 3,283.5 | 14.8 | 1.5 | -134.15 | -738.2 | -2,763.0 | 3,313.4 | 3,299.7 | 13.75 | 240.975 | |
| 3,500.0 | 3,388.4 | 3,392.1 | 3,392.0 | 15.4 | 1.5 | -134.60 | -738.3 | -2,763.0 | 3,336.9 | 3,322.7 | 14.22 | 234.685 | |
| 3,600.0 | 3,482.9 | 3,500.5 | 3,500.4 | 16.0 | 1.5 | -135.05 | -738.1 | -2,762.6 | 3,360.1 | 3,345.4 | 14.68 | 228.936 | |
| 3,700.0 | 3,577.5 | 3,600.0 | 3,599.9 | 16.7 | 1.4 | -135.45 | -737.8 | -2,761.9 | 3,383.2 | 3,368.1 | 15.14 | 223.495 | |
| 3,800.0 | 3,672.0 | 3,686.2 | 3,686.1 | 17.3 | 1.4 | -135.79 | -737.8 | -2,761.2 | 3,406.5 | 3,390.9 | 15.60 | 218.303 | |
| 3,900.0 | 3,766.5 | 3,768.3 | 3,768.2 | 18.0 | 1.4 | -136.12 | -738.1 | -2,760.8 | 3,430.2 | 3,414.1 | 16.08 | 213.367 | |
| 4,000.0 | 3,861.0 | 3,862.5 | 3,862.3 | 18.6 | 1.5 | -136.50 | -738.6 | -2,760.4 | 3,454.4 | 3,437.8 | 16.54 | 208.787 | |
| 4,100.0 | 3,955.5 | 3,953.9 | 3,953.8 | 19.3 | 1.5 | -136.85 | -739.1 | -2,760.0 | 3,478.6 | 3,461.6 | 17.01 | 204.480 | |
| 4,200.0 | 4,050.1 | 4,046.2 | 4,046.1 | 19.9 | 1.5 | -137.21 | -739.7 | -2,759.7 | 3,503.1 | 3,485.6 | 17.48 | 200.442 | |
| 4,300.0 | 4,144.6 | 4,143.4 | 4,143.3 | 20.5 | 1.5 | -137.59 | -740.4 | -2,759.3 | 3,527.7 | 3,509.7 | 17.94 | 196.663 | |
| 4,400.0 | 4,239.1 | 4,233.7 | 4,233.6 | 21.2 | 1.5 | -137.93 | -741.0 | -2,758.9 | 3,552.4 | 3,534.0 | 18.40 | 193.077 | |
| 4,500.0 | 4,333.6 | 4,319.2 | 4,319.0 | 21.8 | 1.5 | -138.25 | -741.6 | -2,758.7 | 3,577.4 | 3,558.6 | 18.86 | 189.658 | |
| 4,600.0 | 4,428.2 | 4,403.4 | 4,403.3 | 22.5 | 1.5 | -138.56 | -742.0 | -2,758.9 | 3,602.9 | 3,583.6 | 19.33 | 186.390 | |
| 4,700.0 | 4,522.7 | 4,500.0 | 4,499.9 | 23.1 | 1.5 | -138.90 | -742.5 | -2,759.2 | 3,628.5 | 3,608.7 | 19.80 | 183.300 | |
| 4,800.0 | 4,617.2 | 4,589.4 | 4,589.2 | 23.8 | 1.6 | -139.21 | -742.8 | -2,759.6 | 3,654.3 | 3,634.0 | 20.26 | 180.365 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,679.9 | 4,679.7 | 24.4 | 1.6 | -139.53 | -743.3 | -2,760.1 | 3,680.4 | 3,659.6 | 20.72 | 177.586 | |
| 5,000.0 | 4,806.2 | 4,775.1 | 4,774.9 | 25.1 | 1.6 | -139.86 | -744.0 | -2,760.5 | 3,706.6 | 3,685.4 | 21.18 | 174.981 | |
| 5,100.0 | 4,900.8 | 4,866.8 | 4,866.7 | 25.7 | 1.7 | -140.17 | -744.8 | -2,760.9 | 3,732.9 | 3,711.3 | 21.64 | 172.513 | |
| 5,200.0 | 4,995.3 | 4,957.2 | 4,957.0 | 26.4 | 1.7 | -140.48 | -745.6 | -2,761.3 | 3,759.5 | 3,737.4 | 22.09 | 170.165 | |
| 5,300.0 | 5,089.8 | 5,054.3 | 5,054.1 | 27.0 | 1.7 | -140.80 | -746.6 | -2,761.7 | 3,786.2 | 3,763.6 | 22.54 | 167.952 | |
| 5,400.0 | 5,184.3 | 5,166.1 | 5,165.9 | 27.7 | 1.7 | -141.17 | -747.5 | -2,762.0 | 3,812.7 | 3,789.7 | 22.98 | 165.901 | |
| 5,500.0 | 5,278.9 | 5,267.5 | 5,267.3 | 28.3 | 1.7 | -141.50 | -748.2 | -2,761.8 | 3,839.0 | 3,815.6 | 23.42 | 163.933 | |
| 5,533.5 | 5,310.5 | 5,299.2 | 5,299.0 | 28.5 | 1.8 | -141.61 | -748.4 | -2,761.8 | 3,847.8 | 3,824.2 | 23.56 | 163.288 | |
| 5,600.0 | 5,373.6 | 5,374.7 | 5,374.5 | 28.9 | 1.8 | -142.06 | -748.8 | -2,761.5 | 3,864.6 | 3,840.9 | 23.72 | 162.908 | |
| 5,700.0 | 5,469.4 | 5,484.0 | 5,483.8 | 29.3 | 1.8 | -142.65 | -749.5 | -2,760.7 | 3,887.5 | 3,863.6 | 23.89 | 162.692 | |
| 5,800.0 | 5,566.1 | 5,571.8 | 5,571.6 | 29.8 | 1.8 | -143.11 | -749.9 | -2,760.0 | 3,907.6 | 3,883.5 | 24.05 | 162.455 | |
| 5,900.0 | 5,663.6 | 5,662.7 | 5,662.5 | 30.1 | 1.8 | -143.51 | -750.5 | -2,759.5 | 3,925.3 | 3,901.1 | 24.19 | 162.262 | |
| 6,000.0 | 5,761.9 | 5,776.9 | 5,776.7 | 30.5 | 1.8 | -143.90 | -751.4 | -2,758.6 | 3,940.2 | 3,915.9 | 24.30 | 162.151 | |
| 6,100.0 | 5,860.7 | 5,886.5 | 5,886.3 | 30.7 | 1.8 | -144.19 | -751.9 | -2,757.5 | 3,951.8 | 3,927.5 | 24.38 | 162.063 | |
| 6,200.0 | 5,960.0 | 5,994.3 | 5,994.1 | 31.0 | 1.8 | -144.42 | -752.3 | -2,756.1 | 3,960.5 | 3,936.1 | 24.45 | 161.962 | |
| 6,300.0 | 6,059.7 | 6,097.8 | 6,097.6 | 31.2 | 1.8 | -144.57 | -752.8 | -2,754.5 | 3,966.2 | 3,941.7 | 24.51 | 161.822 | |
| 6,400.0 | 6,159.6 | 6,205.5 | 6,205.2 | 31.3 | 1.8 | -144.67 | -753.3 | -2,752.7 | 3,968.9 | 3,944.4 | 24.56 | 161.633 | |
| 6,486.1 | 6,245.7 | 6,296.0 | 6,295.8 | 31.4 | 1.8 | -123.54 | -753.7 | -2,751.0 | 3,968.9 | 3,939.7 | 29.15 | 136.163 | |
| 6,500.0 | 6,259.6 | 6,314.7 | 6,314.4 | 31.4 | 1.8 | -123.54 | -753.8 | -2,750.6 | 3,968.7 | 3,939.5 | 29.17 | 136.074 | |
| 6,516.1 | 6,275.7 | 6,338.1 | 6,337.8 | 31.4 | 1.8 | -123.54 | -753.9 | -2,750.2 | 3,968.4 | 3,939.2 | 29.19 | 135.963 | |
| 6,550.0 | 6,309.5 | 6,387.2 | 6,386.9 | 31.5 | 1.8 | -33.62 | -754.0 | -2,749.0 | 3,967.1 | 3,942.6 | 24.55 | 161.612 | |
| 6,600.0 | 6,359.4 | 6,452.4 | 6,452.1 | 31.5 | 1.8 | -33.88 | -754.0 | -2,747.2 | 3,962.6 | 3,938.2 | 24.39 | 162.486 | |
| 6,650.0 | 6,408.8 | 6,526.7 | 6,526.4 | 31.5 | 1.8 | -34.34 | -754.1 | -2,744.8 | 3,955.0 | 3,930.8 | 24.17 | 163.646 | |
| 6,700.0 | 6,457.5 | 6,620.8 | 6,620.4 | 31.5 | 1.8 | -35.06 | -754.1 | -2,740.6 | 3,944.0 | 3,920.1 | 23.87 | 165.202 | |
| 6,716.1 | 6,473.1 | 6,641.8 | 6,641.3 | 31.5 | 1.8 | -35.32 | -754.0 | -2,739.5 | 3,939.8 | 3,916.0 | 23.76 | 165.781 | |
| 6,725.0 | 6,481.6 | 6,653.2 | 6,652.7 | 31.5 | 1.8 | -35.53 | -754.0 | -2,738.9 | 3,937.3 | 3,913.7 | 23.66 | 166.409 | |
| 6,750.0 | 6,505.3 | 6,685.0 | 6,684.4 | 31.5 | 1.8 | -36.21 | -754.1 | -2,737.1 | 3,929.6 | 3,906.3 | 23.33 | 168.423 | |
| 6,775.0 | 6,528.5 | 6,715.9 | 6,715.4 | 31.4 | 1.9 | -36.99 | -754.1 | -2,735.4 | 3,920.9 | 3,898.0 | 22.95 | 170.821 | |
| 6,800.0 | 6,551.3 | 6,700.0 | 6,699.4 | 31.4 | 1.9 | -37.68 | -754.1 | -2,736.3 | 3,911.4 | 3,888.9 | 22.55 | 173.465 | |
| 6,825.0 | 6,573.4 | 6,700.0 | 6,699.4 | 31.4 | 1.9 | -38.52 | -754.1 | -2,736.3 | 3,901.0 | 3,878.9 | 22.09 | 176.561 | |
| 6,850.0 | 6,595.0 | 6,700.0 | 6,699.4 | 31.3 | 1.9 | -39.46 | -754.1 | -2,736.3 | 3,889.9 | 3,868.3 | 21.60 | 180.048 | |
| 6,875.0 | 6,615.8 | 6,700.0 | 6,699.4 | 31.3 | 1.9 | -40.51 | -754.1 | -2,736.3 | 3,878.0 | 3,856.9 | 21.09 | 183.894 | |
| 6,900.0 | 6,635.9 | 6,700.0 | 6,699.4 | 31.3 | 1.9 | -41.67 | -754.1 | -2,736.3 | 3,865.3 | 3,844.7 | 20.56 | 188.032 | |
| 6,925.0 | 6,655.1 | 6,700.0 | 6,699.4 | 31.2 | 1.9 | -42.95 | -754.1 | -2,736.3 | 3,851.9 | 3,831.9 | 20.03 | 192.350 | |
| 6,950.0 | 6,673.6 | 6,700.0 | 6,699.4 | 31.2 | 1.9 | -44.36 | -754.1 | -2,736.3 | 3,837.8 | 3,818.3 | 19.51 | 196.675 | |
| 6,975.0 | 6,691.1 | 6,700.0 | 6,699.4 | 31.1 | 1.9 | -45.91 | -754.1 | -2,736.3 | 3,823.1 | 3,804.1 | 19.04 | 200.768 | |
| 7,000.0 | 6,707.6 | 6,700.0 | 6,699.4 | 31.1 | 1.9 | -47.61 | -754.1 | -2,736.3 | 3,807.7 | 3,789.1 | 18.64 | 204.323 | |
| 7,025.0 | 6,723.1 | 6,700.0 | 6,699.4 | 31.0 | 1.9 | -49.47 | -754.1 | -2,736.3 | 3,791.8 | 3,773.5 | 18.32 | 206.989 | |
| 7,050.0 | 6,737.6 | 6,700.0 | 6,699.4 | 31.0 | 1.9 | -51.50 | -754.1 | -2,736.3 | 3,775.3 | 3,757.2 | 18.11 | 208.427 | |
| 7,075.0 | 6,751.0 | 6,700.0 | 6,699.4 | 30.9 | 1.9 | -53.72 | -754.1 | -2,736.3 | 3,758.3 | 3,740.3 | 18.04 | 208.382 | |
| 7,100.0 | 6,763.3 | 6,700.0 | 6,699.4 | 30.8 | 1.9 | -56.12 | -754.1 | -2,736.3 | 3,740.8 | 3,722.7 | 18.09 | 206.757 | |
| 7,125.0 | 6,774.5 | 6,700.0 | 6,699.4 | 30.8 | 1.9 | -58.71 | -754.1 | -2,736.3 | 3,722.9 | 3,704.6 | 18.28 | 203.654 | |
| 7,150.0 | 6,784.4 | 6,700.0 | 6,699.4 | 30.7 | 1.9 | -61.51 | -754.1 | -2,736.3 | 3,704.6 | 3,686.0 | 18.58 | 199.352 | |
| 7,175.0 | 6,793.1 | 6,700.0 | 6,699.4 | 30.7 | 1.9 | -64.50 | -754.1 | -2,736.3 | 3,686.0 | 3,667.0 | 18.98 | 194.238 | |
| 7,200.0 | 6,800.6 | 6,700.0 | 6,699.4 | 30.6 | 1.9 | -67.68 | -754.1 | -2,736.3 | 3,667.0 | 3,647.6 | 19.43 | 188.717 | |
| 7,225.0 | 6,806.8 | 6,700.0 | 6,699.4 | 30.6 | 1.9 | -71.05 | -754.1 | -2,736.3 | 3,647.8 | 3,627.9 | 19.92 | 183.136 | |
| 7,250.0 | 6,811.8 | 6,700.0 | 6,699.4 | 30.5 | 1.9 | -74.57 | -754.1 | -2,736.3 | 3,628.4 | 3,608.0 | 20.41 | 177.737 | |
| 7,275.0 | 6,815.5 | 6,700.0 | 6,699.4 | 30.5 | 1.9 | -78.22 | -754.1 | -2,736.3 | 3,608.9 | 3,588.0 | 20.91 | 172.631 | |
| 7,300.0 | 6,817.8 | 6,700.0 | 6,699.4 | 30.4 | 1.9 | -81.98 | -754.1 | -2,736.3 | 3,589.2 | 3,567.9 | 21.39 | 167.795 | |
| 7,325.0 | 6,818.9 | 6,700.0 | 6,699.4 | 30.4 | 1.9 | -85.79 | -754.1 | -2,736.3 | 3,569.6 | 3,547.7 | 21.89 | 163.097 | |
| 7,332.8 | 6,819.0 | 6,700.0 | 6,699.4 | 30.4 | 1.9 | -86.98 | -754.1 | -2,736.3 | 3,563.4 | 3,541.4 | 22.05 | 161.632 | |
| 7,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 30.3 | 1.9 | -86.98 | -754.1 | -2,736.3 | 3,510.7 | 3,488.0 | 22.71 | 154.565 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 30.2 | 1.9 | -86.98 | -754.1 | -2,736.3 | 3,433.3 | 3,409.3 | 23.97 | 143.241 | |
| 7,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 30.3 | 1.9 | -86.98 | -754.1 | -2,736.3 | 3,357.0 | 3,331.5 | 25.49 | 131.690 | |
| 7,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 30.6 | 1.9 | -86.98 | -754.1 | -2,736.3 | 3,282.0 | 3,254.8 | 27.24 | 120.507 | |
| 7,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 31.3 | 1.9 | -86.98 | -754.1 | -2,736.3 | 3,208.4 | 3,179.2 | 29.16 | 110.041 | |
| 7,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 32.5 | 1.9 | -86.98 | -754.1 | -2,736.3 | 3,136.2 | 3,105.0 | 31.22 | 100.454 | |
| 8,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 34.2 | 1.9 | -86.98 | -754.1 | -2,736.3 | 3,065.6 | 3,032.2 | 33.40 | 91.786 | |
| 8,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 36.1 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,996.7 | 2,961.0 | 35.67 | 84.008 | |
| 8,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 38.3 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,929.6 | 2,891.5 | 38.02 | 77.056 | |
| 8,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 40.6 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,864.4 | 2,823.9 | 40.43 | 70.851 | |
| 8,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 42.9 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,801.2 | 2,758.3 | 42.89 | 65.315 | |
| 8,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 45.3 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,740.2 | 2,694.8 | 45.39 | 60.372 | |
| 8,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 47.8 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,681.6 | 2,633.7 | 47.93 | 55.953 | |
| 8,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 50.3 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,625.5 | 2,575.0 | 50.49 | 51.997 | |
| 8,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 52.8 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,572.0 | 2,518.9 | 53.08 | 48.452 | |
| 8,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 55.4 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,521.4 | 2,465.7 | 55.70 | 45.269 | |
| 9,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 58.0 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,473.8 | 2,415.4 | 58.33 | 42.410 | |
| 9,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 60.6 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,429.3 | 2,368.4 | 60.98 | 39.839 | |
| 9,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 63.2 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,388.3 | 2,324.6 | 63.64 | 37.527 | |
| 9,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 65.9 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,350.7 | 2,284.4 | 66.32 | 35.448 | |
| 9,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 68.5 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,316.9 | 2,247.9 | 69.00 | 33.578 | |
| 9,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 71.2 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,287.0 | 2,215.3 | 71.70 | 31.898 | |
| 9,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 73.9 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,261.1 | 2,186.7 | 74.40 | 30.391 | |
| 9,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 76.5 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,239.3 | 2,162.2 | 77.11 | 29.040 | |
| 9,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 79.2 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,221.9 | 2,142.0 | 79.83 | 27.833 | |
| 9,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 81.9 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,208.8 | 2,126.3 | 82.55 | 26.756 | |
| 10,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 84.6 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,200.2 | 2,114.9 | 85.28 | 25.799 | |
| 10,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 87.4 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,196.2 | 2,108.1 | 88.02 | 24.951 | |
| 10,139.3 | 6,819.0 | 6,700.0 | 6,699.4 | 88.4 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,195.8 | 2,106.7 | 89.09 | 24.646 | CC |
| 10,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 90.1 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,196.6 | 2,105.9 | 90.76 | 24.204 | ES |
| 10,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 92.8 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,201.7 | 2,108.2 | 93.50 | 23.547 | |
| 10,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 95.5 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,211.2 | 2,115.0 | 96.25 | 22.975 | |
| 10,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 98.3 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,225.2 | 2,126.2 | 99.00 | 22.478 | |
| 10,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 101.0 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,243.6 | 2,141.9 | 101.75 | 22.050 | |
| 10,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 103.8 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,266.3 | 2,161.8 | 104.51 | 21.685 | |
| 10,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 106.5 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,293.1 | 2,185.8 | 107.27 | 21.377 | |
| 10,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 109.2 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,323.8 | 2,213.8 | 110.03 | 21.120 | |
| 11,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 112.0 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,358.5 | 2,245.7 | 112.79 | 20.910 | |
| 11,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 114.8 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,396.8 | 2,281.2 | 115.56 | 20.741 | |
| 11,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 117.5 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,438.6 | 2,320.3 | 118.33 | 20.609 | |
| 11,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 120.3 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,483.7 | 2,362.6 | 121.10 | 20.510 | |
| 11,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 123.0 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,532.0 | 2,408.1 | 123.87 | 20.441 | |
| 11,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 125.8 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,583.2 | 2,456.6 | 126.64 | 20.398 | |
| 11,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 128.6 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,637.3 | 2,507.9 | 129.42 | 20.378 | SF |
| 11,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 131.3 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,694.0 | 2,561.8 | 132.19 | 20.379 | |
| 11,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 134.1 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,753.1 | 2,618.1 | 134.97 | 20.398 | |
| 11,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 136.9 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,814.5 | 2,676.8 | 137.75 | 20.432 | |
| 12,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 139.6 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,878.2 | 2,737.6 | 140.53 | 20.481 | |
| 12,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 142.4 | 1.9 | -86.98 | -754.1 | -2,736.3 | 2,943.8 | 2,800.5 | 143.31 | 20.541 | |
| 12,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 145.2 | 1.9 | -86.98 | -754.1 | -2,736.3 | 3,011.3 | 2,865.2 | 146.09 | 20.612 | |
| 12,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 148.0 | 1.9 | -86.98 | -754.1 | -2,736.3 | 3,080.6 | 2,931.8 | 148.88 | 20.692 | |
| 12,400.0 | 6,819.0 | 6,686.1 | 6,685.6 | 150.8 | 1.8 | -86.62 | -754.1 | -2,737.1 | 3,151.5 | 2,999.9 | 151.60 | 20.789 | |
| 12,500.0 | 6,819.0 | 6,681.6 | 6,681.1 | 153.5 | 1.8 | -86.51 | -754.1 | -2,737.3 | 3,224.0 | 3,069.6 | 154.36 | 20.886 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 1 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,677.1 | 6,676.6 | 156.3 | 1.8 | -86.39 | -754.1 | -2,737.6 | 3,297.9 | 3,140.8 | 157.12 | 20.989 | |
| 12,700.0 | 6,819.0 | 6,672.7 | 6,672.2 | 159.1 | 1.8 | -86.28 | -754.0 | -2,737.8 | 3,373.1 | 3,213.2 | 159.88 | 21.097 | |
| 12,800.0 | 6,819.0 | 6,668.4 | 6,667.9 | 161.9 | 1.8 | -86.16 | -754.0 | -2,738.1 | 3,449.6 | 3,286.9 | 162.65 | 21.209 | |
| 12,900.0 | 6,819.0 | 6,664.1 | 6,663.6 | 164.7 | 1.8 | -86.05 | -754.0 | -2,738.3 | 3,527.2 | 3,361.8 | 165.41 | 21.325 | |
| 13,000.0 | 6,819.0 | 6,659.9 | 6,659.5 | 167.4 | 1.8 | -85.94 | -754.0 | -2,738.5 | 3,606.0 | 3,437.8 | 168.17 | 21.443 | |
| 13,100.0 | 6,819.0 | 6,655.8 | 6,655.3 | 170.2 | 1.8 | -85.84 | -754.0 | -2,738.8 | 3,685.8 | 3,514.8 | 170.93 | 21.563 | |
| 13,200.0 | 6,819.0 | 6,651.7 | 6,651.2 | 173.0 | 1.8 | -85.73 | -754.0 | -2,739.0 | 3,766.5 | 3,592.8 | 173.69 | 21.685 | |
| 13,300.0 | 6,819.0 | 6,647.7 | 6,647.2 | 175.8 | 1.8 | -85.62 | -754.0 | -2,739.2 | 3,848.1 | 3,671.7 | 176.45 | 21.808 | |
| 13,400.0 | 6,819.0 | 6,643.7 | 6,643.2 | 178.6 | 1.8 | -85.52 | -754.0 | -2,739.4 | 3,930.6 | 3,751.4 | 179.21 | 21.932 | |
| 13,500.0 | 6,819.0 | 6,639.8 | 6,639.3 | 181.4 | 1.8 | -85.42 | -754.0 | -2,739.6 | 4,013.9 | 3,831.9 | 181.97 | 22.057 | |
| 13,600.0 | 6,819.0 | 6,635.9 | 6,635.5 | 184.2 | 1.8 | -85.32 | -754.0 | -2,739.8 | 4,097.9 | 3,913.1 | 184.73 | 22.183 | |
| 13,700.0 | 6,819.0 | 6,632.1 | 6,631.6 | 187.0 | 1.8 | -85.22 | -754.0 | -2,740.0 | 4,182.6 | 3,995.1 | 187.49 | 22.308 | |
| 13,800.0 | 6,819.0 | 6,628.3 | 6,627.9 | 189.7 | 1.8 | -85.12 | -754.0 | -2,740.2 | 4,267.9 | 4,077.7 | 190.25 | 22.433 | |
| 13,900.0 | 6,819.0 | 6,624.6 | 6,624.2 | 192.5 | 1.8 | -85.03 | -754.0 | -2,740.4 | 4,353.9 | 4,160.9 | 193.01 | 22.558 | |
| 14,000.0 | 6,819.0 | 6,621.0 | 6,620.5 | 195.3 | 1.8 | -84.93 | -754.1 | -2,740.6 | 4,440.5 | 4,244.7 | 195.77 | 22.682 | |
| 14,100.0 | 6,819.0 | 6,617.3 | 6,616.9 | 198.1 | 1.8 | -84.84 | -754.1 | -2,740.8 | 4,527.6 | 4,329.1 | 198.53 | 22.806 | |
| 14,200.0 | 6,819.0 | 6,600.0 | 6,599.6 | 200.9 | 1.8 | -84.39 | -754.1 | -2,741.6 | 4,615.3 | 4,414.1 | 201.17 | 22.942 | |
| 14,300.0 | 6,819.0 | 6,600.0 | 6,599.6 | 203.7 | 1.8 | -84.39 | -754.1 | -2,741.6 | 4,703.4 | 4,499.4 | 203.96 | 23.061 | |
| 14,400.0 | 6,819.0 | 6,600.0 | 6,599.6 | 206.5 | 1.8 | -84.39 | -754.1 | -2,741.6 | 4,792.0 | 4,585.2 | 206.74 | 23.179 | |
| 14,500.0 | 6,819.0 | 6,600.0 | 6,599.6 | 209.3 | 1.8 | -84.39 | -754.1 | -2,741.6 | 4,881.0 | 4,671.5 | 209.53 | 23.295 | |
| 14,600.0 | 6,819.0 | 6,600.0 | 6,599.6 | 212.1 | 1.8 | -84.39 | -754.1 | -2,741.6 | 4,970.4 | 4,758.1 | 212.31 | 23.411 | |
| 14,700.0 | 6,819.0 | 6,600.0 | 6,599.6 | 214.9 | 1.8 | -84.39 | -754.1 | -2,741.6 | 5,060.3 | 4,845.2 | 215.10 | 23.525 | |
| 14,720.3 | 6,819.0 | 6,600.0 | 6,599.6 | 215.4 | 1.8 | -84.39 | -754.1 | -2,741.6 | 5,078.5 | 4,862.9 | 215.67 | 23.548 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 1A - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -51.78 | 2,164.9 | -2,749.2 | 3,499.3 | | | | |
| 100.0 | 100.0 | 79.7 | 79.7 | 0.1 | 0.1 | -51.78 | 2,165.1 | -2,749.3 | 3,499.4 | 3,499.3 | 0.16 | N/A | |
| 200.0 | 200.0 | 172.7 | 172.7 | 0.3 | 0.2 | -51.78 | 2,165.5 | -2,749.5 | 3,500.0 | 3,499.5 | 0.50 | 6,970.100 | |
| 300.0 | 300.0 | 275.8 | 275.8 | 0.5 | 0.3 | -51.77 | 2,166.1 | -2,749.9 | 3,500.6 | 3,499.7 | 0.83 | 4,219.849 | |
| 400.0 | 400.0 | 384.3 | 384.3 | 0.8 | 0.4 | -51.77 | 2,166.5 | -2,750.1 | 3,501.0 | 3,499.8 | 1.13 | 3,096.717 | |
| 500.0 | 500.0 | 487.7 | 487.7 | 1.0 | 0.4 | -51.77 | 2,166.7 | -2,750.2 | 3,501.2 | 3,499.8 | 1.41 | 2,478.870 | |
| 600.0 | 600.0 | 588.0 | 588.0 | 1.2 | 0.5 | -51.77 | 2,166.7 | -2,750.4 | 3,501.4 | 3,499.7 | 1.69 | 2,068.581 | |
| 700.0 | 700.0 | 691.5 | 691.5 | 1.4 | 0.5 | -51.77 | 2,166.7 | -2,750.6 | 3,501.5 | 3,499.5 | 1.96 | 1,783.646 | |
| 800.0 | 800.0 | 791.5 | 791.5 | 1.7 | 0.6 | -51.78 | 2,166.5 | -2,750.8 | 3,501.6 | 3,499.3 | 2.23 | 1,567.837 | |
| 900.0 | 900.0 | 893.9 | 893.9 | 1.9 | 0.6 | -72.98 | 2,166.3 | -2,751.0 | 3,501.1 | 3,498.6 | 2.50 | 1,401.675 | |
| 1,000.0 | 999.8 | 991.9 | 991.9 | 2.1 | 0.7 | -73.09 | 2,166.1 | -2,751.3 | 3,499.6 | 3,496.8 | 2.76 | 1,269.100 | |
| 1,100.0 | 1,099.5 | 1,093.8 | 1,093.8 | 2.3 | 0.7 | -73.29 | 2,165.6 | -2,751.6 | 3,497.1 | 3,494.1 | 3.03 | 1,155.886 | |
| 1,200.0 | 1,198.7 | 1,197.1 | 1,197.1 | 2.6 | 0.7 | -73.57 | 2,165.0 | -2,752.0 | 3,493.5 | 3,490.2 | 3.31 | 1,056.018 | |
| 1,300.0 | 1,297.5 | 1,294.7 | 1,294.7 | 2.9 | 0.8 | -73.91 | 2,164.4 | -2,752.3 | 3,489.0 | 3,485.4 | 3.61 | 965.205 | |
| 1,400.0 | 1,395.6 | 1,394.3 | 1,394.3 | 3.2 | 0.8 | -74.32 | 2,163.8 | -2,752.7 | 3,483.5 | 3,479.6 | 3.96 | 880.412 | |
| 1,500.0 | 1,493.1 | 1,488.0 | 1,488.0 | 3.5 | 0.8 | -74.79 | 2,163.1 | -2,753.1 | 3,477.3 | 3,473.0 | 4.34 | 800.599 | |
| 1,507.2 | 1,500.0 | 1,494.7 | 1,494.7 | 3.6 | 0.8 | -74.83 | 2,163.1 | -2,753.1 | 3,476.8 | 3,472.5 | 4.37 | 795.372 | |
| 1,572.2 | 1,563.0 | 1,551.1 | 1,551.1 | 3.8 | 0.9 | -75.06 | 2,162.7 | -2,753.5 | 3,472.6 | 3,468.0 | 4.63 | 749.864 | |
| 1,600.0 | 1,590.0 | 1,575.0 | 1,575.0 | 3.9 | 0.9 | -75.19 | 2,162.5 | -2,753.7 | 3,470.9 | 3,466.1 | 4.75 | 731.150 | |
| 1,700.0 | 1,686.3 | 1,658.5 | 1,658.4 | 4.4 | 0.9 | -75.69 | 2,162.1 | -2,754.5 | 3,464.3 | 3,459.1 | 5.22 | 664.263 | |
| 1,800.0 | 1,781.5 | 1,741.8 | 1,741.8 | 4.9 | 0.9 | -76.25 | 2,161.8 | -2,755.5 | 3,457.4 | 3,451.7 | 5.74 | 602.112 | |
| 1,817.6 | 1,798.2 | 1,756.7 | 1,756.7 | 5.0 | 0.9 | -76.35 | 2,161.8 | -2,755.7 | 3,456.2 | 3,450.3 | 5.84 | 591.666 | |
| 1,900.0 | 1,876.1 | 1,827.2 | 1,827.2 | 5.5 | 1.0 | -76.73 | 2,161.6 | -2,756.8 | 3,450.6 | 3,444.3 | 6.32 | 546.274 | |
| 2,000.0 | 1,970.6 | 1,916.2 | 1,916.1 | 6.0 | 1.0 | -77.22 | 2,161.7 | -2,758.2 | 3,444.2 | 3,437.3 | 6.91 | 498.206 | |
| 2,100.0 | 2,065.1 | 2,012.5 | 2,012.5 | 6.6 | 1.0 | -77.74 | 2,161.8 | -2,759.7 | 3,438.2 | 3,430.7 | 7.53 | 456.659 | |
| 2,200.0 | 2,159.6 | 2,113.1 | 2,113.0 | 7.2 | 1.1 | -78.29 | 2,162.2 | -2,761.0 | 3,432.4 | 3,424.2 | 8.16 | 420.674 | |
| 2,300.0 | 2,254.1 | 2,212.3 | 2,212.3 | 7.8 | 1.1 | -78.82 | 2,162.4 | -2,762.2 | 3,426.7 | 3,417.9 | 8.80 | 389.457 | |
| 2,400.0 | 2,348.7 | 2,313.3 | 2,313.2 | 8.4 | 1.1 | -79.37 | 2,162.6 | -2,763.2 | 3,421.2 | 3,411.8 | 9.45 | 362.163 | |
| 2,500.0 | 2,443.2 | 2,404.8 | 2,404.7 | 9.1 | 1.2 | -79.87 | 2,162.8 | -2,764.0 | 3,416.0 | 3,405.9 | 10.10 | 338.324 | |
| 2,600.0 | 2,537.7 | 2,497.9 | 2,497.8 | 9.7 | 1.2 | -80.38 | 2,163.0 | -2,765.0 | 3,411.1 | 3,400.3 | 10.75 | 317.240 | |
| 2,700.0 | 2,632.2 | 2,599.4 | 2,599.3 | 10.3 | 1.2 | -80.93 | 2,163.2 | -2,765.9 | 3,406.4 | 3,395.0 | 11.42 | 298.384 | |
| 2,800.0 | 2,726.8 | 2,698.5 | 2,698.4 | 10.9 | 1.3 | -81.48 | 2,163.4 | -2,766.6 | 3,401.9 | 3,389.8 | 12.08 | 281.541 | |
| 2,900.0 | 2,821.3 | 2,797.1 | 2,797.0 | 11.6 | 1.3 | -82.02 | 2,163.5 | -2,767.3 | 3,397.6 | 3,384.8 | 12.75 | 266.422 | |
| 3,000.0 | 2,915.8 | 2,890.0 | 2,889.9 | 12.2 | 1.3 | -82.53 | 2,163.5 | -2,767.8 | 3,393.5 | 3,380.1 | 13.42 | 252.830 | |
| 3,100.0 | 3,010.3 | 2,984.7 | 2,984.6 | 12.8 | 1.4 | -83.05 | 2,163.6 | -2,768.4 | 3,389.8 | 3,375.7 | 14.09 | 240.507 | |
| 3,200.0 | 3,104.8 | 3,083.8 | 3,083.7 | 13.5 | 1.4 | -83.60 | 2,163.6 | -2,769.0 | 3,386.4 | 3,371.6 | 14.77 | 229.276 | |
| 3,300.0 | 3,199.4 | 3,187.9 | 3,187.8 | 14.1 | 1.4 | -84.17 | 2,163.5 | -2,769.4 | 3,383.0 | 3,367.6 | 15.44 | 219.071 | |
| 3,400.0 | 3,293.9 | 3,288.6 | 3,288.5 | 14.8 | 1.5 | -84.73 | 2,163.2 | -2,769.7 | 3,379.8 | 3,363.6 | 16.11 | 209.826 | |
| 3,500.0 | 3,388.4 | 3,388.4 | 3,388.3 | 15.4 | 1.5 | -85.29 | 2,163.1 | -2,769.6 | 3,376.7 | 3,359.9 | 16.75 | 201.548 | |
| 3,600.0 | 3,482.9 | 3,487.2 | 3,487.1 | 16.0 | 1.5 | -85.83 | 2,163.3 | -2,769.3 | 3,373.7 | 3,356.3 | 17.41 | 193.827 | |
| 3,700.0 | 3,577.5 | 3,591.7 | 3,591.6 | 16.7 | 1.4 | -86.40 | 2,163.6 | -2,768.6 | 3,370.9 | 3,352.9 | 18.06 | 186.650 | |
| 3,800.0 | 3,672.0 | 3,691.6 | 3,691.4 | 17.3 | 1.4 | -86.94 | 2,163.6 | -2,767.8 | 3,368.2 | 3,349.5 | 18.71 | 180.030 | |
| 3,900.0 | 3,766.5 | 3,778.9 | 3,778.8 | 18.0 | 1.4 | -87.43 | 2,163.3 | -2,767.4 | 3,365.8 | 3,346.4 | 19.36 | 173.879 | |
| 4,000.0 | 3,861.0 | 3,876.6 | 3,876.5 | 18.6 | 1.5 | -87.98 | 2,162.7 | -2,767.0 | 3,363.8 | 3,343.8 | 20.01 | 168.127 | |
| 4,100.0 | 3,955.5 | 3,968.6 | 3,968.5 | 19.3 | 1.5 | -88.50 | 2,162.2 | -2,766.6 | 3,362.1 | 3,341.4 | 20.66 | 162.747 | |
| 4,200.0 | 4,050.1 | 4,066.1 | 4,066.0 | 19.9 | 1.5 | -89.05 | 2,161.6 | -2,766.3 | 3,360.8 | 3,339.4 | 21.31 | 157.705 | |
| 4,300.0 | 4,144.6 | 4,161.4 | 4,161.3 | 20.5 | 1.5 | -89.58 | 2,160.9 | -2,765.8 | 3,359.6 | 3,337.7 | 21.96 | 152.974 | |
| 4,400.0 | 4,239.1 | 4,249.6 | 4,249.5 | 21.2 | 1.5 | -90.08 | 2,160.3 | -2,765.5 | 3,358.9 | 3,336.3 | 22.61 | 148.536 | |
| 4,476.0 | 4,310.9 | 4,313.6 | 4,313.4 | 21.7 | 1.5 | -90.44 | 2,159.9 | -2,765.4 | 3,358.7 | 3,335.6 | 23.11 | 145.344 | |
| 4,500.0 | 4,333.6 | 4,332.8 | 4,332.7 | 21.8 | 1.5 | -90.55 | 2,159.7 | -2,765.4 | 3,358.7 | 3,335.4 | 23.27 | 144.363 | |
| 4,600.0 | 4,428.2 | 4,415.7 | 4,415.6 | 22.5 | 1.5 | -91.02 | 2,159.3 | -2,765.6 | 3,359.2 | 3,335.3 | 23.92 | 140.430 | |
| 4,700.0 | 4,522.7 | 4,511.9 | 4,511.8 | 23.1 | 1.6 | -91.57 | 2,158.9 | -2,765.9 | 3,360.2 | 3,335.6 | 24.58 | 136.690 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 1A - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,600.0 | 4,599.9 | 23.8 | 1.6 | -92.06 | 2,158.5 | -2,766.3 | 3,361.5 | 3,336.3 | 25.24 | 133.173 | |
| 4,900.0 | 4,711.7 | 4,694.8 | 4,694.6 | 24.4 | 1.6 | -92.60 | 2,158.0 | -2,766.8 | 3,363.3 | 3,337.4 | 25.90 | 129.847 | |
| 5,000.0 | 4,806.2 | 4,798.5 | 4,798.3 | 25.1 | 1.6 | -93.19 | 2,157.2 | -2,767.2 | 3,365.3 | 3,338.7 | 26.56 | 126.712 | |
| 5,100.0 | 4,900.8 | 4,890.0 | 4,889.9 | 25.7 | 1.7 | -93.71 | 2,156.4 | -2,767.6 | 3,367.4 | 3,340.2 | 27.21 | 123.755 | |
| 5,200.0 | 4,995.3 | 4,983.7 | 4,983.5 | 26.4 | 1.7 | -94.25 | 2,155.5 | -2,768.0 | 3,370.0 | 3,342.1 | 27.86 | 120.955 | |
| 5,300.0 | 5,089.8 | 5,081.1 | 5,081.0 | 27.0 | 1.7 | -94.80 | 2,154.6 | -2,768.4 | 3,372.9 | 3,344.4 | 28.51 | 118.304 | |
| 5,400.0 | 5,184.3 | 5,187.6 | 5,187.5 | 27.7 | 1.7 | -95.41 | 2,153.7 | -2,768.6 | 3,375.9 | 3,346.7 | 29.15 | 115.803 | |
| 5,500.0 | 5,278.9 | 5,283.7 | 5,283.5 | 28.3 | 1.7 | -95.94 | 2,153.1 | -2,768.5 | 3,379.0 | 3,349.2 | 29.79 | 113.430 | |
| 5,533.5 | 5,310.5 | 5,318.3 | 5,318.1 | 28.5 | 1.8 | -96.14 | 2,152.9 | -2,768.4 | 3,380.0 | 3,350.0 | 30.00 | 112.665 | |
| 5,600.0 | 5,373.6 | 5,393.3 | 5,393.1 | 28.9 | 1.8 | -96.58 | 2,152.4 | -2,768.1 | 3,382.1 | 3,351.7 | 30.36 | 111.404 | |
| 5,700.0 | 5,469.4 | 5,497.8 | 5,497.6 | 29.3 | 1.8 | -97.15 | 2,151.9 | -2,767.2 | 3,384.8 | 3,354.0 | 30.79 | 109.928 | |
| 5,800.0 | 5,566.1 | 5,585.3 | 5,585.1 | 29.8 | 1.8 | -97.57 | 2,151.4 | -2,766.6 | 3,387.2 | 3,356.0 | 31.19 | 108.615 | |
| 5,900.0 | 5,663.6 | 5,684.4 | 5,684.3 | 30.1 | 1.8 | -97.99 | 2,150.7 | -2,766.0 | 3,389.5 | 3,358.0 | 31.54 | 107.472 | |
| 6,000.0 | 5,761.9 | 5,795.7 | 5,795.5 | 30.5 | 1.8 | -98.38 | 2,149.8 | -2,765.1 | 3,391.2 | 3,359.4 | 31.85 | 106.482 | |
| 6,100.0 | 5,860.7 | 5,892.4 | 5,892.2 | 30.7 | 1.8 | -98.65 | 2,149.5 | -2,764.0 | 3,392.3 | 3,360.2 | 32.12 | 105.626 | |
| 6,200.0 | 5,960.0 | 6,007.6 | 6,007.4 | 31.0 | 1.8 | -98.89 | 2,149.0 | -2,762.6 | 3,392.8 | 3,360.5 | 32.34 | 104.901 | |
| 6,300.0 | 6,059.7 | 6,112.4 | 6,112.2 | 31.2 | 1.8 | -99.03 | 2,148.5 | -2,760.9 | 3,392.4 | 3,359.9 | 32.53 | 104.288 | |
| 6,400.0 | 6,159.6 | 6,215.4 | 6,215.1 | 31.3 | 1.8 | -99.09 | 2,148.0 | -2,759.2 | 3,391.4 | 3,358.7 | 32.68 | 103.791 | |
| 6,486.1 | 6,245.7 | 6,309.8 | 6,309.5 | 31.4 | 1.8 | -77.93 | 2,147.6 | -2,757.4 | 3,390.0 | 3,370.6 | 19.33 | 175.342 | |
| 6,500.0 | 6,259.6 | 6,326.7 | 6,326.5 | 31.4 | 1.8 | -77.93 | 2,147.5 | -2,757.0 | 3,389.7 | 3,370.3 | 19.36 | 175.123 | |
| 6,516.1 | 6,275.7 | 6,346.5 | 6,346.2 | 31.4 | 1.8 | -77.93 | 2,147.5 | -2,756.6 | 3,389.3 | 3,369.9 | 19.38 | 174.845 | |
| 6,550.0 | 6,309.5 | 6,387.9 | 6,387.7 | 31.5 | 1.8 | 12.11 | 2,147.4 | -2,755.6 | 3,387.7 | 3,354.9 | 32.82 | 103.229 | |
| 6,600.0 | 6,359.4 | 6,452.5 | 6,452.2 | 31.5 | 1.8 | 12.22 | 2,147.4 | -2,753.8 | 3,382.4 | 3,349.6 | 32.83 | 103.036 | |
| 6,650.0 | 6,408.8 | 6,526.3 | 6,525.9 | 31.5 | 1.8 | 12.43 | 2,147.3 | -2,751.4 | 3,373.4 | 3,340.6 | 32.80 | 102.834 | |
| 6,700.0 | 6,457.5 | 6,616.5 | 6,616.1 | 31.5 | 1.8 | 12.75 | 2,147.3 | -2,747.4 | 3,360.6 | 3,327.8 | 32.74 | 102.651 | |
| 6,716.1 | 6,473.1 | 6,638.9 | 6,638.4 | 31.5 | 1.8 | 12.87 | 2,147.3 | -2,746.3 | 3,355.6 | 3,322.9 | 32.70 | 102.622 | |
| 6,725.0 | 6,481.6 | 6,651.0 | 6,650.6 | 31.5 | 1.8 | 12.97 | 2,147.3 | -2,745.7 | 3,352.7 | 3,320.1 | 32.66 | 102.667 | |
| 6,750.0 | 6,505.3 | 6,684.9 | 6,684.3 | 31.5 | 1.8 | 13.29 | 2,147.3 | -2,743.8 | 3,343.7 | 3,311.2 | 32.50 | 102.874 | |
| 6,775.0 | 6,528.5 | 6,717.9 | 6,717.3 | 31.4 | 1.9 | 13.66 | 2,147.3 | -2,741.9 | 3,333.4 | 3,301.1 | 32.30 | 103.212 | |
| 6,800.0 | 6,551.3 | 6,700.0 | 6,699.4 | 31.4 | 1.9 | 13.99 | 2,147.3 | -2,742.9 | 3,322.1 | 3,290.2 | 31.99 | 103.858 | |
| 6,825.0 | 6,573.4 | 6,700.0 | 6,699.4 | 31.4 | 1.9 | 14.40 | 2,147.3 | -2,742.9 | 3,309.9 | 3,278.3 | 31.63 | 104.631 | |
| 6,850.0 | 6,595.0 | 6,700.0 | 6,699.4 | 31.3 | 1.9 | 14.87 | 2,147.3 | -2,742.9 | 3,296.7 | 3,265.5 | 31.22 | 105.586 | |
| 6,875.0 | 6,615.8 | 6,700.0 | 6,699.4 | 31.3 | 1.9 | 15.41 | 2,147.3 | -2,742.9 | 3,282.6 | 3,251.8 | 30.76 | 106.728 | |
| 6,900.0 | 6,635.9 | 6,700.0 | 6,699.4 | 31.3 | 1.9 | 16.02 | 2,147.3 | -2,742.9 | 3,267.6 | 3,237.3 | 30.24 | 108.056 | |
| 6,925.0 | 6,655.1 | 6,700.0 | 6,699.4 | 31.2 | 1.9 | 16.72 | 2,147.3 | -2,742.9 | 3,251.7 | 3,222.0 | 29.68 | 109.568 | |
| 6,950.0 | 6,673.6 | 6,700.0 | 6,699.4 | 31.2 | 1.9 | 17.51 | 2,147.3 | -2,742.9 | 3,234.9 | 3,205.9 | 29.08 | 111.257 | |
| 6,975.0 | 6,691.1 | 6,700.0 | 6,699.4 | 31.1 | 1.9 | 18.42 | 2,147.3 | -2,742.9 | 3,217.4 | 3,189.0 | 28.45 | 113.105 | |
| 7,000.0 | 6,707.6 | 6,700.0 | 6,699.4 | 31.1 | 1.9 | 19.47 | 2,147.3 | -2,742.9 | 3,199.1 | 3,171.3 | 27.80 | 115.088 | |
| 7,025.0 | 6,723.1 | 6,700.0 | 6,699.4 | 31.0 | 1.9 | 20.68 | 2,147.3 | -2,742.9 | 3,180.0 | 3,152.9 | 27.14 | 117.161 | |
| 7,050.0 | 6,737.6 | 6,700.0 | 6,699.4 | 31.0 | 1.9 | 22.09 | 2,147.3 | -2,742.9 | 3,160.3 | 3,133.8 | 26.50 | 119.261 | |
| 7,075.0 | 6,751.0 | 6,700.0 | 6,699.4 | 30.9 | 1.9 | 23.74 | 2,147.3 | -2,742.9 | 3,139.9 | 3,114.0 | 25.89 | 121.297 | |
| 7,100.0 | 6,763.3 | 6,700.0 | 6,699.4 | 30.8 | 1.9 | 25.68 | 2,147.3 | -2,742.9 | 3,118.9 | 3,093.6 | 25.33 | 123.144 | |
| 7,125.0 | 6,774.5 | 6,700.0 | 6,699.4 | 30.8 | 1.9 | 27.99 | 2,147.3 | -2,742.9 | 3,097.4 | 3,072.5 | 24.85 | 124.647 | |
| 7,150.0 | 6,784.4 | 6,700.0 | 6,699.4 | 30.7 | 1.9 | 30.76 | 2,147.3 | -2,742.9 | 3,075.3 | 3,050.8 | 24.48 | 125.630 | |
| 7,175.0 | 6,793.1 | 6,700.0 | 6,699.4 | 30.7 | 1.9 | 34.11 | 2,147.3 | -2,742.9 | 3,052.7 | 3,028.5 | 24.24 | 125.933 | |
| 7,200.0 | 6,800.6 | 6,700.0 | 6,699.4 | 30.6 | 1.9 | 38.22 | 2,147.3 | -2,742.9 | 3,029.8 | 3,005.6 | 24.15 | 125.465 | |
| 7,225.0 | 6,806.8 | 6,700.0 | 6,699.4 | 30.6 | 1.9 | 43.28 | 2,147.3 | -2,742.9 | 3,006.5 | 2,982.3 | 24.19 | 124.302 | |
| 7,250.0 | 6,811.8 | 6,700.0 | 6,699.4 | 30.5 | 1.9 | 49.54 | 2,147.3 | -2,742.9 | 2,982.9 | 2,958.6 | 24.29 | 122.780 | |
| 7,275.0 | 6,815.5 | 6,700.0 | 6,699.4 | 30.5 | 1.9 | 57.24 | 2,147.3 | -2,742.9 | 2,959.0 | 2,934.7 | 24.34 | 121.585 | |
| 7,300.0 | 6,817.8 | 6,700.0 | 6,699.4 | 30.4 | 1.9 | 66.54 | 2,147.3 | -2,742.9 | 2,934.9 | 2,910.8 | 24.11 | 121.734 | |
| 7,325.0 | 6,818.9 | 6,700.0 | 6,699.4 | 30.4 | 1.9 | 77.31 | 2,147.3 | -2,742.9 | 2,910.8 | 2,887.3 | 23.44 | 124.185 | |
| 7,332.8 | 6,819.0 | 6,700.0 | 6,699.4 | 30.4 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 2,903.2 | 2,880.1 | 23.15 | 125.396 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 1A - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 30.3 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 2,838.2 | 2,814.3 | 23.83 | 119.090 | |
| 7,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 30.2 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 2,741.5 | 2,716.4 | 25.09 | 109.272 | |
| 7,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 30.3 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 2,645.1 | 2,618.5 | 26.60 | 99.447 | |
| 7,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 30.6 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 2,549.0 | 2,520.7 | 28.32 | 90.019 | |
| 7,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 31.3 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 2,453.2 | 2,423.0 | 30.21 | 81.219 | |
| 7,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 32.5 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 2,357.8 | 2,325.6 | 32.23 | 73.150 | |
| 8,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 34.2 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 2,262.7 | 2,228.4 | 34.37 | 65.831 | |
| 8,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 36.1 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 2,168.1 | 2,131.5 | 36.60 | 59.234 | |
| 8,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 38.3 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 2,074.0 | 2,035.1 | 38.91 | 53.305 | |
| 8,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 40.6 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,980.5 | 1,939.2 | 41.28 | 47.982 | |
| 8,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 42.9 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,887.7 | 1,844.0 | 43.69 | 43.202 | |
| 8,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 45.3 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,795.6 | 1,749.4 | 46.16 | 38.903 | |
| 8,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 47.8 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,704.4 | 1,655.7 | 48.65 | 35.032 | |
| 8,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 50.3 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,614.2 | 1,563.0 | 51.18 | 31.541 | |
| 8,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 52.8 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,525.3 | 1,471.6 | 53.73 | 28.387 | |
| 8,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 55.4 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,437.8 | 1,381.5 | 56.31 | 25.535 | |
| 9,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 58.0 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,352.1 | 1,293.2 | 58.90 | 22.955 | |
| 9,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 60.6 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,268.5 | 1,206.9 | 61.51 | 20.621 | |
| 9,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 63.2 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,187.4 | 1,123.2 | 64.14 | 18.512 | |
| 9,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 65.9 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,109.3 | 1,042.6 | 66.78 | 16.612 | |
| 9,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 68.5 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,035.1 | 965.7 | 69.43 | 14.909 | |
| 9,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 71.2 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 965.5 | 893.4 | 72.09 | 13.394 | |
| 9,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 73.9 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 901.7 | 826.9 | 74.76 | 12.062 | |
| 9,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 76.5 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 844.9 | 767.5 | 77.44 | 10.911 | |
| 9,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 79.2 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 796.7 | 716.6 | 80.12 | 9.944 | |
| 9,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 81.9 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 758.6 | 675.8 | 82.81 | 9.161 | |
| 10,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 84.6 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 732.3 | 646.8 | 85.51 | 8.565 | |
| 10,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 87.4 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 719.1 | 630.9 | 88.21 | 8.153 | |
| 10,145.9 | 6,819.0 | 6,700.0 | 6,699.4 | 88.6 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 717.7 | 628.2 | 89.45 | 8.023 | CC, ES |
| 10,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 90.1 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 719.7 | 628.8 | 90.92 | 7.916 | |
| 10,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 92.8 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 734.0 | 640.4 | 93.63 | 7.840 | SF |
| 10,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 95.5 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 761.3 | 665.0 | 96.34 | 7.902 | |
| 10,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 98.3 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 800.3 | 701.2 | 99.06 | 8.079 | |
| 10,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 101.0 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 849.3 | 747.5 | 101.78 | 8.344 | |
| 10,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 103.8 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 906.7 | 802.2 | 104.51 | 8.676 | |
| 10,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 106.5 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 971.0 | 863.8 | 107.23 | 9.055 | |
| 10,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 109.2 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,041.0 | 931.0 | 109.96 | 9.467 | |
| 11,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 112.0 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,115.6 | 1,002.9 | 112.70 | 9.899 | |
| 11,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 114.8 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,193.9 | 1,078.4 | 115.43 | 10.343 | |
| 11,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 117.5 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,275.2 | 1,157.0 | 118.17 | 10.791 | |
| 11,300.0 | 6,819.0 | 6,700.0 | 6,699.4 | 120.3 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,359.0 | 1,238.1 | 120.91 | 11.240 | |
| 11,400.0 | 6,819.0 | 6,700.0 | 6,699.4 | 123.0 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,444.9 | 1,321.3 | 123.65 | 11.685 | |
| 11,500.0 | 6,819.0 | 6,700.0 | 6,699.4 | 125.8 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,532.5 | 1,406.1 | 126.39 | 12.125 | |
| 11,600.0 | 6,819.0 | 6,700.0 | 6,699.4 | 128.6 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,621.5 | 1,492.4 | 129.14 | 12.557 | |
| 11,700.0 | 6,819.0 | 6,700.0 | 6,699.4 | 131.3 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,711.8 | 1,579.9 | 131.88 | 12.980 | |
| 11,800.0 | 6,819.0 | 6,700.0 | 6,699.4 | 134.1 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,803.1 | 1,668.4 | 134.63 | 13.393 | |
| 11,900.0 | 6,819.0 | 6,700.0 | 6,699.4 | 136.9 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,895.2 | 1,757.8 | 137.38 | 13.796 | |
| 12,000.0 | 6,819.0 | 6,700.0 | 6,699.4 | 139.6 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 1,988.1 | 1,848.0 | 140.13 | 14.188 | |
| 12,100.0 | 6,819.0 | 6,700.0 | 6,699.4 | 142.4 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 2,081.7 | 1,938.8 | 142.88 | 14.570 | |
| 12,200.0 | 6,819.0 | 6,700.0 | 6,699.4 | 145.2 | 1.9 | 80.90 | 2,147.3 | -2,742.9 | 2,175.8 | 2,030.2 | 145.63 | 14.941 | |
| 12,300.0 | 6,819.0 | 6,690.9 | 6,690.3 | 148.0 | 1.8 | 80.18 | 2,147.3 | -2,743.5 | 2,270.5 | 2,122.3 | 148.19 | 15.321 | |
| 12,400.0 | 6,819.0 | 6,686.1 | 6,685.6 | 150.8 | 1.8 | 79.81 | 2,147.3 | -2,743.7 | 2,365.5 | 2,214.7 | 150.83 | 15.683 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 1A - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,500.0 | 6,819.0 | 6,681.4 | 6,680.9 | 153.5 | 1.8 | 79.44 | 2,147.3 | -2,744.0 | 2,461.0 | 2,307.5 | 153.47 | 16.036 | |
| 12,600.0 | 6,819.0 | 6,676.8 | 6,676.3 | 156.3 | 1.8 | 79.08 | 2,147.3 | -2,744.2 | 2,556.7 | 2,400.6 | 156.09 | 16.380 | |
| 12,700.0 | 6,819.0 | 6,672.2 | 6,671.7 | 159.1 | 1.8 | 78.73 | 2,147.3 | -2,744.5 | 2,652.8 | 2,494.1 | 158.70 | 16.716 | |
| 12,800.0 | 6,819.0 | 6,667.8 | 6,667.3 | 161.9 | 1.8 | 78.38 | 2,147.3 | -2,744.7 | 2,749.2 | 2,587.9 | 161.31 | 17.043 | |
| 12,900.0 | 6,819.0 | 6,663.3 | 6,662.8 | 164.7 | 1.8 | 78.04 | 2,147.3 | -2,745.0 | 2,845.8 | 2,681.8 | 163.91 | 17.362 | |
| 13,000.0 | 6,819.0 | 6,659.0 | 6,658.5 | 167.4 | 1.8 | 77.70 | 2,147.3 | -2,745.2 | 2,942.6 | 2,776.1 | 166.50 | 17.673 | |
| 13,100.0 | 6,819.0 | 6,654.7 | 6,654.2 | 170.2 | 1.8 | 77.37 | 2,147.3 | -2,745.5 | 3,039.6 | 2,870.5 | 169.08 | 17.977 | |
| 13,200.0 | 6,819.0 | 6,650.5 | 6,650.0 | 173.0 | 1.8 | 77.05 | 2,147.3 | -2,745.7 | 3,136.8 | 2,965.1 | 171.65 | 18.274 | |
| 13,300.0 | 6,819.0 | 6,646.3 | 6,645.8 | 175.8 | 1.8 | 76.73 | 2,147.3 | -2,745.9 | 3,234.1 | 3,059.9 | 174.22 | 18.563 | |
| 13,400.0 | 6,819.0 | 6,642.2 | 6,641.8 | 178.6 | 1.8 | 76.42 | 2,147.3 | -2,746.1 | 3,331.6 | 3,154.9 | 176.78 | 18.846 | |
| 13,500.0 | 6,819.0 | 6,638.2 | 6,637.7 | 181.4 | 1.8 | 76.11 | 2,147.3 | -2,746.3 | 3,429.3 | 3,249.9 | 179.33 | 19.123 | |
| 13,600.0 | 6,819.0 | 6,634.2 | 6,633.7 | 184.2 | 1.8 | 75.81 | 2,147.3 | -2,746.5 | 3,527.0 | 3,345.2 | 181.87 | 19.393 | |
| 13,700.0 | 6,819.0 | 6,630.3 | 6,629.8 | 187.0 | 1.8 | 75.51 | 2,147.3 | -2,746.7 | 3,624.9 | 3,440.5 | 184.41 | 19.657 | |
| 13,800.0 | 6,819.0 | 6,626.4 | 6,625.9 | 189.7 | 1.8 | 75.21 | 2,147.3 | -2,746.9 | 3,722.9 | 3,536.0 | 186.94 | 19.915 | |
| 13,900.0 | 6,819.0 | 6,622.6 | 6,622.1 | 192.5 | 1.8 | 74.93 | 2,147.3 | -2,747.1 | 3,821.0 | 3,631.6 | 189.46 | 20.168 | |
| 14,000.0 | 6,819.0 | 6,618.8 | 6,618.3 | 195.3 | 1.8 | 74.64 | 2,147.3 | -2,747.3 | 3,919.2 | 3,727.2 | 191.97 | 20.416 | |
| 14,100.0 | 6,819.0 | 6,615.1 | 6,614.6 | 198.1 | 1.8 | 74.36 | 2,147.3 | -2,747.5 | 4,017.5 | 3,823.0 | 194.48 | 20.658 | |
| 14,200.0 | 6,819.0 | 6,600.0 | 6,599.6 | 200.9 | 1.8 | 73.24 | 2,147.3 | -2,748.3 | 4,115.8 | 3,919.5 | 196.33 | 20.964 | |
| 14,300.0 | 6,819.0 | 6,600.0 | 6,599.6 | 203.7 | 1.8 | 73.24 | 2,147.3 | -2,748.3 | 4,214.2 | 4,015.2 | 199.01 | 21.176 | |
| 14,400.0 | 6,819.0 | 6,600.0 | 6,599.6 | 206.5 | 1.8 | 73.24 | 2,147.3 | -2,748.3 | 4,312.7 | 4,111.0 | 201.70 | 21.382 | |
| 14,500.0 | 6,819.0 | 6,600.0 | 6,599.6 | 209.3 | 1.8 | 73.24 | 2,147.3 | -2,748.3 | 4,411.3 | 4,206.9 | 204.39 | 21.582 | |
| 14,600.0 | 6,819.0 | 6,600.0 | 6,599.6 | 212.1 | 1.8 | 73.24 | 2,147.3 | -2,748.3 | 4,509.9 | 4,302.8 | 207.08 | 21.778 | |
| 14,700.0 | 6,819.0 | 6,600.0 | 6,599.6 | 214.9 | 1.8 | 73.24 | 2,147.3 | -2,748.3 | 4,608.6 | 4,398.8 | 209.77 | 21.970 | |
| 14,720.3 | 6,819.0 | 6,600.0 | 6,599.6 | 215.4 | 1.8 | 73.24 | 2,147.3 | -2,748.3 | 4,628.6 | 4,418.3 | 210.31 | 22.008 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 23-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -72.30 | 824.9 | -2,585.1 | 2,713.5 | | | | |
| 100.0 | 100.0 | 78.6 | 78.6 | 0.1 | 0.1 | -72.30 | 825.1 | -2,585.1 | 2,713.6 | 2,713.5 | 0.16 | N/A | |
| 200.0 | 200.0 | 179.5 | 179.5 | 0.3 | 0.2 | -72.29 | 825.7 | -2,585.4 | 2,714.0 | 2,713.5 | 0.51 | 5,295.409 | |
| 300.0 | 300.0 | 279.2 | 279.2 | 0.5 | 0.3 | -72.28 | 826.2 | -2,585.5 | 2,714.3 | 2,713.5 | 0.83 | 3,274.700 | |
| 400.0 | 400.0 | 376.7 | 376.7 | 0.8 | 0.4 | -72.27 | 826.6 | -2,585.8 | 2,714.7 | 2,713.6 | 1.12 | 2,422.700 | |
| 500.0 | 500.0 | 480.5 | 480.5 | 1.0 | 0.4 | -72.26 | 827.2 | -2,586.0 | 2,715.1 | 2,713.7 | 1.40 | 1,933.287 | |
| 600.0 | 600.0 | 577.7 | 577.7 | 1.2 | 0.5 | -72.25 | 827.6 | -2,586.2 | 2,715.4 | 2,713.7 | 1.68 | 1,620.136 | |
| 700.0 | 700.0 | 674.5 | 674.4 | 1.4 | 0.5 | -72.25 | 828.0 | -2,586.5 | 2,715.8 | 2,713.9 | 1.95 | 1,395.753 | |
| 800.0 | 800.0 | 776.4 | 776.4 | 1.7 | 0.6 | -72.24 | 828.5 | -2,586.8 | 2,716.3 | 2,714.1 | 2.22 | 1,226.270 | |
| 900.0 | 900.0 | 873.7 | 873.7 | 1.9 | 0.6 | -93.42 | 829.0 | -2,587.1 | 2,716.9 | 2,714.4 | 2.50 | 1,087.913 | |
| 1,000.0 | 999.8 | 965.2 | 965.1 | 2.1 | 0.7 | -93.49 | 829.4 | -2,587.7 | 2,717.8 | 2,715.1 | 2.76 | 984.309 | |
| 1,100.0 | 1,099.5 | 1,059.8 | 1,059.8 | 2.3 | 0.7 | -93.63 | 829.9 | -2,588.4 | 2,719.3 | 2,716.3 | 3.03 | 896.161 | |
| 1,200.0 | 1,198.7 | 1,159.1 | 1,159.0 | 2.6 | 0.8 | -93.84 | 830.6 | -2,589.3 | 2,721.2 | 2,717.9 | 3.33 | 818.143 | |
| 1,300.0 | 1,297.5 | 1,256.8 | 1,256.7 | 2.9 | 0.8 | -94.11 | 831.2 | -2,590.1 | 2,723.3 | 2,719.7 | 3.64 | 747.384 | |
| 1,400.0 | 1,395.6 | 1,351.1 | 1,351.1 | 3.2 | 0.9 | -94.43 | 831.9 | -2,591.1 | 2,725.9 | 2,721.9 | 4.00 | 681.899 | |
| 1,500.0 | 1,493.1 | 1,445.4 | 1,445.3 | 3.5 | 0.9 | -94.81 | 832.5 | -2,592.1 | 2,729.1 | 2,724.7 | 4.40 | 620.397 | |
| 1,507.2 | 1,500.0 | 1,452.2 | 1,452.2 | 3.6 | 0.9 | -94.84 | 832.6 | -2,592.2 | 2,729.3 | 2,724.9 | 4.43 | 616.405 | |
| 1,572.2 | 1,563.0 | 1,514.6 | 1,514.6 | 3.8 | 0.9 | -95.15 | 833.1 | -2,592.9 | 2,731.6 | 2,726.9 | 4.70 | 581.256 | |
| 1,600.0 | 1,590.0 | 1,541.6 | 1,541.6 | 3.9 | 0.9 | -95.27 | 833.3 | -2,593.2 | 2,732.6 | 2,727.8 | 4.82 | 566.919 | |
| 1,700.0 | 1,686.3 | 1,638.3 | 1,638.2 | 4.4 | 1.0 | -95.72 | 834.2 | -2,594.3 | 2,736.7 | 2,731.4 | 5.30 | 515.880 | |
| 1,800.0 | 1,781.5 | 1,741.8 | 1,741.7 | 4.9 | 1.0 | -96.27 | 835.1 | -2,595.4 | 2,741.4 | 2,735.5 | 5.85 | 468.755 | |
| 1,817.6 | 1,798.2 | 1,762.2 | 1,762.1 | 5.0 | 1.0 | -96.39 | 835.2 | -2,595.6 | 2,742.2 | 2,736.2 | 5.95 | 460.832 | |
| 1,900.0 | 1,876.1 | 1,857.8 | 1,857.7 | 5.5 | 1.0 | -97.04 | 835.4 | -2,596.1 | 2,746.0 | 2,739.6 | 6.43 | 427.366 | |
| 2,000.0 | 1,970.6 | 1,999.9 | 1,999.8 | 6.0 | 1.0 | -98.02 | 834.2 | -2,595.6 | 2,750.0 | 2,743.0 | 7.01 | 392.547 | |
| 2,100.0 | 2,065.1 | 2,149.0 | 2,148.8 | 6.6 | 1.1 | -99.07 | 831.2 | -2,592.3 | 2,752.3 | 2,744.7 | 7.59 | 362.534 | |
| 2,200.0 | 2,159.6 | 2,262.3 | 2,262.0 | 7.2 | 1.1 | -99.87 | 828.2 | -2,588.4 | 2,753.9 | 2,745.7 | 8.19 | 336.393 | |
| 2,300.0 | 2,254.1 | 2,370.9 | 2,370.6 | 7.8 | 1.1 | -100.63 | 825.3 | -2,584.1 | 2,755.4 | 2,746.6 | 8.79 | 313.550 | |
| 2,400.0 | 2,348.7 | 2,469.8 | 2,469.2 | 8.4 | 1.1 | -101.33 | 822.4 | -2,579.9 | 2,756.9 | 2,747.5 | 9.39 | 293.493 | |
| 2,500.0 | 2,443.2 | 2,568.7 | 2,568.1 | 9.1 | 1.1 | -102.03 | 819.4 | -2,575.5 | 2,758.8 | 2,748.8 | 10.00 | 275.811 | |
| 2,600.0 | 2,537.7 | 2,665.4 | 2,664.6 | 9.7 | 1.1 | -102.72 | 816.2 | -2,571.1 | 2,760.9 | 2,750.2 | 10.61 | 260.133 | |
| 2,700.0 | 2,632.2 | 2,749.6 | 2,748.7 | 10.3 | 1.1 | -103.32 | 813.4 | -2,567.3 | 2,763.5 | 2,752.2 | 11.23 | 246.171 | |
| 2,800.0 | 2,726.8 | 2,830.0 | 2,829.0 | 10.9 | 1.1 | -103.90 | 810.7 | -2,564.1 | 2,767.0 | 2,755.1 | 11.84 | 233.709 | |
| 2,900.0 | 2,821.3 | 2,913.4 | 2,912.3 | 11.6 | 1.1 | -104.49 | 807.9 | -2,561.2 | 2,771.2 | 2,758.8 | 12.45 | 222.532 | |
| 3,000.0 | 2,915.8 | 2,991.0 | 2,989.7 | 12.2 | 1.1 | -105.04 | 805.2 | -2,558.8 | 2,776.4 | 2,763.4 | 13.07 | 212.476 | |
| 3,100.0 | 3,010.3 | 3,069.7 | 3,068.4 | 12.8 | 1.1 | -105.61 | 802.5 | -2,556.9 | 2,782.6 | 2,768.9 | 13.68 | 203.397 | |
| 3,200.0 | 3,104.8 | 3,150.6 | 3,149.2 | 13.5 | 1.2 | -106.18 | 799.7 | -2,555.3 | 2,789.6 | 2,775.3 | 14.29 | 195.179 | |
| 3,300.0 | 3,199.4 | 3,234.4 | 3,232.9 | 14.1 | 1.2 | -106.77 | 797.1 | -2,553.9 | 2,797.5 | 2,782.6 | 14.90 | 187.718 | |
| 3,400.0 | 3,293.9 | 3,322.0 | 3,320.5 | 14.8 | 1.2 | -107.38 | 794.7 | -2,552.8 | 2,806.0 | 2,790.5 | 15.51 | 180.919 | |
| 3,500.0 | 3,388.4 | 3,412.2 | 3,410.7 | 15.4 | 1.2 | -107.99 | 792.4 | -2,551.7 | 2,815.1 | 2,799.0 | 16.11 | 174.703 | |
| 3,600.0 | 3,482.9 | 3,500.0 | 3,498.5 | 16.0 | 1.2 | -108.59 | 790.2 | -2,550.8 | 2,824.7 | 2,808.0 | 16.71 | 168.996 | |
| 3,700.0 | 3,577.5 | 3,591.7 | 3,590.2 | 16.7 | 1.2 | -109.21 | 787.9 | -2,550.1 | 2,834.9 | 2,817.6 | 17.31 | 163.753 | |
| 3,800.0 | 3,672.0 | 3,688.4 | 3,686.8 | 17.3 | 1.3 | -109.86 | 785.5 | -2,549.2 | 2,845.4 | 2,827.5 | 17.90 | 158.928 | |
| 3,900.0 | 3,766.5 | 3,788.6 | 3,786.9 | 18.0 | 1.3 | -110.54 | 782.5 | -2,548.2 | 2,856.2 | 2,837.7 | 18.49 | 154.475 | |
| 4,000.0 | 3,861.0 | 3,872.2 | 3,870.6 | 18.6 | 1.3 | -111.10 | 779.9 | -2,547.4 | 2,867.3 | 2,848.3 | 19.08 | 150.305 | |
| 4,100.0 | 3,955.5 | 3,953.6 | 3,951.8 | 19.3 | 1.3 | -111.65 | 777.5 | -2,546.9 | 2,879.3 | 2,859.6 | 19.66 | 146.434 | |
| 4,200.0 | 4,050.1 | 4,035.3 | 4,033.6 | 19.9 | 1.3 | -112.18 | 775.3 | -2,546.8 | 2,892.0 | 2,871.8 | 20.25 | 142.846 | |
| 4,300.0 | 4,144.6 | 4,117.4 | 4,115.6 | 20.5 | 1.3 | -112.71 | 773.3 | -2,547.0 | 2,905.5 | 2,884.6 | 20.83 | 139.515 | |
| 4,400.0 | 4,239.1 | 4,200.0 | 4,198.2 | 21.2 | 1.4 | -113.24 | 771.3 | -2,547.5 | 2,919.7 | 2,898.3 | 21.40 | 136.422 | |
| 4,500.0 | 4,333.6 | 4,280.9 | 4,279.1 | 21.8 | 1.4 | -113.75 | 769.7 | -2,548.5 | 2,934.6 | 2,912.6 | 21.98 | 133.537 | |
| 4,600.0 | 4,428.2 | 4,373.0 | 4,371.1 | 22.5 | 1.4 | -114.32 | 768.4 | -2,549.8 | 2,950.1 | 2,927.6 | 22.54 | 130.868 | |
| 4,700.0 | 4,522.7 | 4,462.6 | 4,460.7 | 23.1 | 1.4 | -114.86 | 767.1 | -2,551.1 | 2,966.0 | 2,942.9 | 23.11 | 128.362 | |
| 4,800.0 | 4,617.2 | 4,541.3 | 4,539.4 | 23.8 | 1.4 | -115.34 | 765.6 | -2,552.4 | 2,982.4 | 2,958.8 | 23.67 | 125.990 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 23-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,614.0 | 4,612.0 | 24.4 | 1.4 | -115.79 | 763.6 | -2,554.1 | 2,999.8 | 2,975.6 | 24.24 | 123.771 | |
| 5,000.0 | 4,806.2 | 4,690.5 | 4,688.5 | 25.1 | 1.5 | -116.27 | 761.0 | -2,556.3 | 3,018.1 | 2,993.3 | 24.80 | 121.709 | |
| 5,100.0 | 4,900.8 | 4,801.0 | 4,798.9 | 25.7 | 1.5 | -116.95 | 757.4 | -2,559.5 | 3,036.8 | 3,011.5 | 25.33 | 119.868 | |
| 5,200.0 | 4,995.3 | 4,919.3 | 4,917.2 | 26.4 | 1.5 | -117.65 | 754.4 | -2,562.0 | 3,055.1 | 3,029.2 | 25.86 | 118.144 | |
| 5,300.0 | 5,089.8 | 5,024.4 | 5,022.2 | 27.0 | 1.5 | -118.26 | 752.2 | -2,563.9 | 3,073.1 | 3,046.7 | 26.39 | 116.458 | |
| 5,400.0 | 5,184.3 | 5,144.6 | 5,142.4 | 27.7 | 1.6 | -118.93 | 750.9 | -2,565.3 | 3,090.8 | 3,063.9 | 26.91 | 114.871 | |
| 5,500.0 | 5,278.9 | 5,302.1 | 5,299.9 | 28.3 | 1.6 | -119.79 | 750.0 | -2,565.4 | 3,107.8 | 3,080.4 | 27.38 | 113.488 | |
| 5,533.5 | 5,310.5 | 5,351.5 | 5,349.3 | 28.5 | 1.6 | -120.05 | 749.9 | -2,564.7 | 3,113.0 | 3,085.5 | 27.54 | 113.021 | |
| 5,600.0 | 5,373.6 | 5,400.0 | 5,397.7 | 28.9 | 1.6 | -120.47 | 750.1 | -2,563.8 | 3,122.8 | 3,095.0 | 27.80 | 112.349 | |
| 5,700.0 | 5,469.4 | 5,473.0 | 5,470.7 | 29.3 | 1.6 | -121.06 | 750.3 | -2,562.9 | 3,136.8 | 3,108.7 | 28.09 | 111.679 | |
| 5,800.0 | 5,566.1 | 5,548.0 | 5,545.7 | 29.8 | 1.6 | -121.59 | 750.1 | -2,562.9 | 3,150.4 | 3,122.1 | 28.35 | 111.111 | |
| 5,900.0 | 5,663.6 | 5,635.8 | 5,633.6 | 30.1 | 1.6 | -122.11 | 749.7 | -2,563.2 | 3,162.6 | 3,134.0 | 28.59 | 110.633 | |
| 6,000.0 | 5,761.9 | 5,728.3 | 5,726.0 | 30.5 | 1.6 | -122.56 | 749.4 | -2,563.9 | 3,173.5 | 3,144.7 | 28.79 | 110.248 | |
| 6,100.0 | 5,860.7 | 5,842.9 | 5,840.7 | 30.7 | 1.7 | -122.97 | 749.1 | -2,564.2 | 3,182.1 | 3,153.1 | 28.94 | 109.941 | |
| 6,200.0 | 5,960.0 | 5,950.6 | 5,948.3 | 31.0 | 1.7 | -123.27 | 749.2 | -2,564.6 | 3,188.8 | 3,159.8 | 29.08 | 109.670 | |
| 6,300.0 | 6,059.7 | 6,085.3 | 6,083.1 | 31.2 | 1.7 | -123.54 | 747.7 | -2,563.4 | 3,192.7 | 3,163.5 | 29.18 | 109.408 | |
| 6,400.0 | 6,159.6 | 6,177.6 | 6,175.3 | 31.3 | 1.7 | -123.65 | 746.9 | -2,562.2 | 3,194.3 | 3,165.0 | 29.28 | 109.095 | |
| 6,486.1 | 6,245.7 | 6,263.8 | 6,261.5 | 31.4 | 1.7 | -102.52 | 746.3 | -2,561.3 | 3,194.3 | 3,170.1 | 24.19 | 132.074 | |
| 6,500.0 | 6,259.6 | 6,278.4 | 6,276.1 | 31.4 | 1.7 | -102.52 | 746.2 | -2,561.2 | 3,194.2 | 3,170.0 | 24.21 | 131.962 | |
| 6,516.1 | 6,275.7 | 6,295.3 | 6,293.0 | 31.4 | 1.7 | -102.52 | 746.1 | -2,561.0 | 3,194.1 | 3,169.8 | 24.23 | 131.822 | |
| 6,550.0 | 6,309.5 | 6,330.1 | 6,327.8 | 31.5 | 1.7 | -12.55 | 746.0 | -2,560.7 | 3,193.0 | 3,163.6 | 29.35 | 108.795 | |
| 6,600.0 | 6,359.4 | 6,381.1 | 6,378.8 | 31.5 | 1.7 | -12.65 | 746.0 | -2,560.2 | 3,188.5 | 3,159.2 | 29.27 | 108.921 | |
| 6,650.0 | 6,408.8 | 6,434.3 | 6,432.0 | 31.5 | 1.7 | -12.82 | 746.0 | -2,559.6 | 3,180.6 | 3,151.4 | 29.15 | 109.101 | |
| 6,700.0 | 6,457.5 | 6,488.3 | 6,486.0 | 31.5 | 1.7 | -13.08 | 746.0 | -2,558.9 | 3,169.3 | 3,140.3 | 28.96 | 109.429 | |
| 6,716.1 | 6,473.1 | 6,504.8 | 6,502.5 | 31.5 | 1.7 | -13.19 | 745.9 | -2,558.7 | 3,164.9 | 3,136.0 | 28.88 | 109.582 | |
| 6,725.0 | 6,481.6 | 6,513.0 | 6,510.7 | 31.5 | 1.7 | -13.27 | 745.9 | -2,558.6 | 3,162.3 | 3,133.5 | 28.80 | 109.801 | |
| 6,750.0 | 6,505.3 | 6,535.9 | 6,533.5 | 31.5 | 1.7 | -13.54 | 745.9 | -2,558.3 | 3,154.2 | 3,125.7 | 28.53 | 110.556 | |
| 6,775.0 | 6,528.5 | 6,558.3 | 6,555.9 | 31.4 | 1.7 | -13.87 | 745.8 | -2,558.0 | 3,145.0 | 3,116.8 | 28.20 | 111.538 | |
| 6,800.0 | 6,551.3 | 6,580.1 | 6,577.8 | 31.4 | 1.8 | -14.25 | 745.8 | -2,557.7 | 3,134.6 | 3,106.8 | 27.79 | 112.775 | |
| 6,825.0 | 6,573.4 | 6,600.0 | 6,597.7 | 31.4 | 1.8 | -14.69 | 745.7 | -2,557.4 | 3,123.0 | 3,095.7 | 27.32 | 114.298 | |
| 6,850.0 | 6,595.0 | 6,600.0 | 6,597.7 | 31.3 | 1.8 | -15.14 | 745.7 | -2,557.4 | 3,110.5 | 3,083.7 | 26.78 | 116.155 | |
| 6,875.0 | 6,615.8 | 6,600.0 | 6,597.7 | 31.3 | 1.8 | -15.65 | 745.7 | -2,557.4 | 3,097.0 | 3,070.8 | 26.16 | 118.365 | |
| 6,900.0 | 6,635.9 | 6,600.0 | 6,597.7 | 31.3 | 1.8 | -16.23 | 745.7 | -2,557.4 | 3,082.6 | 3,057.1 | 25.48 | 120.965 | |
| 6,925.0 | 6,655.1 | 6,600.0 | 6,597.7 | 31.2 | 1.8 | -16.89 | 745.7 | -2,557.4 | 3,067.3 | 3,042.5 | 24.74 | 123.996 | |
| 6,950.0 | 6,673.6 | 6,600.0 | 6,597.7 | 31.2 | 1.8 | -17.64 | 745.7 | -2,557.4 | 3,051.1 | 3,027.2 | 23.93 | 127.504 | |
| 6,975.0 | 6,691.1 | 6,600.0 | 6,597.7 | 31.1 | 1.8 | -18.50 | 745.7 | -2,557.4 | 3,034.2 | 3,011.1 | 23.07 | 131.538 | |
| 7,000.0 | 6,707.6 | 6,600.0 | 6,597.7 | 31.1 | 1.8 | -19.48 | 745.7 | -2,557.4 | 3,016.4 | 2,994.3 | 22.16 | 136.147 | |
| 7,025.0 | 6,723.1 | 6,600.0 | 6,597.7 | 31.0 | 1.8 | -20.62 | 745.7 | -2,557.4 | 2,997.9 | 2,976.7 | 21.21 | 141.368 | |
| 7,050.0 | 6,737.6 | 6,600.0 | 6,597.7 | 31.0 | 1.8 | -21.92 | 745.7 | -2,557.4 | 2,978.7 | 2,958.5 | 20.23 | 147.211 | |
| 7,075.0 | 6,751.0 | 6,600.0 | 6,597.7 | 30.9 | 1.8 | -23.44 | 745.7 | -2,557.4 | 2,958.8 | 2,939.6 | 19.26 | 153.616 | |
| 7,100.0 | 6,763.3 | 6,600.0 | 6,597.7 | 30.8 | 1.8 | -25.22 | 745.7 | -2,557.4 | 2,938.3 | 2,920.0 | 18.32 | 160.387 | |
| 7,125.0 | 6,774.5 | 6,600.0 | 6,597.7 | 30.8 | 1.8 | -27.31 | 745.7 | -2,557.4 | 2,917.2 | 2,899.8 | 17.46 | 167.080 | |
| 7,150.0 | 6,784.4 | 6,600.0 | 6,597.7 | 30.7 | 1.8 | -29.79 | 745.7 | -2,557.4 | 2,895.6 | 2,878.8 | 16.75 | 172.864 | |
| 7,175.0 | 6,793.1 | 6,600.0 | 6,597.7 | 30.7 | 1.8 | -32.77 | 745.7 | -2,557.4 | 2,873.4 | 2,857.1 | 16.28 | 176.471 | |
| 7,200.0 | 6,800.6 | 6,600.0 | 6,597.7 | 30.6 | 1.8 | -36.37 | 745.7 | -2,557.4 | 2,850.8 | 2,834.7 | 16.15 | 176.477 | |
| 7,225.0 | 6,806.8 | 6,600.0 | 6,597.7 | 30.6 | 1.8 | -40.75 | 745.7 | -2,557.4 | 2,827.8 | 2,811.4 | 16.44 | 172.045 | |
| 7,250.0 | 6,811.8 | 6,600.0 | 6,597.7 | 30.5 | 1.8 | -46.11 | 745.7 | -2,557.4 | 2,804.5 | 2,787.4 | 17.14 | 163.649 | |
| 7,275.0 | 6,815.5 | 6,600.0 | 6,597.7 | 30.5 | 1.8 | -52.66 | 745.7 | -2,557.4 | 2,780.9 | 2,762.7 | 18.18 | 152.965 | |
| 7,300.0 | 6,817.8 | 6,600.0 | 6,597.7 | 30.4 | 1.8 | -60.61 | 745.7 | -2,557.4 | 2,757.0 | 2,737.6 | 19.41 | 142.052 | |
| 7,325.0 | 6,818.9 | 6,600.0 | 6,597.7 | 30.4 | 1.8 | -70.00 | 745.7 | -2,557.4 | 2,733.0 | 2,712.4 | 20.62 | 132.560 | |
| 7,332.8 | 6,819.0 | 6,600.0 | 6,597.7 | 30.4 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,725.5 | 2,704.5 | 20.96 | 130.021 | |
| 7,400.0 | 6,819.0 | 6,600.0 | 6,597.7 | 30.3 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,660.8 | 2,639.2 | 21.59 | 123.259 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 23-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,600.0 | 6,597.7 | 30.2 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,564.7 | 2,541.9 | 22.78 | 112.566 | |
| 7,600.0 | 6,819.0 | 6,600.0 | 6,597.7 | 30.3 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,468.9 | 2,444.7 | 24.25 | 101.801 | |
| 7,700.0 | 6,819.0 | 6,600.0 | 6,597.7 | 30.6 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,373.5 | 2,347.6 | 25.94 | 91.495 | |
| 7,800.0 | 6,819.0 | 6,600.0 | 6,597.7 | 31.3 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,278.5 | 2,250.7 | 27.81 | 81.941 | |
| 7,900.0 | 6,819.0 | 6,600.0 | 6,597.7 | 32.5 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,183.9 | 2,154.1 | 29.81 | 73.257 | |
| 8,000.0 | 6,819.0 | 6,600.0 | 6,597.7 | 34.2 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,089.8 | 2,057.9 | 31.93 | 65.455 | |
| 8,100.0 | 6,819.0 | 6,600.0 | 6,597.7 | 36.1 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,996.3 | 1,962.2 | 34.13 | 58.487 | |
| 8,200.0 | 6,819.0 | 6,600.0 | 6,597.7 | 38.3 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,903.4 | 1,867.0 | 36.41 | 52.280 | |
| 8,300.0 | 6,819.0 | 6,600.0 | 6,597.7 | 40.6 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,811.4 | 1,772.6 | 38.74 | 46.752 | |
| 8,400.0 | 6,819.0 | 6,600.0 | 6,597.7 | 42.9 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,720.2 | 1,679.0 | 41.13 | 41.827 | |
| 8,500.0 | 6,819.0 | 6,600.0 | 6,597.7 | 45.3 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,630.0 | 1,586.4 | 43.55 | 37.430 | |
| 8,600.0 | 6,819.0 | 6,600.0 | 6,597.7 | 47.8 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,541.0 | 1,495.0 | 46.00 | 33.500 | |
| 8,700.0 | 6,819.0 | 6,600.0 | 6,597.7 | 50.3 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,453.5 | 1,405.0 | 48.48 | 29.980 | |
| 8,800.0 | 6,819.0 | 6,600.0 | 6,597.7 | 52.8 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,367.7 | 1,316.7 | 50.99 | 26.825 | |
| 8,900.0 | 6,819.0 | 6,600.0 | 6,597.7 | 55.4 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,284.0 | 1,230.4 | 53.51 | 23.994 | |
| 9,000.0 | 6,819.0 | 6,600.0 | 6,597.7 | 58.0 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,202.7 | 1,146.6 | 56.05 | 21.456 | |
| 9,100.0 | 6,819.0 | 6,600.0 | 6,597.7 | 60.6 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,124.4 | 1,065.8 | 58.61 | 19.186 | |
| 9,200.0 | 6,819.0 | 6,600.0 | 6,597.7 | 63.2 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,049.9 | 988.7 | 61.18 | 17.162 | |
| 9,300.0 | 6,819.0 | 6,600.0 | 6,597.7 | 65.9 | 1.8 | -73.19 | 745.7 | -2,557.4 | 979.9 | 916.1 | 63.76 | 15.369 | |
| 9,400.0 | 6,819.0 | 6,600.0 | 6,597.7 | 68.5 | 1.8 | -73.19 | 745.7 | -2,557.4 | 915.5 | 849.1 | 66.35 | 13.799 | |
| 9,500.0 | 6,819.0 | 6,600.0 | 6,597.7 | 71.2 | 1.8 | -73.19 | 745.7 | -2,557.4 | 857.9 | 789.0 | 68.95 | 12.444 | |
| 9,600.0 | 6,819.0 | 6,600.0 | 6,597.7 | 73.9 | 1.8 | -73.19 | 745.7 | -2,557.4 | 808.7 | 737.1 | 71.55 | 11.302 | |
| 9,700.0 | 6,819.0 | 6,600.0 | 6,597.7 | 76.5 | 1.8 | -73.19 | 745.7 | -2,557.4 | 769.3 | 695.2 | 74.16 | 10.373 | |
| 9,800.0 | 6,819.0 | 6,600.0 | 6,597.7 | 79.2 | 1.8 | -73.19 | 745.7 | -2,557.4 | 741.5 | 664.7 | 76.78 | 9.657 | |
| 9,900.0 | 6,819.0 | 6,600.0 | 6,597.7 | 81.9 | 1.8 | -73.19 | 745.7 | -2,557.4 | 726.4 | 647.0 | 79.41 | 9.148 | |
| 9,960.4 | 6,819.0 | 6,600.0 | 6,597.7 | 83.6 | 1.8 | -73.19 | 745.7 | -2,557.4 | 723.9 | 642.9 | 81.00 | 8.938 | CC, ES |
| 10,000.0 | 6,819.0 | 6,600.0 | 6,597.7 | 84.6 | 1.8 | -73.19 | 745.7 | -2,557.4 | 725.0 | 643.0 | 82.04 | 8.838 | |
| 10,100.0 | 6,819.0 | 6,600.0 | 6,597.7 | 87.4 | 1.8 | -73.19 | 745.7 | -2,557.4 | 737.3 | 652.6 | 84.67 | 8.707 | SF |
| 10,200.0 | 6,819.0 | 6,600.0 | 6,597.7 | 90.1 | 1.8 | -73.19 | 745.7 | -2,557.4 | 762.5 | 675.2 | 87.31 | 8.734 | |
| 10,300.0 | 6,819.0 | 6,600.0 | 6,597.7 | 92.8 | 1.8 | -73.19 | 745.7 | -2,557.4 | 799.6 | 709.7 | 89.95 | 8.890 | |
| 10,400.0 | 6,819.0 | 6,600.0 | 6,597.7 | 95.5 | 1.8 | -73.19 | 745.7 | -2,557.4 | 846.9 | 754.3 | 92.59 | 9.147 | |
| 10,500.0 | 6,819.0 | 6,600.0 | 6,597.7 | 98.3 | 1.8 | -73.19 | 745.7 | -2,557.4 | 902.9 | 807.6 | 95.24 | 9.480 | |
| 10,600.0 | 6,819.0 | 6,600.0 | 6,597.7 | 101.0 | 1.8 | -73.19 | 745.7 | -2,557.4 | 966.0 | 868.1 | 97.89 | 9.868 | |
| 10,700.0 | 6,819.0 | 6,600.0 | 6,597.7 | 103.8 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,034.9 | 934.4 | 100.55 | 10.293 | |
| 10,800.0 | 6,819.0 | 6,600.0 | 6,597.7 | 106.5 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,108.6 | 1,005.4 | 103.20 | 10.742 | |
| 10,900.0 | 6,819.0 | 6,600.0 | 6,597.7 | 109.2 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,186.1 | 1,080.3 | 105.86 | 11.205 | |
| 11,000.0 | 6,819.0 | 6,600.0 | 6,597.7 | 112.0 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,266.8 | 1,158.3 | 108.52 | 11.673 | |
| 11,100.0 | 6,819.0 | 6,600.0 | 6,597.7 | 114.8 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,350.1 | 1,238.9 | 111.18 | 12.143 | |
| 11,200.0 | 6,819.0 | 6,600.0 | 6,597.7 | 117.5 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,435.5 | 1,321.6 | 113.85 | 12.609 | |
| 11,300.0 | 6,819.0 | 6,600.0 | 6,597.7 | 120.3 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,522.7 | 1,406.2 | 116.51 | 13.069 | |
| 11,400.0 | 6,819.0 | 6,600.0 | 6,597.7 | 123.0 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,611.4 | 1,492.2 | 119.18 | 13.521 | |
| 11,500.0 | 6,819.0 | 6,600.0 | 6,597.7 | 125.8 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,701.3 | 1,579.4 | 121.85 | 13.963 | |
| 11,600.0 | 6,819.0 | 6,600.0 | 6,597.7 | 128.6 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,792.3 | 1,667.8 | 124.52 | 14.394 | |
| 11,700.0 | 6,819.0 | 6,600.0 | 6,597.7 | 131.3 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,884.2 | 1,757.0 | 127.19 | 14.815 | |
| 11,800.0 | 6,819.0 | 6,600.0 | 6,597.7 | 134.1 | 1.8 | -73.19 | 745.7 | -2,557.4 | 1,976.9 | 1,847.0 | 129.86 | 15.224 | |
| 11,900.0 | 6,819.0 | 6,600.0 | 6,597.7 | 136.9 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,070.3 | 1,937.7 | 132.53 | 15.621 | |
| 12,000.0 | 6,819.0 | 6,600.0 | 6,597.7 | 139.6 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,164.2 | 2,029.0 | 135.20 | 16.007 | |
| 12,100.0 | 6,819.0 | 6,600.0 | 6,597.7 | 142.4 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,258.7 | 2,120.9 | 137.88 | 16.382 | |
| 12,200.0 | 6,819.0 | 6,600.0 | 6,597.7 | 145.2 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,353.7 | 2,213.1 | 140.56 | 16.746 | |
| 12,300.0 | 6,819.0 | 6,600.0 | 6,597.7 | 148.0 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,449.0 | 2,305.8 | 143.23 | 17.098 | |
| 12,400.0 | 6,819.0 | 6,600.0 | 6,597.7 | 150.8 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,544.7 | 2,398.8 | 145.91 | 17.440 | |
| 12,500.0 | 6,819.0 | 6,600.0 | 6,597.7 | 153.5 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,640.7 | 2,492.2 | 148.59 | 17.772 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 23-4 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 6,600.0 | 6,597.7 | 156.3 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,737.1 | 2,585.8 | 151.27 | 18.094 | |
| 12,700.0 | 6,819.0 | 6,600.0 | 6,597.7 | 159.1 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,833.6 | 2,679.7 | 153.95 | 18.407 | |
| 12,800.0 | 6,819.0 | 6,600.0 | 6,597.7 | 161.9 | 1.8 | -73.19 | 745.7 | -2,557.4 | 2,930.4 | 2,773.8 | 156.63 | 18.710 | |
| 12,900.0 | 6,819.0 | 6,600.0 | 6,597.7 | 164.7 | 1.8 | -73.19 | 745.7 | -2,557.4 | 3,027.4 | 2,868.1 | 159.31 | 19.004 | |
| 13,000.0 | 6,819.0 | 6,600.0 | 6,597.7 | 167.4 | 1.8 | -73.19 | 745.7 | -2,557.4 | 3,124.6 | 2,962.6 | 161.99 | 19.289 | |
| 13,100.0 | 6,819.0 | 6,600.0 | 6,597.7 | 170.2 | 1.8 | -73.19 | 745.7 | -2,557.4 | 3,222.0 | 3,057.3 | 164.67 | 19.566 | |
| 13,200.0 | 6,819.0 | 6,600.0 | 6,597.7 | 173.0 | 1.8 | -73.19 | 745.7 | -2,557.4 | 3,319.5 | 3,152.1 | 167.35 | 19.835 | |
| 13,300.0 | 6,819.0 | 6,600.0 | 6,597.7 | 175.8 | 1.8 | -73.19 | 745.7 | -2,557.4 | 3,417.1 | 3,247.1 | 170.04 | 20.097 | |
| 13,400.0 | 6,819.0 | 6,600.0 | 6,597.7 | 178.6 | 1.8 | -73.19 | 745.7 | -2,557.4 | 3,514.9 | 3,342.2 | 172.72 | 20.350 | |
| 13,500.0 | 6,819.0 | 6,600.0 | 6,597.7 | 181.4 | 1.8 | -73.19 | 745.7 | -2,557.4 | 3,612.9 | 3,437.5 | 175.40 | 20.597 | |
| 13,600.0 | 6,819.0 | 6,600.0 | 6,597.7 | 184.2 | 1.8 | -73.19 | 745.7 | -2,557.4 | 3,710.9 | 3,532.8 | 178.09 | 20.837 | |
| 13,700.0 | 6,819.0 | 6,600.0 | 6,597.7 | 187.0 | 1.8 | -73.19 | 745.7 | -2,557.4 | 3,809.0 | 3,628.2 | 180.77 | 21.071 | |
| 13,800.0 | 6,819.0 | 6,600.0 | 6,597.7 | 189.7 | 1.8 | -73.19 | 745.7 | -2,557.4 | 3,907.2 | 3,723.8 | 183.46 | 21.298 | |
| 13,900.0 | 6,819.0 | 6,600.0 | 6,597.7 | 192.5 | 1.8 | -73.19 | 745.7 | -2,557.4 | 4,005.5 | 3,819.4 | 186.14 | 21.518 | |
| 14,000.0 | 6,819.0 | 6,600.0 | 6,597.7 | 195.3 | 1.8 | -73.19 | 745.7 | -2,557.4 | 4,103.9 | 3,915.1 | 188.83 | 21.733 | |
| 14,100.0 | 6,819.0 | 6,600.0 | 6,597.7 | 198.1 | 1.8 | -73.19 | 745.7 | -2,557.4 | 4,202.4 | 4,010.9 | 191.52 | 21.943 | |
| 14,200.0 | 6,819.0 | 6,600.0 | 6,597.7 | 200.9 | 1.8 | -73.19 | 745.7 | -2,557.4 | 4,300.9 | 4,106.7 | 194.20 | 22.147 | |
| 14,300.0 | 6,819.0 | 6,600.0 | 6,597.7 | 203.7 | 1.8 | -73.19 | 745.7 | -2,557.4 | 4,399.6 | 4,202.7 | 196.89 | 22.345 | |
| 14,400.0 | 6,819.0 | 6,600.0 | 6,597.7 | 206.5 | 1.8 | -73.19 | 745.7 | -2,557.4 | 4,498.2 | 4,298.6 | 199.58 | 22.539 | |
| 14,500.0 | 6,819.0 | 6,600.0 | 6,597.7 | 209.3 | 1.8 | -73.19 | 745.7 | -2,557.4 | 4,596.9 | 4,394.7 | 202.27 | 22.727 | |
| 14,600.0 | 6,819.0 | 6,600.0 | 6,597.7 | 212.1 | 1.8 | -73.19 | 745.7 | -2,557.4 | 4,695.7 | 4,490.8 | 204.95 | 22.911 | |
| 14,700.0 | 6,819.0 | 6,600.0 | 6,597.7 | 214.9 | 1.8 | -73.19 | 745.7 | -2,557.4 | 4,794.6 | 4,586.9 | 207.64 | 23.091 | |
| 14,720.3 | 6,819.0 | 6,600.0 | 6,597.7 | 215.4 | 1.8 | -73.19 | 745.7 | -2,557.4 | 4,814.6 | 4,606.5 | 208.18 | 23.127 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 32-4 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -33.82 | 2,086.1 | -1,397.8 | 2,511.1 | | | | |
| 100.0 | 100.0 | 95.0 | 95.0 | 0.1 | 1.0 | -33.82 | 2,086.1 | -1,397.8 | 2,511.1 | 2,510.0 | 1.12 | 2,234.766 | |
| 200.0 | 200.0 | 195.0 | 195.0 | 0.3 | 3.3 | -33.82 | 2,086.1 | -1,397.8 | 2,511.1 | 2,507.5 | 3.60 | 697.308 | |
| 300.0 | 300.0 | 295.0 | 295.0 | 0.5 | 5.4 | -33.82 | 2,086.1 | -1,397.8 | 2,511.1 | 2,505.2 | 5.92 | 424.345 | |
| 400.0 | 400.0 | 395.0 | 395.0 | 0.8 | 7.4 | -33.82 | 2,086.1 | -1,397.8 | 2,511.1 | 2,502.9 | 8.19 | 306.726 | |
| 500.0 | 500.0 | 495.0 | 495.0 | 1.0 | 9.5 | -33.82 | 2,086.1 | -1,397.8 | 2,511.1 | 2,500.7 | 10.44 | 240.496 | |
| 600.0 | 600.0 | 595.0 | 595.0 | 1.2 | 11.5 | -33.82 | 2,086.1 | -1,397.8 | 2,511.1 | 2,498.4 | 12.69 | 197.892 | |
| 700.0 | 700.0 | 695.0 | 695.0 | 1.4 | 13.5 | -33.82 | 2,086.1 | -1,397.8 | 2,511.1 | 2,496.2 | 14.93 | 168.153 | |
| 800.0 | 800.0 | 795.0 | 795.0 | 1.7 | 15.5 | -33.82 | 2,086.1 | -1,397.8 | 2,511.1 | 2,493.9 | 17.18 | 146.203 | |
| 900.0 | 900.0 | 895.0 | 895.0 | 1.9 | 17.5 | -55.03 | 2,086.1 | -1,397.8 | 2,510.1 | 2,490.7 | 19.41 | 129.314 | |
| 1,000.0 | 999.8 | 994.8 | 994.8 | 2.1 | 19.5 | -55.18 | 2,086.1 | -1,397.8 | 2,507.1 | 2,485.5 | 21.63 | 115.883 | |
| 1,100.0 | 1,099.5 | 1,094.5 | 1,094.5 | 2.3 | 21.5 | -55.43 | 2,086.1 | -1,397.8 | 2,502.2 | 2,478.3 | 23.85 | 104.917 | |
| 1,200.0 | 1,198.7 | 1,193.7 | 1,193.7 | 2.6 | 23.5 | -55.77 | 2,086.1 | -1,397.8 | 2,495.2 | 2,469.2 | 26.06 | 95.765 | |
| 1,300.0 | 1,297.5 | 1,292.5 | 1,292.5 | 2.9 | 25.5 | -56.21 | 2,086.1 | -1,397.8 | 2,486.4 | 2,458.1 | 28.26 | 87.982 | |
| 1,400.0 | 1,395.6 | 1,390.6 | 1,390.6 | 3.2 | 27.5 | -56.75 | 2,086.1 | -1,397.8 | 2,475.7 | 2,445.3 | 30.47 | 81.254 | |
| 1,500.0 | 1,493.1 | 1,488.1 | 1,488.1 | 3.5 | 29.5 | -57.40 | 2,086.1 | -1,397.8 | 2,463.3 | 2,430.6 | 32.69 | 75.354 | |
| 1,507.2 | 1,500.0 | 1,495.0 | 1,495.0 | 3.6 | 29.6 | -57.45 | 2,086.1 | -1,397.8 | 2,462.3 | 2,429.5 | 32.85 | 74.962 | |
| 1,572.2 | 1,563.0 | 1,558.0 | 1,558.0 | 3.8 | 30.9 | -57.75 | 2,086.1 | -1,397.8 | 2,453.6 | 2,419.3 | 34.34 | 71.458 | |
| 1,600.0 | 1,590.0 | 1,585.0 | 1,585.0 | 3.9 | 31.4 | -57.95 | 2,086.1 | -1,397.8 | 2,449.9 | 2,414.9 | 34.96 | 70.083 | |
| 1,700.0 | 1,686.3 | 1,681.3 | 1,681.3 | 4.4 | 33.4 | -58.73 | 2,086.1 | -1,397.8 | 2,435.3 | 2,398.0 | 37.21 | 65.440 | |
| 1,800.0 | 1,781.5 | 1,776.5 | 1,776.5 | 4.9 | 35.3 | -59.60 | 2,086.1 | -1,397.8 | 2,419.1 | 2,379.6 | 39.50 | 61.249 | |
| 1,817.6 | 1,798.2 | 1,793.2 | 1,793.2 | 5.0 | 35.6 | -59.77 | 2,086.1 | -1,397.8 | 2,416.1 | 2,376.2 | 39.90 | 60.552 | |
| 1,900.0 | 1,876.1 | 1,871.1 | 1,871.1 | 5.5 | 37.2 | -60.30 | 2,086.1 | -1,397.8 | 2,402.1 | 2,360.2 | 41.88 | 57.350 | |
| 2,000.0 | 1,970.6 | 1,965.6 | 1,965.6 | 6.0 | 39.1 | -60.95 | 2,086.1 | -1,397.8 | 2,385.4 | 2,341.1 | 44.31 | 53.831 | |
| 2,100.0 | 2,065.1 | 2,060.1 | 2,060.1 | 6.6 | 41.0 | -61.61 | 2,086.1 | -1,397.8 | 2,369.0 | 2,322.3 | 46.76 | 50.664 | |
| 2,200.0 | 2,159.6 | 2,154.6 | 2,154.6 | 7.2 | 42.9 | -62.28 | 2,086.1 | -1,397.8 | 2,353.0 | 2,303.8 | 49.22 | 47.802 | |
| 2,300.0 | 2,254.1 | 2,249.1 | 2,249.1 | 7.8 | 44.8 | -62.96 | 2,086.1 | -1,397.8 | 2,337.3 | 2,285.6 | 51.70 | 45.208 | |
| 2,400.0 | 2,348.7 | 2,343.7 | 2,343.7 | 8.4 | 46.7 | -63.65 | 2,086.1 | -1,397.8 | 2,322.0 | 2,267.8 | 54.19 | 42.847 | |
| 2,500.0 | 2,443.2 | 2,438.2 | 2,438.2 | 9.1 | 48.6 | -64.34 | 2,086.1 | -1,397.8 | 2,307.0 | 2,250.3 | 56.69 | 40.692 | |
| 2,600.0 | 2,537.7 | 2,532.7 | 2,532.7 | 9.7 | 50.5 | -65.04 | 2,086.1 | -1,397.8 | 2,292.4 | 2,233.2 | 59.21 | 38.718 | |
| 2,700.0 | 2,632.2 | 2,627.2 | 2,627.2 | 10.3 | 52.4 | -65.75 | 2,086.1 | -1,397.8 | 2,278.2 | 2,216.5 | 61.73 | 36.906 | |
| 2,800.0 | 2,726.8 | 2,721.8 | 2,721.8 | 10.9 | 54.3 | -66.47 | 2,086.1 | -1,397.8 | 2,264.3 | 2,200.1 | 64.26 | 35.237 | |
| 2,900.0 | 2,821.3 | 2,816.3 | 2,816.3 | 11.6 | 56.2 | -67.20 | 2,086.1 | -1,397.8 | 2,250.9 | 2,184.1 | 66.80 | 33.696 | |
| 3,000.0 | 2,915.8 | 2,910.8 | 2,910.8 | 12.2 | 58.1 | -67.93 | 2,086.1 | -1,397.8 | 2,237.8 | 2,168.5 | 69.34 | 32.271 | |
| 3,100.0 | 3,010.3 | 3,005.3 | 3,005.3 | 12.8 | 60.0 | -68.67 | 2,086.1 | -1,397.8 | 2,225.1 | 2,153.2 | 71.90 | 30.949 | |
| 3,200.0 | 3,104.8 | 3,099.8 | 3,099.8 | 13.5 | 61.9 | -69.42 | 2,086.1 | -1,397.8 | 2,212.9 | 2,138.4 | 74.46 | 29.720 | |
| 3,300.0 | 3,199.4 | 3,194.4 | 3,194.4 | 14.1 | 63.8 | -70.18 | 2,086.1 | -1,397.8 | 2,201.0 | 2,124.0 | 77.02 | 28.577 | |
| 3,400.0 | 3,293.9 | 3,288.9 | 3,288.9 | 14.8 | 65.7 | -70.95 | 2,086.1 | -1,397.8 | 2,189.6 | 2,110.0 | 79.59 | 27.510 | |
| 3,500.0 | 3,388.4 | 3,383.4 | 3,383.4 | 15.4 | 67.6 | -71.72 | 2,086.1 | -1,397.8 | 2,178.6 | 2,096.5 | 82.17 | 26.514 | |
| 3,600.0 | 3,482.9 | 3,477.9 | 3,477.9 | 16.0 | 69.5 | -72.50 | 2,086.1 | -1,397.8 | 2,168.1 | 2,083.3 | 84.75 | 25.583 | |
| 3,700.0 | 3,577.5 | 3,572.5 | 3,572.5 | 16.7 | 71.4 | -73.28 | 2,086.1 | -1,397.8 | 2,158.0 | 2,070.6 | 87.33 | 24.710 | |
| 3,800.0 | 3,672.0 | 3,667.0 | 3,667.0 | 17.3 | 73.3 | -74.07 | 2,086.1 | -1,397.8 | 2,148.3 | 2,058.4 | 89.92 | 23.892 | |
| 3,900.0 | 3,766.5 | 3,761.5 | 3,761.5 | 18.0 | 75.2 | -74.87 | 2,086.1 | -1,397.8 | 2,139.1 | 2,046.6 | 92.51 | 23.123 | |
| 4,000.0 | 3,861.0 | 3,856.0 | 3,856.0 | 18.6 | 77.1 | -75.67 | 2,086.1 | -1,397.8 | 2,130.4 | 2,035.3 | 95.10 | 22.401 | |
| 4,100.0 | 3,955.5 | 3,950.5 | 3,950.5 | 19.3 | 79.0 | -76.48 | 2,086.1 | -1,397.8 | 2,122.1 | 2,024.4 | 97.70 | 21.721 | |
| 4,200.0 | 4,050.1 | 4,045.1 | 4,045.1 | 19.9 | 80.9 | -77.30 | 2,086.1 | -1,397.8 | 2,114.3 | 2,014.0 | 100.29 | 21.081 | |
| 4,300.0 | 4,144.6 | 4,139.6 | 4,139.6 | 20.5 | 82.8 | -78.12 | 2,086.1 | -1,397.8 | 2,106.9 | 2,004.1 | 102.89 | 20.478 | |
| 4,400.0 | 4,239.1 | 4,234.1 | 4,234.1 | 21.2 | 84.7 | -78.95 | 2,086.1 | -1,397.8 | 2,100.1 | 1,994.6 | 105.49 | 19.909 | |
| 4,500.0 | 4,333.6 | 4,328.6 | 4,328.6 | 21.8 | 86.6 | -79.78 | 2,086.1 | -1,397.8 | 2,093.7 | 1,985.7 | 108.08 | 19.372 | |
| 4,600.0 | 4,428.2 | 4,423.2 | 4,423.2 | 22.5 | 88.5 | -80.61 | 2,086.1 | -1,397.8 | 2,087.9 | 1,977.2 | 110.68 | 18.864 | |
| 4,700.0 | 4,522.7 | 4,517.7 | 4,517.7 | 23.1 | 90.4 | -81.45 | 2,086.1 | -1,397.8 | 2,082.5 | 1,969.2 | 113.27 | 18.385 | |
| 4,800.0 | 4,617.2 | 4,612.2 | 4,612.2 | 23.8 | 92.3 | -82.29 | 2,086.1 | -1,397.8 | 2,077.6 | 1,961.7 | 115.86 | 17.931 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 32-4 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,706.7 | 4,706.7 | 24.4 | 94.2 | -83.14 | 2,086.1 | -1,397.8 | 2,073.2 | 1,954.8 | 118.45 | 17.502 | |
| 5,000.0 | 4,806.2 | 4,801.2 | 4,801.2 | 25.1 | 96.1 | -83.99 | 2,086.1 | -1,397.8 | 2,069.4 | 1,948.3 | 121.04 | 17.096 | |
| 5,100.0 | 4,900.8 | 4,895.8 | 4,895.8 | 25.7 | 98.0 | -84.84 | 2,086.1 | -1,397.8 | 2,066.0 | 1,942.4 | 123.62 | 16.712 | |
| 5,200.0 | 4,995.3 | 4,990.3 | 4,990.3 | 26.4 | 99.9 | -85.69 | 2,086.1 | -1,397.8 | 2,063.2 | 1,936.9 | 126.20 | 16.348 | |
| 5,300.0 | 5,089.8 | 5,084.8 | 5,084.8 | 27.0 | 101.8 | -86.55 | 2,086.1 | -1,397.8 | 2,060.8 | 1,932.0 | 128.78 | 16.003 | |
| 5,400.0 | 5,184.3 | 5,179.3 | 5,179.3 | 27.7 | 103.7 | -87.40 | 2,086.1 | -1,397.8 | 2,059.0 | 1,927.6 | 131.35 | 15.676 | |
| 5,500.0 | 5,278.9 | 5,273.9 | 5,273.9 | 28.3 | 105.6 | -88.26 | 2,086.1 | -1,397.8 | 2,057.7 | 1,923.8 | 133.91 | 15.366 | |
| 5,533.5 | 5,310.5 | 5,305.5 | 5,305.5 | 28.5 | 106.3 | -88.55 | 2,086.1 | -1,397.8 | 2,057.4 | 1,922.6 | 134.77 | 15.266 | |
| 5,600.0 | 5,373.6 | 5,368.6 | 5,368.6 | 28.9 | 107.5 | -89.10 | 2,086.1 | -1,397.8 | 2,056.9 | 1,920.5 | 136.42 | 15.078 | |
| 5,700.0 | 5,469.4 | 5,464.4 | 5,464.4 | 29.3 | 109.5 | -89.86 | 2,086.1 | -1,397.8 | 2,056.6 | 1,917.8 | 138.80 | 14.818 | |
| 5,719.8 | 5,488.5 | 5,483.5 | 5,483.5 | 29.4 | 109.8 | -90.00 | 2,086.1 | -1,397.8 | 2,056.6 | 1,917.4 | 139.26 | 14.768 | |
| 5,800.0 | 5,566.1 | 5,561.1 | 5,561.1 | 29.8 | 111.4 | -90.54 | 2,086.1 | -1,397.8 | 2,056.7 | 1,915.6 | 141.15 | 14.571 | |
| 5,900.0 | 5,663.6 | 5,658.6 | 5,658.6 | 30.1 | 113.4 | -91.15 | 2,086.1 | -1,397.8 | 2,057.1 | 1,913.6 | 143.48 | 14.337 | |
| 6,000.0 | 5,761.9 | 5,756.9 | 5,756.9 | 30.5 | 115.3 | -91.67 | 2,086.1 | -1,397.8 | 2,057.5 | 1,911.8 | 145.78 | 14.114 | |
| 6,100.0 | 5,860.7 | 5,855.7 | 5,855.7 | 30.7 | 117.3 | -92.09 | 2,086.1 | -1,397.8 | 2,058.0 | 1,910.0 | 148.04 | 13.902 | |
| 6,200.0 | 5,960.0 | 5,955.0 | 5,955.0 | 31.0 | 119.3 | -92.43 | 2,086.1 | -1,397.8 | 2,058.5 | 1,908.2 | 150.27 | 13.698 | |
| 6,300.0 | 6,059.7 | 6,054.7 | 6,054.7 | 31.2 | 121.3 | -92.66 | 2,086.1 | -1,397.8 | 2,058.9 | 1,906.4 | 152.46 | 13.504 | |
| 6,400.0 | 6,159.6 | 6,154.6 | 6,154.6 | 31.3 | 123.3 | -92.80 | 2,086.1 | -1,397.8 | 2,059.1 | 1,904.5 | 154.62 | 13.317 | |
| 6,486.1 | 6,245.7 | 6,240.7 | 6,240.7 | 31.4 | 125.1 | -71.68 | 2,086.1 | -1,397.8 | 2,059.2 | 1,917.0 | 142.12 | 14.488 | |
| 6,500.0 | 6,259.6 | 6,254.6 | 6,254.6 | 31.4 | 125.3 | -71.68 | 2,086.1 | -1,397.8 | 2,059.2 | 1,916.7 | 142.42 | 14.458 | |
| 6,516.1 | 6,275.7 | 6,270.7 | 6,270.7 | 31.4 | 125.7 | -71.68 | 2,086.1 | -1,397.8 | 2,059.2 | 1,916.4 | 142.78 | 14.422 | |
| 6,550.0 | 6,309.5 | 6,304.5 | 6,304.5 | 31.5 | 126.3 | 18.35 | 2,086.1 | -1,397.8 | 2,058.4 | 1,900.8 | 157.61 | 13.060 | |
| 6,600.0 | 6,359.4 | 6,354.4 | 6,354.4 | 31.5 | 127.3 | 18.49 | 2,086.1 | -1,397.8 | 2,054.5 | 1,896.7 | 157.84 | 13.017 | |
| 6,650.0 | 6,408.8 | 6,403.8 | 6,403.8 | 31.5 | 128.3 | 18.74 | 2,086.1 | -1,397.8 | 2,047.3 | 1,890.0 | 157.35 | 13.011 | |
| 6,700.0 | 6,457.5 | 6,452.5 | 6,452.5 | 31.5 | 129.3 | 19.12 | 2,086.1 | -1,397.8 | 2,036.9 | 1,880.7 | 156.17 | 13.043 | |
| 6,716.1 | 6,473.1 | 6,468.1 | 6,468.1 | 31.5 | 129.6 | 19.26 | 2,086.1 | -1,397.8 | 2,032.8 | 1,877.2 | 155.64 | 13.061 | |
| 6,725.0 | 6,481.6 | 6,476.6 | 6,476.6 | 31.5 | 129.8 | 19.39 | 2,086.1 | -1,397.8 | 2,030.4 | 1,875.4 | 155.07 | 13.093 | |
| 6,750.0 | 6,505.3 | 6,500.3 | 6,500.3 | 31.5 | 130.3 | 19.78 | 2,086.1 | -1,397.8 | 2,022.9 | 1,869.7 | 153.23 | 13.202 | |
| 6,775.0 | 6,528.5 | 6,523.5 | 6,523.5 | 31.4 | 130.8 | 20.25 | 2,086.1 | -1,397.8 | 2,014.2 | 1,863.2 | 151.04 | 13.336 | |
| 6,800.0 | 6,551.3 | 6,546.3 | 6,546.3 | 31.4 | 131.2 | 20.80 | 2,086.1 | -1,397.8 | 2,004.4 | 1,855.8 | 148.53 | 13.495 | |
| 6,825.0 | 6,573.4 | 6,568.4 | 6,568.4 | 31.4 | 131.7 | 21.45 | 2,086.1 | -1,397.8 | 1,993.4 | 1,847.7 | 145.73 | 13.679 | |
| 6,850.0 | 6,595.0 | 6,590.0 | 6,590.0 | 31.3 | 132.1 | 22.19 | 2,086.1 | -1,397.8 | 1,981.4 | 1,838.7 | 142.70 | 13.886 | |
| 6,875.0 | 6,615.8 | 6,610.8 | 6,610.8 | 31.3 | 132.5 | 23.05 | 2,086.1 | -1,397.8 | 1,968.3 | 1,828.9 | 139.47 | 14.113 | |
| 6,900.0 | 6,635.9 | 6,630.9 | 6,630.9 | 31.3 | 132.9 | 24.03 | 2,086.1 | -1,397.8 | 1,954.3 | 1,818.2 | 136.11 | 14.358 | |
| 6,925.0 | 6,655.1 | 6,650.1 | 6,650.1 | 31.2 | 133.3 | 25.16 | 2,086.1 | -1,397.8 | 1,939.3 | 1,806.6 | 132.72 | 14.612 | |
| 6,950.0 | 6,673.6 | 6,668.6 | 6,668.6 | 31.2 | 133.7 | 26.45 | 2,086.1 | -1,397.8 | 1,923.3 | 1,794.0 | 129.39 | 14.865 | |
| 6,975.0 | 6,691.1 | 6,686.1 | 6,686.1 | 31.1 | 134.0 | 27.92 | 2,086.1 | -1,397.8 | 1,906.5 | 1,780.3 | 126.25 | 15.101 | |
| 7,000.0 | 6,707.6 | 6,702.6 | 6,702.6 | 31.1 | 134.4 | 29.61 | 2,086.1 | -1,397.8 | 1,888.9 | 1,765.5 | 123.46 | 15.300 | |
| 7,025.0 | 6,723.1 | 6,718.1 | 6,718.1 | 31.0 | 134.7 | 31.54 | 2,086.1 | -1,397.8 | 1,870.6 | 1,749.3 | 121.21 | 15.432 | |
| 7,050.0 | 6,737.6 | 6,732.6 | 6,732.6 | 31.0 | 135.0 | 33.76 | 2,086.1 | -1,397.8 | 1,851.5 | 1,731.8 | 119.70 | 15.468 | |
| 7,075.0 | 6,751.0 | 6,746.0 | 6,746.0 | 30.9 | 135.2 | 36.31 | 2,086.1 | -1,397.8 | 1,831.7 | 1,712.6 | 119.14 | 15.374 | |
| 7,100.0 | 6,763.3 | 6,758.3 | 6,758.3 | 30.8 | 135.5 | 39.24 | 2,086.1 | -1,397.8 | 1,811.4 | 1,691.6 | 119.75 | 15.126 | |
| 7,125.0 | 6,774.5 | 6,769.5 | 6,769.5 | 30.8 | 135.7 | 42.61 | 2,086.1 | -1,397.8 | 1,790.5 | 1,668.8 | 121.67 | 14.716 | |
| 7,150.0 | 6,784.4 | 6,779.4 | 6,779.4 | 30.7 | 135.9 | 46.47 | 2,086.1 | -1,397.8 | 1,769.1 | 1,644.2 | 124.95 | 14.158 | |
| 7,175.0 | 6,793.1 | 6,788.1 | 6,788.1 | 30.7 | 136.1 | 50.87 | 2,086.1 | -1,397.8 | 1,747.3 | 1,617.8 | 129.51 | 13.491 | |
| 7,200.0 | 6,800.6 | 6,795.6 | 6,795.6 | 30.6 | 136.2 | 55.85 | 2,086.1 | -1,397.8 | 1,725.2 | 1,590.1 | 135.08 | 12.771 | |
| 7,225.0 | 6,806.8 | 6,801.8 | 6,801.8 | 30.6 | 136.3 | 61.43 | 2,086.1 | -1,397.8 | 1,702.8 | 1,561.6 | 141.18 | 12.061 | |
| 7,250.0 | 6,811.8 | 6,806.8 | 6,806.8 | 30.5 | 136.4 | 67.55 | 2,086.1 | -1,397.8 | 1,680.2 | 1,533.0 | 147.13 | 11.419 | |
| 7,275.0 | 6,815.5 | 6,810.5 | 6,810.5 | 30.5 | 136.5 | 74.11 | 2,086.1 | -1,397.8 | 1,657.4 | 1,505.2 | 152.19 | 10.890 | |
| 7,300.0 | 6,817.8 | 6,812.8 | 6,812.8 | 30.4 | 136.6 | 80.96 | 2,086.1 | -1,397.8 | 1,634.5 | 1,478.8 | 155.66 | 10.500 | |
| 7,325.0 | 6,818.9 | 6,813.9 | 6,813.9 | 30.4 | 136.6 | 87.87 | 2,086.1 | -1,397.8 | 1,611.6 | 1,454.5 | 157.07 | 10.260 | |
| 7,332.8 | 6,819.0 | 6,814.0 | 6,814.0 | 30.4 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,604.4 | 1,447.4 | 157.07 | 10.215 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 32-4 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 6,814.0 | 6,814.0 | 30.3 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,543.2 | 1,385.5 | 157.74 | 9.783 | |
| 7,500.0 | 6,819.0 | 6,814.0 | 6,814.0 | 30.2 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,453.0 | 1,294.0 | 159.00 | 9.139 | |
| 7,600.0 | 6,819.0 | 6,814.0 | 6,814.0 | 30.3 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,364.2 | 1,203.7 | 160.52 | 8.499 | |
| 7,700.0 | 6,819.0 | 6,814.0 | 6,814.0 | 30.6 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,277.1 | 1,114.8 | 162.27 | 7.870 | |
| 7,800.0 | 6,819.0 | 6,814.0 | 6,814.0 | 31.3 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,192.0 | 1,027.8 | 164.19 | 7.260 | |
| 7,900.0 | 6,819.0 | 6,814.0 | 6,814.0 | 32.5 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,109.3 | 943.1 | 166.25 | 6.673 | |
| 8,000.0 | 6,819.0 | 6,814.0 | 6,814.0 | 34.2 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,029.8 | 861.4 | 168.43 | 6.114 | |
| 8,100.0 | 6,819.0 | 6,814.0 | 6,814.0 | 36.1 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 954.1 | 783.4 | 170.70 | 5.589 | |
| 8,200.0 | 6,819.0 | 6,814.0 | 6,814.0 | 38.3 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 883.2 | 710.2 | 173.04 | 5.104 | |
| 8,300.0 | 6,819.0 | 6,814.0 | 6,814.0 | 40.6 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 818.5 | 643.1 | 175.45 | 4.665 | |
| 8,400.0 | 6,819.0 | 6,814.0 | 6,814.0 | 42.9 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 761.4 | 583.5 | 177.91 | 4.280 | |
| 8,500.0 | 6,819.0 | 6,814.0 | 6,814.0 | 45.3 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 713.9 | 533.5 | 180.41 | 3.957 | |
| 8,600.0 | 6,819.0 | 6,814.0 | 6,814.0 | 47.8 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 677.8 | 494.9 | 182.95 | 3.705 | |
| 8,700.0 | 6,819.0 | 6,814.0 | 6,814.0 | 50.3 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 655.2 | 469.7 | 185.52 | 3.532 | |
| 8,800.0 | 6,819.0 | 6,814.0 | 6,814.0 | 52.8 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 647.4 | 459.3 | 188.11 | 3.442 | |
| 8,800.8 | 6,819.0 | 6,814.0 | 6,814.0 | 52.9 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 647.4 | 459.3 | 188.13 | 3.441 | CC, ES |
| 8,900.0 | 6,819.0 | 6,814.0 | 6,814.0 | 55.4 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 654.9 | 464.2 | 190.72 | 3.434 | SF |
| 9,000.0 | 6,819.0 | 6,814.0 | 6,814.0 | 58.0 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 677.3 | 484.0 | 193.36 | 3.503 | |
| 9,100.0 | 6,819.0 | 6,814.0 | 6,814.0 | 60.6 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 713.2 | 517.2 | 196.01 | 3.639 | |
| 9,200.0 | 6,819.0 | 6,814.0 | 6,814.0 | 63.2 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 760.6 | 561.9 | 198.67 | 3.828 | |
| 9,300.0 | 6,819.0 | 6,814.0 | 6,814.0 | 65.9 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 817.5 | 616.1 | 201.35 | 4.060 | |
| 9,400.0 | 6,819.0 | 6,814.0 | 6,814.0 | 68.5 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 882.1 | 678.1 | 204.03 | 4.323 | |
| 9,500.0 | 6,819.0 | 6,814.0 | 6,814.0 | 71.2 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 952.9 | 746.1 | 206.73 | 4.609 | |
| 9,600.0 | 6,819.0 | 6,814.0 | 6,814.0 | 73.9 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,028.5 | 819.1 | 209.43 | 4.911 | |
| 9,700.0 | 6,819.0 | 6,814.0 | 6,814.0 | 76.5 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,108.0 | 895.8 | 212.15 | 5.223 | |
| 9,800.0 | 6,819.0 | 6,814.0 | 6,814.0 | 79.2 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,190.6 | 975.7 | 214.87 | 5.541 | |
| 9,900.0 | 6,819.0 | 6,814.0 | 6,814.0 | 81.9 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,275.7 | 1,058.1 | 217.59 | 5.863 | |
| 10,000.0 | 6,819.0 | 6,814.0 | 6,814.0 | 84.6 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,362.8 | 1,142.4 | 220.33 | 6.185 | |
| 10,100.0 | 6,819.0 | 6,814.0 | 6,814.0 | 87.4 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,451.5 | 1,228.5 | 223.06 | 6.507 | |
| 10,200.0 | 6,819.0 | 6,814.0 | 6,814.0 | 90.1 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,541.7 | 1,315.9 | 225.81 | 6.827 | |
| 10,300.0 | 6,819.0 | 6,814.0 | 6,814.0 | 92.8 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,633.0 | 1,404.4 | 228.55 | 7.145 | |
| 10,400.0 | 6,819.0 | 6,814.0 | 6,814.0 | 95.5 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,725.2 | 1,493.9 | 231.30 | 7.459 | |
| 10,500.0 | 6,819.0 | 6,814.0 | 6,814.0 | 98.3 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,818.3 | 1,584.3 | 234.06 | 7.769 | |
| 10,600.0 | 6,819.0 | 6,814.0 | 6,814.0 | 101.0 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 1,912.1 | 1,675.3 | 236.81 | 8.074 | |
| 10,700.0 | 6,819.0 | 6,814.0 | 6,814.0 | 103.8 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 2,006.5 | 1,766.9 | 239.57 | 8.375 | |
| 10,800.0 | 6,819.0 | 6,814.0 | 6,814.0 | 106.5 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 2,101.4 | 1,859.0 | 242.33 | 8.671 | |
| 10,900.0 | 6,819.0 | 6,814.0 | 6,814.0 | 109.2 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 2,196.7 | 1,951.6 | 245.10 | 8.963 | |
| 11,000.0 | 6,819.0 | 6,814.0 | 6,814.0 | 112.0 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 2,292.5 | 2,044.6 | 247.87 | 9.249 | |
| 11,100.0 | 6,819.0 | 6,814.0 | 6,814.0 | 114.8 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 2,388.6 | 2,137.9 | 250.63 | 9.530 | |
| 11,200.0 | 6,819.0 | 6,814.0 | 6,814.0 | 117.5 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 2,485.0 | 2,231.6 | 253.41 | 9.806 | |
| 11,300.0 | 6,819.0 | 6,814.0 | 6,814.0 | 120.3 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 2,581.7 | 2,325.5 | 256.18 | 10.078 | |
| 11,400.0 | 6,819.0 | 6,814.0 | 6,814.0 | 123.0 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 2,678.6 | 2,419.6 | 258.95 | 10.344 | |
| 11,500.0 | 6,819.0 | 6,814.0 | 6,814.0 | 125.8 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 2,775.7 | 2,514.0 | 261.73 | 10.605 | |
| 11,600.0 | 6,819.0 | 6,814.0 | 6,814.0 | 128.6 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 2,873.1 | 2,608.6 | 264.51 | 10.862 | |
| 11,700.0 | 6,819.0 | 6,814.0 | 6,814.0 | 131.3 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 2,970.6 | 2,703.3 | 267.29 | 11.114 | |
| 11,800.0 | 6,819.0 | 6,814.0 | 6,814.0 | 134.1 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 3,068.2 | 2,798.2 | 270.07 | 11.361 | |
| 11,900.0 | 6,819.0 | 6,814.0 | 6,814.0 | 136.9 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 3,166.1 | 2,893.2 | 272.85 | 11.604 | |
| 12,000.0 | 6,819.0 | 6,814.0 | 6,814.0 | 139.6 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 3,264.0 | 2,988.4 | 275.64 | 11.842 | |
| 12,100.0 | 6,819.0 | 6,814.0 | 6,814.0 | 142.4 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 3,362.1 | 3,083.7 | 278.42 | 12.076 | |
| 12,200.0 | 6,819.0 | 6,814.0 | 6,814.0 | 145.2 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 3,460.3 | 3,179.1 | 281.20 | 12.305 | |
| 12,300.0 | 6,819.0 | 6,814.0 | 6,814.0 | 148.0 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 3,558.6 | 3,274.6 | 283.99 | 12.531 | |
| 12,400.0 | 6,819.0 | 6,814.0 | 6,814.0 | 150.8 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 3,656.9 | 3,370.2 | 286.78 | 12.752 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT SITZMAN 32-4 - Wellbore #1 - Design #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 0-INC — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,500.0 | 6,819.0 | 6,814.0 | 6,814.0 | 153.5 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 3,755.4 | 3,465.8 | 289.57 | 12.969 | |
| 12,600.0 | 6,819.0 | 6,814.0 | 6,814.0 | 156.3 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 3,853.9 | 3,561.6 | 292.36 | 13.182 | |
| 12,700.0 | 6,819.0 | 6,814.0 | 6,814.0 | 159.1 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 3,952.6 | 3,657.4 | 295.15 | 13.392 | |
| 12,800.0 | 6,819.0 | 6,814.0 | 6,814.0 | 161.9 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 4,051.2 | 3,753.3 | 297.94 | 13.598 | |
| 12,900.0 | 6,819.0 | 6,814.0 | 6,814.0 | 164.7 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 4,150.0 | 3,849.3 | 300.73 | 13.800 | |
| 13,000.0 | 6,819.0 | 6,814.0 | 6,814.0 | 167.4 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 4,248.8 | 3,945.3 | 303.52 | 13.998 | |
| 13,100.0 | 6,819.0 | 6,814.0 | 6,814.0 | 170.2 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 4,347.6 | 4,041.3 | 306.31 | 14.193 | |
| 13,200.0 | 6,819.0 | 6,814.0 | 6,814.0 | 173.0 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 4,446.6 | 4,137.4 | 309.11 | 14.385 | |
| 13,300.0 | 6,819.0 | 6,814.0 | 6,814.0 | 175.8 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 4,545.5 | 4,233.6 | 311.90 | 14.574 | |
| 13,400.0 | 6,819.0 | 6,814.0 | 6,814.0 | 178.6 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 4,644.5 | 4,329.8 | 314.69 | 14.759 | |
| 13,500.0 | 6,819.0 | 6,814.0 | 6,814.0 | 181.4 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 4,743.6 | 4,426.1 | 317.49 | 14.941 | |
| 13,600.0 | 6,819.0 | 6,814.0 | 6,814.0 | 184.2 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 4,842.6 | 4,522.4 | 320.28 | 15.120 | |
| 13,700.0 | 6,819.0 | 6,814.0 | 6,814.0 | 187.0 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 4,941.8 | 4,618.7 | 323.08 | 15.296 | |
| 13,800.0 | 6,819.0 | 6,814.0 | 6,814.0 | 189.7 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 5,040.9 | 4,715.0 | 325.88 | 15.469 | |
| 13,900.0 | 6,819.0 | 6,814.0 | 6,814.0 | 192.5 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 5,140.1 | 4,811.4 | 328.67 | 15.639 | |
| 14,000.0 | 6,819.0 | 6,814.0 | 6,814.0 | 195.3 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 5,239.3 | 4,907.9 | 331.47 | 15.806 | |
| 14,100.0 | 6,819.0 | 6,814.0 | 6,814.0 | 198.1 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 5,338.6 | 5,004.3 | 334.27 | 15.971 | |
| 14,200.0 | 6,819.0 | 6,814.0 | 6,814.0 | 200.9 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 5,437.8 | 5,100.8 | 337.07 | 16.133 | |
| 14,300.0 | 6,819.0 | 6,814.0 | 6,814.0 | 203.7 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 5,537.1 | 5,197.3 | 339.86 | 16.292 | |
| 14,400.0 | 6,819.0 | 6,814.0 | 6,814.0 | 206.5 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 5,636.5 | 5,293.8 | 342.66 | 16.449 | |
| 14,500.0 | 6,819.0 | 6,814.0 | 6,814.0 | 209.3 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 5,735.8 | 5,390.4 | 345.46 | 16.603 | |
| 14,600.0 | 6,819.0 | 6,814.0 | 6,814.0 | 212.1 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 5,835.2 | 5,486.9 | 348.26 | 16.755 | |
| 14,700.0 | 6,819.0 | 6,814.0 | 6,814.0 | 214.9 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 5,934.6 | 5,583.5 | 351.06 | 16.905 | |
| 14,720.3 | 6,819.0 | 6,814.0 | 6,814.0 | 215.4 | 136.6 | 90.00 | 2,086.1 | -1,397.8 | 5,954.8 | 5,603.2 | 351.63 | 16.935 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ZEHNDER B5-23 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -87.15 | 281.5 | -5,649.7 | 5,656.7 | | | | |
| 100.0 | 100.0 | 62.5 | 62.5 | 0.1 | 0.1 | -87.15 | 281.5 | -5,649.8 | 5,656.9 | 5,656.7 | 0.15 | N/A | |
| 200.0 | 200.0 | 148.9 | 148.8 | 0.3 | 0.2 | -87.15 | 281.2 | -5,650.4 | 5,657.5 | 5,657.0 | 0.48 | N/A | |
| 300.0 | 300.0 | 258.5 | 258.5 | 0.5 | 0.3 | -87.15 | 280.9 | -5,651.1 | 5,658.1 | 5,657.3 | 0.80 | 7,051.380 | |
| 400.0 | 400.0 | 347.6 | 347.6 | 0.8 | 0.3 | -87.15 | 281.5 | -5,651.5 | 5,658.7 | 5,657.6 | 1.08 | 5,226.812 | |
| 500.0 | 500.0 | 420.3 | 420.3 | 1.0 | 0.4 | -87.14 | 282.5 | -5,652.2 | 5,659.6 | 5,658.3 | 1.36 | 4,174.921 | |
| 600.0 | 600.0 | 500.0 | 500.0 | 1.2 | 0.4 | -87.13 | 283.6 | -5,653.3 | 5,661.1 | 5,659.5 | 1.63 | 3,481.340 | |
| 700.0 | 700.0 | 592.5 | 592.4 | 1.4 | 0.5 | -87.12 | 284.6 | -5,654.9 | 5,662.9 | 5,661.0 | 1.90 | 2,977.350 | |
| 800.0 | 800.0 | 698.7 | 698.6 | 1.7 | 0.5 | -87.11 | 285.6 | -5,656.6 | 5,664.5 | 5,662.3 | 2.18 | 2,598.527 | |
| 900.0 | 900.0 | 783.0 | 782.9 | 1.9 | 0.6 | -108.23 | 286.5 | -5,658.0 | 5,666.7 | 5,664.3 | 2.46 | 2,306.713 | |
| 1,000.0 | 999.8 | 878.5 | 878.4 | 2.1 | 0.6 | -108.20 | 287.6 | -5,659.8 | 5,670.3 | 5,667.6 | 2.73 | 2,078.545 | |
| 1,100.0 | 1,099.5 | 980.8 | 980.7 | 2.3 | 0.7 | -108.19 | 288.6 | -5,661.7 | 5,674.9 | 5,671.9 | 3.01 | 1,886.488 | |
| 1,200.0 | 1,198.7 | 1,081.4 | 1,081.3 | 2.6 | 0.7 | -108.19 | 289.6 | -5,663.5 | 5,680.7 | 5,677.4 | 3.30 | 1,720.316 | |
| 1,300.0 | 1,297.5 | 1,208.3 | 1,208.1 | 2.9 | 0.8 | -108.25 | 290.7 | -5,665.5 | 5,687.2 | 5,683.6 | 3.63 | 1,566.742 | |
| 1,400.0 | 1,395.6 | 1,291.4 | 1,291.2 | 3.2 | 0.8 | -108.25 | 291.2 | -5,666.7 | 5,694.8 | 5,690.8 | 3.97 | 1,432.682 | |
| 1,500.0 | 1,493.1 | 1,419.7 | 1,419.5 | 3.5 | 0.9 | -108.36 | 291.3 | -5,668.4 | 5,703.4 | 5,699.0 | 4.38 | 1,301.940 | |
| 1,507.2 | 1,500.0 | 1,426.6 | 1,426.4 | 3.6 | 0.9 | -108.37 | 291.3 | -5,668.5 | 5,704.1 | 5,699.6 | 4.41 | 1,293.777 | |
| 1,572.2 | 1,563.0 | 1,489.2 | 1,489.0 | 3.8 | 0.9 | -108.51 | 291.3 | -5,669.2 | 5,709.9 | 5,705.3 | 4.67 | 1,222.439 | |
| 1,600.0 | 1,590.0 | 1,523.3 | 1,523.1 | 3.9 | 0.9 | -108.54 | 291.4 | -5,669.5 | 5,712.5 | 5,707.7 | 4.79 | 1,192.804 | |
| 1,700.0 | 1,686.3 | 1,640.7 | 1,640.5 | 4.4 | 0.9 | -108.67 | 290.9 | -5,670.4 | 5,722.1 | 5,716.9 | 5.26 | 1,087.811 | |
| 1,800.0 | 1,781.5 | 1,722.1 | 1,721.9 | 4.9 | 1.0 | -108.70 | 290.7 | -5,670.9 | 5,733.0 | 5,727.2 | 5.78 | 992.069 | |
| 1,817.6 | 1,798.2 | 1,733.5 | 1,733.3 | 5.0 | 1.0 | -108.69 | 290.6 | -5,671.0 | 5,735.1 | 5,729.2 | 5.88 | 976.055 | |
| 1,900.0 | 1,876.1 | 1,800.0 | 1,799.8 | 5.5 | 1.0 | -108.90 | 290.6 | -5,671.8 | 5,745.2 | 5,738.8 | 6.34 | 906.065 | |
| 2,000.0 | 1,970.6 | 1,862.1 | 1,861.9 | 6.0 | 1.0 | -109.09 | 290.6 | -5,672.8 | 5,757.9 | 5,751.0 | 6.91 | 832.825 | |
| 2,100.0 | 2,065.1 | 1,949.3 | 1,949.0 | 6.6 | 1.0 | -109.36 | 290.8 | -5,674.3 | 5,771.1 | 5,763.6 | 7.51 | 768.770 | |
| 2,200.0 | 2,159.6 | 2,071.4 | 2,071.1 | 7.2 | 1.1 | -109.73 | 291.4 | -5,676.3 | 5,784.3 | 5,776.2 | 8.12 | 712.748 | |
| 2,300.0 | 2,254.1 | 2,196.7 | 2,196.4 | 7.8 | 1.1 | -110.10 | 292.8 | -5,677.6 | 5,797.0 | 5,788.3 | 8.72 | 664.655 | |
| 2,400.0 | 2,348.7 | 2,284.4 | 2,284.1 | 8.4 | 1.2 | -110.35 | 294.6 | -5,678.4 | 5,809.8 | 5,800.5 | 9.32 | 623.181 | |
| 2,500.0 | 2,443.2 | 2,411.8 | 2,411.5 | 9.1 | 1.2 | -110.71 | 297.5 | -5,679.2 | 5,822.5 | 5,812.5 | 9.93 | 586.339 | |
| 2,600.0 | 2,537.7 | 2,511.1 | 2,510.7 | 9.7 | 1.2 | -110.99 | 299.6 | -5,679.5 | 5,835.0 | 5,824.4 | 10.53 | 553.995 | |
| 2,700.0 | 2,632.2 | 2,607.0 | 2,606.6 | 10.3 | 1.3 | -111.26 | 301.7 | -5,679.8 | 5,847.6 | 5,836.5 | 11.14 | 525.077 | |
| 2,800.0 | 2,726.8 | 2,705.7 | 2,705.3 | 10.9 | 1.3 | -111.53 | 304.0 | -5,680.1 | 5,860.3 | 5,848.6 | 11.74 | 499.114 | |
| 2,900.0 | 2,821.3 | 2,805.3 | 2,804.9 | 11.6 | 1.3 | -111.81 | 306.3 | -5,680.3 | 5,873.1 | 5,860.7 | 12.35 | 475.715 | |
| 3,000.0 | 2,915.8 | 2,913.6 | 2,913.2 | 12.2 | 1.3 | -112.11 | 308.7 | -5,680.3 | 5,885.8 | 5,872.9 | 12.95 | 454.559 | |
| 3,100.0 | 3,010.3 | 3,031.0 | 3,030.5 | 12.8 | 1.4 | -112.44 | 310.9 | -5,680.0 | 5,898.4 | 5,884.9 | 13.55 | 435.407 | |
| 3,200.0 | 3,104.8 | 3,138.6 | 3,138.1 | 13.5 | 1.4 | -112.74 | 312.5 | -5,679.3 | 5,910.9 | 5,896.8 | 14.14 | 418.014 | |
| 3,300.0 | 3,199.4 | 3,238.3 | 3,237.8 | 14.1 | 1.4 | -113.02 | 313.6 | -5,678.5 | 5,923.4 | 5,908.6 | 14.73 | 402.132 | |
| 3,400.0 | 3,293.9 | 3,332.7 | 3,332.2 | 14.8 | 1.4 | -113.30 | 313.7 | -5,677.7 | 5,935.9 | 5,920.6 | 15.32 | 387.580 | |
| 3,500.0 | 3,388.4 | 3,430.4 | 3,429.9 | 15.4 | 1.4 | -113.59 | 312.7 | -5,676.9 | 5,948.7 | 5,932.8 | 15.90 | 374.106 | |
| 3,600.0 | 3,482.9 | 3,553.6 | 3,553.0 | 16.0 | 1.4 | -113.98 | 309.6 | -5,675.2 | 5,961.2 | 5,944.7 | 16.49 | 361.576 | |
| 3,700.0 | 3,577.5 | 3,721.0 | 3,720.3 | 16.7 | 1.4 | -114.51 | 304.8 | -5,671.6 | 5,973.2 | 5,956.2 | 17.06 | 350.103 | |
| 3,800.0 | 3,672.0 | 3,800.0 | 3,799.3 | 17.3 | 1.4 | -114.76 | 302.4 | -5,669.5 | 5,985.0 | 5,967.3 | 17.65 | 339.151 | |
| 3,900.0 | 3,766.5 | 3,861.7 | 3,860.9 | 18.0 | 1.4 | -114.95 | 300.7 | -5,668.1 | 5,997.3 | 5,979.0 | 18.24 | 328.839 | |
| 4,000.0 | 3,861.0 | 3,900.0 | 3,899.2 | 18.6 | 1.4 | -115.07 | 299.9 | -5,667.4 | 6,010.2 | 5,991.4 | 18.83 | 319.175 | |
| 4,100.0 | 3,955.5 | 3,947.7 | 3,946.9 | 19.3 | 1.4 | -115.21 | 299.0 | -5,667.0 | 6,024.1 | 6,004.7 | 19.43 | 310.095 | |
| 4,200.0 | 4,050.1 | 4,000.0 | 3,999.2 | 19.9 | 1.4 | -115.36 | 298.2 | -5,667.3 | 6,039.2 | 6,019.2 | 20.02 | 301.661 | |
| 4,300.0 | 4,144.6 | 4,000.0 | 3,999.2 | 20.5 | 1.4 | -115.36 | 298.2 | -5,667.3 | 6,055.4 | 6,034.7 | 20.62 | 293.706 | |
| 4,400.0 | 4,239.1 | 4,064.8 | 4,064.0 | 21.2 | 1.4 | -115.55 | 297.7 | -5,668.6 | 6,072.3 | 6,051.1 | 21.22 | 286.181 | |
| 4,500.0 | 4,333.6 | 4,100.0 | 4,099.2 | 21.8 | 1.4 | -115.65 | 297.6 | -5,669.7 | 6,090.3 | 6,068.5 | 21.82 | 279.070 | |
| 4,600.0 | 4,428.2 | 4,159.1 | 4,158.2 | 22.5 | 1.4 | -115.81 | 297.7 | -5,671.9 | 6,109.1 | 6,086.7 | 22.43 | 272.400 | |
| 4,700.0 | 4,522.7 | 4,232.3 | 4,231.3 | 23.1 | 1.5 | -116.01 | 297.9 | -5,675.3 | 6,128.7 | 6,105.7 | 23.03 | 266.130 | |
| 4,800.0 | 4,617.2 | 4,538.1 | 4,537.0 | 23.8 | 1.5 | -116.85 | 298.5 | -5,683.3 | 6,146.0 | 6,122.4 | 23.60 | 260.416 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ZEHNDER B5-23 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,628.2 | 4,627.1 | 24.4 | 1.6 | -117.11 | 297.3 | -5,684.0 | 6,162.4 | 6,138.3 | 24.18 | 254.806 | |
| 5,000.0 | 4,806.2 | 4,700.0 | 4,698.9 | 25.1 | 1.6 | -117.31 | 296.5 | -5,685.1 | 6,179.7 | 6,154.9 | 24.77 | 249.458 | |
| 5,100.0 | 4,900.8 | 4,736.1 | 4,735.0 | 25.7 | 1.6 | -117.41 | 296.2 | -5,685.9 | 6,197.5 | 6,172.2 | 25.36 | 244.338 | |
| 5,200.0 | 4,995.3 | 4,800.0 | 4,798.8 | 26.4 | 1.6 | -117.58 | 296.1 | -5,687.7 | 6,216.1 | 6,190.1 | 25.96 | 239.475 | |
| 5,300.0 | 5,089.8 | 5,083.5 | 5,082.3 | 27.0 | 1.7 | -118.33 | 297.6 | -5,692.1 | 6,233.7 | 6,207.2 | 26.51 | 235.175 | |
| 5,400.0 | 5,184.3 | 5,187.2 | 5,185.9 | 27.7 | 1.7 | -118.61 | 296.8 | -5,691.8 | 6,249.7 | 6,222.6 | 27.07 | 230.906 | |
| 5,500.0 | 5,278.9 | 5,249.2 | 5,248.0 | 28.3 | 1.7 | -118.78 | 296.1 | -5,691.6 | 6,266.1 | 6,238.4 | 27.64 | 226.699 | |
| 5,533.5 | 5,310.5 | 5,268.4 | 5,267.1 | 28.5 | 1.7 | -118.83 | 295.8 | -5,691.7 | 6,271.7 | 6,243.9 | 27.83 | 225.329 | |
| 5,600.0 | 5,373.6 | 5,300.0 | 5,298.8 | 28.9 | 1.7 | -119.12 | 295.3 | -5,691.8 | 6,282.7 | 6,254.6 | 28.12 | 223.459 | |
| 5,700.0 | 5,469.4 | 5,369.7 | 5,368.5 | 29.3 | 1.7 | -119.57 | 294.1 | -5,692.4 | 6,298.5 | 6,270.0 | 28.45 | 221.376 | |
| 5,800.0 | 5,566.1 | 5,457.1 | 5,455.9 | 29.8 | 1.7 | -120.00 | 292.9 | -5,693.6 | 6,313.0 | 6,284.3 | 28.75 | 219.561 | |
| 5,900.0 | 5,663.6 | 5,575.4 | 5,574.1 | 30.1 | 1.7 | -120.45 | 291.1 | -5,695.0 | 6,325.7 | 6,296.7 | 29.02 | 217.997 | |
| 6,000.0 | 5,761.9 | 5,709.8 | 5,708.5 | 30.5 | 1.7 | -120.84 | 288.9 | -5,695.9 | 6,336.3 | 6,307.1 | 29.25 | 216.654 | |
| 6,100.0 | 5,860.7 | 5,855.1 | 5,853.8 | 30.7 | 1.8 | -121.17 | 287.6 | -5,695.9 | 6,344.3 | 6,314.9 | 29.44 | 215.520 | |
| 6,200.0 | 5,960.0 | 5,953.9 | 5,952.6 | 31.0 | 1.8 | -121.37 | 286.8 | -5,695.7 | 6,350.3 | 6,320.7 | 29.60 | 214.522 | |
| 6,300.0 | 6,059.7 | 6,058.6 | 6,057.3 | 31.2 | 1.8 | -121.51 | 285.9 | -5,695.4 | 6,354.5 | 6,324.8 | 29.74 | 213.690 | |
| 6,400.0 | 6,159.6 | 6,162.0 | 6,160.7 | 31.3 | 1.8 | -121.59 | 285.5 | -5,695.1 | 6,356.8 | 6,327.0 | 29.84 | 213.012 | |
| 6,486.1 | 6,245.7 | 6,248.5 | 6,247.2 | 31.4 | 1.8 | -100.45 | 285.2 | -5,694.9 | 6,357.3 | 6,333.7 | 23.59 | 269.504 | |
| 6,500.0 | 6,259.6 | 6,262.5 | 6,261.2 | 31.4 | 1.8 | -100.45 | 285.2 | -5,694.9 | 6,357.3 | 6,333.7 | 23.61 | 269.293 | |
| 6,516.1 | 6,275.7 | 6,278.8 | 6,277.5 | 31.4 | 1.8 | -100.45 | 285.1 | -5,694.8 | 6,357.3 | 6,333.6 | 23.63 | 269.024 | |
| 6,550.0 | 6,309.5 | 6,312.1 | 6,310.8 | 31.5 | 1.8 | -10.47 | 285.0 | -5,694.7 | 6,356.4 | 6,326.5 | 29.91 | 212.548 | |
| 6,600.0 | 6,359.4 | 6,359.2 | 6,357.9 | 31.5 | 1.8 | -10.54 | 284.9 | -5,694.6 | 6,352.3 | 6,322.5 | 29.81 | 213.063 | |
| 6,650.0 | 6,408.8 | 6,406.3 | 6,405.0 | 31.5 | 1.8 | -10.66 | 285.0 | -5,694.6 | 6,344.8 | 6,315.1 | 29.68 | 213.800 | |
| 6,700.0 | 6,457.5 | 6,455.3 | 6,454.0 | 31.5 | 1.8 | -10.85 | 285.0 | -5,694.5 | 6,333.9 | 6,304.4 | 29.47 | 214.907 | |
| 6,716.1 | 6,473.1 | 6,470.9 | 6,469.6 | 31.5 | 1.8 | -10.92 | 285.0 | -5,694.5 | 6,329.7 | 6,300.3 | 29.39 | 215.369 | |
| 6,725.0 | 6,481.6 | 6,479.4 | 6,478.1 | 31.5 | 1.8 | -10.98 | 285.0 | -5,694.5 | 6,327.2 | 6,297.9 | 29.31 | 215.887 | |
| 6,750.0 | 6,505.3 | 6,503.1 | 6,501.8 | 31.5 | 1.8 | -11.19 | 285.0 | -5,694.4 | 6,319.3 | 6,290.3 | 29.04 | 217.625 | |
| 6,775.0 | 6,528.5 | 6,525.4 | 6,524.1 | 31.4 | 1.8 | -11.43 | 285.0 | -5,694.4 | 6,310.3 | 6,281.5 | 28.71 | 219.816 | |
| 6,800.0 | 6,551.3 | 6,547.3 | 6,545.9 | 31.4 | 1.8 | -11.72 | 285.0 | -5,694.4 | 6,300.0 | 6,271.7 | 28.31 | 222.519 | |
| 6,825.0 | 6,573.4 | 6,568.6 | 6,567.2 | 31.4 | 1.8 | -12.06 | 285.0 | -5,694.4 | 6,288.6 | 6,260.8 | 27.85 | 225.789 | |
| 6,850.0 | 6,595.0 | 6,589.2 | 6,587.9 | 31.3 | 1.8 | -12.45 | 285.0 | -5,694.3 | 6,276.1 | 6,248.8 | 27.32 | 229.691 | |
| 6,875.0 | 6,615.8 | 6,619.8 | 6,618.4 | 31.3 | 1.8 | -12.92 | 285.0 | -5,694.3 | 6,262.5 | 6,235.8 | 26.74 | 234.231 | |
| 6,900.0 | 6,635.9 | 6,660.8 | 6,659.5 | 31.3 | 1.8 | -13.48 | 285.1 | -5,694.1 | 6,247.8 | 6,221.7 | 26.09 | 239.465 | |
| 6,925.0 | 6,655.1 | 6,699.9 | 6,698.6 | 31.2 | 1.8 | -14.13 | 285.1 | -5,693.9 | 6,232.0 | 6,206.6 | 25.38 | 245.553 | |
| 6,950.0 | 6,673.6 | 6,713.5 | 6,712.2 | 31.2 | 1.8 | -14.84 | 285.1 | -5,693.7 | 6,215.2 | 6,190.6 | 24.59 | 252.773 | |
| 6,975.0 | 6,691.1 | 6,726.4 | 6,725.1 | 31.1 | 1.8 | -15.66 | 285.1 | -5,693.6 | 6,197.6 | 6,173.8 | 23.74 | 261.100 | |
| 7,000.0 | 6,707.6 | 6,738.6 | 6,737.3 | 31.1 | 1.8 | -16.62 | 285.1 | -5,693.5 | 6,179.0 | 6,156.2 | 22.83 | 270.668 | |
| 7,025.0 | 6,723.1 | 6,750.1 | 6,748.8 | 31.0 | 1.8 | -17.74 | 285.1 | -5,693.5 | 6,159.7 | 6,137.8 | 21.87 | 281.614 | |
| 7,050.0 | 6,737.6 | 6,760.8 | 6,759.5 | 31.0 | 1.8 | -19.06 | 285.1 | -5,693.4 | 6,139.6 | 6,118.7 | 20.88 | 294.052 | |
| 7,075.0 | 6,751.0 | 6,770.7 | 6,769.4 | 30.9 | 1.8 | -20.64 | 285.1 | -5,693.3 | 6,118.8 | 6,098.9 | 19.87 | 308.005 | |
| 7,100.0 | 6,763.3 | 6,779.8 | 6,778.5 | 30.8 | 1.8 | -22.53 | 285.1 | -5,693.3 | 6,097.4 | 6,078.5 | 18.86 | 323.273 | |
| 7,125.0 | 6,774.5 | 6,800.0 | 6,798.7 | 30.8 | 1.8 | -24.93 | 285.0 | -5,693.2 | 6,075.4 | 6,057.4 | 17.92 | 338.980 | |
| 7,150.0 | 6,784.4 | 6,800.0 | 6,798.7 | 30.7 | 1.8 | -27.72 | 285.0 | -5,693.2 | 6,052.8 | 6,035.7 | 17.11 | 353.838 | |
| 7,175.0 | 6,793.1 | 6,800.0 | 6,798.7 | 30.7 | 1.8 | -31.21 | 285.0 | -5,693.2 | 6,029.8 | 6,013.2 | 16.54 | 364.484 | |
| 7,200.0 | 6,800.6 | 6,800.0 | 6,798.7 | 30.6 | 1.8 | -35.64 | 285.0 | -5,693.2 | 6,006.4 | 5,990.0 | 16.39 | 366.563 | |
| 7,225.0 | 6,806.8 | 6,800.0 | 6,798.7 | 30.6 | 1.8 | -41.36 | 285.0 | -5,693.2 | 5,982.6 | 5,965.8 | 16.77 | 356.764 | |
| 7,250.0 | 6,811.8 | 6,800.0 | 6,798.7 | 30.5 | 1.8 | -48.80 | 285.0 | -5,693.2 | 5,958.5 | 5,940.8 | 17.72 | 336.176 | |
| 7,275.0 | 6,815.5 | 6,800.0 | 6,798.7 | 30.5 | 1.8 | -58.47 | 285.0 | -5,693.2 | 5,934.3 | 5,915.2 | 19.09 | 310.778 | |
| 7,300.0 | 6,817.8 | 6,800.0 | 6,798.7 | 30.4 | 1.8 | -70.65 | 285.0 | -5,693.2 | 5,909.9 | 5,889.4 | 20.51 | 288.159 | |
| 7,325.0 | 6,818.9 | 6,800.0 | 6,798.7 | 30.4 | 1.8 | -84.92 | 285.0 | -5,693.2 | 5,885.4 | 5,863.7 | 21.68 | 271.526 | |
| 7,332.8 | 6,819.0 | 6,800.0 | 6,798.7 | 30.4 | 1.8 | -89.59 | 285.0 | -5,693.2 | 5,877.7 | 5,855.7 | 22.09 | 266.090 | |
| 7,400.0 | 6,819.0 | 6,800.0 | 6,798.7 | 30.3 | 1.8 | -89.59 | 285.0 | -5,693.2 | 5,811.9 | 5,789.1 | 22.76 | 255.341 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ZEHNDER B5-23 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 6,800.0 | 6,798.7 | 30.2 | 1.8 | -89.59 | 285.0 | -5,693.2 | 5,713.9 | 5,689.9 | 24.02 | 237.876 | |
| 7,600.0 | 6,819.0 | 6,800.0 | 6,798.7 | 30.3 | 1.8 | -89.59 | 285.0 | -5,693.2 | 5,616.0 | 5,590.4 | 25.55 | 219.841 | |
| 7,700.0 | 6,819.0 | 6,800.0 | 6,798.7 | 30.6 | 1.8 | -89.59 | 285.0 | -5,693.2 | 5,518.2 | 5,490.9 | 27.29 | 202.209 | |
| 7,800.0 | 6,819.0 | 6,800.0 | 6,798.7 | 31.3 | 1.8 | -89.59 | 285.0 | -5,693.2 | 5,420.4 | 5,391.2 | 29.21 | 185.567 | |
| 7,900.0 | 6,819.0 | 6,800.0 | 6,798.7 | 32.5 | 1.8 | -89.59 | 285.0 | -5,693.2 | 5,322.7 | 5,291.5 | 31.27 | 170.201 | |
| 8,000.0 | 6,819.0 | 6,800.0 | 6,798.7 | 34.2 | 1.8 | -89.59 | 285.0 | -5,693.2 | 5,225.2 | 5,191.7 | 33.45 | 156.202 | |
| 8,100.0 | 6,819.0 | 6,800.0 | 6,798.7 | 36.1 | 1.8 | -89.59 | 285.0 | -5,693.2 | 5,127.7 | 5,092.0 | 35.72 | 143.543 | |
| 8,200.0 | 6,819.0 | 6,800.0 | 6,798.7 | 38.3 | 1.8 | -89.59 | 285.0 | -5,693.2 | 5,030.3 | 4,992.2 | 38.07 | 132.137 | |
| 8,300.0 | 6,819.0 | 6,800.0 | 6,798.7 | 40.6 | 1.8 | -89.59 | 285.0 | -5,693.2 | 4,933.0 | 4,892.5 | 40.48 | 121.872 | |
| 8,400.0 | 6,819.0 | 6,800.0 | 6,798.7 | 42.9 | 1.8 | -89.59 | 285.0 | -5,693.2 | 4,835.8 | 4,792.9 | 42.94 | 112.628 | |
| 8,500.0 | 6,819.0 | 6,800.0 | 6,798.7 | 45.3 | 1.8 | -89.59 | 285.0 | -5,693.2 | 4,738.8 | 4,693.4 | 45.44 | 104.291 | |
| 8,600.0 | 6,819.0 | 6,800.0 | 6,798.7 | 47.8 | 1.8 | -89.59 | 285.0 | -5,693.2 | 4,641.9 | 4,593.9 | 47.98 | 96.756 | |
| 8,700.0 | 6,819.0 | 6,800.0 | 6,798.7 | 50.3 | 1.8 | -89.59 | 285.0 | -5,693.2 | 4,545.1 | 4,494.5 | 50.54 | 89.926 | |
| 8,800.0 | 6,819.0 | 6,800.0 | 6,798.7 | 52.8 | 1.8 | -89.59 | 285.0 | -5,693.2 | 4,448.4 | 4,395.3 | 53.14 | 83.719 | |
| 8,900.0 | 6,819.0 | 6,800.0 | 6,798.7 | 55.4 | 1.8 | -89.59 | 285.0 | -5,693.2 | 4,351.9 | 4,296.2 | 55.75 | 78.062 | |
| 9,000.0 | 6,819.0 | 6,800.0 | 6,798.7 | 58.0 | 1.8 | -89.59 | 285.0 | -5,693.2 | 4,255.6 | 4,197.2 | 58.38 | 72.891 | |
| 9,100.0 | 6,819.0 | 6,800.0 | 6,798.7 | 60.6 | 1.8 | -89.59 | 285.0 | -5,693.2 | 4,159.4 | 4,098.4 | 61.03 | 68.151 | |
| 9,200.0 | 6,819.0 | 6,800.0 | 6,798.7 | 63.2 | 1.8 | -89.59 | 285.0 | -5,693.2 | 4,063.4 | 3,999.7 | 63.70 | 63.794 | |
| 9,300.0 | 6,819.0 | 6,800.0 | 6,798.7 | 65.9 | 1.8 | -89.59 | 285.0 | -5,693.2 | 3,967.6 | 3,901.3 | 66.37 | 59.778 | |
| 9,400.0 | 6,819.0 | 6,800.0 | 6,798.7 | 68.5 | 1.8 | -89.59 | 285.0 | -5,693.2 | 3,872.1 | 3,803.0 | 69.06 | 56.068 | |
| 9,500.0 | 6,819.0 | 6,800.0 | 6,798.7 | 71.2 | 1.8 | -89.59 | 285.0 | -5,693.2 | 3,776.7 | 3,705.0 | 71.76 | 52.632 | |
| 9,600.0 | 6,819.0 | 6,800.0 | 6,798.7 | 73.9 | 1.8 | -89.59 | 285.0 | -5,693.2 | 3,681.6 | 3,607.2 | 74.46 | 49.442 | |
| 9,700.0 | 6,819.0 | 6,800.0 | 6,798.7 | 76.5 | 1.8 | -89.59 | 285.0 | -5,693.2 | 3,586.8 | 3,509.6 | 77.18 | 46.475 | |
| 9,800.0 | 6,819.0 | 6,800.0 | 6,798.7 | 79.2 | 1.8 | -89.59 | 285.0 | -5,693.2 | 3,492.3 | 3,412.4 | 79.90 | 43.710 | |
| 9,900.0 | 6,819.0 | 6,800.0 | 6,798.7 | 81.9 | 1.8 | -89.59 | 285.0 | -5,693.2 | 3,398.1 | 3,315.4 | 82.62 | 41.127 | |
| 10,000.0 | 6,819.0 | 6,800.0 | 6,798.7 | 84.6 | 1.8 | -89.59 | 285.0 | -5,693.2 | 3,304.2 | 3,218.8 | 85.36 | 38.711 | |
| 10,100.0 | 6,819.0 | 6,800.0 | 6,798.7 | 87.4 | 1.8 | -89.59 | 285.0 | -5,693.2 | 3,210.7 | 3,122.6 | 88.09 | 36.446 | |
| 10,200.0 | 6,819.0 | 6,800.0 | 6,798.7 | 90.1 | 1.8 | -89.59 | 285.0 | -5,693.2 | 3,117.5 | 3,026.7 | 90.83 | 34.321 | |
| 10,300.0 | 6,819.0 | 6,800.0 | 6,798.7 | 92.8 | 1.8 | -89.59 | 285.0 | -5,693.2 | 3,024.9 | 2,931.3 | 93.58 | 32.324 | |
| 10,400.0 | 6,819.0 | 6,800.0 | 6,798.7 | 95.5 | 1.8 | -89.59 | 285.0 | -5,693.2 | 2,932.7 | 2,836.3 | 96.33 | 30.444 | |
| 10,500.0 | 6,819.0 | 6,800.0 | 6,798.7 | 98.3 | 1.8 | -89.59 | 285.0 | -5,693.2 | 2,841.0 | 2,741.9 | 99.08 | 28.673 | |
| 10,600.0 | 6,819.0 | 6,800.0 | 6,798.7 | 101.0 | 1.8 | -89.59 | 285.0 | -5,693.2 | 2,749.9 | 2,648.1 | 101.84 | 27.002 | |
| 10,700.0 | 6,819.0 | 6,800.0 | 6,798.7 | 103.8 | 1.8 | -89.59 | 285.0 | -5,693.2 | 2,659.5 | 2,554.9 | 104.60 | 25.425 | |
| 10,800.0 | 6,819.0 | 6,800.0 | 6,798.7 | 106.5 | 1.8 | -89.59 | 285.0 | -5,693.2 | 2,569.7 | 2,462.4 | 107.36 | 23.935 | |
| 10,900.0 | 6,819.0 | 6,800.0 | 6,798.7 | 109.2 | 1.8 | -89.59 | 285.0 | -5,693.2 | 2,480.8 | 2,370.7 | 110.13 | 22.527 | |
| 11,000.0 | 6,819.0 | 6,800.0 | 6,798.7 | 112.0 | 1.8 | -89.59 | 285.0 | -5,693.2 | 2,392.7 | 2,279.8 | 112.89 | 21.194 | |
| 11,100.0 | 6,819.0 | 6,800.0 | 6,798.7 | 114.8 | 1.8 | -89.59 | 285.0 | -5,693.2 | 2,305.6 | 2,190.0 | 115.66 | 19.934 | |
| 11,200.0 | 6,819.0 | 6,800.0 | 6,798.7 | 117.5 | 1.8 | -89.59 | 285.0 | -5,693.2 | 2,219.6 | 2,101.2 | 118.44 | 18.741 | |
| 11,300.0 | 6,819.0 | 6,800.0 | 6,798.7 | 120.3 | 1.8 | -89.59 | 285.0 | -5,693.2 | 2,134.8 | 2,013.6 | 121.21 | 17.613 | |
| 11,400.0 | 6,819.0 | 6,800.0 | 6,798.7 | 123.0 | 1.8 | -89.59 | 285.0 | -5,693.2 | 2,051.4 | 1,927.4 | 123.98 | 16.546 | |
| 11,500.0 | 6,819.0 | 6,800.0 | 6,798.7 | 125.8 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,969.5 | 1,842.7 | 126.76 | 15.537 | |
| 11,600.0 | 6,819.0 | 6,800.0 | 6,798.7 | 128.6 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,889.4 | 1,759.8 | 129.54 | 14.585 | |
| 11,700.0 | 6,819.0 | 6,800.0 | 6,798.7 | 131.3 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,811.2 | 1,678.9 | 132.32 | 13.688 | |
| 11,800.0 | 6,819.0 | 6,800.0 | 6,798.7 | 134.1 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,735.3 | 1,600.2 | 135.10 | 12.844 | |
| 11,900.0 | 6,819.0 | 6,800.0 | 6,798.7 | 136.9 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,661.9 | 1,524.0 | 137.88 | 12.053 | |
| 12,000.0 | 6,819.0 | 6,800.0 | 6,798.7 | 139.6 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,591.4 | 1,450.8 | 140.66 | 11.314 | |
| 12,100.0 | 6,819.0 | 6,800.0 | 6,798.7 | 142.4 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,524.3 | 1,380.8 | 143.45 | 10.626 | |
| 12,200.0 | 6,819.0 | 6,800.0 | 6,798.7 | 145.2 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,460.9 | 1,314.7 | 146.23 | 9.990 | |
| 12,300.0 | 6,819.0 | 6,800.0 | 6,798.7 | 148.0 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,401.8 | 1,252.7 | 149.02 | 9.407 | |
| 12,400.0 | 6,819.0 | 6,800.0 | 6,798.7 | 150.8 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,347.5 | 1,195.7 | 151.81 | 8.876 | |
| 12,500.0 | 6,819.0 | 6,800.0 | 6,798.7 | 153.5 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,298.6 | 1,144.0 | 154.60 | 8.400 | |
| 12,600.0 | 6,819.0 | 6,800.0 | 6,798.7 | 156.3 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,255.9 | 1,098.5 | 157.38 | 7.980 | |

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|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - EXIST VERT ZEHNDER B5-23 - Wellbore #1 - Wellbore #1 — **Offset Site Error:** 0.0 usft

**Survey Program:** 100-GYD_CT — **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 6,819.0 | 6,800.0 | 6,798.7 | 159.1 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,219.8 | 1,059.7 | 160.17 | 7.616 | |
| 12,800.0 | 6,819.0 | 6,800.0 | 6,798.7 | 161.9 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,191.1 | 1,028.1 | 162.97 | 7.309 | |
| 12,900.0 | 6,819.0 | 6,800.0 | 6,798.7 | 164.7 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,170.3 | 1,004.5 | 165.76 | 7.060 | |
| 13,000.0 | 6,819.0 | 6,800.0 | 6,798.7 | 167.4 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,157.7 | 989.1 | 168.55 | 6.869 | |
| 13,096.2 | 6,819.0 | 6,800.0 | 6,798.7 | 170.1 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,153.7 | 982.5 | 171.24 | 6.737 | CC |
| 13,100.0 | 6,819.0 | 6,800.0 | 6,798.7 | 170.2 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,153.7 | 982.4 | 171.34 | 6.733 | ES |
| 13,200.0 | 6,819.0 | 6,800.0 | 6,798.7 | 173.0 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,158.3 | 984.2 | 174.13 | 6.652 | |
| 13,300.0 | 6,819.0 | 6,800.0 | 6,798.7 | 175.8 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,171.5 | 994.6 | 176.93 | 6.622 | SF |
| 13,400.0 | 6,819.0 | 6,800.0 | 6,798.7 | 178.6 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,193.0 | 1,013.3 | 179.72 | 6.638 | |
| 13,500.0 | 6,819.0 | 6,800.0 | 6,798.7 | 181.4 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,222.3 | 1,039.8 | 182.52 | 6.697 | |
| 13,600.0 | 6,819.0 | 6,800.0 | 6,798.7 | 184.2 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,258.9 | 1,073.6 | 185.31 | 6.793 | |
| 13,700.0 | 6,819.0 | 6,800.0 | 6,798.7 | 187.0 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,302.1 | 1,114.0 | 188.11 | 6.922 | |
| 13,800.0 | 6,819.0 | 6,800.0 | 6,798.7 | 189.7 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,351.4 | 1,160.5 | 190.90 | 7.079 | |
| 13,900.0 | 6,819.0 | 6,800.0 | 6,798.7 | 192.5 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,406.1 | 1,212.4 | 193.70 | 7.259 | |
| 14,000.0 | 6,819.0 | 6,800.0 | 6,798.7 | 195.3 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,465.5 | 1,269.0 | 196.50 | 7.458 | |
| 14,100.0 | 6,819.0 | 6,800.0 | 6,798.7 | 198.1 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,529.2 | 1,329.9 | 199.30 | 7.673 | |
| 14,200.0 | 6,819.0 | 6,800.0 | 6,798.7 | 200.9 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,596.7 | 1,394.6 | 202.09 | 7.901 | |
| 14,300.0 | 6,819.0 | 6,800.0 | 6,798.7 | 203.7 | 1.8 | -89.59 | 285.0 | -5,693.2 | 1,667.4 | 1,462.5 | 204.89 | 8.138 | |
| 14,400.0 | 6,819.0 | 6,803.6 | 6,802.3 | 206.5 | 1.8 | -89.77 | 285.0 | -5,693.2 | 1,740.9 | 1,533.2 | 207.71 | 8.382 | |
| 14,500.0 | 6,819.0 | 6,803.2 | 6,801.9 | 209.3 | 1.8 | -89.75 | 285.0 | -5,693.2 | 1,817.0 | 1,606.5 | 210.50 | 8.632 | |
| 14,600.0 | 6,819.0 | 6,802.9 | 6,801.5 | 212.1 | 1.8 | -89.73 | 285.0 | -5,693.2 | 1,895.4 | 1,682.0 | 213.30 | 8.886 | |
| 14,700.0 | 6,819.0 | 6,802.5 | 6,801.2 | 214.9 | 1.8 | -89.71 | 285.0 | -5,693.2 | 1,975.6 | 1,759.5 | 216.10 | 9.142 | |
| 14,720.3 | 6,819.0 | 6,802.5 | 6,801.1 | 215.4 | 1.8 | -89.71 | 285.0 | -5,693.2 | 1,992.1 | 1,775.5 | 216.67 | 9.194 | |

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|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4W-234 - ORIGINAL WELLBORE - PROP — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 108.11 | -4.7 | 14.5 | 15.2 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 108.11 | -4.7 | 14.5 | 15.2 | 15.1 | 0.17 | 88.016 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 108.11 | -4.7 | 14.5 | 15.2 | 14.6 | 0.62 | 24.466 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 108.11 | -4.7 | 14.5 | 15.2 | 14.2 | 1.07 | 14.208 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 108.11 | -4.7 | 14.5 | 15.2 | 13.7 | 1.52 | 10.011 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | 108.11 | -4.7 | 14.5 | 15.2 | 13.3 | 1.97 | 7.728 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | 108.11 | -4.7 | 14.5 | 15.2 | 12.8 | 2.42 | 6.293 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.4 | 1.4 | 108.11 | -4.7 | 14.5 | 15.2 | 12.4 | 2.87 | 5.307 | CC |
| 800.0 | 800.0 | 799.9 | 799.9 | 1.7 | 1.7 | 101.73 | -3.2 | 15.2 | 15.5 | 12.2 | 3.32 | 4.685 | |
| 900.0 | 900.0 | 899.6 | 899.5 | 1.9 | 1.9 | 69.04 | 1.6 | 17.4 | 16.8 | 13.1 | 3.76 | 4.468 | |
| 1,000.0 | 999.8 | 999.3 | 998.7 | 2.1 | 2.1 | 59.87 | 9.4 | 21.1 | 18.9 | 14.6 | 4.21 | 4.476 | |
| 1,100.0 | 1,099.5 | 1,098.8 | 1,097.5 | 2.3 | 2.4 | 53.07 | 20.3 | 26.3 | 21.5 | 16.8 | 4.68 | 4.591 | |
| 1,200.0 | 1,198.7 | 1,198.2 | 1,195.7 | 2.6 | 2.6 | 48.22 | 34.4 | 32.9 | 24.5 | 19.3 | 5.16 | 4.745 | |
| 1,300.0 | 1,297.5 | 1,297.4 | 1,293.1 | 2.9 | 3.0 | 44.84 | 51.4 | 40.9 | 27.8 | 22.1 | 5.66 | 4.901 | |
| 1,400.0 | 1,395.6 | 1,396.6 | 1,389.7 | 3.2 | 3.3 | 42.55 | 71.5 | 50.3 | 31.3 | 25.0 | 6.20 | 5.038 | |
| 1,500.0 | 1,493.1 | 1,495.9 | 1,485.7 | 3.5 | 3.8 | 41.14 | 94.6 | 61.2 | 34.8 | 28.0 | 6.79 | 5.133 | |
| 1,507.2 | 1,500.0 | 1,503.0 | 1,492.6 | 3.6 | 3.8 | 41.13 | 96.3 | 62.0 | 35.0 | 28.2 | 6.83 | 5.131 | |
| 1,572.2 | 1,563.0 | 1,568.0 | 1,555.2 | 3.8 | 4.1 | 41.10 | 111.9 | 69.3 | 36.9 | 29.7 | 7.24 | 5.094 | |
| 1,600.0 | 1,590.0 | 1,595.8 | 1,582.0 | 3.9 | 4.2 | 41.22 | 118.6 | 72.5 | 37.6 | 30.2 | 7.42 | 5.068 | |
| 1,700.0 | 1,686.3 | 1,695.8 | 1,678.4 | 4.4 | 4.7 | 43.83 | 142.7 | 83.8 | 38.5 | 30.3 | 8.17 | 4.709 | |
| 1,800.0 | 1,781.5 | 1,795.7 | 1,774.7 | 4.9 | 5.2 | 50.25 | 166.7 | 95.1 | 37.1 | 27.9 | 9.15 | 4.053 | |
| 1,817.6 | 1,798.2 | 1,813.3 | 1,791.7 | 5.0 | 5.3 | 51.87 | 171.0 | 97.1 | 36.6 | 27.3 | 9.35 | 3.918 | |
| 1,900.0 | 1,876.1 | 1,895.5 | 1,870.9 | 5.5 | 5.7 | 60.22 | 190.8 | 106.4 | 35.0 | 24.5 | 10.43 | 3.354 | |
| 2,000.0 | 1,970.6 | 1,995.2 | 1,967.1 | 6.0 | 6.2 | 71.15 | 214.8 | 117.7 | 34.0 | 22.2 | 11.83 | 2.876 | |
| 2,023.1 | 1,992.4 | 2,018.3 | 1,989.3 | 6.2 | 6.3 | 73.73 | 220.3 | 120.3 | 34.0 | 21.8 | 12.16 | 2.796 | |
| 2,100.0 | 2,065.1 | 2,095.0 | 2,063.3 | 6.6 | 6.7 | 82.27 | 238.8 | 129.0 | 34.4 | 21.2 | 13.21 | 2.602 | |
| 2,200.0 | 2,159.6 | 2,194.8 | 2,159.5 | 7.2 | 7.2 | 92.79 | 262.8 | 140.3 | 36.0 | 21.5 | 14.44 | 2.492 | |
| 2,300.0 | 2,254.1 | 2,294.6 | 2,255.6 | 7.8 | 7.7 | 102.13 | 286.8 | 151.5 | 38.7 | 23.2 | 15.45 | 2.502 | |
| 2,400.0 | 2,348.7 | 2,394.4 | 2,351.8 | 8.4 | 8.3 | 110.09 | 310.8 | 162.8 | 42.3 | 26.0 | 16.29 | 2.594 | |
| 2,500.0 | 2,443.2 | 2,494.1 | 2,448.0 | 9.1 | 8.8 | 116.70 | 334.9 | 174.1 | 46.5 | 29.5 | 17.00 | 2.736 | |
| 2,600.0 | 2,537.7 | 2,593.9 | 2,544.2 | 9.7 | 9.3 | 122.14 | 358.9 | 185.4 | 51.3 | 33.7 | 17.63 | 2.909 | |
| 2,700.0 | 2,632.2 | 2,693.7 | 2,640.4 | 10.3 | 9.9 | 126.62 | 382.9 | 196.7 | 56.4 | 38.2 | 18.22 | 3.097 | |
| 2,800.0 | 2,726.8 | 2,793.5 | 2,736.6 | 10.9 | 10.4 | 130.34 | 406.9 | 208.0 | 61.9 | 43.1 | 18.80 | 3.291 | |
| 2,900.0 | 2,821.3 | 2,893.3 | 2,832.7 | 11.6 | 10.9 | 133.45 | 430.9 | 219.3 | 67.5 | 48.2 | 19.37 | 3.486 | |
| 3,000.0 | 2,915.8 | 2,993.0 | 2,928.9 | 12.2 | 11.5 | 136.07 | 455.0 | 230.6 | 73.4 | 53.4 | 19.95 | 3.678 | |
| 3,100.0 | 3,010.3 | 3,092.8 | 3,025.1 | 12.8 | 12.0 | 138.30 | 479.0 | 241.9 | 79.3 | 58.8 | 20.53 | 3.864 | |
| 3,200.0 | 3,104.8 | 3,192.6 | 3,121.3 | 13.5 | 12.5 | 140.22 | 503.0 | 253.2 | 85.4 | 64.3 | 21.12 | 4.043 | |
| 3,300.0 | 3,199.4 | 3,292.4 | 3,217.5 | 14.1 | 13.1 | 141.88 | 527.0 | 264.5 | 91.5 | 69.8 | 21.71 | 4.215 | |
| 3,400.0 | 3,293.9 | 3,392.1 | 3,313.7 | 14.8 | 13.6 | 143.33 | 551.0 | 275.7 | 97.7 | 75.4 | 22.32 | 4.379 | |
| 3,500.0 | 3,388.4 | 3,491.9 | 3,409.9 | 15.4 | 14.1 | 144.61 | 575.0 | 287.0 | 104.0 | 81.1 | 22.93 | 4.536 | |
| 3,600.0 | 3,482.9 | 3,591.7 | 3,506.0 | 16.0 | 14.7 | 145.74 | 599.1 | 298.3 | 110.3 | 86.8 | 23.55 | 4.685 | |
| 3,700.0 | 3,577.5 | 3,691.5 | 3,602.2 | 16.7 | 15.2 | 146.75 | 623.1 | 309.6 | 116.7 | 92.5 | 24.17 | 4.826 | |
| 3,800.0 | 3,672.0 | 3,791.3 | 3,698.4 | 17.3 | 15.7 | 147.66 | 647.1 | 320.9 | 123.0 | 98.2 | 24.80 | 4.961 | |
| 3,900.0 | 3,766.5 | 3,891.0 | 3,794.6 | 18.0 | 16.3 | 148.47 | 671.1 | 332.2 | 129.4 | 104.0 | 25.43 | 5.089 | |
| 4,000.0 | 3,861.0 | 3,990.8 | 3,890.8 | 18.6 | 16.8 | 149.21 | 695.1 | 343.5 | 135.9 | 109.8 | 26.07 | 5.211 | |
| 4,100.0 | 3,955.5 | 4,090.6 | 3,987.0 | 19.3 | 17.4 | 149.88 | 719.1 | 354.8 | 142.3 | 115.6 | 26.72 | 5.327 | |
| 4,200.0 | 4,050.1 | 4,190.4 | 4,083.1 | 19.9 | 17.9 | 150.50 | 743.2 | 366.1 | 148.8 | 121.4 | 27.36 | 5.438 | |
| 4,300.0 | 4,144.6 | 4,290.1 | 4,179.3 | 20.5 | 18.4 | 151.06 | 767.2 | 377.4 | 155.3 | 127.3 | 28.01 | 5.543 | |
| 4,400.0 | 4,239.1 | 4,389.9 | 4,275.5 | 21.2 | 19.0 | 151.58 | 791.2 | 388.7 | 161.8 | 133.1 | 28.67 | 5.644 | |
| 4,500.0 | 4,333.6 | 4,489.7 | 4,371.7 | 21.8 | 19.5 | 152.05 | 815.2 | 400.0 | 168.3 | 139.0 | 29.32 | 5.740 | |
| 4,600.0 | 4,428.2 | 4,589.5 | 4,467.9 | 22.5 | 20.1 | 152.49 | 839.2 | 411.2 | 174.8 | 144.8 | 29.98 | 5.831 | |
| 4,700.0 | 4,522.7 | 4,689.3 | 4,564.1 | 23.1 | 20.6 | 152.90 | 863.2 | 422.5 | 181.3 | 150.7 | 30.64 | 5.919 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4W-234 - ORIGINAL WELLBORE - PROP — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,789.0 | 4,660.2 | 23.8 | 21.1 | 153.29 | 887.3 | 433.8 | 187.9 | 156.6 | 31.30 | 6.002 | |
| 4,900.0 | 4,711.7 | 4,888.8 | 4,756.4 | 24.4 | 21.7 | 153.64 | 911.3 | 445.1 | 194.4 | 162.5 | 31.97 | 6.082 | |
| 5,000.0 | 4,806.2 | 4,988.6 | 4,852.6 | 25.1 | 22.2 | 153.97 | 935.3 | 456.4 | 201.0 | 168.4 | 32.63 | 6.159 | |
| 5,100.0 | 4,900.8 | 5,088.4 | 4,948.8 | 25.7 | 22.8 | 154.28 | 959.3 | 467.7 | 207.6 | 174.3 | 33.30 | 6.233 | |
| 5,200.0 | 4,995.3 | 5,188.2 | 5,045.0 | 26.4 | 23.3 | 154.58 | 983.3 | 479.0 | 214.1 | 180.1 | 33.97 | 6.303 | |
| 5,300.0 | 5,089.8 | 5,287.9 | 5,141.2 | 27.0 | 23.9 | 154.85 | 1,007.3 | 490.3 | 220.7 | 186.1 | 34.64 | 6.371 | |
| 5,400.0 | 5,184.3 | 5,387.7 | 5,237.4 | 27.7 | 24.4 | 155.11 | 1,031.4 | 501.6 | 227.3 | 192.0 | 35.31 | 6.436 | |
| 5,500.0 | 5,278.9 | 5,487.5 | 5,333.5 | 28.3 | 24.9 | 155.36 | 1,055.4 | 512.9 | 233.9 | 197.9 | 35.98 | 6.499 | |
| 5,533.5 | 5,310.5 | 5,519.5 | 5,364.4 | 28.5 | 25.1 | 155.44 | 1,063.0 | 516.4 | 236.1 | 199.9 | 36.19 | 6.524 | |
| 5,600.0 | 5,373.6 | 5,581.2 | 5,424.2 | 28.9 | 25.4 | 155.67 | 1,076.9 | 523.0 | 240.8 | 204.3 | 36.57 | 6.586 | |
| 5,700.0 | 5,469.4 | 5,674.0 | 5,514.6 | 29.3 | 25.7 | 156.03 | 1,095.6 | 531.8 | 247.7 | 210.7 | 37.02 | 6.691 | |
| 5,800.0 | 5,566.1 | 5,766.6 | 5,605.5 | 29.8 | 26.0 | 156.38 | 1,111.6 | 539.3 | 254.2 | 216.8 | 37.40 | 6.798 | |
| 5,900.0 | 5,663.6 | 5,859.0 | 5,696.8 | 30.1 | 26.3 | 156.73 | 1,124.9 | 545.5 | 260.4 | 222.7 | 37.71 | 6.906 | |
| 6,000.0 | 5,761.9 | 5,951.3 | 5,788.3 | 30.5 | 26.5 | 157.09 | 1,135.5 | 550.5 | 266.3 | 228.3 | 37.95 | 7.017 | |
| 6,100.0 | 5,860.7 | 6,043.4 | 5,880.0 | 30.7 | 26.7 | 157.44 | 1,143.4 | 554.3 | 271.8 | 233.7 | 38.12 | 7.129 | |
| 6,200.0 | 5,960.0 | 6,135.3 | 5,971.7 | 31.0 | 26.9 | 157.80 | 1,148.7 | 556.7 | 277.0 | 238.8 | 38.23 | 7.245 | |
| 6,300.0 | 6,059.7 | 6,227.2 | 6,063.5 | 31.2 | 27.0 | 158.16 | 1,151.3 | 557.9 | 281.8 | 243.6 | 38.27 | 7.365 | |
| 6,400.0 | 6,159.6 | 6,323.3 | 6,159.6 | 31.3 | 27.1 | 158.57 | 1,151.6 | 557.7 | 285.9 | 247.7 | 38.23 | 7.479 | |
| 6,486.1 | 6,245.7 | 6,408.7 | 6,244.6 | 31.4 | 27.2 | -178.60 | 1,151.6 | 549.9 | 287.2 | 231.5 | 55.74 | 5.153 | |
| 6,500.0 | 6,259.6 | 6,422.2 | 6,258.0 | 31.4 | 27.2 | -178.17 | 1,151.6 | 547.7 | 287.3 | 231.4 | 55.87 | 5.142 | |
| 6,516.1 | 6,275.7 | 6,437.9 | 6,273.4 | 31.4 | 27.2 | -177.61 | 1,151.6 | 544.9 | 287.4 | 231.4 | 56.04 | 5.129 | |
| 6,550.0 | 6,309.5 | 6,470.4 | 6,305.2 | 31.5 | 27.1 | -86.35 | 1,151.6 | 538.0 | 287.7 | 250.9 | 36.89 | 7.801 | |
| 6,600.0 | 6,359.4 | 6,517.6 | 6,350.6 | 31.5 | 27.1 | -84.52 | 1,151.6 | 525.3 | 288.5 | 252.2 | 36.27 | 7.955 | |
| 6,650.0 | 6,408.8 | 6,563.4 | 6,393.3 | 31.5 | 27.1 | -82.53 | 1,151.6 | 509.0 | 289.7 | 254.1 | 35.61 | 8.137 | |
| 6,700.0 | 6,457.5 | 6,607.8 | 6,433.2 | 31.5 | 27.0 | -80.36 | 1,151.6 | 489.4 | 291.5 | 256.6 | 34.93 | 8.346 | |
| 6,716.1 | 6,473.1 | 6,621.9 | 6,445.5 | 31.5 | 27.0 | -79.62 | 1,151.6 | 482.4 | 292.2 | 257.5 | 34.71 | 8.419 | |
| 6,725.0 | 6,481.6 | 6,629.6 | 6,452.1 | 31.5 | 27.0 | -79.20 | 1,151.6 | 478.4 | 292.7 | 258.1 | 34.58 | 8.462 | |
| 6,750.0 | 6,505.3 | 6,650.0 | 6,469.2 | 31.5 | 27.0 | -78.09 | 1,151.6 | 467.4 | 293.9 | 259.6 | 34.25 | 8.580 | |
| 6,775.0 | 6,528.5 | 6,672.5 | 6,487.6 | 31.4 | 26.9 | -76.91 | 1,151.6 | 454.4 | 295.2 | 261.3 | 33.92 | 8.704 | |
| 6,800.0 | 6,551.3 | 6,693.6 | 6,504.2 | 31.4 | 26.9 | -75.83 | 1,151.6 | 441.4 | 296.6 | 263.0 | 33.62 | 8.824 | |
| 6,825.0 | 6,573.4 | 6,714.6 | 6,520.2 | 31.4 | 26.8 | -74.79 | 1,151.6 | 427.8 | 298.1 | 264.7 | 33.33 | 8.943 | |
| 6,850.0 | 6,595.0 | 6,735.4 | 6,535.4 | 31.3 | 26.8 | -73.79 | 1,151.6 | 413.6 | 299.6 | 266.5 | 33.06 | 9.062 | |
| 6,875.0 | 6,615.8 | 6,756.1 | 6,549.9 | 31.3 | 26.8 | -72.84 | 1,151.6 | 398.9 | 301.1 | 268.3 | 32.80 | 9.180 | |
| 6,900.0 | 6,635.9 | 6,775.0 | 6,562.6 | 31.3 | 26.7 | -71.99 | 1,151.6 | 384.9 | 302.6 | 270.0 | 32.56 | 9.294 | |
| 6,925.0 | 6,655.1 | 6,797.0 | 6,576.7 | 31.2 | 26.7 | -71.07 | 1,151.6 | 368.0 | 304.1 | 271.8 | 32.31 | 9.412 | |
| 6,950.0 | 6,673.6 | 6,817.2 | 6,588.9 | 31.2 | 26.6 | -70.26 | 1,151.6 | 351.8 | 305.6 | 273.5 | 32.09 | 9.524 | |
| 6,975.0 | 6,691.1 | 6,837.4 | 6,600.4 | 31.1 | 26.6 | -69.50 | 1,151.6 | 335.3 | 307.1 | 275.2 | 31.88 | 9.633 | |
| 7,000.0 | 6,707.6 | 6,857.4 | 6,611.1 | 31.1 | 26.5 | -68.79 | 1,151.6 | 318.4 | 308.5 | 276.8 | 31.68 | 9.737 | |
| 7,025.0 | 6,723.1 | 6,875.0 | 6,619.9 | 31.0 | 26.5 | -68.19 | 1,151.6 | 303.2 | 309.9 | 278.3 | 31.51 | 9.833 | |
| 7,050.0 | 6,737.6 | 6,897.2 | 6,630.3 | 31.0 | 26.4 | -67.52 | 1,151.6 | 283.5 | 311.1 | 279.8 | 31.36 | 9.921 | |
| 7,075.0 | 6,751.0 | 6,917.0 | 6,638.7 | 30.9 | 26.4 | -66.96 | 1,151.6 | 265.6 | 312.4 | 281.1 | 31.25 | 9.996 | |
| 7,100.0 | 6,763.3 | 6,936.7 | 6,646.3 | 30.8 | 26.3 | -66.45 | 1,151.6 | 247.5 | 313.5 | 282.3 | 31.17 | 10.057 | |
| 7,125.0 | 6,774.5 | 6,956.3 | 6,653.2 | 30.8 | 26.3 | -66.00 | 1,151.6 | 229.1 | 314.6 | 283.4 | 31.14 | 10.102 | |
| 7,150.0 | 6,784.4 | 6,975.0 | 6,659.0 | 30.7 | 26.2 | -65.60 | 1,151.6 | 211.3 | 315.5 | 284.4 | 31.15 | 10.128 | |
| 7,175.0 | 6,793.1 | 6,995.4 | 6,664.6 | 30.7 | 26.2 | -65.23 | 1,151.6 | 191.7 | 316.4 | 285.1 | 31.23 | 10.131 | |
| 7,200.0 | 6,800.6 | 7,014.9 | 6,669.1 | 30.6 | 26.1 | -64.93 | 1,151.6 | 172.7 | 317.1 | 285.8 | 31.36 | 10.111 | |
| 7,225.0 | 6,806.8 | 7,034.3 | 6,672.8 | 30.6 | 26.1 | -64.68 | 1,151.6 | 153.6 | 317.7 | 286.2 | 31.56 | 10.067 | |
| 7,250.0 | 6,811.8 | 7,053.8 | 6,675.8 | 30.5 | 26.0 | -64.47 | 1,151.6 | 134.4 | 318.2 | 286.4 | 31.82 | 10.000 | |
| 7,275.0 | 6,815.5 | 7,075.0 | 6,678.1 | 30.5 | 26.0 | -64.31 | 1,151.6 | 113.3 | 318.6 | 286.5 | 32.16 | 9.907 | |
| 7,300.0 | 6,817.8 | 7,092.5 | 6,679.3 | 30.4 | 26.0 | -64.22 | 1,151.6 | 95.9 | 318.9 | 286.3 | 32.55 | 9.796 | |
| 7,325.0 | 6,818.9 | 7,111.9 | 6,679.9 | 30.4 | 25.9 | -64.17 | 1,151.6 | 76.5 | 319.0 | 286.0 | 33.01 | 9.663 | |
| 7,332.8 | 6,819.0 | 7,118.2 | 6,680.0 | 30.4 | 25.9 | -64.17 | 1,151.6 | 70.2 | 319.0 | 285.8 | 33.17 | 9.617 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4W-234 - ORIGINAL WELLBORE - PROP — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 7,185.4 | 6,680.0 | 30.3 | 25.8 | -64.17 | 1,151.6 | 3.0 | 319.0 | 284.6 | 34.40 | 9.274 | |
| 7,500.0 | 6,819.0 | 7,285.4 | 6,680.0 | 30.2 | 25.7 | -64.17 | 1,151.6 | -97.0 | 319.0 | 282.3 | 36.72 | 8.687 | |
| 7,600.0 | 6,819.0 | 7,385.4 | 6,680.0 | 30.3 | 25.9 | -64.17 | 1,151.6 | -197.0 | 319.0 | 279.4 | 39.57 | 8.062 | |
| 7,700.0 | 6,819.0 | 7,485.4 | 6,680.0 | 30.6 | 26.7 | -64.17 | 1,151.6 | -297.0 | 319.0 | 276.2 | 42.83 | 7.448 | |
| 7,800.0 | 6,819.0 | 7,585.4 | 6,680.0 | 31.3 | 28.3 | -64.17 | 1,151.6 | -397.0 | 319.0 | 272.6 | 46.43 | 6.871 | |
| 7,900.0 | 6,819.0 | 7,685.4 | 6,680.0 | 32.5 | 30.2 | -64.17 | 1,151.6 | -497.0 | 319.0 | 268.7 | 50.29 | 6.344 | |
| 8,000.0 | 6,819.0 | 7,785.4 | 6,680.0 | 34.2 | 32.4 | -64.17 | 1,151.6 | -597.0 | 319.0 | 264.7 | 54.35 | 5.870 | |
| 8,100.0 | 6,819.0 | 7,885.4 | 6,680.0 | 36.1 | 34.7 | -64.17 | 1,151.6 | -697.0 | 319.0 | 260.4 | 58.57 | 5.447 | |
| 8,200.0 | 6,819.0 | 7,985.4 | 6,680.0 | 38.3 | 37.0 | -64.17 | 1,151.6 | -797.0 | 319.0 | 256.1 | 62.92 | 5.070 | |
| 8,300.0 | 6,819.0 | 8,085.4 | 6,680.0 | 40.6 | 39.4 | -64.17 | 1,151.6 | -897.0 | 319.0 | 251.6 | 67.38 | 4.735 | |
| 8,400.0 | 6,819.0 | 8,185.4 | 6,680.0 | 42.9 | 41.9 | -64.17 | 1,151.6 | -997.0 | 319.0 | 247.1 | 71.92 | 4.436 | |
| 8,500.0 | 6,819.0 | 8,285.4 | 6,680.0 | 45.3 | 44.4 | -64.17 | 1,151.6 | -1,097.0 | 319.0 | 242.5 | 76.53 | 4.168 | |
| 8,600.0 | 6,819.0 | 8,385.4 | 6,680.0 | 47.8 | 47.0 | -64.17 | 1,151.6 | -1,197.0 | 319.0 | 237.8 | 81.20 | 3.929 | |
| 8,700.0 | 6,819.0 | 8,485.4 | 6,680.0 | 50.3 | 49.5 | -64.17 | 1,151.6 | -1,297.0 | 319.0 | 233.1 | 85.92 | 3.713 | |
| 8,800.0 | 6,819.0 | 8,585.4 | 6,680.0 | 52.8 | 52.1 | -64.17 | 1,151.6 | -1,397.0 | 319.0 | 228.3 | 90.68 | 3.518 | |
| 8,900.0 | 6,819.0 | 8,685.4 | 6,680.0 | 55.4 | 54.7 | -64.17 | 1,151.6 | -1,497.0 | 319.0 | 223.5 | 95.48 | 3.341 | |
| 9,000.0 | 6,819.0 | 8,785.4 | 6,680.0 | 58.0 | 57.4 | -64.17 | 1,151.6 | -1,597.0 | 319.0 | 218.7 | 100.30 | 3.181 | |
| 9,100.0 | 6,819.0 | 8,885.4 | 6,680.0 | 60.6 | 60.0 | -64.17 | 1,151.6 | -1,697.0 | 319.0 | 213.9 | 105.15 | 3.034 | |
| 9,200.0 | 6,819.0 | 8,985.4 | 6,680.0 | 63.2 | 62.7 | -64.17 | 1,151.6 | -1,797.0 | 319.0 | 209.0 | 110.02 | 2.900 | |
| 9,300.0 | 6,819.0 | 9,085.4 | 6,680.0 | 65.9 | 65.3 | -64.17 | 1,151.6 | -1,897.0 | 319.0 | 204.1 | 114.91 | 2.776 | |
| 9,400.0 | 6,819.0 | 9,185.4 | 6,680.0 | 68.5 | 68.0 | -64.17 | 1,151.6 | -1,997.0 | 319.0 | 199.2 | 119.82 | 2.662 | |
| 9,500.0 | 6,819.0 | 9,285.4 | 6,680.0 | 71.2 | 70.7 | -64.17 | 1,151.6 | -2,097.0 | 319.0 | 194.3 | 124.75 | 2.557 | |
| 9,600.0 | 6,819.0 | 9,385.4 | 6,680.0 | 73.9 | 73.4 | -64.17 | 1,151.6 | -2,197.0 | 319.0 | 189.3 | 129.68 | 2.460 | |
| 9,700.0 | 6,819.0 | 9,485.4 | 6,680.0 | 76.5 | 76.1 | -64.17 | 1,151.6 | -2,297.0 | 319.0 | 184.4 | 134.63 | 2.369 | |
| 9,800.0 | 6,819.0 | 9,585.4 | 6,680.0 | 79.2 | 78.8 | -64.17 | 1,151.6 | -2,397.0 | 319.0 | 179.4 | 139.59 | 2.285 | |
| 9,900.0 | 6,819.0 | 9,685.4 | 6,680.0 | 81.9 | 81.5 | -64.17 | 1,151.6 | -2,497.0 | 319.0 | 174.5 | 144.56 | 2.207 | |
| 10,000.0 | 6,819.0 | 9,785.4 | 6,680.0 | 84.6 | 84.3 | -64.17 | 1,151.6 | -2,597.0 | 319.0 | 169.5 | 149.54 | 2.133 | |
| 10,100.0 | 6,819.0 | 9,885.4 | 6,680.0 | 87.4 | 87.0 | -64.17 | 1,151.6 | -2,697.0 | 319.0 | 164.5 | 154.53 | 2.064 | |
| 10,200.0 | 6,819.0 | 9,985.4 | 6,680.0 | 90.1 | 89.7 | -64.17 | 1,151.6 | -2,797.0 | 319.0 | 159.5 | 159.52 | 2.000 | |
| 10,300.0 | 6,819.0 | 10,085.4 | 6,680.0 | 92.8 | 92.5 | -64.17 | 1,151.6 | -2,897.0 | 319.0 | 154.5 | 164.52 | 1.939 | |
| 10,400.0 | 6,819.0 | 10,185.4 | 6,680.0 | 95.5 | 95.2 | -64.17 | 1,151.6 | -2,997.0 | 319.0 | 149.5 | 169.52 | 1.882 | |
| 10,500.0 | 6,819.0 | 10,285.4 | 6,680.0 | 98.3 | 98.0 | -64.17 | 1,151.6 | -3,097.0 | 319.0 | 144.5 | 174.53 | 1.828 | |
| 10,600.0 | 6,819.0 | 10,385.4 | 6,680.0 | 101.0 | 100.7 | -64.17 | 1,151.6 | -3,197.0 | 319.0 | 139.5 | 179.55 | 1.777 | |
| 10,700.0 | 6,819.0 | 10,485.4 | 6,680.0 | 103.8 | 103.5 | -64.17 | 1,151.6 | -3,297.0 | 319.0 | 134.4 | 184.57 | 1.728 | |
| 10,800.0 | 6,819.0 | 10,585.4 | 6,680.0 | 106.5 | 106.2 | -64.17 | 1,151.6 | -3,397.0 | 319.0 | 129.4 | 189.59 | 1.683 | |
| 10,900.0 | 6,819.0 | 10,685.4 | 6,680.0 | 109.2 | 109.0 | -64.17 | 1,151.6 | -3,497.0 | 319.0 | 124.4 | 194.62 | 1.639 | |
| 11,000.0 | 6,819.0 | 10,785.4 | 6,680.0 | 112.0 | 111.8 | -64.17 | 1,151.6 | -3,597.0 | 319.0 | 119.4 | 199.65 | 1.598 | |
| 11,100.0 | 6,819.0 | 10,885.4 | 6,680.0 | 114.8 | 114.5 | -64.17 | 1,151.6 | -3,697.0 | 319.0 | 114.3 | 204.68 | 1.559 | |
| 11,200.0 | 6,819.0 | 10,985.4 | 6,680.0 | 117.5 | 117.3 | -64.17 | 1,151.6 | -3,797.0 | 319.0 | 109.3 | 209.72 | 1.521 | |
| 11,300.0 | 6,819.0 | 11,085.4 | 6,680.0 | 120.3 | 120.1 | -64.17 | 1,151.6 | -3,897.0 | 319.0 | 104.3 | 214.76 | 1.485 | Level 3 |
| 11,400.0 | 6,819.0 | 11,185.4 | 6,680.0 | 123.0 | 122.8 | -64.17 | 1,151.6 | -3,997.0 | 319.0 | 99.2 | 219.80 | 1.451 | Level 3 |
| 11,500.0 | 6,819.0 | 11,285.4 | 6,680.0 | 125.8 | 125.6 | -64.17 | 1,151.6 | -4,097.0 | 319.0 | 94.2 | 224.85 | 1.419 | Level 3 |
| 11,600.0 | 6,819.0 | 11,385.4 | 6,680.0 | 128.6 | 128.4 | -64.17 | 1,151.6 | -4,197.0 | 319.0 | 89.1 | 229.89 | 1.388 | Level 3 |
| 11,700.0 | 6,819.0 | 11,485.4 | 6,680.0 | 131.3 | 131.1 | -64.17 | 1,151.6 | -4,297.0 | 319.0 | 84.1 | 234.94 | 1.358 | Level 3 |
| 11,800.0 | 6,819.0 | 11,585.4 | 6,680.0 | 134.1 | 133.9 | -64.17 | 1,151.6 | -4,397.0 | 319.0 | 79.0 | 239.99 | 1.329 | Level 3 |
| 11,900.0 | 6,819.0 | 11,685.4 | 6,680.0 | 136.9 | 136.7 | -64.17 | 1,151.6 | -4,497.0 | 319.0 | 74.0 | 245.05 | 1.302 | Level 3 |
| 12,000.0 | 6,819.0 | 11,785.4 | 6,680.0 | 139.6 | 139.5 | -64.17 | 1,151.6 | -4,597.0 | 319.0 | 68.9 | 250.10 | 1.276 | Level 3 |
| 12,100.0 | 6,819.0 | 11,885.4 | 6,680.0 | 142.4 | 142.3 | -64.17 | 1,151.6 | -4,697.0 | 319.0 | 63.9 | 255.16 | 1.250 | Level 3 |
| 12,200.0 | 6,819.0 | 11,985.4 | 6,680.0 | 145.2 | 145.0 | -64.17 | 1,151.6 | -4,797.0 | 319.0 | 58.8 | 260.22 | 1.226 | Level 2 |
| 12,300.0 | 6,819.0 | 12,085.4 | 6,680.0 | 148.0 | 147.8 | -64.17 | 1,151.6 | -4,897.0 | 319.0 | 53.7 | 265.28 | 1.203 | Level 2 |
| 12,400.0 | 6,819.0 | 12,185.4 | 6,680.0 | 150.8 | 150.6 | -64.17 | 1,151.6 | -4,997.0 | 319.0 | 48.7 | 270.34 | 1.180 | Level 2 |
| 12,500.0 | 6,819.0 | 12,285.4 | 6,680.0 | 153.5 | 153.4 | -64.17 | 1,151.6 | -5,097.0 | 319.0 | 43.6 | 275.40 | 1.158 | Level 2 |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4W-234 - ORIGINAL WELLBORE - PROP — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 12,385.4 | 6,680.0 | 156.3 | 156.2 | -64.17 | 1,151.6 | -5,197.0 | 319.0 | 38.6 | 280.46 | 1.137 | Level 2 |
| 12,700.0 | 6,819.0 | 12,485.4 | 6,680.0 | 159.1 | 159.0 | -64.17 | 1,151.6 | -5,297.0 | 319.0 | 33.5 | 285.53 | 1.117 | Level 2 |
| 12,800.0 | 6,819.0 | 12,585.4 | 6,680.0 | 161.9 | 161.8 | -64.17 | 1,151.6 | -5,397.0 | 319.0 | 28.4 | 290.59 | 1.098 | Level 2 |
| 12,900.0 | 6,819.0 | 12,685.4 | 6,680.0 | 164.7 | 164.5 | -64.17 | 1,151.6 | -5,497.0 | 319.0 | 23.4 | 295.66 | 1.079 | Level 2 |
| 13,000.0 | 6,819.0 | 12,785.4 | 6,680.0 | 167.4 | 167.3 | -64.17 | 1,151.6 | -5,597.0 | 319.0 | 18.3 | 300.73 | 1.061 | Level 2 |
| 13,100.0 | 6,819.0 | 12,885.4 | 6,680.0 | 170.2 | 170.1 | -64.17 | 1,151.6 | -5,697.0 | 319.0 | 13.2 | 305.80 | 1.043 | Level 2 |
| 13,200.0 | 6,819.0 | 12,985.4 | 6,680.0 | 173.0 | 172.9 | -64.17 | 1,151.6 | -5,797.0 | 319.0 | 8.1 | 310.87 | 1.026 | Level 2 |
| 13,300.0 | 6,819.0 | 13,085.4 | 6,680.0 | 175.8 | 175.7 | -64.17 | 1,151.6 | -5,897.0 | 319.0 | 3.1 | 315.94 | 1.010 | Level 2 |
| 13,400.0 | 6,819.0 | 13,185.4 | 6,680.0 | 178.6 | 178.5 | -64.17 | 1,151.6 | -5,997.0 | 319.0 | -2.0 | 321.01 | 0.994 | Level 1 |
| 13,500.0 | 6,819.0 | 13,285.4 | 6,680.0 | 181.4 | 181.3 | -64.17 | 1,151.6 | -6,097.0 | 319.0 | -7.1 | 326.08 | 0.978 | Level 1 |
| 13,600.0 | 6,819.0 | 13,385.4 | 6,680.0 | 184.2 | 184.1 | -64.17 | 1,151.6 | -6,197.0 | 319.0 | -12.1 | 331.15 | 0.963 | Level 1 |
| 13,700.0 | 6,819.0 | 13,485.4 | 6,680.0 | 187.0 | 186.9 | -64.17 | 1,151.6 | -6,297.0 | 319.0 | -17.2 | 336.23 | 0.949 | Level 1 |
| 13,800.0 | 6,819.0 | 13,585.4 | 6,680.0 | 189.7 | 189.7 | -64.17 | 1,151.6 | -6,397.0 | 319.0 | -22.3 | 341.30 | 0.935 | Level 1 |
| 13,900.0 | 6,819.0 | 13,685.4 | 6,680.0 | 192.5 | 192.5 | -64.17 | 1,151.6 | -6,497.0 | 319.0 | -27.4 | 346.38 | 0.921 | Level 1 |
| 14,000.0 | 6,819.0 | 13,785.4 | 6,680.0 | 195.3 | 195.3 | -64.17 | 1,151.6 | -6,597.0 | 319.0 | -32.4 | 351.45 | 0.908 | Level 1 |
| 14,100.0 | 6,819.0 | 13,885.4 | 6,680.0 | 198.1 | 198.1 | -64.17 | 1,151.6 | -6,697.0 | 319.0 | -37.5 | 356.53 | 0.895 | Level 1 |
| 14,200.0 | 6,819.0 | 13,985.4 | 6,680.0 | 200.9 | 200.9 | -64.17 | 1,151.6 | -6,797.0 | 319.0 | -42.6 | 361.61 | 0.882 | Level 1 |
| 14,300.0 | 6,819.0 | 14,085.4 | 6,680.0 | 203.7 | 203.6 | -64.17 | 1,151.6 | -6,897.0 | 319.0 | -47.7 | 366.68 | 0.870 | Level 1 |
| 14,400.0 | 6,819.0 | 14,185.4 | 6,680.0 | 206.5 | 206.4 | -64.17 | 1,151.6 | -6,997.0 | 319.0 | -52.7 | 371.76 | 0.858 | Level 1 |
| 14,500.0 | 6,819.0 | 14,285.4 | 6,680.0 | 209.3 | 209.2 | -64.17 | 1,151.6 | -7,097.0 | 319.0 | -57.8 | 376.84 | 0.847 | Level 1 |
| 14,600.0 | 6,819.0 | 14,385.4 | 6,680.0 | 212.1 | 212.0 | -64.17 | 1,151.6 | -7,197.0 | 319.0 | -62.9 | 381.92 | 0.835 | Level 1 |
| 14,700.0 | 6,819.0 | 14,485.5 | 6,680.0 | 214.9 | 214.8 | -64.17 | 1,151.6 | -7,297.1 | 319.0 | -68.0 | 387.01 | 0.824 | Level 1 |
| 14,720.3 | 6,819.0 | 14,505.8 | 6,680.0 | 215.4 | 215.4 | -64.16 | 1,151.6 | -7,317.5 | 319.0 | -69.1 | 388.02 | 0.822 | Level 1, ES, SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4W-334 - ORIGINAL WELLBORE - PROP — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 108.28 | -9.5 | 28.7 | 30.2 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 108.28 | -9.5 | 28.7 | 30.2 | 30.0 | 0.17 | 174.503 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 108.28 | -9.5 | 28.7 | 30.2 | 29.6 | 0.62 | 48.508 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 108.28 | -9.5 | 28.7 | 30.2 | 29.1 | 1.07 | 28.169 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 108.28 | -9.5 | 28.7 | 30.2 | 28.7 | 1.52 | 19.847 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | 108.28 | -9.5 | 28.7 | 30.2 | 28.2 | 1.97 | 15.321 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | 108.28 | -9.5 | 28.7 | 30.2 | 27.8 | 2.42 | 12.476 | CC |
| 700.0 | 700.0 | 699.8 | 699.7 | 1.4 | 1.4 | 105.09 | -8.0 | 29.5 | 30.6 | 27.7 | 2.87 | 10.670 | ES |
| 800.0 | 800.0 | 799.3 | 799.1 | 1.7 | 1.7 | 96.15 | -3.5 | 32.1 | 32.3 | 29.0 | 3.32 | 9.745 | |
| 900.0 | 900.0 | 898.4 | 897.9 | 1.9 | 1.9 | 64.93 | 4.0 | 36.4 | 35.9 | 32.1 | 3.77 | 9.529 | |
| 1,000.0 | 999.8 | 997.4 | 996.1 | 2.1 | 2.1 | 57.36 | 14.4 | 42.3 | 40.8 | 36.5 | 4.23 | 9.642 | |
| 1,100.0 | 1,099.5 | 1,096.1 | 1,093.6 | 2.3 | 2.4 | 51.93 | 27.7 | 49.9 | 46.5 | 41.8 | 4.70 | 9.896 | |
| 1,200.0 | 1,198.7 | 1,194.6 | 1,190.3 | 2.6 | 2.8 | 48.14 | 43.9 | 59.2 | 53.0 | 47.8 | 5.20 | 10.184 | |
| 1,300.0 | 1,297.5 | 1,294.2 | 1,287.7 | 2.9 | 3.1 | 46.33 | 62.1 | 69.6 | 58.8 | 53.1 | 5.73 | 10.268 | |
| 1,400.0 | 1,395.6 | 1,394.1 | 1,385.4 | 3.2 | 3.5 | 47.11 | 80.3 | 80.0 | 62.3 | 56.0 | 6.30 | 9.883 | |
| 1,500.0 | 1,493.1 | 1,494.0 | 1,483.1 | 3.5 | 3.9 | 50.17 | 98.5 | 90.4 | 63.5 | 56.5 | 6.96 | 9.120 | |
| 1,507.2 | 1,500.0 | 1,501.2 | 1,490.1 | 3.6 | 3.9 | 50.48 | 99.8 | 91.2 | 63.5 | 56.5 | 7.01 | 9.057 | |
| 1,572.2 | 1,563.0 | 1,566.1 | 1,553.6 | 3.8 | 4.2 | 53.33 | 111.7 | 98.0 | 63.6 | 56.1 | 7.49 | 8.489 | |
| 1,600.0 | 1,590.0 | 1,593.9 | 1,580.7 | 3.9 | 4.3 | 54.65 | 116.8 | 100.9 | 63.6 | 55.9 | 7.71 | 8.255 | |
| 1,700.0 | 1,686.3 | 1,693.7 | 1,678.3 | 4.4 | 4.7 | 61.10 | 135.0 | 111.3 | 62.9 | 54.3 | 8.61 | 7.301 | |
| 1,800.0 | 1,781.5 | 1,793.1 | 1,775.5 | 4.9 | 5.2 | 70.59 | 153.1 | 121.6 | 61.7 | 52.0 | 9.71 | 6.352 | |
| 1,817.6 | 1,798.2 | 1,810.6 | 1,792.6 | 5.0 | 5.2 | 72.60 | 156.3 | 123.5 | 61.5 | 51.6 | 9.92 | 6.202 | |
| 1,843.4 | 1,822.5 | 1,836.1 | 1,817.5 | 5.1 | 5.3 | 75.62 | 161.0 | 126.1 | 61.4 | 51.2 | 10.24 | 6.003 | |
| 1,900.0 | 1,876.1 | 1,892.3 | 1,872.5 | 5.5 | 5.6 | 82.22 | 171.2 | 132.0 | 61.9 | 51.0 | 10.91 | 5.668 | |
| 2,000.0 | 1,970.6 | 1,991.5 | 1,969.4 | 6.0 | 6.0 | 93.37 | 189.3 | 142.3 | 64.6 | 52.5 | 12.03 | 5.369 | |
| 2,100.0 | 2,065.1 | 2,090.7 | 2,066.4 | 6.6 | 6.4 | 103.30 | 207.4 | 152.7 | 69.5 | 56.5 | 12.98 | 5.355 | |
| 2,200.0 | 2,159.6 | 2,189.9 | 2,163.4 | 7.2 | 6.9 | 111.71 | 225.5 | 163.1 | 76.3 | 62.5 | 13.78 | 5.534 | |
| 2,300.0 | 2,254.1 | 2,289.1 | 2,260.4 | 7.8 | 7.3 | 118.64 | 243.6 | 173.4 | 84.4 | 69.9 | 14.47 | 5.832 | |
| 2,400.0 | 2,348.7 | 2,388.3 | 2,357.4 | 8.4 | 7.8 | 124.30 | 261.7 | 183.8 | 93.5 | 78.4 | 15.09 | 6.197 | |
| 2,500.0 | 2,443.2 | 2,487.5 | 2,454.3 | 9.1 | 8.2 | 128.93 | 279.8 | 194.1 | 103.4 | 87.7 | 15.67 | 6.596 | |
| 2,600.0 | 2,537.7 | 2,586.7 | 2,551.3 | 9.7 | 8.6 | 132.73 | 298.0 | 204.5 | 113.8 | 97.6 | 16.24 | 7.007 | |
| 2,700.0 | 2,632.2 | 2,685.9 | 2,648.3 | 10.3 | 9.1 | 135.89 | 316.1 | 214.8 | 124.7 | 107.8 | 16.81 | 7.417 | |
| 2,800.0 | 2,726.8 | 2,785.1 | 2,745.3 | 10.9 | 9.5 | 138.53 | 334.2 | 225.2 | 135.8 | 118.4 | 17.37 | 7.818 | |
| 2,900.0 | 2,821.3 | 2,884.3 | 2,842.2 | 11.6 | 9.9 | 140.77 | 352.3 | 235.5 | 147.2 | 129.3 | 17.94 | 8.206 | |
| 3,000.0 | 2,915.8 | 2,983.5 | 2,939.2 | 12.2 | 10.4 | 142.69 | 370.4 | 245.9 | 158.8 | 140.3 | 18.52 | 8.577 | |
| 3,100.0 | 3,010.3 | 3,082.7 | 3,036.2 | 12.8 | 10.8 | 144.35 | 388.5 | 256.2 | 170.6 | 151.5 | 19.10 | 8.932 | |
| 3,200.0 | 3,104.8 | 3,181.9 | 3,133.2 | 13.5 | 11.3 | 145.79 | 406.6 | 266.6 | 182.4 | 162.7 | 19.68 | 9.269 | |
| 3,300.0 | 3,199.4 | 3,281.0 | 3,230.2 | 14.1 | 11.7 | 147.05 | 424.7 | 276.9 | 194.4 | 174.1 | 20.27 | 9.589 | |
| 3,400.0 | 3,293.9 | 3,380.2 | 3,327.1 | 14.8 | 12.2 | 148.17 | 442.8 | 287.3 | 206.4 | 185.6 | 20.87 | 9.892 | |
| 3,500.0 | 3,388.4 | 3,479.4 | 3,424.1 | 15.4 | 12.6 | 149.17 | 460.9 | 297.6 | 218.6 | 197.1 | 21.47 | 10.180 | |
| 3,600.0 | 3,482.9 | 3,578.6 | 3,521.1 | 16.0 | 13.0 | 150.06 | 479.0 | 308.0 | 230.7 | 208.7 | 22.07 | 10.452 | |
| 3,700.0 | 3,577.5 | 3,677.8 | 3,618.1 | 16.7 | 13.5 | 150.86 | 497.1 | 318.3 | 243.0 | 220.3 | 22.68 | 10.711 | |
| 3,800.0 | 3,672.0 | 3,777.0 | 3,715.1 | 17.3 | 13.9 | 151.58 | 515.2 | 328.7 | 255.2 | 231.9 | 23.30 | 10.956 | |
| 3,900.0 | 3,766.5 | 3,876.2 | 3,812.0 | 18.0 | 14.4 | 152.24 | 533.3 | 339.0 | 267.5 | 243.6 | 23.91 | 11.189 | |
| 4,000.0 | 3,861.0 | 3,975.4 | 3,909.0 | 18.6 | 14.8 | 152.84 | 551.4 | 349.4 | 279.9 | 255.3 | 24.53 | 11.410 | |
| 4,100.0 | 3,955.5 | 4,074.6 | 4,006.0 | 19.3 | 15.3 | 153.39 | 569.5 | 359.7 | 292.2 | 267.1 | 25.15 | 11.620 | |
| 4,200.0 | 4,050.1 | 4,173.8 | 4,103.0 | 19.9 | 15.7 | 153.89 | 587.6 | 370.1 | 304.6 | 278.9 | 25.77 | 11.820 | |
| 4,300.0 | 4,144.6 | 4,273.0 | 4,199.9 | 20.5 | 16.2 | 154.36 | 605.7 | 380.4 | 317.0 | 290.6 | 26.40 | 12.010 | |
| 4,400.0 | 4,239.1 | 4,372.2 | 4,296.9 | 21.2 | 16.6 | 154.79 | 623.8 | 390.8 | 329.5 | 302.4 | 27.02 | 12.192 | |
| 4,500.0 | 4,333.6 | 4,471.4 | 4,393.9 | 21.8 | 17.1 | 155.19 | 641.9 | 401.1 | 341.9 | 314.3 | 27.65 | 12.365 | |
| 4,600.0 | 4,428.2 | 4,570.6 | 4,490.9 | 22.5 | 17.5 | 155.56 | 660.0 | 411.5 | 354.4 | 326.1 | 28.28 | 12.530 | |
| 4,700.0 | 4,522.7 | 4,669.8 | 4,587.9 | 23.1 | 17.9 | 155.90 | 678.1 | 421.9 | 366.9 | 337.9 | 28.91 | 12.688 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4W-334 - ORIGINAL WELLBORE - PROP — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,617.2 | 4,769.0 | 4,684.8 | 23.8 | 18.4 | 156.23 | 696.2 | 432.2 | 379.3 | 349.8 | 29.55 | 12.839 | |
| 4,900.0 | 4,711.7 | 4,868.2 | 4,781.8 | 24.4 | 18.8 | 156.53 | 714.3 | 442.6 | 391.8 | 361.7 | 30.18 | 12.983 | |
| 5,000.0 | 4,806.2 | 4,967.4 | 4,878.8 | 25.1 | 19.3 | 156.81 | 732.5 | 452.9 | 404.3 | 373.5 | 30.82 | 13.122 | |
| 5,100.0 | 4,900.8 | 5,066.6 | 4,975.8 | 25.7 | 19.7 | 157.08 | 750.6 | 463.3 | 416.9 | 385.4 | 31.45 | 13.254 | |
| 5,200.0 | 4,995.3 | 5,165.8 | 5,072.7 | 26.4 | 20.2 | 157.33 | 768.7 | 473.6 | 429.4 | 397.3 | 32.09 | 13.382 | |
| 5,300.0 | 5,089.8 | 5,265.0 | 5,169.7 | 27.0 | 20.6 | 157.57 | 786.8 | 484.0 | 441.9 | 409.2 | 32.73 | 13.504 | |
| 5,400.0 | 5,184.3 | 5,364.1 | 5,266.7 | 27.7 | 21.1 | 157.79 | 804.9 | 494.3 | 454.5 | 421.1 | 33.36 | 13.621 | |
| 5,500.0 | 5,278.9 | 5,463.3 | 5,363.7 | 28.3 | 21.5 | 158.00 | 823.0 | 504.7 | 467.0 | 433.0 | 34.00 | 13.734 | |
| 5,533.5 | 5,310.5 | 5,496.6 | 5,396.2 | 28.5 | 21.7 | 158.07 | 829.0 | 508.1 | 471.2 | 437.0 | 34.22 | 13.771 | |
| 5,600.0 | 5,373.6 | 5,562.6 | 5,460.7 | 28.9 | 22.0 | 158.22 | 841.1 | 515.0 | 478.9 | 444.2 | 34.66 | 13.816 | |
| 5,700.0 | 5,469.4 | 5,662.2 | 5,558.1 | 29.3 | 22.4 | 158.30 | 859.3 | 525.4 | 487.7 | 452.4 | 35.30 | 13.813 | |
| 5,800.0 | 5,566.1 | 5,751.9 | 5,646.0 | 29.8 | 22.7 | 158.28 | 875.0 | 534.4 | 494.0 | 458.2 | 35.86 | 13.777 | |
| 5,900.0 | 5,663.6 | 5,838.8 | 5,731.5 | 30.1 | 23.0 | 158.27 | 887.9 | 541.8 | 499.7 | 463.4 | 36.32 | 13.758 | |
| 6,000.0 | 5,761.9 | 5,925.5 | 5,817.4 | 30.5 | 23.2 | 158.28 | 898.6 | 547.9 | 504.8 | 468.1 | 36.72 | 13.748 | |
| 6,100.0 | 5,860.7 | 6,012.1 | 5,903.5 | 30.7 | 23.4 | 158.31 | 907.1 | 552.8 | 509.2 | 472.2 | 37.04 | 13.747 | |
| 6,200.0 | 5,960.0 | 6,100.0 | 5,991.0 | 31.0 | 23.6 | 158.36 | 913.3 | 556.3 | 513.0 | 475.7 | 37.30 | 13.754 | |
| 6,300.0 | 6,059.7 | 6,185.2 | 6,076.1 | 31.2 | 23.8 | 158.42 | 917.1 | 558.5 | 516.2 | 478.7 | 37.48 | 13.773 | |
| 6,400.0 | 6,159.6 | 6,271.7 | 6,162.6 | 31.3 | 23.9 | 158.50 | 918.8 | 559.4 | 518.7 | 481.1 | 37.59 | 13.798 | |
| 6,486.1 | 6,245.7 | 6,354.9 | 6,245.8 | 31.4 | 24.0 | 179.81 | 918.8 | 558.7 | 519.9 | 467.9 | 51.96 | 10.005 | |
| 6,500.0 | 6,259.6 | 6,368.8 | 6,259.6 | 31.4 | 24.0 | 179.89 | 918.8 | 557.9 | 519.9 | 467.9 | 52.01 | 9.995 | |
| 6,512.8 | 6,272.4 | 6,381.6 | 6,272.4 | 31.4 | 24.0 | 180.00 | 918.8 | 556.9 | 519.9 | 467.8 | 52.06 | 9.985 | |
| 6,516.1 | 6,275.7 | 6,384.9 | 6,275.7 | 31.4 | 24.0 | -179.97 | 918.8 | 556.6 | 519.9 | 467.8 | 52.08 | 9.982 | |
| 6,550.0 | 6,309.5 | 6,418.5 | 6,309.1 | 31.5 | 24.0 | -89.64 | 918.8 | 552.8 | 519.9 | 482.3 | 37.57 | 13.838 | |
| 6,600.0 | 6,359.4 | 6,467.9 | 6,357.8 | 31.5 | 24.0 | -89.15 | 918.8 | 544.4 | 519.9 | 482.5 | 37.44 | 13.887 | |
| 6,650.0 | 6,408.8 | 6,517.1 | 6,405.5 | 31.5 | 24.0 | -88.67 | 918.8 | 532.8 | 520.0 | 482.7 | 37.27 | 13.952 | |
| 6,700.0 | 6,457.5 | 6,565.4 | 6,451.3 | 31.5 | 24.0 | -88.12 | 918.8 | 517.5 | 520.2 | 483.1 | 37.04 | 14.044 | |
| 6,716.1 | 6,473.1 | 6,580.8 | 6,465.6 | 31.5 | 23.9 | -87.91 | 918.8 | 511.6 | 520.2 | 483.3 | 36.94 | 14.081 | |
| 6,725.0 | 6,481.6 | 6,589.3 | 6,473.3 | 31.5 | 23.9 | -87.79 | 918.8 | 508.2 | 520.3 | 483.4 | 36.89 | 14.103 | |
| 6,750.0 | 6,505.3 | 6,613.0 | 6,494.7 | 31.5 | 23.9 | -87.46 | 918.8 | 498.0 | 520.4 | 483.7 | 36.73 | 14.167 | |
| 6,775.0 | 6,528.5 | 6,636.6 | 6,515.5 | 31.4 | 23.9 | -87.13 | 918.8 | 486.7 | 520.5 | 484.0 | 36.57 | 14.233 | |
| 6,800.0 | 6,551.3 | 6,660.1 | 6,535.5 | 31.4 | 23.8 | -86.81 | 918.8 | 474.5 | 520.7 | 484.3 | 36.41 | 14.299 | |
| 6,825.0 | 6,573.4 | 6,683.4 | 6,554.8 | 31.4 | 23.8 | -86.49 | 918.8 | 461.4 | 520.9 | 484.6 | 36.26 | 14.365 | |
| 6,850.0 | 6,595.0 | 6,706.6 | 6,573.4 | 31.3 | 23.7 | -86.19 | 918.8 | 447.5 | 521.0 | 484.9 | 36.11 | 14.428 | |
| 6,875.0 | 6,615.8 | 6,729.7 | 6,591.2 | 31.3 | 23.7 | -85.90 | 918.8 | 432.7 | 521.2 | 485.2 | 35.98 | 14.488 | |
| 6,900.0 | 6,635.9 | 6,752.7 | 6,608.1 | 31.3 | 23.6 | -85.62 | 918.8 | 417.2 | 521.4 | 485.6 | 35.85 | 14.544 | |
| 6,925.0 | 6,655.1 | 6,775.0 | 6,623.9 | 31.2 | 23.6 | -85.35 | 918.8 | 401.4 | 521.6 | 485.9 | 35.75 | 14.592 | |
| 6,950.0 | 6,673.6 | 6,798.4 | 6,639.6 | 31.2 | 23.5 | -85.09 | 918.8 | 384.0 | 521.8 | 486.1 | 35.66 | 14.634 | |
| 6,975.0 | 6,691.1 | 6,821.1 | 6,653.9 | 31.1 | 23.5 | -84.85 | 918.8 | 366.5 | 522.0 | 486.4 | 35.59 | 14.665 | |
| 7,000.0 | 6,707.6 | 6,843.8 | 6,667.4 | 31.1 | 23.4 | -84.61 | 918.8 | 348.3 | 522.2 | 486.6 | 35.56 | 14.686 | |
| 7,025.0 | 6,723.1 | 6,866.3 | 6,680.0 | 31.0 | 23.4 | -84.40 | 918.8 | 329.6 | 522.4 | 486.8 | 35.55 | 14.694 | |
| 7,050.0 | 6,737.6 | 6,888.8 | 6,691.7 | 31.0 | 23.3 | -84.19 | 918.8 | 310.4 | 522.6 | 487.0 | 35.57 | 14.689 | |
| 7,075.0 | 6,751.0 | 6,911.2 | 6,702.3 | 30.9 | 23.2 | -84.00 | 918.8 | 290.7 | 522.7 | 487.1 | 35.63 | 14.670 | |
| 7,100.0 | 6,763.3 | 6,933.6 | 6,712.1 | 30.8 | 23.2 | -83.83 | 918.8 | 270.6 | 522.9 | 487.2 | 35.73 | 14.636 | |
| 7,125.0 | 6,774.5 | 6,955.9 | 6,720.8 | 30.8 | 23.1 | -83.67 | 918.8 | 250.1 | 523.1 | 487.2 | 35.86 | 14.586 | |
| 7,150.0 | 6,784.4 | 6,978.1 | 6,728.6 | 30.7 | 23.1 | -83.53 | 918.8 | 229.2 | 523.2 | 487.2 | 36.03 | 14.520 | |
| 7,175.0 | 6,793.1 | 7,000.0 | 6,735.3 | 30.7 | 23.0 | -83.40 | 918.8 | 208.4 | 523.3 | 487.1 | 36.24 | 14.439 | |
| 7,200.0 | 6,800.6 | 7,022.5 | 6,741.2 | 30.6 | 23.0 | -83.29 | 918.8 | 186.7 | 523.5 | 487.0 | 36.50 | 14.341 | |
| 7,225.0 | 6,806.8 | 7,044.6 | 6,746.0 | 30.6 | 22.9 | -83.20 | 918.8 | 165.1 | 523.6 | 486.8 | 36.80 | 14.229 | |
| 7,250.0 | 6,811.8 | 7,066.7 | 6,749.7 | 30.5 | 22.9 | -83.12 | 918.8 | 143.3 | 523.6 | 486.5 | 37.13 | 14.103 | |
| 7,275.0 | 6,815.5 | 7,088.8 | 6,752.5 | 30.5 | 22.8 | -83.06 | 918.8 | 121.4 | 523.7 | 486.2 | 37.50 | 13.966 | |
| 7,300.0 | 6,817.8 | 7,110.8 | 6,754.2 | 30.4 | 22.8 | -83.01 | 918.8 | 99.4 | 523.8 | 485.9 | 37.90 | 13.818 | |
| 7,325.0 | 6,818.9 | 7,132.9 | 6,754.9 | 30.4 | 22.7 | -82.99 | 918.8 | 77.4 | 523.8 | 485.5 | 38.34 | 13.661 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4W-334 - ORIGINAL WELLBORE - PROP — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,332.8 | 6,819.0 | 7,140.0 | 6,755.0 | 30.4 | 22.7 | -82.98 | 918.8 | 70.3 | 523.8 | 485.3 | 38.49 | 13.610 | |
| 7,400.0 | 6,819.0 | 7,207.2 | 6,754.9 | 30.3 | 22.6 | -82.97 | 918.8 | 3.1 | 523.8 | 483.9 | 39.89 | 13.132 | |
| 7,500.0 | 6,819.0 | 7,307.2 | 6,754.8 | 30.2 | 22.5 | -82.96 | 918.8 | -96.9 | 523.8 | 481.3 | 42.49 | 12.328 | |
| 7,600.0 | 6,819.0 | 7,407.2 | 6,754.6 | 30.3 | 23.4 | -82.95 | 918.8 | -196.9 | 523.8 | 478.2 | 45.63 | 11.481 | |
| 7,700.0 | 6,819.0 | 7,507.2 | 6,754.5 | 30.6 | 25.3 | -82.93 | 918.8 | -296.9 | 523.9 | 474.7 | 49.20 | 10.647 | |
| 7,800.0 | 6,819.0 | 7,607.2 | 6,754.4 | 31.3 | 27.3 | -82.92 | 918.8 | -396.9 | 523.9 | 470.7 | 53.12 | 9.862 | |
| 7,900.0 | 6,819.0 | 7,707.2 | 6,754.3 | 32.5 | 29.5 | -82.91 | 918.8 | -496.9 | 523.9 | 466.6 | 57.31 | 9.140 | |
| 8,000.0 | 6,819.0 | 7,807.2 | 6,754.1 | 34.2 | 31.8 | -82.89 | 918.8 | -596.9 | 523.9 | 462.2 | 61.73 | 8.487 | |
| 8,100.0 | 6,819.0 | 7,907.2 | 6,754.0 | 36.1 | 34.1 | -82.88 | 918.8 | -696.9 | 523.9 | 457.6 | 66.32 | 7.900 | |
| 8,200.0 | 6,819.0 | 8,007.2 | 6,753.9 | 38.3 | 36.5 | -82.87 | 918.8 | -796.9 | 523.9 | 452.9 | 71.05 | 7.374 | |
| 8,300.0 | 6,819.0 | 8,107.2 | 6,753.8 | 40.6 | 39.0 | -82.85 | 918.8 | -896.9 | 523.9 | 448.1 | 75.89 | 6.904 | |
| 8,400.0 | 6,819.0 | 8,207.2 | 6,753.6 | 42.9 | 41.5 | -82.84 | 918.8 | -996.9 | 524.0 | 443.1 | 80.83 | 6.482 | |
| 8,500.0 | 6,819.0 | 8,307.2 | 6,753.5 | 45.3 | 44.0 | -82.82 | 918.8 | -1,096.9 | 524.0 | 438.1 | 85.85 | 6.103 | |
| 8,600.0 | 6,819.0 | 8,407.2 | 6,753.4 | 47.8 | 46.6 | -82.81 | 918.8 | -1,196.9 | 524.0 | 433.1 | 90.94 | 5.762 | |
| 8,700.0 | 6,819.0 | 8,507.2 | 6,753.3 | 50.3 | 49.2 | -82.80 | 918.8 | -1,296.9 | 524.0 | 427.9 | 96.07 | 5.454 | |
| 8,800.0 | 6,819.0 | 8,607.2 | 6,753.1 | 52.8 | 51.8 | -82.78 | 918.8 | -1,396.9 | 524.0 | 422.8 | 101.26 | 5.175 | |
| 8,900.0 | 6,819.0 | 8,707.2 | 6,753.0 | 55.4 | 54.4 | -82.77 | 918.8 | -1,496.9 | 524.0 | 417.6 | 106.48 | 4.922 | |
| 9,000.0 | 6,819.0 | 8,807.2 | 6,752.9 | 58.0 | 57.1 | -82.76 | 918.8 | -1,596.9 | 524.1 | 412.3 | 111.74 | 4.690 | |
| 9,100.0 | 6,819.0 | 8,907.2 | 6,752.8 | 60.6 | 59.7 | -82.74 | 918.8 | -1,696.9 | 524.1 | 407.1 | 117.02 | 4.478 | |
| 9,200.0 | 6,819.0 | 9,007.2 | 6,752.6 | 63.2 | 62.4 | -82.73 | 918.8 | -1,796.9 | 524.1 | 401.8 | 122.33 | 4.284 | |
| 9,300.0 | 6,819.0 | 9,107.2 | 6,752.5 | 65.9 | 65.1 | -82.71 | 918.8 | -1,896.9 | 524.1 | 396.4 | 127.67 | 4.105 | |
| 9,400.0 | 6,819.0 | 9,207.2 | 6,752.4 | 68.5 | 67.8 | -82.70 | 918.8 | -1,996.9 | 524.1 | 391.1 | 133.02 | 3.940 | |
| 9,500.0 | 6,819.0 | 9,307.2 | 6,752.2 | 71.2 | 70.5 | -82.69 | 918.8 | -2,096.9 | 524.1 | 385.8 | 138.39 | 3.787 | |
| 9,600.0 | 6,819.0 | 9,407.2 | 6,752.1 | 73.9 | 73.2 | -82.67 | 918.8 | -2,196.9 | 524.2 | 380.4 | 143.78 | 3.646 | |
| 9,700.0 | 6,819.0 | 9,507.2 | 6,752.0 | 76.5 | 75.9 | -82.66 | 918.8 | -2,296.9 | 524.2 | 375.0 | 149.17 | 3.514 | |
| 9,800.0 | 6,819.0 | 9,607.2 | 6,751.8 | 79.2 | 78.6 | -82.64 | 918.8 | -2,396.9 | 524.2 | 369.6 | 154.58 | 3.391 | |
| 9,900.0 | 6,819.0 | 9,707.2 | 6,751.7 | 81.9 | 81.4 | -82.63 | 918.8 | -2,496.9 | 524.2 | 364.2 | 160.01 | 3.276 | |
| 10,000.0 | 6,819.0 | 9,807.2 | 6,751.6 | 84.6 | 84.1 | -82.61 | 918.8 | -2,596.9 | 524.2 | 358.8 | 165.44 | 3.169 | |
| 10,100.0 | 6,819.0 | 9,907.2 | 6,751.5 | 87.4 | 86.8 | -82.60 | 918.8 | -2,696.9 | 524.2 | 353.4 | 170.88 | 3.068 | |
| 10,200.0 | 6,819.0 | 10,007.2 | 6,751.3 | 90.1 | 89.6 | -82.59 | 918.8 | -2,796.9 | 524.3 | 347.9 | 176.33 | 2.973 | |
| 10,300.0 | 6,819.0 | 10,107.2 | 6,751.2 | 92.8 | 92.3 | -82.57 | 918.8 | -2,896.9 | 524.3 | 342.5 | 181.78 | 2.884 | |
| 10,400.0 | 6,819.0 | 10,207.2 | 6,751.1 | 95.5 | 95.1 | -82.56 | 918.8 | -2,996.9 | 524.3 | 337.1 | 187.24 | 2.800 | |
| 10,500.0 | 6,819.0 | 10,307.2 | 6,750.9 | 98.3 | 97.8 | -82.54 | 918.8 | -3,096.9 | 524.3 | 331.6 | 192.71 | 2.721 | |
| 10,600.0 | 6,819.0 | 10,407.2 | 6,750.8 | 101.0 | 100.6 | -82.53 | 918.8 | -3,196.9 | 524.3 | 326.1 | 198.18 | 2.646 | |
| 10,700.0 | 6,819.0 | 10,507.2 | 6,750.7 | 103.8 | 103.4 | -82.51 | 918.8 | -3,296.9 | 524.3 | 320.7 | 203.66 | 2.575 | |
| 10,800.0 | 6,819.0 | 10,607.2 | 6,750.5 | 106.5 | 106.1 | -82.50 | 918.8 | -3,396.9 | 524.4 | 315.2 | 209.14 | 2.507 | |
| 10,900.0 | 6,819.0 | 10,707.2 | 6,750.4 | 109.2 | 108.9 | -82.49 | 918.8 | -3,496.9 | 524.4 | 309.8 | 214.63 | 2.443 | |
| 11,000.0 | 6,819.0 | 10,807.2 | 6,750.3 | 112.0 | 111.7 | -82.47 | 918.8 | -3,596.9 | 524.4 | 304.3 | 220.12 | 2.382 | |
| 11,100.0 | 6,819.0 | 10,907.2 | 6,750.1 | 114.8 | 114.4 | -82.46 | 918.8 | -3,696.9 | 524.4 | 298.8 | 225.61 | 2.324 | |
| 11,200.0 | 6,819.0 | 11,007.2 | 6,750.0 | 117.5 | 117.2 | -82.44 | 918.8 | -3,796.9 | 524.4 | 293.3 | 231.11 | 2.269 | |
| 11,300.0 | 6,819.0 | 11,107.2 | 6,749.8 | 120.3 | 120.0 | -82.43 | 918.8 | -3,896.9 | 524.5 | 287.8 | 236.61 | 2.217 | |
| 11,400.0 | 6,819.0 | 11,207.2 | 6,749.7 | 123.0 | 122.7 | -82.41 | 918.8 | -3,996.9 | 524.5 | 282.4 | 242.11 | 2.166 | |
| 11,500.0 | 6,819.0 | 11,307.2 | 6,749.6 | 125.8 | 125.5 | -82.40 | 918.8 | -4,096.9 | 524.5 | 276.9 | 247.62 | 2.118 | |
| 11,600.0 | 6,819.0 | 11,407.2 | 6,749.4 | 128.6 | 128.3 | -82.38 | 918.8 | -4,196.9 | 524.5 | 271.4 | 253.12 | 2.072 | |
| 11,700.0 | 6,819.0 | 11,507.2 | 6,749.3 | 131.3 | 131.1 | -82.37 | 918.8 | -4,296.9 | 524.5 | 265.9 | 258.63 | 2.028 | |
| 11,800.0 | 6,819.0 | 11,607.2 | 6,749.2 | 134.1 | 133.9 | -82.35 | 918.8 | -4,396.9 | 524.6 | 260.4 | 264.14 | 1.986 | |
| 11,900.0 | 6,819.0 | 11,707.2 | 6,749.0 | 136.9 | 136.6 | -82.34 | 918.8 | -4,496.9 | 524.6 | 254.9 | 269.66 | 1.945 | |
| 12,000.0 | 6,819.0 | 11,807.2 | 6,748.9 | 139.6 | 139.4 | -82.32 | 918.8 | -4,596.9 | 524.6 | 249.4 | 275.17 | 1.906 | |
| 12,100.0 | 6,819.0 | 11,907.2 | 6,748.8 | 142.4 | 142.2 | -82.31 | 918.8 | -4,696.9 | 524.6 | 243.9 | 280.69 | 1.869 | |
| 12,200.0 | 6,819.0 | 12,007.2 | 6,748.6 | 145.2 | 145.0 | -82.29 | 918.8 | -4,796.9 | 524.6 | 238.4 | 286.21 | 1.833 | |
| 12,300.0 | 6,819.0 | 12,107.2 | 6,748.5 | 148.0 | 147.8 | -82.28 | 918.8 | -4,896.9 | 524.6 | 232.9 | 291.72 | 1.798 | |
| 12,400.0 | 6,819.0 | 12,207.2 | 6,748.3 | 150.8 | 150.6 | -82.26 | 918.8 | -4,996.9 | 524.7 | 227.4 | 297.24 | 1.765 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4W-334 - ORIGINAL WELLBORE - PROP — **Offset Site Error:** 0.0 usft

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

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,500.0 | 6,819.0 | 12,307.2 | 6,748.2 | 153.5 | 153.4 | -82.25 | 918.8 | -5,096.9 | 524.7 | 221.9 | 302.77 | 1.733 | |
| 12,600.0 | 6,819.0 | 12,407.2 | 6,748.1 | 156.3 | 156.2 | -82.23 | 918.8 | -5,196.9 | 524.7 | 216.4 | 308.29 | 1.702 | |
| 12,700.0 | 6,819.0 | 12,507.2 | 6,747.9 | 159.1 | 158.9 | -82.22 | 918.8 | -5,296.9 | 524.7 | 210.9 | 313.81 | 1.672 | |
| 12,800.0 | 6,819.0 | 12,607.2 | 6,747.8 | 161.9 | 161.7 | -82.20 | 918.8 | -5,396.9 | 524.7 | 205.4 | 319.34 | 1.643 | |
| 12,900.0 | 6,819.0 | 12,707.2 | 6,747.6 | 164.7 | 164.5 | -82.19 | 918.8 | -5,496.9 | 524.8 | 199.9 | 324.86 | 1.615 | |
| 13,000.0 | 6,819.0 | 12,807.2 | 6,747.5 | 167.4 | 167.3 | -82.17 | 918.8 | -5,596.9 | 524.8 | 194.4 | 330.39 | 1.588 | |
| 13,100.0 | 6,819.0 | 12,907.2 | 6,747.3 | 170.2 | 170.1 | -82.16 | 918.8 | -5,696.9 | 524.8 | 188.9 | 335.91 | 1.562 | |
| 13,200.0 | 6,819.0 | 13,007.2 | 6,747.2 | 173.0 | 172.9 | -82.14 | 918.8 | -5,796.9 | 524.8 | 183.4 | 341.44 | 1.537 | |
| 13,300.0 | 6,819.0 | 13,107.2 | 6,747.1 | 175.8 | 175.7 | -82.13 | 918.8 | -5,896.9 | 524.8 | 177.9 | 346.97 | 1.513 | |
| 13,400.0 | 6,819.0 | 13,207.2 | 6,746.9 | 178.6 | 178.5 | -82.11 | 918.8 | -5,996.9 | 524.9 | 172.4 | 352.50 | 1.489 | Level 3 |
| 13,500.0 | 6,819.0 | 13,307.2 | 6,746.8 | 181.4 | 181.3 | -82.09 | 918.8 | -6,096.9 | 524.9 | 166.9 | 358.03 | 1.466 | Level 3 |
| 13,600.0 | 6,819.0 | 13,407.2 | 6,746.6 | 184.2 | 184.1 | -82.08 | 918.8 | -6,196.9 | 524.9 | 161.3 | 363.56 | 1.444 | Level 3 |
| 13,700.0 | 6,819.0 | 13,507.2 | 6,746.5 | 187.0 | 186.9 | -82.06 | 918.8 | -6,296.9 | 524.9 | 155.8 | 369.09 | 1.422 | Level 3 |
| 13,800.0 | 6,819.0 | 13,607.2 | 6,746.3 | 189.7 | 189.7 | -82.05 | 918.8 | -6,396.9 | 524.9 | 150.3 | 374.62 | 1.401 | Level 3 |
| 13,900.0 | 6,819.0 | 13,707.2 | 6,746.2 | 192.5 | 192.5 | -82.03 | 918.8 | -6,496.9 | 525.0 | 144.8 | 380.15 | 1.381 | Level 3 |
| 14,000.0 | 6,819.0 | 13,807.2 | 6,746.1 | 195.3 | 195.3 | -82.02 | 918.8 | -6,596.9 | 525.0 | 139.3 | 385.68 | 1.361 | Level 3 |
| 14,100.0 | 6,819.0 | 13,907.2 | 6,745.9 | 198.1 | 198.1 | -82.00 | 918.8 | -6,696.9 | 525.0 | 133.8 | 391.21 | 1.342 | Level 3 |
| 14,200.0 | 6,819.0 | 14,007.2 | 6,745.8 | 200.9 | 200.9 | -81.99 | 918.8 | -6,796.9 | 525.0 | 128.3 | 396.74 | 1.323 | Level 3 |
| 14,300.0 | 6,819.0 | 14,107.2 | 6,745.6 | 203.7 | 203.7 | -81.97 | 918.8 | -6,896.9 | 525.0 | 122.8 | 402.27 | 1.305 | Level 3 |
| 14,400.0 | 6,819.0 | 14,207.2 | 6,745.5 | 206.5 | 206.5 | -81.95 | 918.8 | -6,996.9 | 525.1 | 117.3 | 407.80 | 1.288 | Level 3 |
| 14,500.0 | 6,819.0 | 14,307.2 | 6,745.3 | 209.3 | 209.3 | -81.94 | 918.8 | -7,096.9 | 525.1 | 111.8 | 413.33 | 1.270 | Level 3 |
| 14,600.0 | 6,819.0 | 14,407.2 | 6,745.2 | 212.1 | 212.1 | -81.92 | 918.8 | -7,196.9 | 525.1 | 106.2 | 418.87 | 1.254 | Level 3 |
| 14,700.0 | 6,819.0 | 14,507.2 | 6,745.0 | 214.9 | 214.9 | -81.91 | 918.8 | -7,296.9 | 525.1 | 100.7 | 424.40 | 1.237 | Level 2 |
| 14,719.7 | 6,819.0 | 14,526.8 | 6,745.0 | 215.4 | 215.4 | -81.90 | 918.8 | -7,316.6 | 525.1 | 99.7 | 425.49 | 1.234 | Level 2 |
| 14,720.3 | 6,819.0 | 14,527.5 | 6,745.0 | 215.4 | 215.4 | -81.90 | 918.8 | -7,317.2 | 525.1 | 99.6 | 425.52 | 1.234 | Level 2, SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-204 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 108.38 | -23.7 | 71.3 | 75.1 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 108.38 | -23.7 | 71.3 | 75.1 | 74.9 | 0.17 | 433.960 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 108.38 | -23.7 | 71.3 | 75.1 | 74.5 | 0.62 | 120.631 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 108.38 | -23.7 | 71.3 | 75.1 | 74.0 | 1.07 | 70.052 | CC, ES |
| 400.0 | 400.0 | 397.8 | 397.8 | 0.8 | 0.7 | 107.71 | -23.3 | 72.9 | 76.6 | 75.0 | 1.51 | 50.727 | |
| 500.0 | 500.0 | 495.4 | 495.2 | 1.0 | 1.0 | 105.86 | -22.1 | 77.7 | 81.0 | 79.0 | 1.95 | 41.516 | |
| 600.0 | 600.0 | 592.5 | 592.0 | 1.2 | 1.2 | 103.20 | -20.1 | 85.8 | 88.5 | 86.1 | 2.40 | 36.882 | |
| 700.0 | 700.0 | 688.9 | 687.7 | 1.4 | 1.5 | 100.17 | -17.4 | 96.9 | 99.2 | 96.3 | 2.85 | 34.777 | |
| 800.0 | 800.0 | 784.5 | 782.2 | 1.7 | 1.8 | 97.14 | -13.9 | 111.0 | 113.2 | 109.9 | 3.31 | 34.214 | |
| 900.0 | 900.0 | 879.1 | 875.2 | 1.9 | 2.1 | 73.57 | -9.7 | 127.9 | 130.2 | 126.4 | 3.78 | 34.434 | |
| 1,000.0 | 999.8 | 976.5 | 970.5 | 2.1 | 2.5 | 72.61 | -4.9 | 147.5 | 148.4 | 144.1 | 4.25 | 34.886 | |
| 1,100.0 | 1,099.5 | 1,075.0 | 1,066.8 | 2.3 | 2.9 | 72.94 | 0.0 | 167.4 | 165.6 | 160.9 | 4.74 | 34.938 | |
| 1,200.0 | 1,198.7 | 1,173.5 | 1,163.2 | 2.6 | 3.3 | 74.24 | 4.9 | 187.3 | 182.0 | 176.7 | 5.26 | 34.596 | |
| 1,300.0 | 1,297.5 | 1,272.0 | 1,259.5 | 2.9 | 3.8 | 76.26 | 9.8 | 207.2 | 197.6 | 191.8 | 5.83 | 33.913 | |
| 1,400.0 | 1,395.6 | 1,370.3 | 1,355.6 | 3.2 | 4.2 | 78.87 | 14.7 | 227.0 | 212.8 | 206.4 | 6.46 | 32.970 | |
| 1,500.0 | 1,493.1 | 1,468.3 | 1,451.5 | 3.5 | 4.7 | 81.93 | 19.5 | 246.8 | 228.0 | 220.9 | 7.16 | 31.833 | |
| 1,507.2 | 1,500.0 | 1,475.3 | 1,458.3 | 3.6 | 4.7 | 82.17 | 19.9 | 248.2 | 229.1 | 221.9 | 7.22 | 31.756 | |
| 1,572.2 | 1,563.0 | 1,538.8 | 1,520.5 | 3.8 | 5.0 | 84.41 | 23.1 | 261.0 | 239.3 | 231.6 | 7.71 | 31.053 | |
| 1,600.0 | 1,590.0 | 1,566.0 | 1,547.1 | 3.9 | 5.1 | 85.25 | 24.4 | 266.5 | 243.7 | 235.8 | 7.92 | 30.771 | |
| 1,700.0 | 1,686.3 | 1,663.4 | 1,642.4 | 4.4 | 5.5 | 88.49 | 29.2 | 286.2 | 260.2 | 251.4 | 8.76 | 29.682 | |
| 1,800.0 | 1,781.5 | 1,760.2 | 1,737.0 | 4.9 | 6.0 | 91.97 | 34.1 | 305.7 | 277.6 | 267.9 | 9.69 | 28.648 | |
| 1,817.6 | 1,798.2 | 1,777.2 | 1,753.7 | 5.0 | 6.0 | 92.61 | 34.9 | 309.2 | 280.8 | 270.9 | 9.86 | 28.477 | |
| 1,900.0 | 1,876.1 | 1,856.6 | 1,831.3 | 5.5 | 6.4 | 95.71 | 38.9 | 325.2 | 296.3 | 285.6 | 10.68 | 27.743 | |
| 2,000.0 | 1,970.6 | 1,952.9 | 1,925.5 | 6.0 | 6.8 | 99.08 | 43.6 | 344.7 | 316.2 | 304.5 | 11.69 | 27.056 | |
| 2,100.0 | 2,065.1 | 2,049.3 | 2,019.8 | 6.6 | 7.3 | 102.05 | 48.4 | 364.1 | 337.0 | 324.3 | 12.70 | 26.545 | |
| 2,200.0 | 2,159.6 | 2,145.6 | 2,114.0 | 7.2 | 7.7 | 104.68 | 53.2 | 383.6 | 358.7 | 345.0 | 13.71 | 26.169 | |
| 2,300.0 | 2,254.1 | 2,242.0 | 2,208.3 | 7.8 | 8.1 | 107.01 | 58.0 | 403.0 | 381.0 | 366.3 | 14.71 | 25.897 | |
| 2,400.0 | 2,348.7 | 2,338.3 | 2,302.5 | 8.4 | 8.6 | 109.08 | 62.8 | 422.5 | 403.8 | 388.1 | 15.71 | 25.704 | |
| 2,500.0 | 2,443.2 | 2,434.7 | 2,396.8 | 9.1 | 9.0 | 110.94 | 67.6 | 441.9 | 427.1 | 410.4 | 16.70 | 25.571 | |
| 2,600.0 | 2,537.7 | 2,531.0 | 2,491.0 | 9.7 | 9.5 | 112.61 | 72.4 | 461.4 | 450.8 | 433.1 | 17.69 | 25.484 | |
| 2,700.0 | 2,632.2 | 2,627.4 | 2,585.2 | 10.3 | 9.9 | 114.11 | 77.2 | 480.8 | 474.8 | 456.1 | 18.67 | 25.433 | |
| 2,800.0 | 2,726.8 | 2,723.7 | 2,679.5 | 10.9 | 10.3 | 115.46 | 82.0 | 500.3 | 499.1 | 479.4 | 19.64 | 25.408 | |
| 2,900.0 | 2,821.3 | 2,827.2 | 2,781.0 | 11.6 | 10.7 | 116.92 | 86.8 | 519.8 | 523.1 | 502.5 | 20.57 | 25.425 | |
| 3,000.0 | 2,915.8 | 2,931.7 | 2,884.2 | 12.2 | 11.0 | 118.63 | 90.8 | 536.0 | 545.8 | 524.4 | 21.42 | 25.485 | |
| 3,100.0 | 3,010.3 | 3,035.9 | 2,987.5 | 12.8 | 11.3 | 120.54 | 93.8 | 548.5 | 567.6 | 545.4 | 22.20 | 25.568 | |
| 3,200.0 | 3,104.8 | 3,139.3 | 3,090.6 | 13.5 | 11.5 | 122.63 | 96.0 | 557.2 | 588.7 | 565.8 | 22.91 | 25.692 | |
| 3,300.0 | 3,199.4 | 3,241.8 | 3,192.9 | 14.1 | 11.7 | 124.88 | 97.2 | 562.3 | 609.3 | 585.8 | 23.55 | 25.874 | |
| 3,400.0 | 3,293.9 | 3,342.8 | 3,293.9 | 14.8 | 11.8 | 127.25 | 97.6 | 563.9 | 629.7 | 605.6 | 24.10 | 26.126 | |
| 3,500.0 | 3,388.4 | 3,437.3 | 3,388.4 | 15.4 | 11.9 | 129.47 | 97.6 | 563.9 | 650.7 | 626.1 | 24.61 | 26.438 | |
| 3,600.0 | 3,482.9 | 3,531.9 | 3,482.9 | 16.0 | 12.1 | 131.55 | 97.6 | 563.9 | 672.6 | 647.5 | 25.10 | 26.797 | |
| 3,700.0 | 3,577.5 | 3,626.4 | 3,577.5 | 16.7 | 12.2 | 133.51 | 97.6 | 563.9 | 695.3 | 669.7 | 25.57 | 27.197 | |
| 3,800.0 | 3,672.0 | 3,720.9 | 3,672.0 | 17.3 | 12.3 | 135.34 | 97.6 | 563.9 | 718.8 | 692.8 | 26.02 | 27.630 | |
| 3,900.0 | 3,766.5 | 3,815.4 | 3,766.5 | 18.0 | 12.5 | 137.07 | 97.6 | 563.9 | 743.0 | 716.5 | 26.45 | 28.089 | |
| 4,000.0 | 3,861.0 | 3,909.9 | 3,861.0 | 18.6 | 12.6 | 138.69 | 97.6 | 563.9 | 767.8 | 740.9 | 26.88 | 28.569 | |
| 4,100.0 | 3,955.5 | 4,004.5 | 3,955.5 | 19.3 | 12.7 | 140.21 | 97.6 | 563.9 | 793.2 | 765.9 | 27.29 | 29.064 | |
| 4,200.0 | 4,050.1 | 4,099.0 | 4,050.1 | 19.9 | 12.9 | 141.64 | 97.6 | 563.9 | 819.1 | 791.4 | 27.70 | 29.571 | |
| 4,300.0 | 4,144.6 | 4,193.5 | 4,144.6 | 20.5 | 13.0 | 142.99 | 97.6 | 563.9 | 845.5 | 817.4 | 28.10 | 30.084 | |
| 4,400.0 | 4,239.1 | 4,288.0 | 4,239.1 | 21.2 | 13.1 | 144.26 | 97.6 | 563.9 | 872.2 | 843.7 | 28.50 | 30.602 | |
| 4,500.0 | 4,333.6 | 4,382.6 | 4,333.6 | 21.8 | 13.3 | 145.45 | 97.6 | 563.9 | 899.4 | 870.5 | 28.90 | 31.122 | |
| 4,600.0 | 4,428.2 | 4,477.1 | 4,428.2 | 22.5 | 13.4 | 146.58 | 97.6 | 563.9 | 927.0 | 897.7 | 29.30 | 31.642 | |
| 4,700.0 | 4,522.7 | 4,571.6 | 4,522.7 | 23.1 | 13.6 | 147.64 | 97.6 | 563.9 | 954.8 | 925.1 | 29.69 | 32.159 | |
| 4,800.0 | 4,617.2 | 4,666.1 | 4,617.2 | 23.8 | 13.7 | 148.64 | 97.6 | 563.9 | 982.9 | 952.9 | 30.09 | 32.671 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-204 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,760.6 | 4,711.7 | 24.4 | 13.9 | 149.59 | 97.6 | 563.9 | 1,011.4 | 980.9 | 30.48 | 33.179 | |
| 5,000.0 | 4,806.2 | 4,855.2 | 4,806.2 | 25.1 | 14.0 | 150.49 | 97.6 | 563.9 | 1,040.0 | 1,009.2 | 30.88 | 33.680 | |
| 5,100.0 | 4,900.8 | 4,949.7 | 4,900.8 | 25.7 | 14.2 | 151.34 | 97.6 | 563.9 | 1,068.9 | 1,037.6 | 31.28 | 34.174 | |
| 5,200.0 | 4,995.3 | 5,044.2 | 4,995.3 | 26.4 | 14.3 | 152.15 | 97.6 | 563.9 | 1,098.0 | 1,066.4 | 31.68 | 34.661 | |
| 5,300.0 | 5,089.8 | 5,138.7 | 5,089.8 | 27.0 | 14.5 | 152.92 | 97.6 | 563.9 | 1,127.3 | 1,095.2 | 32.08 | 35.138 | |
| 5,400.0 | 5,184.3 | 5,233.3 | 5,184.3 | 27.7 | 14.7 | 153.64 | 97.6 | 563.9 | 1,156.8 | 1,124.3 | 32.49 | 35.607 | |
| 5,500.0 | 5,278.9 | 5,327.8 | 5,278.9 | 28.3 | 14.8 | 154.34 | 97.6 | 563.9 | 1,186.4 | 1,153.6 | 32.90 | 36.066 | |
| 5,533.5 | 5,310.5 | 5,359.5 | 5,310.5 | 28.5 | 14.9 | 154.56 | 97.6 | 563.9 | 1,196.4 | 1,163.4 | 33.03 | 36.218 | |
| 5,600.0 | 5,373.6 | 5,422.5 | 5,373.6 | 28.9 | 15.0 | 155.15 | 97.6 | 563.9 | 1,215.6 | 1,182.2 | 33.32 | 36.477 | |
| 5,700.0 | 5,469.4 | 5,518.3 | 5,469.4 | 29.3 | 15.1 | 155.93 | 97.6 | 563.9 | 1,242.0 | 1,208.2 | 33.71 | 36.837 | |
| 5,800.0 | 5,566.1 | 5,615.0 | 5,566.1 | 29.8 | 15.3 | 156.59 | 97.6 | 563.9 | 1,265.3 | 1,231.2 | 34.09 | 37.118 | |
| 5,900.0 | 5,663.6 | 5,712.6 | 5,663.6 | 30.1 | 15.5 | 157.14 | 97.6 | 563.9 | 1,285.7 | 1,251.2 | 34.45 | 37.324 | |
| 6,000.0 | 5,761.9 | 5,810.8 | 5,761.9 | 30.5 | 15.7 | 157.59 | 97.6 | 563.9 | 1,302.9 | 1,268.1 | 34.78 | 37.461 | |
| 6,100.0 | 5,860.7 | 5,909.6 | 5,860.7 | 30.7 | 15.8 | 157.95 | 97.6 | 563.9 | 1,316.9 | 1,281.9 | 35.09 | 37.531 | |
| 6,200.0 | 5,960.0 | 6,009.0 | 5,960.0 | 31.0 | 16.0 | 158.22 | 97.6 | 563.9 | 1,327.8 | 1,292.4 | 35.37 | 37.539 | |
| 6,300.0 | 6,059.7 | 6,108.6 | 6,059.7 | 31.2 | 16.2 | 158.40 | 97.6 | 563.9 | 1,335.5 | 1,299.8 | 35.63 | 37.485 | |
| 6,400.0 | 6,159.6 | 6,208.7 | 6,159.8 | 31.3 | 16.4 | 158.53 | 97.6 | 563.5 | 1,339.9 | 1,304.0 | 35.84 | 37.385 | |
| 6,486.1 | 6,245.7 | 6,294.8 | 6,245.5 | 31.4 | 16.4 | -179.94 | 97.6 | 555.6 | 1,341.1 | 1,297.3 | 43.77 | 30.640 | |
| 6,500.0 | 6,259.6 | 6,308.5 | 6,258.9 | 31.4 | 16.4 | -179.85 | 97.6 | 553.4 | 1,341.1 | 1,297.3 | 43.82 | 30.606 | |
| 6,516.1 | 6,275.7 | 6,324.2 | 6,274.4 | 31.4 | 16.4 | -179.73 | 97.6 | 550.5 | 1,341.1 | 1,297.2 | 43.88 | 30.565 | |
| 6,550.0 | 6,309.5 | 6,357.0 | 6,306.5 | 31.5 | 16.4 | -89.45 | 97.6 | 543.5 | 1,341.1 | 1,305.3 | 35.84 | 37.421 | |
| 6,600.0 | 6,359.4 | 6,404.6 | 6,352.3 | 31.5 | 16.4 | -89.05 | 97.6 | 530.5 | 1,341.3 | 1,305.5 | 35.77 | 37.495 | |
| 6,650.0 | 6,408.8 | 6,450.0 | 6,394.6 | 31.5 | 16.4 | -88.62 | 97.6 | 514.3 | 1,341.5 | 1,305.8 | 35.66 | 37.623 | |
| 6,700.0 | 6,457.5 | 6,495.7 | 6,435.5 | 31.5 | 16.4 | -88.13 | 97.6 | 493.9 | 1,341.8 | 1,306.3 | 35.50 | 37.802 | |
| 6,716.1 | 6,473.1 | 6,509.9 | 6,447.8 | 31.5 | 16.4 | -87.96 | 97.6 | 486.8 | 1,342.0 | 1,306.5 | 35.44 | 37.867 | |
| 6,725.0 | 6,481.6 | 6,517.6 | 6,454.4 | 31.5 | 16.4 | -87.87 | 97.6 | 482.8 | 1,342.1 | 1,306.7 | 35.41 | 37.904 | |
| 6,750.0 | 6,505.3 | 6,539.3 | 6,472.5 | 31.5 | 16.3 | -87.60 | 97.6 | 470.9 | 1,342.3 | 1,307.0 | 35.31 | 38.013 | |
| 6,775.0 | 6,528.5 | 6,560.8 | 6,490.0 | 31.4 | 16.3 | -87.35 | 97.6 | 458.4 | 1,342.6 | 1,307.4 | 35.22 | 38.123 | |
| 6,800.0 | 6,551.3 | 6,582.1 | 6,506.7 | 31.4 | 16.3 | -87.10 | 97.6 | 445.2 | 1,342.9 | 1,307.8 | 35.13 | 38.231 | |
| 6,825.0 | 6,573.4 | 6,603.2 | 6,522.7 | 31.4 | 16.3 | -86.85 | 97.6 | 431.4 | 1,343.2 | 1,308.2 | 35.04 | 38.336 | |
| 6,850.0 | 6,595.0 | 6,625.0 | 6,538.5 | 31.3 | 16.3 | -86.61 | 97.6 | 416.4 | 1,343.5 | 1,308.6 | 34.96 | 38.436 | |
| 6,875.0 | 6,615.8 | 6,644.9 | 6,552.4 | 31.3 | 16.3 | -86.39 | 97.6 | 402.1 | 1,343.9 | 1,309.0 | 34.89 | 38.519 | |
| 6,900.0 | 6,635.9 | 6,665.5 | 6,566.1 | 31.3 | 16.3 | -86.17 | 97.6 | 386.7 | 1,344.2 | 1,309.4 | 34.83 | 38.591 | |
| 6,925.0 | 6,655.1 | 6,686.0 | 6,579.0 | 31.2 | 16.3 | -85.96 | 97.6 | 370.8 | 1,344.5 | 1,309.8 | 34.79 | 38.645 | |
| 6,950.0 | 6,673.6 | 6,706.4 | 6,591.2 | 31.2 | 16.3 | -85.76 | 97.6 | 354.5 | 1,344.9 | 1,310.1 | 34.77 | 38.680 | |
| 6,975.0 | 6,691.1 | 6,725.0 | 6,601.7 | 31.1 | 16.4 | -85.57 | 97.6 | 339.1 | 1,345.2 | 1,310.5 | 34.77 | 38.694 | |
| 7,000.0 | 6,707.6 | 6,746.7 | 6,613.2 | 31.1 | 16.4 | -85.38 | 97.6 | 320.7 | 1,345.6 | 1,310.8 | 34.79 | 38.673 | |
| 7,025.0 | 6,723.1 | 6,766.7 | 6,623.0 | 31.0 | 16.5 | -85.21 | 97.6 | 303.3 | 1,345.9 | 1,311.0 | 34.85 | 38.624 | |
| 7,050.0 | 6,737.6 | 6,786.6 | 6,632.1 | 31.0 | 16.6 | -85.05 | 97.6 | 285.6 | 1,346.2 | 1,311.3 | 34.93 | 38.544 | |
| 7,075.0 | 6,751.0 | 6,806.5 | 6,640.4 | 30.9 | 16.7 | -84.90 | 97.6 | 267.5 | 1,346.5 | 1,311.5 | 35.04 | 38.430 | |
| 7,100.0 | 6,763.3 | 6,825.0 | 6,647.4 | 30.8 | 16.8 | -84.77 | 97.6 | 250.4 | 1,346.8 | 1,311.6 | 35.17 | 38.290 | |
| 7,125.0 | 6,774.5 | 6,845.9 | 6,654.6 | 30.8 | 16.9 | -84.64 | 97.6 | 230.8 | 1,347.0 | 1,311.7 | 35.36 | 38.095 | |
| 7,150.0 | 6,784.4 | 6,865.5 | 6,660.5 | 30.7 | 17.0 | -84.52 | 97.6 | 212.1 | 1,347.3 | 1,311.7 | 35.58 | 37.871 | |
| 7,175.0 | 6,793.1 | 6,885.1 | 6,665.7 | 30.7 | 17.2 | -84.42 | 97.6 | 193.2 | 1,347.5 | 1,311.7 | 35.83 | 37.613 | |
| 7,200.0 | 6,800.6 | 6,904.6 | 6,670.0 | 30.6 | 17.3 | -84.33 | 97.6 | 174.2 | 1,347.7 | 1,311.6 | 36.11 | 37.322 | |
| 7,225.0 | 6,806.8 | 6,925.0 | 6,673.7 | 30.6 | 17.5 | -84.26 | 97.6 | 154.1 | 1,347.9 | 1,311.4 | 36.44 | 36.991 | |
| 7,250.0 | 6,811.8 | 6,943.5 | 6,676.4 | 30.5 | 17.7 | -84.20 | 97.6 | 135.8 | 1,348.0 | 1,311.2 | 36.79 | 36.644 | |
| 7,275.0 | 6,815.5 | 6,962.9 | 6,678.3 | 30.5 | 17.9 | -84.15 | 97.6 | 116.5 | 1,348.1 | 1,310.9 | 37.17 | 36.264 | |
| 7,300.0 | 6,817.8 | 6,982.3 | 6,679.5 | 30.4 | 18.1 | -84.11 | 97.6 | 97.2 | 1,348.2 | 1,310.6 | 37.59 | 35.862 | |
| 7,325.0 | 6,818.9 | 7,002.3 | 6,680.0 | 30.4 | 18.4 | -84.09 | 97.6 | 77.2 | 1,348.3 | 1,310.2 | 38.05 | 35.436 | |
| 7,332.8 | 6,819.0 | 7,009.3 | 6,680.0 | 30.4 | 18.5 | -84.08 | 97.6 | 70.2 | 1,348.3 | 1,310.0 | 38.21 | 35.281 | |
| 7,400.0 | 6,819.0 | 7,076.5 | 6,680.0 | 30.3 | 19.4 | -84.08 | 97.6 | 3.0 | 1,348.3 | 1,308.5 | 39.79 | 33.886 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-204 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 7,176.5 | 6,680.0 | 30.2 | 21.0 | -84.08 | 97.6 | -97.0 | 1,348.3 | 1,305.7 | 42.61 | 31.643 | |
| 7,600.0 | 6,819.0 | 7,276.5 | 6,680.0 | 30.3 | 22.8 | -84.08 | 97.6 | -197.0 | 1,348.3 | 1,302.3 | 45.94 | 29.351 | |
| 7,700.0 | 6,819.0 | 7,376.5 | 6,680.0 | 30.6 | 24.8 | -84.08 | 97.6 | -297.0 | 1,348.3 | 1,298.6 | 49.67 | 27.144 | |
| 7,800.0 | 6,819.0 | 7,476.5 | 6,680.0 | 31.3 | 26.9 | -84.08 | 97.6 | -397.0 | 1,348.3 | 1,294.5 | 53.73 | 25.094 | |
| 7,900.0 | 6,819.0 | 7,576.5 | 6,680.0 | 32.5 | 29.2 | -84.08 | 97.6 | -497.0 | 1,348.3 | 1,290.2 | 58.04 | 23.229 | |
| 8,000.0 | 6,819.0 | 7,676.5 | 6,680.0 | 34.2 | 31.5 | -84.08 | 97.6 | -597.0 | 1,348.3 | 1,285.7 | 62.56 | 21.552 | |
| 8,100.0 | 6,819.0 | 7,776.5 | 6,680.0 | 36.1 | 34.0 | -84.08 | 97.6 | -697.0 | 1,348.3 | 1,281.0 | 67.24 | 20.052 | |
| 8,200.0 | 6,819.0 | 7,876.5 | 6,680.0 | 38.3 | 36.4 | -84.08 | 97.6 | -797.0 | 1,348.3 | 1,276.2 | 72.05 | 18.714 | |
| 8,300.0 | 6,819.0 | 7,976.5 | 6,680.0 | 40.6 | 39.0 | -84.08 | 97.6 | -897.0 | 1,348.3 | 1,271.3 | 76.96 | 17.519 | |
| 8,400.0 | 6,819.0 | 8,076.5 | 6,680.0 | 42.9 | 41.5 | -84.08 | 97.6 | -997.0 | 1,348.3 | 1,266.3 | 81.96 | 16.450 | |
| 8,500.0 | 6,819.0 | 8,176.5 | 6,680.0 | 45.3 | 44.1 | -84.08 | 97.6 | -1,097.0 | 1,348.3 | 1,261.2 | 87.04 | 15.491 | |
| 8,600.0 | 6,819.0 | 8,276.5 | 6,680.0 | 47.8 | 46.7 | -84.08 | 97.6 | -1,197.0 | 1,348.3 | 1,256.1 | 92.17 | 14.628 | |
| 8,700.0 | 6,819.0 | 8,376.5 | 6,680.0 | 50.3 | 49.4 | -84.08 | 97.6 | -1,297.0 | 1,348.3 | 1,250.9 | 97.36 | 13.849 | |
| 8,800.0 | 6,819.0 | 8,476.5 | 6,680.0 | 52.8 | 52.0 | -84.08 | 97.6 | -1,397.0 | 1,348.3 | 1,245.7 | 102.58 | 13.143 | |
| 8,900.0 | 6,819.0 | 8,576.5 | 6,680.0 | 55.4 | 54.7 | -84.08 | 97.6 | -1,497.0 | 1,348.3 | 1,240.4 | 107.85 | 12.501 | |
| 9,000.0 | 6,819.0 | 8,676.5 | 6,680.0 | 58.0 | 57.4 | -84.08 | 97.6 | -1,597.0 | 1,348.3 | 1,235.1 | 113.15 | 11.916 | |
| 9,100.0 | 6,819.0 | 8,776.5 | 6,680.0 | 60.6 | 60.1 | -84.08 | 97.6 | -1,697.0 | 1,348.3 | 1,229.8 | 118.47 | 11.381 | |
| 9,200.0 | 6,819.0 | 8,876.5 | 6,680.0 | 63.2 | 62.8 | -84.08 | 97.6 | -1,797.0 | 1,348.3 | 1,224.4 | 123.82 | 10.889 | |
| 9,300.0 | 6,819.0 | 8,976.5 | 6,680.0 | 65.9 | 65.5 | -84.08 | 97.6 | -1,897.0 | 1,348.3 | 1,219.1 | 129.19 | 10.437 | |
| 9,400.0 | 6,819.0 | 9,076.5 | 6,680.0 | 68.5 | 68.2 | -84.08 | 97.6 | -1,997.0 | 1,348.3 | 1,213.7 | 134.57 | 10.019 | |
| 9,500.0 | 6,819.0 | 9,176.5 | 6,680.0 | 71.2 | 71.0 | -84.08 | 97.6 | -2,097.0 | 1,348.3 | 1,208.3 | 139.98 | 9.632 | |
| 9,600.0 | 6,819.0 | 9,276.5 | 6,680.0 | 73.9 | 73.7 | -84.08 | 97.6 | -2,197.0 | 1,348.3 | 1,202.9 | 145.39 | 9.273 | |
| 9,700.0 | 6,819.0 | 9,376.5 | 6,680.0 | 76.5 | 76.4 | -84.08 | 97.6 | -2,297.0 | 1,348.3 | 1,197.4 | 150.82 | 8.939 | |
| 9,800.0 | 6,819.0 | 9,476.5 | 6,680.0 | 79.2 | 79.2 | -84.08 | 97.6 | -2,397.0 | 1,348.3 | 1,192.0 | 156.27 | 8.628 | |
| 9,900.0 | 6,819.0 | 9,576.5 | 6,680.0 | 81.9 | 81.9 | -84.08 | 97.6 | -2,497.0 | 1,348.3 | 1,186.5 | 161.72 | 8.337 | |
| 10,000.0 | 6,819.0 | 9,676.5 | 6,680.0 | 84.6 | 84.7 | -84.08 | 97.6 | -2,597.0 | 1,348.3 | 1,181.1 | 167.18 | 8.065 | |
| 10,100.0 | 6,819.0 | 9,776.5 | 6,680.0 | 87.4 | 87.5 | -84.08 | 97.6 | -2,697.0 | 1,348.3 | 1,175.6 | 172.65 | 7.809 | |
| 10,200.0 | 6,819.0 | 9,876.5 | 6,680.0 | 90.1 | 90.2 | -84.08 | 97.6 | -2,797.0 | 1,348.3 | 1,170.1 | 178.13 | 7.569 | |
| 10,300.0 | 6,819.0 | 9,976.5 | 6,680.0 | 92.8 | 93.0 | -84.08 | 97.6 | -2,897.0 | 1,348.3 | 1,164.7 | 183.61 | 7.343 | |
| 10,400.0 | 6,819.0 | 10,076.5 | 6,680.0 | 95.5 | 95.7 | -84.08 | 97.6 | -2,997.0 | 1,348.3 | 1,159.2 | 189.11 | 7.130 | |
| 10,500.0 | 6,819.0 | 10,176.5 | 6,680.0 | 98.3 | 98.5 | -84.08 | 97.6 | -3,097.0 | 1,348.3 | 1,153.7 | 194.60 | 6.928 | |
| 10,600.0 | 6,819.0 | 10,276.5 | 6,680.0 | 101.0 | 101.3 | -84.08 | 97.6 | -3,197.0 | 1,348.3 | 1,148.2 | 200.11 | 6.738 | |
| 10,700.0 | 6,819.0 | 10,376.5 | 6,680.0 | 103.8 | 104.1 | -84.08 | 97.6 | -3,297.0 | 1,348.3 | 1,142.7 | 205.61 | 6.557 | |
| 10,800.0 | 6,819.0 | 10,476.5 | 6,680.0 | 106.5 | 106.8 | -84.08 | 97.6 | -3,397.0 | 1,348.3 | 1,137.1 | 211.12 | 6.386 | |
| 10,900.0 | 6,819.0 | 10,576.5 | 6,680.0 | 109.2 | 109.6 | -84.08 | 97.6 | -3,497.0 | 1,348.3 | 1,131.6 | 216.64 | 6.224 | |
| 11,000.0 | 6,819.0 | 10,676.5 | 6,680.0 | 112.0 | 112.4 | -84.08 | 97.6 | -3,597.0 | 1,348.3 | 1,126.1 | 222.16 | 6.069 | |
| 11,100.0 | 6,819.0 | 10,776.5 | 6,680.0 | 114.8 | 115.2 | -84.08 | 97.6 | -3,697.0 | 1,348.3 | 1,120.6 | 227.68 | 5.922 | |
| 11,200.0 | 6,819.0 | 10,876.5 | 6,680.0 | 117.5 | 118.0 | -84.08 | 97.6 | -3,797.0 | 1,348.3 | 1,115.1 | 233.21 | 5.781 | |
| 11,300.0 | 6,819.0 | 10,976.5 | 6,680.0 | 120.3 | 120.7 | -84.08 | 97.6 | -3,897.0 | 1,348.3 | 1,109.5 | 238.74 | 5.647 | |
| 11,400.0 | 6,819.0 | 11,076.5 | 6,680.0 | 123.0 | 123.5 | -84.08 | 97.6 | -3,997.0 | 1,348.3 | 1,104.0 | 244.28 | 5.519 | |
| 11,500.0 | 6,819.0 | 11,176.5 | 6,680.0 | 125.8 | 126.3 | -84.08 | 97.6 | -4,097.0 | 1,348.3 | 1,098.5 | 249.81 | 5.397 | |
| 11,600.0 | 6,819.0 | 11,276.5 | 6,680.0 | 128.6 | 129.1 | -84.08 | 97.6 | -4,197.0 | 1,348.3 | 1,092.9 | 255.35 | 5.280 | |
| 11,700.0 | 6,819.0 | 11,376.5 | 6,680.0 | 131.3 | 131.9 | -84.08 | 97.6 | -4,297.0 | 1,348.3 | 1,087.4 | 260.89 | 5.168 | |
| 11,800.0 | 6,819.0 | 11,476.5 | 6,680.0 | 134.1 | 134.7 | -84.08 | 97.6 | -4,397.0 | 1,348.3 | 1,081.8 | 266.43 | 5.060 | |
| 11,900.0 | 6,819.0 | 11,576.5 | 6,680.0 | 136.9 | 137.5 | -84.08 | 97.6 | -4,497.0 | 1,348.3 | 1,076.3 | 271.98 | 4.957 | |
| 12,000.0 | 6,819.0 | 11,676.5 | 6,680.0 | 139.6 | 140.3 | -84.08 | 97.6 | -4,597.0 | 1,348.3 | 1,070.7 | 277.52 | 4.858 | |
| 12,100.0 | 6,819.0 | 11,776.5 | 6,680.0 | 142.4 | 143.1 | -84.08 | 97.6 | -4,697.0 | 1,348.3 | 1,065.2 | 283.07 | 4.763 | |
| 12,200.0 | 6,819.0 | 11,876.5 | 6,680.0 | 145.2 | 145.9 | -84.08 | 97.6 | -4,797.0 | 1,348.3 | 1,059.7 | 288.62 | 4.671 | |
| 12,300.0 | 6,819.0 | 11,976.5 | 6,680.0 | 148.0 | 148.6 | -84.08 | 97.6 | -4,897.0 | 1,348.3 | 1,054.1 | 294.18 | 4.583 | |
| 12,400.0 | 6,819.0 | 12,076.5 | 6,680.0 | 150.8 | 151.4 | -84.08 | 97.6 | -4,997.0 | 1,348.3 | 1,048.5 | 299.73 | 4.498 | |
| 12,500.0 | 6,819.0 | 12,176.5 | 6,680.0 | 153.5 | 154.2 | -84.08 | 97.6 | -5,097.0 | 1,348.3 | 1,043.0 | 305.29 | 4.416 | |
| 12,600.0 | 6,819.0 | 12,276.5 | 6,680.0 | 156.3 | 157.0 | -84.08 | 97.6 | -5,197.0 | 1,348.3 | 1,037.4 | 310.84 | 4.337 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-204 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 6,819.0 | 12,376.5 | 6,680.0 | 159.1 | 159.8 | -84.08 | 97.6 | -5,297.0 | 1,348.3 | 1,031.9 | 316.40 | 4.261 | |
| 12,800.0 | 6,819.0 | 12,476.5 | 6,680.0 | 161.9 | 162.6 | -84.08 | 97.6 | -5,397.0 | 1,348.3 | 1,026.3 | 321.96 | 4.188 | |
| 12,900.0 | 6,819.0 | 12,576.5 | 6,680.0 | 164.7 | 165.4 | -84.08 | 97.6 | -5,497.0 | 1,348.3 | 1,020.8 | 327.52 | 4.117 | |
| 13,000.0 | 6,819.0 | 12,676.5 | 6,680.0 | 167.4 | 168.2 | -84.08 | 97.6 | -5,597.0 | 1,348.3 | 1,015.2 | 333.08 | 4.048 | |
| 13,100.0 | 6,819.0 | 12,776.5 | 6,680.0 | 170.2 | 171.0 | -84.08 | 97.6 | -5,697.0 | 1,348.3 | 1,009.6 | 338.64 | 3.981 | |
| 13,200.0 | 6,819.0 | 12,876.5 | 6,680.0 | 173.0 | 173.8 | -84.08 | 97.6 | -5,797.0 | 1,348.3 | 1,004.1 | 344.21 | 3.917 | |
| 13,300.0 | 6,819.0 | 12,976.5 | 6,680.0 | 175.8 | 176.6 | -84.08 | 97.6 | -5,897.0 | 1,348.3 | 998.5 | 349.77 | 3.855 | |
| 13,400.0 | 6,819.0 | 13,076.5 | 6,680.0 | 178.6 | 179.4 | -84.08 | 97.6 | -5,997.0 | 1,348.3 | 992.9 | 355.34 | 3.794 | |
| 13,500.0 | 6,819.0 | 13,176.5 | 6,680.0 | 181.4 | 182.2 | -84.08 | 97.6 | -6,097.0 | 1,348.3 | 987.4 | 360.90 | 3.736 | |
| 13,600.0 | 6,819.0 | 13,276.5 | 6,680.0 | 184.2 | 185.0 | -84.08 | 97.6 | -6,197.0 | 1,348.3 | 981.8 | 366.47 | 3.679 | |
| 13,700.0 | 6,819.0 | 13,376.5 | 6,680.0 | 187.0 | 187.8 | -84.08 | 97.6 | -6,297.0 | 1,348.3 | 976.2 | 372.04 | 3.624 | |
| 13,800.0 | 6,819.0 | 13,476.5 | 6,680.0 | 189.7 | 190.6 | -84.08 | 97.6 | -6,397.0 | 1,348.3 | 970.7 | 377.61 | 3.571 | |
| 13,900.0 | 6,819.0 | 13,576.5 | 6,680.0 | 192.5 | 193.4 | -84.08 | 97.6 | -6,497.0 | 1,348.3 | 965.1 | 383.18 | 3.519 | |
| 14,000.0 | 6,819.0 | 13,676.5 | 6,680.0 | 195.3 | 196.2 | -84.08 | 97.6 | -6,597.0 | 1,348.3 | 959.5 | 388.75 | 3.468 | |
| 14,100.0 | 6,819.0 | 13,776.5 | 6,680.0 | 198.1 | 199.0 | -84.08 | 97.6 | -6,697.0 | 1,348.3 | 954.0 | 394.32 | 3.419 | |
| 14,200.0 | 6,819.0 | 13,876.5 | 6,680.0 | 200.9 | 201.8 | -84.08 | 97.6 | -6,797.0 | 1,348.3 | 948.4 | 399.89 | 3.372 | |
| 14,300.0 | 6,819.0 | 13,976.5 | 6,680.0 | 203.7 | 204.6 | -84.08 | 97.6 | -6,897.0 | 1,348.3 | 942.8 | 405.46 | 3.325 | |
| 14,400.0 | 6,819.0 | 14,076.5 | 6,680.0 | 206.5 | 207.4 | -84.08 | 97.6 | -6,997.0 | 1,348.3 | 937.2 | 411.03 | 3.280 | |
| 14,500.0 | 6,819.0 | 14,176.5 | 6,680.0 | 209.3 | 210.2 | -84.08 | 97.6 | -7,097.0 | 1,348.3 | 931.7 | 416.61 | 3.236 | |
| 14,600.0 | 6,819.0 | 14,276.5 | 6,680.0 | 212.1 | 213.0 | -84.08 | 97.6 | -7,197.0 | 1,348.3 | 926.1 | 422.18 | 3.194 | |
| 14,700.0 | 6,819.0 | 14,376.9 | 6,680.0 | 214.9 | 215.8 | -84.08 | 97.6 | -7,297.5 | 1,348.3 | 920.5 | 427.77 | 3.152 | |
| 14,720.3 | 6,819.0 | 14,397.3 | 6,680.0 | 215.4 | 216.4 | -84.08 | 97.6 | -7,317.8 | 1,348.2 | 919.3 | 428.90 | 3.143 | SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-214 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 108.33 | -14.2 | 42.9 | 45.2 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 108.33 | -14.2 | 42.9 | 45.2 | 45.0 | 0.17 | 260.991 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 108.33 | -14.2 | 42.9 | 45.2 | 44.5 | 0.62 | 72.550 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 108.33 | -14.2 | 42.9 | 45.2 | 44.1 | 1.07 | 42.131 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 108.33 | -14.2 | 42.9 | 45.2 | 43.6 | 1.52 | 29.684 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | 108.33 | -14.2 | 42.9 | 45.2 | 43.2 | 1.97 | 22.915 | CC, ES |
| 600.0 | 600.0 | 599.4 | 599.3 | 1.2 | 1.2 | 106.35 | -12.9 | 44.0 | 45.9 | 43.4 | 2.42 | 18.982 | |
| 700.0 | 700.0 | 698.5 | 698.3 | 1.4 | 1.4 | 100.77 | -9.0 | 47.4 | 48.3 | 45.4 | 2.86 | 16.855 | |
| 800.0 | 800.0 | 797.1 | 796.6 | 1.7 | 1.7 | 92.77 | -2.6 | 53.0 | 53.1 | 49.8 | 3.32 | 16.019 | |
| 900.0 | 900.0 | 895.3 | 894.0 | 1.9 | 1.9 | 64.15 | 6.4 | 60.7 | 60.5 | 56.8 | 3.78 | 16.028 | |
| 1,000.0 | 999.8 | 993.0 | 990.6 | 2.1 | 2.2 | 59.02 | 17.8 | 70.6 | 69.6 | 65.3 | 4.25 | 16.387 | |
| 1,100.0 | 1,099.5 | 1,090.4 | 1,086.2 | 2.3 | 2.5 | 55.68 | 31.6 | 82.5 | 79.8 | 75.1 | 4.73 | 16.866 | |
| 1,200.0 | 1,198.7 | 1,189.7 | 1,183.3 | 2.6 | 2.9 | 54.11 | 47.2 | 96.0 | 89.9 | 84.6 | 5.25 | 17.128 | |
| 1,300.0 | 1,297.5 | 1,289.3 | 1,280.8 | 2.9 | 3.3 | 54.47 | 62.9 | 109.6 | 97.9 | 92.1 | 5.80 | 16.885 | |
| 1,400.0 | 1,395.6 | 1,389.1 | 1,378.4 | 3.2 | 3.7 | 56.37 | 78.6 | 123.2 | 104.0 | 97.6 | 6.41 | 16.222 | |
| 1,500.0 | 1,493.1 | 1,488.8 | 1,475.9 | 3.5 | 4.1 | 59.64 | 94.3 | 136.7 | 108.4 | 101.3 | 7.11 | 15.244 | |
| 1,507.2 | 1,500.0 | 1,495.9 | 1,482.9 | 3.6 | 4.2 | 59.92 | 95.4 | 137.7 | 108.7 | 101.5 | 7.16 | 15.170 | |
| 1,572.2 | 1,563.0 | 1,560.7 | 1,546.2 | 3.8 | 4.4 | 62.52 | 105.6 | 146.5 | 111.2 | 103.5 | 7.66 | 14.504 | |
| 1,600.0 | 1,590.0 | 1,588.4 | 1,573.4 | 3.9 | 4.6 | 63.63 | 109.9 | 150.3 | 112.2 | 104.3 | 7.89 | 14.230 | |
| 1,700.0 | 1,686.3 | 1,687.9 | 1,670.6 | 4.4 | 5.0 | 68.49 | 125.6 | 163.8 | 115.5 | 106.8 | 8.78 | 13.156 | |
| 1,800.0 | 1,781.5 | 1,787.0 | 1,767.6 | 4.9 | 5.4 | 74.61 | 141.2 | 177.3 | 118.7 | 108.9 | 9.81 | 12.096 | |
| 1,817.6 | 1,798.2 | 1,804.4 | 1,784.6 | 5.0 | 5.5 | 75.81 | 143.9 | 179.7 | 119.3 | 109.3 | 10.01 | 11.922 | |
| 1,900.0 | 1,876.1 | 1,885.9 | 1,864.3 | 5.5 | 5.8 | 81.42 | 156.7 | 190.8 | 122.9 | 111.9 | 10.94 | 11.230 | |
| 2,000.0 | 1,970.6 | 1,984.7 | 1,961.0 | 6.0 | 6.3 | 87.76 | 172.2 | 204.2 | 128.6 | 116.6 | 12.07 | 10.659 | |
| 2,100.0 | 2,065.1 | 2,083.5 | 2,057.7 | 6.6 | 6.7 | 93.49 | 187.8 | 217.7 | 135.9 | 122.7 | 13.17 | 10.317 | |
| 2,200.0 | 2,159.6 | 2,182.4 | 2,154.4 | 7.2 | 7.1 | 98.61 | 203.3 | 231.1 | 144.3 | 130.1 | 14.23 | 10.142 | |
| 2,300.0 | 2,254.1 | 2,281.2 | 2,251.0 | 7.8 | 7.6 | 103.14 | 218.9 | 244.6 | 153.8 | 138.6 | 15.25 | 10.088 | |
| 2,400.0 | 2,348.7 | 2,380.1 | 2,347.7 | 8.4 | 8.0 | 107.12 | 234.4 | 258.0 | 164.2 | 147.9 | 16.22 | 10.118 | |
| 2,500.0 | 2,443.2 | 2,478.9 | 2,444.4 | 9.1 | 8.5 | 110.63 | 250.0 | 271.5 | 175.2 | 158.0 | 17.16 | 10.208 | |
| 2,600.0 | 2,537.7 | 2,577.8 | 2,541.1 | 9.7 | 8.9 | 113.71 | 265.5 | 284.9 | 186.8 | 168.8 | 18.07 | 10.337 | |
| 2,700.0 | 2,632.2 | 2,676.6 | 2,637.8 | 10.3 | 9.3 | 116.43 | 281.1 | 298.4 | 198.9 | 180.0 | 18.96 | 10.493 | |
| 2,800.0 | 2,726.8 | 2,775.5 | 2,734.5 | 10.9 | 9.8 | 118.84 | 296.6 | 311.8 | 211.4 | 191.6 | 19.82 | 10.666 | |
| 2,900.0 | 2,821.3 | 2,874.3 | 2,831.2 | 11.6 | 10.2 | 120.97 | 312.1 | 325.2 | 224.2 | 203.6 | 20.67 | 10.849 | |
| 3,000.0 | 2,915.8 | 2,973.2 | 2,927.8 | 12.2 | 10.7 | 122.87 | 327.7 | 338.7 | 237.3 | 215.8 | 21.50 | 11.037 | |
| 3,100.0 | 3,010.3 | 3,072.0 | 3,024.5 | 12.8 | 11.1 | 124.58 | 343.2 | 352.1 | 250.6 | 228.3 | 22.33 | 11.226 | |
| 3,200.0 | 3,104.8 | 3,170.9 | 3,121.2 | 13.5 | 11.5 | 126.11 | 358.8 | 365.6 | 264.2 | 241.0 | 23.14 | 11.415 | |
| 3,300.0 | 3,199.4 | 3,269.7 | 3,217.9 | 14.1 | 12.0 | 127.49 | 374.3 | 379.0 | 277.9 | 253.9 | 23.95 | 11.601 | |
| 3,400.0 | 3,293.9 | 3,368.5 | 3,314.6 | 14.8 | 12.4 | 128.74 | 389.9 | 392.5 | 291.7 | 266.9 | 24.76 | 11.783 | |
| 3,500.0 | 3,388.4 | 3,467.4 | 3,411.3 | 15.4 | 12.9 | 129.88 | 405.4 | 405.9 | 305.6 | 280.1 | 25.55 | 11.960 | |
| 3,600.0 | 3,482.9 | 3,566.2 | 3,508.0 | 16.0 | 13.3 | 130.92 | 420.9 | 419.4 | 319.7 | 293.4 | 26.35 | 12.132 | |
| 3,700.0 | 3,577.5 | 3,665.1 | 3,604.6 | 16.7 | 13.7 | 131.87 | 436.5 | 432.8 | 333.9 | 306.7 | 27.14 | 12.299 | |
| 3,800.0 | 3,672.0 | 3,763.9 | 3,701.3 | 17.3 | 14.2 | 132.75 | 452.0 | 446.3 | 348.1 | 320.2 | 27.94 | 12.461 | |
| 3,900.0 | 3,766.5 | 3,862.8 | 3,798.0 | 18.0 | 14.6 | 133.55 | 467.6 | 459.7 | 362.4 | 333.7 | 28.73 | 12.617 | |
| 4,000.0 | 3,861.0 | 3,961.6 | 3,894.7 | 18.6 | 15.1 | 134.29 | 483.1 | 473.2 | 376.8 | 347.3 | 29.51 | 12.767 | |
| 4,100.0 | 3,955.5 | 4,060.5 | 3,991.4 | 19.3 | 15.5 | 134.98 | 498.7 | 486.6 | 391.2 | 360.9 | 30.30 | 12.912 | |
| 4,200.0 | 4,050.1 | 4,159.3 | 4,088.1 | 19.9 | 16.0 | 135.62 | 514.2 | 500.1 | 405.7 | 374.6 | 31.09 | 13.051 | |
| 4,300.0 | 4,144.6 | 4,258.2 | 4,184.8 | 20.5 | 16.4 | 136.22 | 529.7 | 513.5 | 420.3 | 388.4 | 31.87 | 13.186 | |
| 4,400.0 | 4,239.1 | 4,353.7 | 4,278.2 | 21.2 | 16.8 | 136.80 | 544.5 | 526.3 | 435.0 | 402.4 | 32.61 | 13.342 | |
| 4,500.0 | 4,333.6 | 4,445.4 | 4,368.5 | 21.8 | 17.1 | 137.63 | 556.7 | 536.8 | 451.2 | 418.0 | 33.20 | 13.592 | |
| 4,600.0 | 4,428.2 | 4,536.2 | 4,458.4 | 22.5 | 17.4 | 138.70 | 566.6 | 545.4 | 469.0 | 435.4 | 33.66 | 13.935 | |
| 4,700.0 | 4,522.7 | 4,625.9 | 4,547.5 | 23.1 | 17.6 | 139.97 | 574.3 | 552.1 | 488.6 | 454.6 | 34.02 | 14.363 | |
| 4,800.0 | 4,617.2 | 4,714.5 | 4,635.8 | 23.8 | 17.8 | 141.41 | 579.8 | 556.9 | 510.1 | 475.8 | 34.28 | 14.877 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-214 - ORIGINAL WELLBORE - PROP( **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,800.0 | 4,721.2 | 24.4 | 17.9 | 142.94 | 583.2 | 559.8 | 533.5 | 499.1 | 34.48 | 15.476 | |
| 5,000.0 | 4,806.2 | 4,887.3 | 4,808.5 | 25.1 | 18.0 | 144.60 | 584.6 | 561.0 | 559.1 | 524.6 | 34.58 | 16.171 | |
| 5,100.0 | 4,900.8 | 4,979.6 | 4,900.8 | 25.7 | 18.1 | 146.37 | 584.7 | 561.1 | 586.5 | 551.8 | 34.63 | 16.935 | |
| 5,200.0 | 4,995.3 | 5,074.1 | 4,995.3 | 26.4 | 18.2 | 148.03 | 584.7 | 561.1 | 614.3 | 579.6 | 34.71 | 17.700 | |
| 5,300.0 | 5,089.8 | 5,168.7 | 5,089.8 | 27.0 | 18.4 | 149.55 | 584.7 | 561.1 | 642.7 | 607.9 | 34.82 | 18.459 | |
| 5,400.0 | 5,184.3 | 5,263.2 | 5,184.3 | 27.7 | 18.5 | 150.94 | 584.7 | 561.1 | 671.4 | 636.4 | 34.95 | 19.209 | |
| 5,500.0 | 5,278.9 | 5,357.7 | 5,278.9 | 28.3 | 18.6 | 152.22 | 584.7 | 561.1 | 700.5 | 665.3 | 35.11 | 19.949 | |
| 5,533.5 | 5,310.5 | 5,389.4 | 5,310.5 | 28.5 | 18.7 | 152.63 | 584.7 | 561.1 | 710.3 | 675.1 | 35.17 | 20.195 | |
| 5,600.0 | 5,373.6 | 5,452.5 | 5,373.6 | 28.9 | 18.7 | 153.56 | 584.7 | 561.1 | 729.2 | 693.9 | 35.28 | 20.670 | |
| 5,700.0 | 5,469.4 | 5,548.2 | 5,469.4 | 29.3 | 18.9 | 154.75 | 584.7 | 561.1 | 755.3 | 719.8 | 35.43 | 21.320 | |
| 5,800.0 | 5,566.1 | 5,644.9 | 5,566.1 | 29.8 | 19.0 | 155.74 | 584.7 | 561.1 | 778.5 | 742.9 | 35.60 | 21.868 | |
| 5,900.0 | 5,663.6 | 5,742.5 | 5,663.6 | 30.1 | 19.1 | 156.55 | 584.7 | 561.1 | 798.7 | 762.9 | 35.79 | 22.319 | |
| 6,000.0 | 5,761.9 | 5,840.7 | 5,761.9 | 30.5 | 19.3 | 157.21 | 584.7 | 561.1 | 815.9 | 779.9 | 35.98 | 22.676 | |
| 6,100.0 | 5,860.7 | 5,939.6 | 5,860.7 | 30.7 | 19.4 | 157.72 | 584.7 | 561.1 | 829.9 | 793.7 | 36.17 | 22.943 | |
| 6,200.0 | 5,960.0 | 6,038.9 | 5,960.0 | 31.0 | 19.6 | 158.10 | 584.7 | 561.1 | 840.7 | 804.4 | 36.36 | 23.124 | |
| 6,300.0 | 6,059.7 | 6,138.5 | 6,059.7 | 31.2 | 19.7 | 158.37 | 584.7 | 561.1 | 848.4 | 811.9 | 36.53 | 23.222 | |
| 6,400.0 | 6,159.6 | 6,238.6 | 6,159.7 | 31.3 | 19.8 | 158.54 | 584.7 | 560.7 | 852.8 | 816.1 | 36.69 | 23.246 | |
| 6,486.1 | 6,245.7 | 6,324.3 | 6,245.1 | 31.4 | 19.9 | -179.73 | 584.7 | 552.8 | 854.0 | 806.3 | 47.67 | 17.914 | |
| 6,500.0 | 6,259.6 | 6,337.9 | 6,258.5 | 31.4 | 19.9 | -179.58 | 584.7 | 550.6 | 854.0 | 806.3 | 47.74 | 17.890 | |
| 6,516.1 | 6,275.7 | 6,353.6 | 6,273.9 | 31.4 | 19.9 | -179.39 | 584.7 | 547.8 | 854.1 | 806.2 | 47.81 | 17.862 | |
| 6,550.0 | 6,309.5 | 6,386.3 | 6,305.8 | 31.5 | 19.9 | -88.96 | 584.7 | 540.8 | 854.2 | 817.7 | 36.43 | 23.446 | |
| 6,600.0 | 6,359.4 | 6,433.7 | 6,351.5 | 31.5 | 19.9 | -88.34 | 584.7 | 528.0 | 854.4 | 818.1 | 36.26 | 23.564 | |
| 6,650.0 | 6,408.8 | 6,479.7 | 6,394.4 | 31.5 | 19.8 | -87.66 | 584.7 | 511.6 | 854.8 | 818.7 | 36.03 | 23.726 | |
| 6,700.0 | 6,457.5 | 6,525.0 | 6,435.0 | 31.5 | 19.8 | -86.89 | 584.7 | 491.4 | 855.3 | 819.6 | 35.74 | 23.931 | |
| 6,716.1 | 6,473.1 | 6,538.5 | 6,446.6 | 31.5 | 19.8 | -86.65 | 584.7 | 484.7 | 855.6 | 819.9 | 35.65 | 24.000 | |
| 6,725.0 | 6,481.6 | 6,546.2 | 6,453.2 | 31.5 | 19.7 | -86.50 | 584.7 | 480.7 | 855.7 | 820.1 | 35.59 | 24.042 | |
| 6,750.0 | 6,505.3 | 6,567.8 | 6,471.4 | 31.5 | 19.7 | -86.09 | 584.7 | 468.9 | 856.1 | 820.7 | 35.43 | 24.161 | |
| 6,775.0 | 6,528.5 | 6,589.2 | 6,488.8 | 31.4 | 19.7 | -85.69 | 584.7 | 456.5 | 856.6 | 821.3 | 35.28 | 24.279 | |
| 6,800.0 | 6,551.3 | 6,610.5 | 6,505.5 | 31.4 | 19.6 | -85.30 | 584.7 | 443.4 | 857.0 | 821.9 | 35.13 | 24.396 | |
| 6,825.0 | 6,573.4 | 6,631.5 | 6,521.5 | 31.4 | 19.6 | -84.93 | 584.7 | 429.6 | 857.5 | 822.6 | 34.99 | 24.509 | |
| 6,850.0 | 6,595.0 | 6,652.4 | 6,536.7 | 31.3 | 19.5 | -84.56 | 584.7 | 415.4 | 858.1 | 823.2 | 34.86 | 24.616 | |
| 6,875.0 | 6,615.8 | 6,675.0 | 6,552.5 | 31.3 | 19.5 | -84.18 | 584.7 | 399.2 | 858.6 | 823.8 | 34.73 | 24.720 | |
| 6,900.0 | 6,635.9 | 6,693.7 | 6,564.9 | 31.3 | 19.4 | -83.87 | 584.7 | 385.2 | 859.1 | 824.5 | 34.64 | 24.802 | |
| 6,925.0 | 6,655.1 | 6,714.1 | 6,577.9 | 31.2 | 19.4 | -83.55 | 584.7 | 369.4 | 859.6 | 825.1 | 34.56 | 24.876 | |
| 6,950.0 | 6,673.6 | 6,734.4 | 6,590.1 | 31.2 | 19.3 | -83.24 | 584.7 | 353.2 | 860.2 | 825.7 | 34.50 | 24.936 | |
| 6,975.0 | 6,691.1 | 6,754.6 | 6,601.5 | 31.1 | 19.3 | -82.95 | 584.7 | 336.6 | 860.7 | 826.2 | 34.46 | 24.979 | |
| 7,000.0 | 6,707.6 | 6,775.0 | 6,612.3 | 31.1 | 19.2 | -82.67 | 584.7 | 319.3 | 861.2 | 826.8 | 34.44 | 25.003 | |
| 7,025.0 | 6,723.1 | 6,794.7 | 6,622.1 | 31.0 | 19.2 | -82.41 | 584.7 | 302.2 | 861.7 | 827.3 | 34.46 | 25.003 | |
| 7,050.0 | 6,737.6 | 6,814.5 | 6,631.2 | 31.0 | 19.2 | -82.17 | 584.7 | 284.6 | 862.2 | 827.7 | 34.51 | 24.981 | |
| 7,075.0 | 6,751.0 | 6,834.3 | 6,639.6 | 30.9 | 19.1 | -81.95 | 584.7 | 266.6 | 862.6 | 828.1 | 34.60 | 24.935 | |
| 7,100.0 | 6,763.3 | 6,854.1 | 6,647.1 | 30.8 | 19.1 | -81.74 | 584.7 | 248.4 | 863.1 | 828.4 | 34.71 | 24.864 | |
| 7,125.0 | 6,774.5 | 6,875.0 | 6,654.3 | 30.8 | 19.1 | -81.54 | 584.7 | 228.7 | 863.5 | 828.6 | 34.87 | 24.764 | |
| 7,150.0 | 6,784.4 | 6,893.3 | 6,659.9 | 30.7 | 19.0 | -81.38 | 584.7 | 211.3 | 863.8 | 828.8 | 35.06 | 24.642 | |
| 7,175.0 | 6,793.1 | 6,912.9 | 6,665.1 | 30.7 | 19.0 | -81.24 | 584.7 | 192.5 | 864.2 | 828.9 | 35.28 | 24.491 | |
| 7,200.0 | 6,800.6 | 6,932.4 | 6,669.6 | 30.6 | 19.0 | -81.11 | 584.7 | 173.5 | 864.5 | 828.9 | 35.55 | 24.317 | |
| 7,225.0 | 6,806.8 | 6,950.0 | 6,672.9 | 30.6 | 19.0 | -81.00 | 584.7 | 156.2 | 864.7 | 828.9 | 35.84 | 24.130 | |
| 7,250.0 | 6,811.8 | 6,971.2 | 6,676.1 | 30.5 | 19.0 | -80.91 | 584.7 | 135.2 | 864.9 | 828.7 | 36.19 | 23.900 | |
| 7,275.0 | 6,815.5 | 6,990.6 | 6,678.2 | 30.5 | 19.0 | -80.84 | 584.7 | 115.9 | 865.1 | 828.5 | 36.56 | 23.659 | |
| 7,300.0 | 6,817.8 | 7,010.0 | 6,679.5 | 30.4 | 19.0 | -80.79 | 584.7 | 96.5 | 865.2 | 828.2 | 36.97 | 23.403 | |
| 7,325.0 | 6,818.9 | 7,029.4 | 6,680.0 | 30.4 | 19.0 | -80.76 | 584.7 | 77.2 | 865.2 | 827.8 | 37.40 | 23.133 | |
| 7,332.8 | 6,819.0 | 7,036.4 | 6,680.0 | 30.4 | 19.1 | -80.76 | 584.7 | 70.2 | 865.2 | 827.7 | 37.56 | 23.036 | |
| 7,400.0 | 6,819.0 | 7,103.6 | 6,680.0 | 30.3 | 19.5 | -80.76 | 584.7 | 3.0 | 865.2 | 826.2 | 39.01 | 22.179 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-214 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,500.0 | 6,819.0 | 7,203.6 | 6,680.0 | 30.2 | 20.9 | -80.76 | 584.7 | -97.0 | 865.2 | 823.6 | 41.70 | 20.751 | |
| 7,600.0 | 6,819.0 | 7,303.6 | 6,680.0 | 30.3 | 22.6 | -80.76 | 584.7 | -197.0 | 865.2 | 820.3 | 44.91 | 19.267 | |
| 7,700.0 | 6,819.0 | 7,403.6 | 6,680.0 | 30.6 | 24.6 | -80.76 | 584.7 | -297.0 | 865.2 | 816.7 | 48.54 | 17.824 | |
| 7,800.0 | 6,819.0 | 7,503.6 | 6,680.0 | 31.3 | 26.7 | -80.76 | 584.7 | -397.0 | 865.2 | 812.7 | 52.52 | 16.476 | |
| 7,900.0 | 6,819.0 | 7,603.6 | 6,680.0 | 32.5 | 28.9 | -80.76 | 584.7 | -497.0 | 865.2 | 808.5 | 56.75 | 15.246 | |
| 8,000.0 | 6,819.0 | 7,703.6 | 6,680.0 | 34.2 | 31.3 | -80.76 | 584.7 | -597.0 | 865.2 | 804.0 | 61.20 | 14.138 | |
| 8,100.0 | 6,819.0 | 7,803.6 | 6,680.0 | 36.1 | 33.7 | -80.76 | 584.7 | -697.0 | 865.2 | 799.4 | 65.82 | 13.146 | |
| 8,200.0 | 6,819.0 | 7,903.6 | 6,680.0 | 38.3 | 36.1 | -80.76 | 584.7 | -797.0 | 865.2 | 794.7 | 70.57 | 12.261 | |
| 8,300.0 | 6,819.0 | 8,003.6 | 6,680.0 | 40.6 | 38.6 | -80.76 | 584.7 | -897.0 | 865.2 | 789.8 | 75.43 | 11.471 | |
| 8,400.0 | 6,819.0 | 8,103.6 | 6,680.0 | 42.9 | 41.1 | -80.76 | 584.7 | -997.0 | 865.2 | 784.9 | 80.38 | 10.765 | |
| 8,500.0 | 6,819.0 | 8,203.6 | 6,680.0 | 45.3 | 43.7 | -80.76 | 584.7 | -1,097.0 | 865.2 | 779.8 | 85.40 | 10.131 | |
| 8,600.0 | 6,819.0 | 8,303.6 | 6,680.0 | 47.8 | 46.3 | -80.76 | 584.7 | -1,197.0 | 865.2 | 774.8 | 90.49 | 9.562 | |
| 8,700.0 | 6,819.0 | 8,403.6 | 6,680.0 | 50.3 | 48.9 | -80.76 | 584.7 | -1,297.0 | 865.2 | 769.6 | 95.63 | 9.048 | |
| 8,800.0 | 6,819.0 | 8,503.6 | 6,680.0 | 52.8 | 51.6 | -80.76 | 584.7 | -1,397.0 | 865.2 | 764.4 | 100.81 | 8.583 | |
| 8,900.0 | 6,819.0 | 8,603.6 | 6,680.0 | 55.4 | 54.2 | -80.76 | 584.7 | -1,497.0 | 865.2 | 759.2 | 106.03 | 8.160 | |
| 9,000.0 | 6,819.0 | 8,703.6 | 6,680.0 | 58.0 | 56.9 | -80.76 | 584.7 | -1,597.0 | 865.2 | 754.0 | 111.28 | 7.775 | |
| 9,100.0 | 6,819.0 | 8,803.6 | 6,680.0 | 60.6 | 59.6 | -80.76 | 584.7 | -1,697.0 | 865.2 | 748.7 | 116.56 | 7.423 | |
| 9,200.0 | 6,819.0 | 8,903.6 | 6,680.0 | 63.2 | 62.3 | -80.76 | 584.7 | -1,797.0 | 865.2 | 743.4 | 121.87 | 7.100 | |
| 9,300.0 | 6,819.0 | 9,003.6 | 6,680.0 | 65.9 | 65.0 | -80.76 | 584.7 | -1,897.0 | 865.2 | 738.1 | 127.19 | 6.803 | |
| 9,400.0 | 6,819.0 | 9,103.6 | 6,680.0 | 68.5 | 67.7 | -80.76 | 584.7 | -1,997.0 | 865.2 | 732.7 | 132.53 | 6.528 | |
| 9,500.0 | 6,819.0 | 9,203.6 | 6,680.0 | 71.2 | 70.4 | -80.76 | 584.7 | -2,097.0 | 865.2 | 727.4 | 137.90 | 6.275 | |
| 9,600.0 | 6,819.0 | 9,303.6 | 6,680.0 | 73.9 | 73.1 | -80.76 | 584.7 | -2,197.0 | 865.3 | 722.0 | 143.27 | 6.039 | |
| 9,700.0 | 6,819.0 | 9,403.6 | 6,680.0 | 76.5 | 75.9 | -80.76 | 584.7 | -2,297.0 | 865.3 | 716.6 | 148.66 | 5.820 | |
| 9,800.0 | 6,819.0 | 9,503.6 | 6,680.0 | 79.2 | 78.6 | -80.76 | 584.7 | -2,397.0 | 865.3 | 711.2 | 154.06 | 5.616 | |
| 9,900.0 | 6,819.0 | 9,603.6 | 6,680.0 | 81.9 | 81.4 | -80.76 | 584.7 | -2,497.0 | 865.3 | 705.8 | 159.47 | 5.426 | |
| 10,000.0 | 6,819.0 | 9,703.6 | 6,680.0 | 84.6 | 84.1 | -80.76 | 584.7 | -2,597.0 | 865.3 | 700.4 | 164.89 | 5.247 | |
| 10,100.0 | 6,819.0 | 9,803.6 | 6,680.0 | 87.4 | 86.9 | -80.76 | 584.7 | -2,697.0 | 865.3 | 694.9 | 170.32 | 5.080 | |
| 10,200.0 | 6,819.0 | 9,903.6 | 6,680.0 | 90.1 | 89.6 | -80.76 | 584.7 | -2,797.0 | 865.3 | 689.5 | 175.75 | 4.923 | |
| 10,300.0 | 6,819.0 | 10,003.6 | 6,680.0 | 92.8 | 92.4 | -80.76 | 584.7 | -2,897.0 | 865.3 | 684.1 | 181.20 | 4.775 | |
| 10,400.0 | 6,819.0 | 10,103.6 | 6,680.0 | 95.5 | 95.1 | -80.76 | 584.7 | -2,997.0 | 865.3 | 678.6 | 186.65 | 4.636 | |
| 10,500.0 | 6,819.0 | 10,203.6 | 6,680.0 | 98.3 | 97.9 | -80.76 | 584.7 | -3,097.0 | 865.3 | 673.1 | 192.10 | 4.504 | |
| 10,600.0 | 6,819.0 | 10,303.6 | 6,680.0 | 101.0 | 100.7 | -80.76 | 584.7 | -3,197.0 | 865.3 | 667.7 | 197.57 | 4.380 | |
| 10,700.0 | 6,819.0 | 10,403.6 | 6,680.0 | 103.8 | 103.4 | -80.76 | 584.7 | -3,297.0 | 865.3 | 662.2 | 203.03 | 4.262 | |
| 10,800.0 | 6,819.0 | 10,503.6 | 6,680.0 | 106.5 | 106.2 | -80.76 | 584.7 | -3,397.0 | 865.3 | 656.7 | 208.50 | 4.150 | |
| 10,900.0 | 6,819.0 | 10,603.6 | 6,680.0 | 109.2 | 109.0 | -80.76 | 584.7 | -3,497.0 | 865.3 | 651.3 | 213.98 | 4.044 | |
| 11,000.0 | 6,819.0 | 10,703.6 | 6,680.0 | 112.0 | 111.8 | -80.76 | 584.7 | -3,597.0 | 865.3 | 645.8 | 219.46 | 3.943 | |
| 11,100.0 | 6,819.0 | 10,803.6 | 6,680.0 | 114.8 | 114.5 | -80.76 | 584.7 | -3,697.0 | 865.3 | 640.3 | 224.94 | 3.847 | |
| 11,200.0 | 6,819.0 | 10,903.6 | 6,680.0 | 117.5 | 117.3 | -80.76 | 584.7 | -3,797.0 | 865.3 | 634.8 | 230.43 | 3.755 | |
| 11,300.0 | 6,819.0 | 11,003.6 | 6,680.0 | 120.3 | 120.1 | -80.76 | 584.7 | -3,897.0 | 865.3 | 629.3 | 235.91 | 3.668 | |
| 11,400.0 | 6,819.0 | 11,103.6 | 6,680.0 | 123.0 | 122.9 | -80.76 | 584.7 | -3,997.0 | 865.3 | 623.8 | 241.41 | 3.584 | |
| 11,500.0 | 6,819.0 | 11,203.6 | 6,680.0 | 125.8 | 125.7 | -80.76 | 584.7 | -4,097.0 | 865.3 | 618.4 | 246.90 | 3.504 | |
| 11,600.0 | 6,819.0 | 11,303.6 | 6,680.0 | 128.6 | 128.4 | -80.76 | 584.7 | -4,197.0 | 865.3 | 612.9 | 252.40 | 3.428 | |
| 11,700.0 | 6,819.0 | 11,403.6 | 6,680.0 | 131.3 | 131.2 | -80.76 | 584.7 | -4,297.0 | 865.3 | 607.4 | 257.90 | 3.355 | |
| 11,800.0 | 6,819.0 | 11,503.6 | 6,680.0 | 134.1 | 134.0 | -80.76 | 584.7 | -4,397.0 | 865.3 | 601.9 | 263.40 | 3.285 | |
| 11,900.0 | 6,819.0 | 11,603.6 | 6,680.0 | 136.9 | 136.8 | -80.76 | 584.7 | -4,497.0 | 865.3 | 596.3 | 268.91 | 3.218 | |
| 12,000.0 | 6,819.0 | 11,703.6 | 6,680.0 | 139.6 | 139.6 | -80.76 | 584.7 | -4,597.0 | 865.3 | 590.8 | 274.41 | 3.153 | |
| 12,100.0 | 6,819.0 | 11,803.6 | 6,680.0 | 142.4 | 142.4 | -80.76 | 584.7 | -4,697.0 | 865.3 | 585.3 | 279.92 | 3.091 | |
| 12,200.0 | 6,819.0 | 11,903.6 | 6,680.0 | 145.2 | 145.2 | -80.76 | 584.7 | -4,797.0 | 865.3 | 579.8 | 285.43 | 3.031 | |
| 12,300.0 | 6,819.0 | 12,003.6 | 6,680.0 | 148.0 | 148.0 | -80.76 | 584.7 | -4,897.0 | 865.3 | 574.3 | 290.94 | 2.974 | |
| 12,400.0 | 6,819.0 | 12,103.6 | 6,680.0 | 150.8 | 150.8 | -80.76 | 584.7 | -4,997.0 | 865.3 | 568.8 | 296.45 | 2.919 | |
| 12,500.0 | 6,819.0 | 12,203.6 | 6,680.0 | 153.5 | 153.5 | -80.76 | 584.7 | -5,097.0 | 865.3 | 563.3 | 301.97 | 2.865 | |
| 12,600.0 | 6,819.0 | 12,303.6 | 6,680.0 | 156.3 | 156.3 | -80.76 | 584.7 | -5,197.0 | 865.3 | 557.8 | 307.48 | 2.814 | |

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|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-214 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,700.0 | 6,819.0 | 12,403.6 | 6,680.0 | 159.1 | 159.1 | -80.76 | 584.7 | -5,297.0 | 865.3 | 552.3 | 313.00 | 2.764 | |
| 12,800.0 | 6,819.0 | 12,503.6 | 6,680.0 | 161.9 | 161.9 | -80.76 | 584.7 | -5,397.0 | 865.3 | 546.7 | 318.52 | 2.716 | |
| 12,900.0 | 6,819.0 | 12,603.6 | 6,680.0 | 164.7 | 164.7 | -80.76 | 584.7 | -5,497.0 | 865.3 | 541.2 | 324.04 | 2.670 | |
| 13,000.0 | 6,819.0 | 12,703.6 | 6,680.0 | 167.4 | 167.5 | -80.76 | 584.7 | -5,597.0 | 865.3 | 535.7 | 329.56 | 2.625 | |
| 13,100.0 | 6,819.0 | 12,803.6 | 6,680.0 | 170.2 | 170.3 | -80.76 | 584.7 | -5,697.0 | 865.3 | 530.2 | 335.08 | 2.582 | |
| 13,200.0 | 6,819.0 | 12,903.6 | 6,680.0 | 173.0 | 173.1 | -80.76 | 584.7 | -5,797.0 | 865.3 | 524.7 | 340.60 | 2.540 | |
| 13,300.0 | 6,819.0 | 13,003.6 | 6,680.0 | 175.8 | 175.9 | -80.76 | 584.7 | -5,897.0 | 865.3 | 519.1 | 346.13 | 2.500 | |
| 13,400.0 | 6,819.0 | 13,103.6 | 6,680.0 | 178.6 | 178.7 | -80.76 | 584.7 | -5,997.0 | 865.3 | 513.6 | 351.65 | 2.461 | |
| 13,500.0 | 6,819.0 | 13,203.6 | 6,680.0 | 181.4 | 181.5 | -80.76 | 584.7 | -6,097.0 | 865.3 | 508.1 | 357.18 | 2.422 | |
| 13,600.0 | 6,819.0 | 13,303.6 | 6,680.0 | 184.2 | 184.3 | -80.76 | 584.7 | -6,197.0 | 865.3 | 502.6 | 362.70 | 2.386 | |
| 13,700.0 | 6,819.0 | 13,403.6 | 6,680.0 | 187.0 | 187.1 | -80.76 | 584.7 | -6,297.0 | 865.3 | 497.0 | 368.23 | 2.350 | |
| 13,800.0 | 6,819.0 | 13,503.6 | 6,680.0 | 189.7 | 189.9 | -80.76 | 584.7 | -6,397.0 | 865.3 | 491.5 | 373.76 | 2.315 | |
| 13,900.0 | 6,819.0 | 13,603.6 | 6,680.0 | 192.5 | 192.7 | -80.76 | 584.7 | -6,497.0 | 865.3 | 486.0 | 379.29 | 2.281 | |
| 14,000.0 | 6,819.0 | 13,703.6 | 6,680.0 | 195.3 | 195.5 | -80.76 | 584.7 | -6,597.0 | 865.3 | 480.4 | 384.82 | 2.248 | |
| 14,100.0 | 6,819.0 | 13,803.6 | 6,680.0 | 198.1 | 198.3 | -80.76 | 584.7 | -6,697.0 | 865.3 | 474.9 | 390.35 | 2.217 | |
| 14,200.0 | 6,819.0 | 13,903.6 | 6,680.0 | 200.9 | 201.1 | -80.76 | 584.7 | -6,797.0 | 865.3 | 469.4 | 395.88 | 2.186 | |
| 14,300.0 | 6,819.0 | 14,003.6 | 6,680.0 | 203.7 | 203.9 | -80.76 | 584.7 | -6,897.0 | 865.3 | 463.8 | 401.41 | 2.156 | |
| 14,400.0 | 6,819.0 | 14,103.6 | 6,680.0 | 206.5 | 206.7 | -80.76 | 584.7 | -6,997.0 | 865.3 | 458.3 | 406.94 | 2.126 | |
| 14,500.0 | 6,819.0 | 14,203.6 | 6,680.0 | 209.3 | 209.5 | -80.76 | 584.7 | -7,097.0 | 865.3 | 452.8 | 412.47 | 2.098 | |
| 14,600.0 | 6,819.0 | 14,303.6 | 6,680.0 | 212.1 | 212.3 | -80.76 | 584.7 | -7,197.0 | 865.3 | 447.3 | 418.01 | 2.070 | |
| 14,700.0 | 6,819.0 | 14,405.0 | 6,680.0 | 214.9 | 215.1 | -80.76 | 584.7 | -7,298.5 | 865.3 | 441.7 | 423.58 | 2.043 | |
| 14,720.3 | 6,819.0 | 14,425.4 | 6,680.0 | 215.4 | 215.7 | -80.75 | 584.7 | -7,318.8 | 865.2 | 440.5 | 424.70 | 2.037 | SF |

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|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-234 - ORIGINAL WELLBORE - PROP( **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -72.22 | 9.1 | -28.4 | 29.8 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -72.22 | 9.1 | -28.4 | 29.8 | 29.7 | 0.17 | 172.322 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -72.22 | 9.1 | -28.4 | 29.8 | 29.2 | 0.62 | 47.902 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | -72.22 | 9.1 | -28.4 | 29.8 | 28.8 | 1.07 | 27.817 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -72.22 | 9.1 | -28.4 | 29.8 | 28.3 | 1.52 | 19.599 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | -72.22 | 9.1 | -28.4 | 29.8 | 27.9 | 1.97 | 15.130 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | -72.22 | 9.1 | -28.4 | 29.8 | 27.4 | 2.42 | 12.320 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.4 | 1.4 | -72.22 | 9.1 | -28.4 | 29.8 | 27.0 | 2.87 | 10.391 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | -72.22 | 9.1 | -28.4 | 29.8 | 26.5 | 3.32 | 8.984 | CC |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | -96.71 | 9.1 | -28.4 | 30.0 | 26.2 | 3.77 | 7.957 | ES |
| 1,000.0 | 999.8 | 999.8 | 999.8 | 2.1 | 2.1 | -106.32 | 9.1 | -28.4 | 31.0 | 26.8 | 4.21 | 7.361 | |
| 1,100.0 | 1,099.5 | 1,100.3 | 1,100.3 | 2.3 | 2.3 | -122.37 | 8.2 | -26.9 | 33.2 | 28.6 | 4.64 | 7.154 | |
| 1,200.0 | 1,198.7 | 1,200.0 | 1,199.9 | 2.6 | 2.5 | -143.39 | 5.4 | -22.5 | 38.6 | 33.5 | 5.05 | 7.631 | |
| 1,300.0 | 1,297.5 | 1,298.5 | 1,298.0 | 2.9 | 2.7 | -163.04 | 0.8 | -15.3 | 50.4 | 45.0 | 5.47 | 9.221 | |
| 1,400.0 | 1,395.6 | 1,395.4 | 1,394.2 | 3.2 | 2.9 | -177.43 | -5.5 | -5.4 | 69.7 | 63.8 | 5.91 | 11.802 | |
| 1,500.0 | 1,493.1 | 1,490.3 | 1,487.9 | 3.5 | 3.2 | 172.92 | -13.3 | 7.0 | 95.8 | 89.4 | 6.38 | 15.012 | |
| 1,507.2 | 1,500.0 | 1,497.0 | 1,494.6 | 3.6 | 3.2 | 172.37 | -13.9 | 7.9 | 97.9 | 91.5 | 6.42 | 15.261 | |
| 1,572.2 | 1,563.0 | 1,558.5 | 1,555.1 | 3.8 | 3.4 | 168.17 | -19.7 | 17.0 | 117.5 | 110.7 | 6.74 | 17.432 | |
| 1,600.0 | 1,590.0 | 1,584.5 | 1,580.7 | 3.9 | 3.4 | 166.73 | -22.1 | 20.9 | 126.1 | 119.3 | 6.87 | 18.356 | |
| 1,700.0 | 1,686.3 | 1,676.1 | 1,670.5 | 4.4 | 3.7 | 162.44 | -31.7 | 36.0 | 160.6 | 153.2 | 7.40 | 21.702 | |
| 1,800.0 | 1,781.5 | 1,768.1 | 1,760.5 | 4.9 | 4.1 | 159.52 | -42.0 | 52.1 | 199.1 | 191.1 | 7.96 | 25.023 | |
| 1,817.6 | 1,798.2 | 1,784.2 | 1,776.2 | 5.0 | 4.1 | 159.14 | -43.8 | 55.0 | 206.2 | 198.2 | 8.06 | 25.600 | |
| 1,900.0 | 1,876.1 | 1,859.3 | 1,849.6 | 5.5 | 4.4 | 157.90 | -52.1 | 68.1 | 239.9 | 231.3 | 8.57 | 27.995 | |
| 2,000.0 | 1,970.6 | 1,950.4 | 1,938.8 | 6.0 | 4.8 | 156.79 | -62.3 | 84.1 | 280.8 | 271.5 | 9.21 | 30.494 | |
| 2,100.0 | 2,065.1 | 2,041.5 | 2,027.9 | 6.6 | 5.2 | 155.96 | -72.4 | 100.1 | 321.7 | 311.9 | 9.86 | 32.614 | |
| 2,200.0 | 2,159.6 | 2,132.7 | 2,117.1 | 7.2 | 5.5 | 155.32 | -82.6 | 116.1 | 362.7 | 352.2 | 10.53 | 34.436 | |
| 2,300.0 | 2,254.1 | 2,223.8 | 2,206.2 | 7.8 | 5.9 | 154.81 | -92.7 | 132.1 | 403.8 | 392.6 | 11.21 | 36.006 | |
| 2,400.0 | 2,348.7 | 2,314.9 | 2,295.4 | 8.4 | 6.3 | 154.39 | -102.8 | 148.1 | 444.8 | 432.9 | 11.90 | 37.368 | |
| 2,500.0 | 2,443.2 | 2,406.1 | 2,384.5 | 9.1 | 6.7 | 154.05 | -113.0 | 164.1 | 485.9 | 473.3 | 12.60 | 38.558 | |
| 2,600.0 | 2,537.7 | 2,497.2 | 2,473.7 | 9.7 | 7.1 | 153.76 | -123.1 | 180.1 | 527.0 | 513.7 | 13.31 | 39.604 | |
| 2,700.0 | 2,632.2 | 2,588.4 | 2,562.8 | 10.3 | 7.5 | 153.51 | -133.3 | 196.1 | 568.1 | 554.1 | 14.02 | 40.528 | |
| 2,800.0 | 2,726.8 | 2,679.5 | 2,652.0 | 10.9 | 7.9 | 153.29 | -143.4 | 212.1 | 609.2 | 594.5 | 14.73 | 41.350 | |
| 2,900.0 | 2,821.3 | 2,770.6 | 2,741.1 | 11.6 | 8.3 | 153.10 | -153.6 | 228.1 | 650.3 | 634.9 | 15.45 | 42.086 | |
| 3,000.0 | 2,915.8 | 2,861.8 | 2,830.2 | 12.2 | 8.7 | 152.94 | -163.7 | 244.1 | 691.5 | 675.3 | 16.18 | 42.746 | |
| 3,100.0 | 3,010.3 | 2,952.9 | 2,919.4 | 12.8 | 9.1 | 152.79 | -173.9 | 260.1 | 732.6 | 715.7 | 16.90 | 43.342 | |
| 3,200.0 | 3,104.8 | 3,044.0 | 3,008.5 | 13.5 | 9.5 | 152.66 | -184.0 | 276.1 | 773.7 | 756.1 | 17.63 | 43.882 | |
| 3,300.0 | 3,199.4 | 3,135.2 | 3,097.7 | 14.1 | 9.9 | 152.54 | -194.2 | 292.1 | 814.8 | 796.5 | 18.36 | 44.373 | |
| 3,400.0 | 3,293.9 | 3,226.3 | 3,186.8 | 14.8 | 10.3 | 152.43 | -204.3 | 308.1 | 856.0 | 836.9 | 19.10 | 44.821 | |
| 3,500.0 | 3,388.4 | 3,317.4 | 3,276.0 | 15.4 | 10.8 | 152.33 | -214.5 | 324.1 | 897.1 | 877.3 | 19.83 | 45.232 | |
| 3,600.0 | 3,482.9 | 3,408.6 | 3,365.1 | 16.0 | 11.2 | 152.24 | -224.6 | 340.1 | 938.2 | 917.7 | 20.57 | 45.610 | |
| 3,700.0 | 3,577.5 | 3,499.7 | 3,454.3 | 16.7 | 11.6 | 152.16 | -234.7 | 356.1 | 979.4 | 958.1 | 21.31 | 45.958 | |
| 3,800.0 | 3,672.0 | 3,590.9 | 3,543.4 | 17.3 | 12.0 | 152.09 | -244.9 | 372.1 | 1,020.5 | 998.5 | 22.05 | 46.279 | |
| 3,900.0 | 3,766.5 | 3,682.0 | 3,632.6 | 18.0 | 12.4 | 152.02 | -255.0 | 388.1 | 1,061.7 | 1,038.9 | 22.79 | 46.577 | |
| 4,000.0 | 3,861.0 | 3,773.1 | 3,721.7 | 18.6 | 12.8 | 151.95 | -265.2 | 404.1 | 1,102.8 | 1,079.3 | 23.54 | 46.854 | |
| 4,100.0 | 3,955.5 | 3,864.3 | 3,810.9 | 19.3 | 13.3 | 151.89 | -275.3 | 420.1 | 1,144.0 | 1,119.7 | 24.28 | 47.112 | |
| 4,200.0 | 4,050.1 | 3,955.4 | 3,900.0 | 19.9 | 13.7 | 151.84 | -285.5 | 436.1 | 1,185.1 | 1,160.1 | 25.03 | 47.352 | |
| 4,300.0 | 4,144.6 | 4,046.5 | 3,989.2 | 20.5 | 14.1 | 151.79 | -295.6 | 452.1 | 1,226.2 | 1,200.5 | 25.77 | 47.577 | |
| 4,400.0 | 4,239.1 | 4,137.7 | 4,078.3 | 21.2 | 14.5 | 151.74 | -305.8 | 468.1 | 1,267.4 | 1,240.9 | 26.52 | 47.788 | |
| 4,500.0 | 4,333.6 | 4,228.8 | 4,167.4 | 21.8 | 14.9 | 151.69 | -315.9 | 484.1 | 1,308.5 | 1,281.3 | 27.27 | 47.986 | |
| 4,600.0 | 4,428.2 | 4,320.0 | 4,256.6 | 22.5 | 15.4 | 151.65 | -326.1 | 500.1 | 1,349.7 | 1,321.7 | 28.02 | 48.172 | |
| 4,700.0 | 4,522.7 | 4,416.5 | 4,351.0 | 23.1 | 15.8 | 151.61 | -336.8 | 517.0 | 1,390.8 | 1,362.0 | 28.77 | 48.338 | |
| 4,800.0 | 4,617.2 | 4,548.0 | 4,480.4 | 23.8 | 16.2 | 151.69 | -349.4 | 536.9 | 1,430.3 | 1,400.8 | 29.53 | 48.437 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-234 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,682.2 | 4,613.4 | 24.4 | 16.5 | 151.97 | -359.0 | 552.0 | 1,467.2 | 1,437.0 | 30.23 | 48.536 | |
| 5,000.0 | 4,806.2 | 4,818.8 | 4,749.4 | 25.1 | 16.8 | 152.44 | -365.3 | 562.0 | 1,501.5 | 1,470.6 | 30.86 | 48.651 | |
| 5,100.0 | 4,900.8 | 4,957.1 | 4,887.6 | 25.7 | 17.0 | 153.10 | -368.1 | 566.5 | 1,533.1 | 1,501.6 | 31.42 | 48.786 | |
| 5,200.0 | 4,995.3 | 5,064.7 | 4,995.3 | 26.4 | 17.2 | 153.70 | -368.3 | 566.7 | 1,562.7 | 1,530.8 | 31.92 | 48.959 | |
| 5,300.0 | 5,089.8 | 5,159.3 | 5,089.8 | 27.0 | 17.3 | 154.21 | -368.3 | 566.7 | 1,592.3 | 1,559.9 | 32.40 | 49.147 | |
| 5,400.0 | 5,184.3 | 5,253.8 | 5,184.3 | 27.7 | 17.4 | 154.71 | -368.3 | 566.7 | 1,622.1 | 1,589.2 | 32.88 | 49.336 | |
| 5,500.0 | 5,278.9 | 5,348.3 | 5,278.9 | 28.3 | 17.6 | 155.19 | -368.3 | 566.7 | 1,651.9 | 1,618.6 | 33.36 | 49.524 | |
| 5,533.5 | 5,310.5 | 5,380.0 | 5,310.5 | 28.5 | 17.6 | 155.35 | -368.3 | 566.7 | 1,662.0 | 1,628.5 | 33.52 | 49.587 | |
| 5,600.0 | 5,373.6 | 5,443.1 | 5,373.6 | 28.9 | 17.7 | 155.81 | -368.3 | 566.7 | 1,681.2 | 1,647.3 | 33.91 | 49.585 | |
| 5,700.0 | 5,469.4 | 5,538.8 | 5,469.4 | 29.3 | 17.8 | 156.42 | -368.3 | 566.7 | 1,707.7 | 1,673.3 | 34.43 | 49.602 | |
| 5,800.0 | 5,566.1 | 5,635.6 | 5,566.1 | 29.8 | 17.9 | 156.95 | -368.3 | 566.7 | 1,731.2 | 1,696.3 | 34.92 | 49.581 | |
| 5,900.0 | 5,663.6 | 5,733.1 | 5,663.6 | 30.1 | 18.1 | 157.39 | -368.3 | 566.7 | 1,751.5 | 1,716.2 | 35.37 | 49.525 | |
| 6,000.0 | 5,761.9 | 5,831.3 | 5,761.9 | 30.5 | 18.2 | 157.75 | -368.3 | 566.7 | 1,768.8 | 1,733.0 | 35.78 | 49.436 | |
| 6,100.0 | 5,860.7 | 5,930.2 | 5,860.7 | 30.7 | 18.4 | 158.04 | -368.3 | 566.7 | 1,782.9 | 1,746.7 | 36.15 | 49.317 | |
| 6,200.0 | 5,960.0 | 6,029.5 | 5,960.0 | 31.0 | 18.5 | 158.26 | -368.3 | 566.7 | 1,793.7 | 1,757.3 | 36.48 | 49.168 | |
| 6,300.0 | 6,059.7 | 6,129.1 | 6,059.7 | 31.2 | 18.6 | 158.42 | -368.3 | 566.7 | 1,801.4 | 1,764.6 | 36.77 | 48.989 | |
| 6,400.0 | 6,159.6 | 6,229.3 | 6,159.9 | 31.3 | 18.8 | 158.52 | -368.3 | 566.3 | 1,805.8 | 1,768.8 | 37.01 | 48.793 | |
| 6,486.1 | 6,245.7 | 6,315.8 | 6,245.9 | 31.4 | 18.8 | 179.95 | -368.3 | 558.3 | 1,807.0 | 1,761.6 | 45.43 | 39.779 | |
| 6,495.2 | 6,254.8 | 6,324.8 | 6,254.8 | 31.4 | 18.8 | -180.00 | -368.3 | 556.9 | 1,807.0 | 1,761.5 | 45.45 | 39.759 | |
| 6,500.0 | 6,259.6 | 6,329.5 | 6,259.4 | 31.4 | 18.8 | -179.97 | -368.3 | 556.1 | 1,807.0 | 1,761.5 | 45.46 | 39.749 | |
| 6,516.1 | 6,275.7 | 6,345.3 | 6,275.0 | 31.4 | 18.8 | -179.88 | -368.3 | 553.2 | 1,807.0 | 1,761.5 | 45.50 | 39.714 | |
| 6,550.0 | 6,309.5 | 6,378.2 | 6,307.1 | 31.5 | 18.8 | -89.68 | -368.3 | 546.1 | 1,807.0 | 1,769.9 | 37.09 | 48.717 | |
| 6,600.0 | 6,359.4 | 6,426.0 | 6,353.1 | 31.5 | 18.8 | -89.38 | -368.3 | 533.1 | 1,807.1 | 1,770.0 | 37.05 | 48.771 | |
| 6,650.0 | 6,408.8 | 6,472.4 | 6,396.3 | 31.5 | 18.7 | -89.05 | -368.3 | 516.3 | 1,807.3 | 1,770.3 | 36.96 | 48.897 | |
| 6,700.0 | 6,457.5 | 6,517.5 | 6,436.6 | 31.5 | 18.7 | -88.69 | -368.3 | 496.1 | 1,807.5 | 1,770.7 | 36.83 | 49.080 | |
| 6,716.1 | 6,473.1 | 6,531.7 | 6,448.9 | 31.5 | 18.6 | -88.56 | -368.3 | 489.0 | 1,807.6 | 1,770.8 | 36.78 | 49.148 | |
| 6,725.0 | 6,481.6 | 6,539.5 | 6,455.5 | 31.5 | 18.6 | -88.49 | -368.3 | 484.9 | 1,807.7 | 1,770.9 | 36.75 | 49.188 | |
| 6,750.0 | 6,505.3 | 6,561.3 | 6,473.7 | 31.5 | 18.6 | -88.29 | -368.3 | 472.9 | 1,807.8 | 1,771.2 | 36.67 | 49.306 | |
| 6,775.0 | 6,528.5 | 6,582.8 | 6,491.2 | 31.4 | 18.6 | -88.10 | -368.3 | 460.3 | 1,808.0 | 1,771.5 | 36.58 | 49.429 | |
| 6,800.0 | 6,551.3 | 6,604.2 | 6,507.9 | 31.4 | 18.5 | -87.91 | -368.3 | 447.0 | 1,808.3 | 1,771.8 | 36.49 | 49.555 | |
| 6,825.0 | 6,573.4 | 6,625.0 | 6,523.6 | 31.4 | 18.5 | -87.73 | -368.3 | 433.3 | 1,808.5 | 1,772.1 | 36.40 | 49.679 | |
| 6,850.0 | 6,595.0 | 6,646.4 | 6,539.1 | 31.3 | 18.5 | -87.55 | -368.3 | 418.6 | 1,808.7 | 1,772.4 | 36.32 | 49.800 | |
| 6,875.0 | 6,615.8 | 6,667.2 | 6,553.6 | 31.3 | 18.4 | -87.38 | -368.3 | 403.6 | 1,809.0 | 1,772.7 | 36.24 | 49.911 | |
| 6,900.0 | 6,635.9 | 6,687.9 | 6,567.2 | 31.3 | 18.4 | -87.21 | -368.3 | 388.1 | 1,809.2 | 1,773.0 | 36.18 | 50.009 | |
| 6,925.0 | 6,655.1 | 6,708.4 | 6,580.1 | 31.2 | 18.4 | -87.05 | -368.3 | 372.2 | 1,809.5 | 1,773.4 | 36.12 | 50.091 | |
| 6,950.0 | 6,673.6 | 6,728.8 | 6,592.3 | 31.2 | 18.3 | -86.90 | -368.3 | 355.8 | 1,809.7 | 1,773.6 | 36.09 | 50.152 | |
| 6,975.0 | 6,691.1 | 6,750.0 | 6,604.1 | 31.1 | 18.3 | -86.75 | -368.3 | 338.2 | 1,810.0 | 1,773.9 | 36.06 | 50.188 | |
| 7,000.0 | 6,707.6 | 6,769.2 | 6,614.2 | 31.1 | 18.3 | -86.62 | -368.3 | 321.8 | 1,810.2 | 1,774.2 | 36.07 | 50.192 | |
| 7,025.0 | 6,723.1 | 6,789.3 | 6,624.0 | 31.0 | 18.3 | -86.49 | -368.3 | 304.3 | 1,810.5 | 1,774.4 | 36.09 | 50.163 | |
| 7,050.0 | 6,737.6 | 6,809.2 | 6,633.0 | 31.0 | 18.3 | -86.36 | -368.3 | 286.5 | 1,810.7 | 1,774.6 | 36.14 | 50.099 | |
| 7,075.0 | 6,751.0 | 6,829.1 | 6,641.2 | 30.9 | 18.4 | -86.25 | -368.3 | 268.5 | 1,810.9 | 1,774.7 | 36.22 | 49.996 | |
| 7,100.0 | 6,763.3 | 6,850.0 | 6,649.0 | 30.8 | 18.4 | -86.14 | -368.3 | 249.1 | 1,811.2 | 1,774.8 | 36.34 | 49.846 | |
| 7,125.0 | 6,774.5 | 6,868.6 | 6,655.3 | 30.8 | 18.4 | -86.05 | -368.3 | 231.6 | 1,811.4 | 1,774.9 | 36.48 | 49.660 | |
| 7,150.0 | 6,784.4 | 6,888.2 | 6,661.1 | 30.7 | 18.5 | -85.96 | -368.3 | 212.8 | 1,811.5 | 1,774.9 | 36.65 | 49.425 | |
| 7,175.0 | 6,793.1 | 6,907.8 | 6,666.2 | 30.7 | 18.5 | -85.88 | -368.3 | 193.9 | 1,811.7 | 1,774.9 | 36.86 | 49.148 | |
| 7,200.0 | 6,800.6 | 6,925.0 | 6,670.0 | 30.6 | 18.6 | -85.81 | -368.3 | 177.1 | 1,811.9 | 1,774.8 | 37.09 | 48.852 | |
| 7,225.0 | 6,806.8 | 6,946.8 | 6,673.9 | 30.6 | 18.7 | -85.75 | -368.3 | 155.7 | 1,812.0 | 1,774.6 | 37.39 | 48.467 | |
| 7,250.0 | 6,811.8 | 6,966.2 | 6,676.6 | 30.5 | 18.8 | -85.70 | -368.3 | 136.5 | 1,812.1 | 1,774.4 | 37.70 | 48.066 | |
| 7,275.0 | 6,815.5 | 6,985.6 | 6,678.5 | 30.5 | 18.9 | -85.66 | -368.3 | 117.2 | 1,812.2 | 1,774.2 | 38.05 | 47.632 | |
| 7,300.0 | 6,817.8 | 7,005.0 | 6,679.6 | 30.4 | 19.0 | -85.63 | -368.3 | 97.8 | 1,812.3 | 1,773.9 | 38.42 | 47.168 | |
| 7,325.0 | 6,818.9 | 7,024.8 | 6,680.0 | 30.4 | 19.2 | -85.60 | -368.3 | 78.0 | 1,812.3 | 1,773.5 | 38.83 | 46.669 | |
| 7,332.8 | 6,819.0 | 7,032.6 | 6,680.0 | 30.4 | 19.3 | -85.60 | -368.3 | 70.2 | 1,812.3 | 1,773.3 | 38.99 | 46.477 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-234 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 7,099.8 | 6,680.0 | 30.3 | 19.9 | -85.60 | -368.3 | 3.0 | 1,812.3 | 1,771.9 | 40.45 | 44.807 | |
| 7,500.0 | 6,819.0 | 7,199.8 | 6,680.0 | 30.2 | 21.2 | -85.60 | -368.3 | -97.0 | 1,812.3 | 1,769.2 | 43.15 | 42.004 | |
| 7,600.0 | 6,819.0 | 7,299.8 | 6,680.0 | 30.3 | 22.9 | -85.60 | -368.3 | -197.0 | 1,812.3 | 1,766.0 | 46.37 | 39.086 | |
| 7,700.0 | 6,819.0 | 7,399.8 | 6,680.0 | 30.6 | 24.8 | -85.60 | -368.3 | -297.0 | 1,812.3 | 1,762.3 | 50.01 | 36.238 | |
| 7,800.0 | 6,819.0 | 7,499.8 | 6,680.0 | 31.3 | 26.8 | -85.60 | -368.3 | -397.0 | 1,812.3 | 1,758.3 | 53.99 | 33.567 | |
| 7,900.0 | 6,819.0 | 7,599.8 | 6,680.0 | 32.5 | 29.0 | -85.60 | -368.3 | -497.0 | 1,812.3 | 1,754.1 | 58.24 | 31.118 | |
| 8,000.0 | 6,819.0 | 7,699.8 | 6,680.0 | 34.2 | 31.3 | -85.60 | -368.3 | -597.0 | 1,812.3 | 1,749.6 | 62.70 | 28.904 | |
| 8,100.0 | 6,819.0 | 7,799.8 | 6,680.0 | 36.1 | 33.7 | -85.60 | -368.3 | -697.0 | 1,812.3 | 1,745.0 | 67.33 | 26.915 | |
| 8,200.0 | 6,819.0 | 7,899.8 | 6,680.0 | 38.3 | 36.1 | -85.60 | -368.3 | -797.0 | 1,812.3 | 1,740.2 | 72.11 | 25.134 | |
| 8,300.0 | 6,819.0 | 7,999.8 | 6,680.0 | 40.6 | 38.6 | -85.60 | -368.3 | -897.0 | 1,812.3 | 1,735.3 | 76.99 | 23.540 | |
| 8,400.0 | 6,819.0 | 8,099.8 | 6,680.0 | 42.9 | 41.2 | -85.60 | -368.3 | -997.0 | 1,812.3 | 1,730.4 | 81.97 | 22.111 | |
| 8,500.0 | 6,819.0 | 8,199.8 | 6,680.0 | 45.3 | 43.7 | -85.60 | -368.3 | -1,097.0 | 1,812.3 | 1,725.3 | 87.02 | 20.827 | |
| 8,600.0 | 6,819.0 | 8,299.8 | 6,680.0 | 47.8 | 46.3 | -85.60 | -368.3 | -1,197.0 | 1,812.3 | 1,720.2 | 92.14 | 19.670 | |
| 8,700.0 | 6,819.0 | 8,399.8 | 6,680.0 | 50.3 | 48.9 | -85.60 | -368.3 | -1,297.0 | 1,812.3 | 1,715.0 | 97.31 | 18.625 | |
| 8,800.0 | 6,819.0 | 8,499.8 | 6,680.0 | 52.8 | 51.6 | -85.60 | -368.3 | -1,397.0 | 1,812.3 | 1,709.8 | 102.53 | 17.677 | |
| 8,900.0 | 6,819.0 | 8,599.8 | 6,680.0 | 55.4 | 54.2 | -85.60 | -368.3 | -1,497.0 | 1,812.3 | 1,704.5 | 107.78 | 16.815 | |
| 9,000.0 | 6,819.0 | 8,699.8 | 6,680.0 | 58.0 | 56.9 | -85.60 | -368.3 | -1,597.0 | 1,812.3 | 1,699.3 | 113.07 | 16.028 | |
| 9,100.0 | 6,819.0 | 8,799.8 | 6,680.0 | 60.6 | 59.6 | -85.60 | -368.3 | -1,697.0 | 1,812.3 | 1,693.9 | 118.39 | 15.308 | |
| 9,200.0 | 6,819.0 | 8,899.8 | 6,680.0 | 63.2 | 62.3 | -85.60 | -368.3 | -1,797.0 | 1,812.3 | 1,688.6 | 123.73 | 14.647 | |
| 9,300.0 | 6,819.0 | 8,999.8 | 6,680.0 | 65.9 | 65.0 | -85.60 | -368.3 | -1,897.0 | 1,812.3 | 1,683.2 | 129.10 | 14.038 | |
| 9,400.0 | 6,819.0 | 9,099.8 | 6,680.0 | 68.5 | 67.7 | -85.60 | -368.3 | -1,997.0 | 1,812.3 | 1,677.8 | 134.49 | 13.476 | |
| 9,500.0 | 6,819.0 | 9,199.8 | 6,680.0 | 71.2 | 70.4 | -85.60 | -368.3 | -2,097.0 | 1,812.3 | 1,672.4 | 139.89 | 12.955 | |
| 9,600.0 | 6,819.0 | 9,299.8 | 6,680.0 | 73.9 | 73.1 | -85.60 | -368.3 | -2,197.0 | 1,812.3 | 1,667.0 | 145.31 | 12.472 | |
| 9,700.0 | 6,819.0 | 9,399.8 | 6,680.0 | 76.5 | 75.9 | -85.60 | -368.3 | -2,297.0 | 1,812.3 | 1,661.6 | 150.74 | 12.023 | |
| 9,800.0 | 6,819.0 | 9,499.8 | 6,680.0 | 79.2 | 78.6 | -85.60 | -368.3 | -2,397.0 | 1,812.3 | 1,656.1 | 156.19 | 11.604 | |
| 9,900.0 | 6,819.0 | 9,599.8 | 6,680.0 | 81.9 | 81.3 | -85.60 | -368.3 | -2,497.0 | 1,812.3 | 1,650.7 | 161.64 | 11.212 | |
| 10,000.0 | 6,819.0 | 9,699.8 | 6,680.0 | 84.6 | 84.1 | -85.60 | -368.3 | -2,597.0 | 1,812.3 | 1,645.2 | 167.11 | 10.845 | |
| 10,100.0 | 6,819.0 | 9,799.8 | 6,680.0 | 87.4 | 86.8 | -85.60 | -368.3 | -2,697.0 | 1,812.3 | 1,639.7 | 172.58 | 10.501 | |
| 10,200.0 | 6,819.0 | 9,899.8 | 6,680.0 | 90.1 | 89.6 | -85.60 | -368.3 | -2,797.0 | 1,812.3 | 1,634.3 | 178.07 | 10.178 | |
| 10,300.0 | 6,819.0 | 9,999.8 | 6,680.0 | 92.8 | 92.4 | -85.60 | -368.3 | -2,897.0 | 1,812.3 | 1,628.8 | 183.56 | 9.873 | |
| 10,400.0 | 6,819.0 | 10,099.8 | 6,680.0 | 95.5 | 95.1 | -85.60 | -368.3 | -2,997.0 | 1,812.3 | 1,623.3 | 189.06 | 9.586 | |
| 10,500.0 | 6,819.0 | 10,199.8 | 6,680.0 | 98.3 | 97.9 | -85.60 | -368.3 | -3,097.0 | 1,812.3 | 1,617.8 | 194.56 | 9.315 | |
| 10,600.0 | 6,819.0 | 10,299.8 | 6,680.0 | 101.0 | 100.6 | -85.60 | -368.3 | -3,197.0 | 1,812.3 | 1,612.3 | 200.07 | 9.059 | |
| 10,700.0 | 6,819.0 | 10,399.8 | 6,680.0 | 103.8 | 103.4 | -85.60 | -368.3 | -3,297.0 | 1,812.3 | 1,606.7 | 205.58 | 8.816 | |
| 10,800.0 | 6,819.0 | 10,499.8 | 6,680.0 | 106.5 | 106.2 | -85.60 | -368.3 | -3,397.0 | 1,812.3 | 1,601.2 | 211.10 | 8.585 | |
| 10,900.0 | 6,819.0 | 10,599.8 | 6,680.0 | 109.2 | 109.0 | -85.60 | -368.3 | -3,497.0 | 1,812.3 | 1,595.7 | 216.63 | 8.366 | |
| 11,000.0 | 6,819.0 | 10,699.8 | 6,680.0 | 112.0 | 111.7 | -85.60 | -368.3 | -3,597.0 | 1,812.3 | 1,590.2 | 222.15 | 8.158 | |
| 11,100.0 | 6,819.0 | 10,799.8 | 6,680.0 | 114.8 | 114.5 | -85.60 | -368.3 | -3,697.0 | 1,812.3 | 1,584.6 | 227.69 | 7.960 | |
| 11,200.0 | 6,819.0 | 10,899.8 | 6,680.0 | 117.5 | 117.3 | -85.60 | -368.3 | -3,797.0 | 1,812.3 | 1,579.1 | 233.22 | 7.771 | |
| 11,300.0 | 6,819.0 | 10,999.8 | 6,680.0 | 120.3 | 120.1 | -85.60 | -368.3 | -3,897.0 | 1,812.3 | 1,573.6 | 238.76 | 7.591 | |
| 11,400.0 | 6,819.0 | 11,099.8 | 6,680.0 | 123.0 | 122.9 | -85.60 | -368.3 | -3,997.0 | 1,812.3 | 1,568.0 | 244.30 | 7.418 | |
| 11,500.0 | 6,819.0 | 11,199.8 | 6,680.0 | 125.8 | 125.6 | -85.60 | -368.3 | -4,097.0 | 1,812.3 | 1,562.5 | 249.85 | 7.254 | |
| 11,600.0 | 6,819.0 | 11,299.8 | 6,680.0 | 128.6 | 128.4 | -85.60 | -368.3 | -4,197.0 | 1,812.3 | 1,556.9 | 255.40 | 7.096 | |
| 11,700.0 | 6,819.0 | 11,399.8 | 6,680.0 | 131.3 | 131.2 | -85.60 | -368.3 | -4,297.0 | 1,812.3 | 1,551.4 | 260.95 | 6.945 | |
| 11,800.0 | 6,819.0 | 11,499.8 | 6,680.0 | 134.1 | 134.0 | -85.60 | -368.3 | -4,397.0 | 1,812.3 | 1,545.8 | 266.50 | 6.801 | |
| 11,900.0 | 6,819.0 | 11,599.8 | 6,680.0 | 136.9 | 136.8 | -85.60 | -368.3 | -4,497.0 | 1,812.3 | 1,540.3 | 272.05 | 6.662 | |
| 12,000.0 | 6,819.0 | 11,699.8 | 6,680.0 | 139.6 | 139.6 | -85.60 | -368.3 | -4,597.0 | 1,812.3 | 1,534.7 | 277.61 | 6.528 | |
| 12,100.0 | 6,819.0 | 11,799.8 | 6,680.0 | 142.4 | 142.4 | -85.60 | -368.3 | -4,697.0 | 1,812.3 | 1,529.2 | 283.17 | 6.400 | |
| 12,200.0 | 6,819.0 | 11,899.8 | 6,680.0 | 145.2 | 145.2 | -85.60 | -368.3 | -4,797.0 | 1,812.3 | 1,523.6 | 288.73 | 6.277 | |
| 12,300.0 | 6,819.0 | 11,999.8 | 6,680.0 | 148.0 | 147.9 | -85.60 | -368.3 | -4,897.0 | 1,812.3 | 1,518.0 | 294.29 | 6.158 | |
| 12,400.0 | 6,819.0 | 12,099.8 | 6,680.0 | 150.8 | 150.7 | -85.60 | -368.3 | -4,997.0 | 1,812.3 | 1,512.5 | 299.85 | 6.044 | |
| 12,500.0 | 6,819.0 | 12,199.8 | 6,680.0 | 153.5 | 153.5 | -85.60 | -368.3 | -5,097.0 | 1,812.3 | 1,506.9 | 305.42 | 5.934 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-234 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 12,299.8 | 6,680.0 | 156.3 | 156.3 | -85.60 | -368.3 | -5,197.0 | 1,812.3 | 1,501.3 | 310.99 | 5.828 | |
| 12,700.0 | 6,819.0 | 12,399.8 | 6,680.0 | 159.1 | 159.1 | -85.60 | -368.3 | -5,297.0 | 1,812.3 | 1,495.8 | 316.56 | 5.725 | |
| 12,800.0 | 6,819.0 | 12,499.8 | 6,680.0 | 161.9 | 161.9 | -85.60 | -368.3 | -5,397.0 | 1,812.3 | 1,490.2 | 322.13 | 5.626 | |
| 12,900.0 | 6,819.0 | 12,599.8 | 6,680.0 | 164.7 | 164.7 | -85.60 | -368.3 | -5,497.0 | 1,812.3 | 1,484.6 | 327.70 | 5.530 | |
| 13,000.0 | 6,819.0 | 12,699.8 | 6,680.0 | 167.4 | 167.5 | -85.60 | -368.3 | -5,597.0 | 1,812.3 | 1,479.1 | 333.27 | 5.438 | |
| 13,100.0 | 6,819.0 | 12,799.8 | 6,680.0 | 170.2 | 170.3 | -85.60 | -368.3 | -5,697.0 | 1,812.3 | 1,473.5 | 338.84 | 5.349 | |
| 13,200.0 | 6,819.0 | 12,899.8 | 6,680.0 | 173.0 | 173.1 | -85.60 | -368.3 | -5,797.0 | 1,812.3 | 1,467.9 | 344.42 | 5.262 | |
| 13,300.0 | 6,819.0 | 12,999.8 | 6,680.0 | 175.8 | 175.9 | -85.60 | -368.3 | -5,897.0 | 1,812.3 | 1,462.3 | 349.99 | 5.178 | |
| 13,400.0 | 6,819.0 | 13,099.8 | 6,680.0 | 178.6 | 178.7 | -85.60 | -368.3 | -5,997.0 | 1,812.3 | 1,456.8 | 355.57 | 5.097 | |
| 13,500.0 | 6,819.0 | 13,199.8 | 6,680.0 | 181.4 | 181.5 | -85.60 | -368.3 | -6,097.0 | 1,812.3 | 1,451.2 | 361.15 | 5.018 | |
| 13,600.0 | 6,819.0 | 13,299.8 | 6,680.0 | 184.2 | 184.3 | -85.60 | -368.3 | -6,197.0 | 1,812.3 | 1,445.6 | 366.72 | 4.942 | |
| 13,700.0 | 6,819.0 | 13,399.8 | 6,680.0 | 187.0 | 187.1 | -85.60 | -368.3 | -6,297.0 | 1,812.3 | 1,440.0 | 372.30 | 4.868 | |
| 13,800.0 | 6,819.0 | 13,499.8 | 6,680.0 | 189.7 | 189.9 | -85.60 | -368.3 | -6,397.0 | 1,812.3 | 1,434.4 | 377.88 | 4.796 | |
| 13,900.0 | 6,819.0 | 13,599.8 | 6,680.0 | 192.5 | 192.7 | -85.60 | -368.3 | -6,497.0 | 1,812.3 | 1,428.9 | 383.46 | 4.726 | |
| 14,000.0 | 6,819.0 | 13,699.8 | 6,680.0 | 195.3 | 195.5 | -85.60 | -368.3 | -6,597.0 | 1,812.3 | 1,423.3 | 389.04 | 4.658 | |
| 14,100.0 | 6,819.0 | 13,799.8 | 6,680.0 | 198.1 | 198.3 | -85.60 | -368.3 | -6,697.0 | 1,812.3 | 1,417.7 | 394.63 | 4.592 | |
| 14,200.0 | 6,819.0 | 13,899.8 | 6,680.0 | 200.9 | 201.1 | -85.60 | -368.3 | -6,797.0 | 1,812.3 | 1,412.1 | 400.21 | 4.528 | |
| 14,300.0 | 6,819.0 | 13,999.8 | 6,680.0 | 203.7 | 203.9 | -85.60 | -368.3 | -6,897.0 | 1,812.3 | 1,406.5 | 405.79 | 4.466 | |
| 14,400.0 | 6,819.0 | 14,099.8 | 6,680.0 | 206.5 | 206.7 | -85.60 | -368.3 | -6,997.0 | 1,812.3 | 1,400.9 | 411.38 | 4.405 | |
| 14,500.0 | 6,819.0 | 14,199.8 | 6,680.0 | 209.3 | 209.5 | -85.60 | -368.3 | -7,097.0 | 1,812.3 | 1,395.4 | 416.96 | 4.346 | |
| 14,600.0 | 6,819.0 | 14,299.8 | 6,680.0 | 212.1 | 212.3 | -85.60 | -368.3 | -7,197.0 | 1,812.3 | 1,389.8 | 422.55 | 4.289 | |
| 14,700.0 | 6,819.0 | 14,399.8 | 6,680.0 | 214.9 | 215.1 | -85.60 | -368.3 | -7,297.0 | 1,812.3 | 1,384.2 | 428.13 | 4.233 | |
| 14,716.0 | 6,819.0 | 14,414.0 | 6,680.0 | 215.3 | 215.5 | -85.60 | -368.3 | -7,311.2 | 1,812.3 | 1,383.4 | 428.98 | 4.225 | |
| 14,720.3 | 6,819.0 | 14,418.3 | 6,680.0 | 215.4 | 215.6 | -85.60 | -368.3 | -7,315.5 | 1,812.3 | 1,383.1 | 429.22 | 4.222 | SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-314 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 108.36 | -18.9 | 57.1 | 60.1 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 108.36 | -18.9 | 57.1 | 60.1 | 60.0 | 0.17 | 347.479 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 108.36 | -18.9 | 57.1 | 60.1 | 59.5 | 0.62 | 96.592 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 108.36 | -18.9 | 57.1 | 60.1 | 59.1 | 1.07 | 56.092 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 108.36 | -18.9 | 57.1 | 60.1 | 58.6 | 1.52 | 39.521 | CC, ES |
| 500.0 | 500.0 | 498.8 | 498.7 | 1.0 | 1.0 | 107.06 | -17.9 | 58.4 | 61.2 | 59.2 | 1.96 | 31.139 | |
| 600.0 | 600.0 | 597.3 | 597.1 | 1.2 | 1.2 | 103.42 | -14.9 | 62.6 | 64.4 | 62.0 | 2.41 | 26.726 | |
| 700.0 | 700.0 | 695.3 | 694.8 | 1.4 | 1.4 | 98.17 | -10.0 | 69.3 | 70.2 | 67.4 | 2.86 | 24.561 | |
| 800.0 | 800.0 | 792.7 | 791.5 | 1.7 | 1.7 | 92.22 | -3.1 | 78.8 | 79.3 | 76.0 | 3.32 | 23.903 | |
| 900.0 | 900.0 | 889.4 | 887.0 | 1.9 | 2.0 | 65.99 | 5.7 | 90.7 | 91.1 | 87.3 | 3.79 | 24.034 | |
| 1,000.0 | 999.8 | 985.5 | 981.5 | 2.1 | 2.3 | 62.81 | 16.3 | 105.2 | 104.7 | 100.5 | 4.27 | 24.557 | |
| 1,100.0 | 1,099.5 | 1,084.0 | 1,077.8 | 2.3 | 2.7 | 61.23 | 28.4 | 121.7 | 118.8 | 114.0 | 4.76 | 24.958 | |
| 1,200.0 | 1,198.7 | 1,183.3 | 1,174.9 | 2.6 | 3.1 | 61.28 | 40.6 | 138.3 | 131.2 | 126.0 | 5.28 | 24.850 | |
| 1,300.0 | 1,297.5 | 1,282.6 | 1,272.0 | 2.9 | 3.5 | 62.56 | 52.8 | 155.0 | 142.1 | 136.2 | 5.85 | 24.293 | |
| 1,400.0 | 1,395.6 | 1,382.0 | 1,369.2 | 3.2 | 4.0 | 64.83 | 65.0 | 171.6 | 151.5 | 145.0 | 6.48 | 23.378 | |
| 1,500.0 | 1,493.1 | 1,481.2 | 1,466.3 | 3.5 | 4.4 | 67.98 | 77.2 | 188.3 | 159.8 | 152.6 | 7.20 | 22.209 | |
| 1,507.2 | 1,500.0 | 1,488.3 | 1,473.2 | 3.6 | 4.4 | 68.24 | 78.1 | 189.5 | 160.4 | 153.1 | 7.25 | 22.123 | |
| 1,572.2 | 1,563.0 | 1,552.7 | 1,536.3 | 3.8 | 4.7 | 70.60 | 86.0 | 200.3 | 165.7 | 157.9 | 7.75 | 21.363 | |
| 1,600.0 | 1,590.0 | 1,580.3 | 1,563.3 | 3.9 | 4.8 | 71.57 | 89.4 | 204.9 | 168.0 | 160.0 | 7.98 | 21.054 | |
| 1,700.0 | 1,686.3 | 1,679.2 | 1,660.0 | 4.4 | 5.3 | 75.50 | 101.6 | 221.5 | 176.0 | 167.2 | 8.87 | 19.859 | |
| 1,800.0 | 1,781.5 | 1,777.7 | 1,756.3 | 4.9 | 5.7 | 80.09 | 113.7 | 238.0 | 184.3 | 174.5 | 9.86 | 18.694 | |
| 1,817.6 | 1,798.2 | 1,795.0 | 1,773.3 | 5.0 | 5.8 | 80.96 | 115.8 | 240.9 | 185.9 | 175.8 | 10.05 | 18.500 | |
| 1,900.0 | 1,876.1 | 1,875.9 | 1,852.4 | 5.5 | 6.1 | 85.04 | 125.8 | 254.5 | 193.6 | 182.7 | 10.94 | 17.701 | |
| 2,000.0 | 1,970.6 | 1,974.1 | 1,948.4 | 6.0 | 6.6 | 89.56 | 137.8 | 270.9 | 204.2 | 192.2 | 12.03 | 16.976 | |
| 2,100.0 | 2,065.1 | 2,072.3 | 2,044.4 | 6.6 | 7.0 | 93.62 | 149.9 | 287.4 | 216.0 | 202.9 | 13.12 | 16.462 | |
| 2,200.0 | 2,159.6 | 2,170.4 | 2,140.5 | 7.2 | 7.4 | 97.25 | 162.0 | 303.9 | 228.7 | 214.5 | 14.20 | 16.108 | |
| 2,300.0 | 2,254.1 | 2,268.6 | 2,236.5 | 7.8 | 7.9 | 100.49 | 174.1 | 320.3 | 242.3 | 227.0 | 15.26 | 15.874 | |
| 2,400.0 | 2,348.7 | 2,366.8 | 2,332.5 | 8.4 | 8.3 | 103.39 | 186.1 | 336.8 | 256.6 | 240.2 | 16.31 | 15.728 | |
| 2,500.0 | 2,443.2 | 2,465.0 | 2,428.6 | 9.1 | 8.8 | 105.98 | 198.2 | 353.3 | 271.4 | 254.1 | 17.34 | 15.650 | |
| 2,600.0 | 2,537.7 | 2,563.1 | 2,524.6 | 9.7 | 9.2 | 108.30 | 210.3 | 369.7 | 286.7 | 268.4 | 18.36 | 15.620 | |
| 2,700.0 | 2,632.2 | 2,661.3 | 2,620.6 | 10.3 | 9.6 | 110.39 | 222.3 | 386.2 | 302.5 | 283.1 | 19.36 | 15.627 | |
| 2,800.0 | 2,726.8 | 2,759.5 | 2,716.6 | 10.9 | 10.1 | 112.27 | 234.4 | 402.7 | 318.6 | 298.3 | 20.34 | 15.661 | |
| 2,900.0 | 2,821.3 | 2,857.7 | 2,812.7 | 11.6 | 10.5 | 113.97 | 246.5 | 419.1 | 335.0 | 313.7 | 21.32 | 15.715 | |
| 3,000.0 | 2,915.8 | 2,955.8 | 2,908.7 | 12.2 | 11.0 | 115.51 | 258.6 | 435.6 | 351.7 | 329.4 | 22.28 | 15.783 | |
| 3,100.0 | 3,010.3 | 3,054.0 | 3,004.7 | 12.8 | 11.4 | 116.91 | 270.6 | 452.1 | 368.6 | 345.4 | 23.24 | 15.861 | |
| 3,200.0 | 3,104.8 | 3,152.2 | 3,100.8 | 13.5 | 11.9 | 118.19 | 282.7 | 468.5 | 385.7 | 361.5 | 24.19 | 15.946 | |
| 3,300.0 | 3,199.4 | 3,250.4 | 3,196.8 | 14.1 | 12.3 | 119.36 | 294.8 | 485.0 | 403.0 | 377.8 | 25.13 | 16.036 | |
| 3,400.0 | 3,293.9 | 3,348.5 | 3,292.8 | 14.8 | 12.7 | 120.43 | 306.8 | 501.5 | 420.4 | 394.3 | 26.07 | 16.129 | |
| 3,500.0 | 3,388.4 | 3,446.7 | 3,388.9 | 15.4 | 13.2 | 121.45 | 318.8 | 517.8 | 438.0 | 411.0 | 26.97 | 16.239 | |
| 3,600.0 | 3,482.9 | 3,544.4 | 3,484.9 | 16.0 | 13.5 | 122.72 | 329.1 | 531.9 | 455.7 | 428.0 | 27.75 | 16.419 | |
| 3,700.0 | 3,577.5 | 3,641.2 | 3,580.8 | 16.7 | 13.8 | 124.29 | 337.5 | 543.2 | 473.8 | 445.4 | 28.43 | 16.669 | |
| 3,800.0 | 3,672.0 | 3,737.1 | 3,676.0 | 17.3 | 14.0 | 126.11 | 343.8 | 551.9 | 492.6 | 463.5 | 29.00 | 16.982 | |
| 3,900.0 | 3,766.5 | 3,831.8 | 3,770.4 | 18.0 | 14.2 | 128.13 | 348.2 | 557.9 | 512.1 | 482.6 | 29.49 | 17.369 | |
| 4,000.0 | 3,861.0 | 3,925.1 | 3,863.6 | 18.6 | 14.3 | 130.31 | 350.8 | 561.4 | 532.8 | 502.9 | 29.87 | 17.838 | |
| 4,100.0 | 3,955.5 | 4,017.0 | 3,955.5 | 19.3 | 14.5 | 132.61 | 351.6 | 562.5 | 554.8 | 524.7 | 30.16 | 18.397 | |
| 4,200.0 | 4,050.1 | 4,111.5 | 4,050.1 | 19.9 | 14.6 | 134.93 | 351.6 | 562.5 | 578.1 | 547.7 | 30.40 | 19.018 | |
| 4,300.0 | 4,144.6 | 4,206.1 | 4,144.6 | 20.5 | 14.7 | 137.07 | 351.6 | 562.5 | 602.2 | 571.6 | 30.63 | 19.657 | |
| 4,400.0 | 4,239.1 | 4,300.6 | 4,239.1 | 21.2 | 14.8 | 139.05 | 351.6 | 562.5 | 627.1 | 596.2 | 30.87 | 20.314 | |
| 4,500.0 | 4,333.6 | 4,395.1 | 4,333.6 | 21.8 | 14.9 | 140.89 | 351.6 | 562.5 | 652.6 | 621.5 | 31.10 | 20.982 | |
| 4,600.0 | 4,428.2 | 4,489.6 | 4,428.2 | 22.5 | 15.1 | 142.60 | 351.6 | 562.5 | 678.8 | 647.5 | 31.34 | 21.658 | |
| 4,700.0 | 4,522.7 | 4,584.2 | 4,522.7 | 23.1 | 15.2 | 144.18 | 351.6 | 562.5 | 705.5 | 674.0 | 31.59 | 22.336 | |
| 4,800.0 | 4,617.2 | 4,678.7 | 4,617.2 | 23.8 | 15.3 | 145.65 | 351.6 | 562.5 | 732.7 | 700.9 | 31.84 | 23.014 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-314 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,773.2 | 4,711.7 | 24.4 | 15.5 | 147.01 | 351.6 | 562.5 | 760.4 | 728.3 | 32.10 | 23.688 | |
| 5,000.0 | 4,806.2 | 4,867.7 | 4,806.2 | 25.1 | 15.6 | 148.28 | 351.6 | 562.5 | 788.4 | 756.0 | 32.37 | 24.356 | |
| 5,100.0 | 4,900.8 | 4,962.2 | 4,900.8 | 25.7 | 15.7 | 149.47 | 351.6 | 562.5 | 816.7 | 784.1 | 32.65 | 25.017 | |
| 5,200.0 | 4,995.3 | 5,056.8 | 4,995.3 | 26.4 | 15.9 | 150.58 | 351.6 | 562.5 | 845.4 | 812.4 | 32.93 | 25.669 | |
| 5,300.0 | 5,089.8 | 5,151.3 | 5,089.8 | 27.0 | 16.0 | 151.62 | 351.6 | 562.5 | 874.3 | 841.1 | 33.23 | 26.310 | |
| 5,400.0 | 5,184.3 | 5,245.8 | 5,184.3 | 27.7 | 16.2 | 152.59 | 351.6 | 562.5 | 903.5 | 870.0 | 33.54 | 26.940 | |
| 5,500.0 | 5,278.9 | 5,340.3 | 5,278.9 | 28.3 | 16.3 | 153.50 | 351.6 | 562.5 | 932.9 | 899.1 | 33.85 | 27.558 | |
| 5,533.5 | 5,310.5 | 5,372.0 | 5,310.5 | 28.5 | 16.4 | 153.80 | 351.6 | 562.5 | 942.9 | 908.9 | 33.96 | 27.762 | |
| 5,600.0 | 5,373.6 | 5,435.1 | 5,373.6 | 28.9 | 16.5 | 154.52 | 351.6 | 562.5 | 961.9 | 927.7 | 34.18 | 28.145 | |
| 5,700.0 | 5,469.4 | 5,530.9 | 5,469.4 | 29.3 | 16.6 | 155.46 | 351.6 | 562.5 | 988.2 | 953.7 | 34.47 | 28.671 | |
| 5,800.0 | 5,566.1 | 5,627.6 | 5,566.1 | 29.8 | 16.8 | 156.25 | 351.6 | 562.5 | 1,011.5 | 976.7 | 34.76 | 29.103 | |
| 5,900.0 | 5,663.6 | 5,725.1 | 5,663.6 | 30.1 | 16.9 | 156.90 | 351.6 | 562.5 | 1,031.8 | 996.7 | 35.04 | 29.447 | |
| 6,000.0 | 5,761.9 | 5,823.4 | 5,761.9 | 30.5 | 17.1 | 157.43 | 351.6 | 562.5 | 1,049.0 | 1,013.7 | 35.31 | 29.707 | |
| 6,100.0 | 5,860.7 | 5,922.2 | 5,860.7 | 30.7 | 17.2 | 157.85 | 351.6 | 562.5 | 1,063.0 | 1,027.4 | 35.57 | 29.888 | |
| 6,200.0 | 5,960.0 | 6,021.5 | 5,960.0 | 31.0 | 17.4 | 158.17 | 351.6 | 562.5 | 1,073.9 | 1,038.1 | 35.81 | 29.991 | |
| 6,300.0 | 6,059.7 | 6,121.2 | 6,059.7 | 31.2 | 17.6 | 158.39 | 351.6 | 562.5 | 1,081.5 | 1,045.5 | 36.03 | 30.021 | |
| 6,400.0 | 6,159.6 | 6,221.0 | 6,159.6 | 31.3 | 17.7 | 158.51 | 351.6 | 562.5 | 1,086.0 | 1,049.7 | 36.22 | 29.979 | |
| 6,486.1 | 6,245.7 | 6,307.4 | 6,245.9 | 31.4 | 17.9 | 179.75 | 351.6 | 561.7 | 1,087.2 | 1,041.9 | 45.24 | 24.030 | |
| 6,500.0 | 6,259.6 | 6,321.3 | 6,259.8 | 31.4 | 17.9 | 179.79 | 351.6 | 560.9 | 1,087.2 | 1,041.9 | 45.28 | 24.007 | |
| 6,516.1 | 6,275.7 | 6,337.5 | 6,275.9 | 31.4 | 17.9 | 179.86 | 351.6 | 559.6 | 1,087.1 | 1,041.8 | 45.34 | 23.978 | |
| 6,546.2 | 6,305.8 | 6,367.5 | 6,305.8 | 31.5 | 17.9 | -90.00 | 351.6 | 556.3 | 1,087.1 | 1,050.7 | 36.41 | 29.855 | |
| 6,550.0 | 6,309.5 | 6,371.3 | 6,309.5 | 31.5 | 17.9 | -89.98 | 351.6 | 555.8 | 1,087.1 | 1,050.7 | 36.42 | 29.853 | |
| 6,600.0 | 6,359.4 | 6,420.9 | 6,358.4 | 31.5 | 17.9 | -89.75 | 351.6 | 547.3 | 1,087.2 | 1,050.8 | 36.40 | 29.865 | |
| 6,650.0 | 6,408.8 | 6,470.2 | 6,406.3 | 31.5 | 17.9 | -89.52 | 351.6 | 535.5 | 1,087.2 | 1,050.8 | 36.34 | 29.913 | |
| 6,700.0 | 6,457.5 | 6,518.8 | 6,452.3 | 31.5 | 17.9 | -89.25 | 351.6 | 520.1 | 1,087.2 | 1,051.0 | 36.23 | 30.007 | |
| 6,716.1 | 6,473.1 | 6,534.3 | 6,466.6 | 31.5 | 17.9 | -89.15 | 351.6 | 514.2 | 1,087.3 | 1,051.1 | 36.18 | 30.048 | |
| 6,725.0 | 6,481.6 | 6,542.8 | 6,474.4 | 31.5 | 17.9 | -89.09 | 351.6 | 510.7 | 1,087.3 | 1,051.1 | 36.16 | 30.072 | |
| 6,750.0 | 6,505.3 | 6,566.7 | 6,495.9 | 31.5 | 17.8 | -88.92 | 351.6 | 500.4 | 1,087.3 | 1,051.3 | 36.07 | 30.146 | |
| 6,775.0 | 6,528.5 | 6,590.4 | 6,516.7 | 31.4 | 17.8 | -88.76 | 351.6 | 489.0 | 1,087.4 | 1,051.4 | 35.98 | 30.226 | |
| 6,800.0 | 6,551.3 | 6,613.9 | 6,536.8 | 31.4 | 17.8 | -88.60 | 351.6 | 476.7 | 1,087.5 | 1,051.6 | 35.88 | 30.309 | |
| 6,825.0 | 6,573.4 | 6,637.4 | 6,556.2 | 31.4 | 17.7 | -88.45 | 351.6 | 463.5 | 1,087.5 | 1,051.8 | 35.78 | 30.393 | |
| 6,850.0 | 6,595.0 | 6,660.7 | 6,574.8 | 31.3 | 17.7 | -88.30 | 351.6 | 449.4 | 1,087.6 | 1,051.9 | 35.69 | 30.475 | |
| 6,875.0 | 6,615.8 | 6,683.9 | 6,592.6 | 31.3 | 17.7 | -88.16 | 351.6 | 434.5 | 1,087.7 | 1,052.1 | 35.60 | 30.553 | |
| 6,900.0 | 6,635.9 | 6,707.0 | 6,609.5 | 31.3 | 17.6 | -88.01 | 351.6 | 418.9 | 1,087.8 | 1,052.3 | 35.52 | 30.622 | |
| 6,925.0 | 6,655.1 | 6,730.0 | 6,625.7 | 31.2 | 17.6 | -87.88 | 351.6 | 402.5 | 1,087.9 | 1,052.4 | 35.46 | 30.681 | |
| 6,950.0 | 6,673.6 | 6,752.9 | 6,640.9 | 31.2 | 17.6 | -87.75 | 351.6 | 385.5 | 1,088.0 | 1,052.6 | 35.41 | 30.726 | |
| 6,975.0 | 6,691.1 | 6,775.0 | 6,654.9 | 31.1 | 17.5 | -87.63 | 351.6 | 368.3 | 1,088.1 | 1,052.7 | 35.38 | 30.754 | |
| 7,000.0 | 6,707.6 | 6,798.3 | 6,668.7 | 31.1 | 17.5 | -87.51 | 351.6 | 349.5 | 1,088.2 | 1,052.8 | 35.38 | 30.760 | |
| 7,025.0 | 6,723.1 | 6,821.0 | 6,681.2 | 31.0 | 17.5 | -87.40 | 351.6 | 330.7 | 1,088.3 | 1,052.9 | 35.40 | 30.742 | |
| 7,050.0 | 6,737.6 | 6,843.5 | 6,692.8 | 31.0 | 17.5 | -87.29 | 351.6 | 311.3 | 1,088.4 | 1,052.9 | 35.45 | 30.698 | |
| 7,075.0 | 6,751.0 | 6,866.0 | 6,703.4 | 30.9 | 17.5 | -87.20 | 351.6 | 291.5 | 1,088.5 | 1,052.9 | 35.54 | 30.625 | |
| 7,100.0 | 6,763.3 | 6,888.4 | 6,713.1 | 30.8 | 17.5 | -87.11 | 351.6 | 271.3 | 1,088.5 | 1,052.9 | 35.66 | 30.523 | |
| 7,125.0 | 6,774.5 | 6,910.7 | 6,721.8 | 30.8 | 17.6 | -87.02 | 351.6 | 250.7 | 1,088.6 | 1,052.8 | 35.82 | 30.390 | |
| 7,150.0 | 6,784.4 | 6,933.0 | 6,729.4 | 30.7 | 17.6 | -86.95 | 351.6 | 229.8 | 1,088.7 | 1,052.7 | 36.02 | 30.226 | |
| 7,175.0 | 6,793.1 | 6,955.2 | 6,736.1 | 30.7 | 17.7 | -86.88 | 351.6 | 208.6 | 1,088.8 | 1,052.5 | 36.26 | 30.030 | |
| 7,200.0 | 6,800.6 | 6,977.4 | 6,741.8 | 30.6 | 17.8 | -86.82 | 351.6 | 187.2 | 1,088.8 | 1,052.3 | 36.53 | 29.805 | |
| 7,225.0 | 6,806.8 | 7,000.0 | 6,746.5 | 30.6 | 17.9 | -86.76 | 351.6 | 165.1 | 1,088.9 | 1,052.0 | 36.85 | 29.548 | |
| 7,250.0 | 6,811.8 | 7,021.7 | 6,750.1 | 30.5 | 18.0 | -86.72 | 351.6 | 143.7 | 1,088.9 | 1,051.7 | 37.20 | 29.270 | |
| 7,275.0 | 6,815.5 | 7,043.8 | 6,752.7 | 30.5 | 18.2 | -86.68 | 351.6 | 121.8 | 1,089.0 | 1,051.4 | 37.60 | 28.965 | |
| 7,300.0 | 6,817.8 | 7,065.8 | 6,754.4 | 30.4 | 18.4 | -86.65 | 351.6 | 99.8 | 1,089.0 | 1,051.0 | 38.02 | 28.641 | |
| 7,325.0 | 6,818.9 | 7,087.9 | 6,755.0 | 30.4 | 18.6 | -86.63 | 351.6 | 77.7 | 1,089.0 | 1,050.5 | 38.48 | 28.301 | |
| 7,332.8 | 6,819.0 | 7,095.3 | 6,755.0 | 30.4 | 18.6 | -86.63 | 351.6 | 70.3 | 1,089.0 | 1,050.4 | 38.64 | 28.187 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-314 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 7,162.5 | 6,754.9 | 30.3 | 19.5 | -86.63 | 351.6 | 3.1 | 1,089.0 | 1,048.8 | 40.19 | 27.098 | |
| 7,500.0 | 6,819.0 | 7,262.5 | 6,754.8 | 30.2 | 21.0 | -86.62 | 351.6 | -96.9 | 1,089.0 | 1,046.1 | 42.95 | 25.354 | |
| 7,600.0 | 6,819.0 | 7,362.5 | 6,754.6 | 30.3 | 22.7 | -86.61 | 351.6 | -196.9 | 1,089.0 | 1,042.8 | 46.24 | 23.554 | |
| 7,700.0 | 6,819.0 | 7,462.5 | 6,754.5 | 30.6 | 24.7 | -86.61 | 351.6 | -296.9 | 1,089.1 | 1,039.1 | 49.93 | 21.810 | |
| 7,800.0 | 6,819.0 | 7,562.5 | 6,754.4 | 31.3 | 26.8 | -86.60 | 351.6 | -396.9 | 1,089.1 | 1,035.1 | 53.96 | 20.182 | |
| 7,900.0 | 6,819.0 | 7,662.5 | 6,754.3 | 32.5 | 29.1 | -86.59 | 351.6 | -496.9 | 1,089.1 | 1,030.8 | 58.25 | 18.695 | |
| 8,000.0 | 6,819.0 | 7,762.5 | 6,754.1 | 34.2 | 31.4 | -86.59 | 351.6 | -596.9 | 1,089.1 | 1,026.3 | 62.75 | 17.355 | |
| 8,100.0 | 6,819.0 | 7,862.5 | 6,754.0 | 36.1 | 33.8 | -86.58 | 351.6 | -696.9 | 1,089.1 | 1,021.7 | 67.42 | 16.154 | |
| 8,200.0 | 6,819.0 | 7,962.5 | 6,753.9 | 38.3 | 36.3 | -86.57 | 351.6 | -796.9 | 1,089.1 | 1,016.9 | 72.22 | 15.080 | |
| 8,300.0 | 6,819.0 | 8,062.5 | 6,753.8 | 40.6 | 38.8 | -86.57 | 351.6 | -896.9 | 1,089.1 | 1,012.0 | 77.13 | 14.120 | |
| 8,400.0 | 6,819.0 | 8,162.5 | 6,753.6 | 42.9 | 41.3 | -86.56 | 351.6 | -996.9 | 1,089.1 | 1,007.0 | 82.13 | 13.260 | |
| 8,500.0 | 6,819.0 | 8,262.5 | 6,753.5 | 45.3 | 43.9 | -86.55 | 351.6 | -1,096.9 | 1,089.1 | 1,001.9 | 87.21 | 12.489 | |
| 8,600.0 | 6,819.0 | 8,362.5 | 6,753.4 | 47.8 | 46.5 | -86.55 | 351.6 | -1,196.9 | 1,089.1 | 996.8 | 92.34 | 11.794 | |
| 8,700.0 | 6,819.0 | 8,462.5 | 6,753.3 | 50.3 | 49.1 | -86.54 | 351.6 | -1,296.9 | 1,089.1 | 991.6 | 97.53 | 11.167 | |
| 8,800.0 | 6,819.0 | 8,562.5 | 6,753.1 | 52.8 | 51.8 | -86.53 | 351.6 | -1,396.9 | 1,089.1 | 986.4 | 102.77 | 10.598 | |
| 8,900.0 | 6,819.0 | 8,662.5 | 6,753.0 | 55.4 | 54.4 | -86.53 | 351.6 | -1,496.9 | 1,089.1 | 981.1 | 108.04 | 10.081 | |
| 9,000.0 | 6,819.0 | 8,762.5 | 6,752.9 | 58.0 | 57.1 | -86.52 | 351.6 | -1,596.9 | 1,089.2 | 975.8 | 113.34 | 9.609 | |
| 9,100.0 | 6,819.0 | 8,862.5 | 6,752.7 | 60.6 | 59.8 | -86.51 | 351.6 | -1,696.9 | 1,089.2 | 970.5 | 118.68 | 9.178 | |
| 9,200.0 | 6,819.0 | 8,962.5 | 6,752.6 | 63.2 | 62.5 | -86.51 | 351.6 | -1,796.9 | 1,089.2 | 965.1 | 124.03 | 8.781 | |
| 9,300.0 | 6,819.0 | 9,062.5 | 6,752.5 | 65.9 | 65.2 | -86.50 | 351.6 | -1,896.9 | 1,089.2 | 959.8 | 129.41 | 8.416 | |
| 9,400.0 | 6,819.0 | 9,162.5 | 6,752.4 | 68.5 | 67.9 | -86.49 | 351.6 | -1,996.9 | 1,089.2 | 954.4 | 134.81 | 8.080 | |
| 9,500.0 | 6,819.0 | 9,262.5 | 6,752.2 | 71.2 | 70.7 | -86.49 | 351.6 | -2,096.9 | 1,089.2 | 949.0 | 140.22 | 7.768 | |
| 9,600.0 | 6,819.0 | 9,362.5 | 6,752.1 | 73.9 | 73.4 | -86.48 | 351.6 | -2,196.9 | 1,089.2 | 943.6 | 145.65 | 7.478 | |
| 9,700.0 | 6,819.0 | 9,462.5 | 6,752.0 | 76.5 | 76.1 | -86.47 | 351.6 | -2,296.9 | 1,089.2 | 938.1 | 151.09 | 7.209 | |
| 9,800.0 | 6,819.0 | 9,562.5 | 6,751.8 | 79.2 | 78.9 | -86.47 | 351.6 | -2,396.9 | 1,089.2 | 932.7 | 156.55 | 6.958 | |
| 9,900.0 | 6,819.0 | 9,662.5 | 6,751.7 | 81.9 | 81.6 | -86.46 | 351.6 | -2,496.9 | 1,089.2 | 927.2 | 162.01 | 6.723 | |
| 10,000.0 | 6,819.0 | 9,762.5 | 6,751.6 | 84.6 | 84.4 | -86.45 | 351.6 | -2,596.9 | 1,089.2 | 921.7 | 167.49 | 6.503 | |
| 10,100.0 | 6,819.0 | 9,862.5 | 6,751.5 | 87.4 | 87.1 | -86.45 | 351.6 | -2,696.9 | 1,089.2 | 916.3 | 172.97 | 6.297 | |
| 10,200.0 | 6,819.0 | 9,962.5 | 6,751.3 | 90.1 | 89.9 | -86.44 | 351.6 | -2,796.9 | 1,089.2 | 910.8 | 178.46 | 6.104 | |
| 10,300.0 | 6,819.0 | 10,062.5 | 6,751.2 | 92.8 | 92.7 | -86.43 | 351.6 | -2,896.9 | 1,089.3 | 905.3 | 183.96 | 5.921 | |
| 10,400.0 | 6,819.0 | 10,162.5 | 6,751.1 | 95.5 | 95.4 | -86.43 | 351.6 | -2,996.9 | 1,089.3 | 899.8 | 189.46 | 5.749 | |
| 10,500.0 | 6,819.0 | 10,262.5 | 6,750.9 | 98.3 | 98.2 | -86.42 | 351.6 | -3,096.9 | 1,089.3 | 894.3 | 194.97 | 5.587 | |
| 10,600.0 | 6,819.0 | 10,362.5 | 6,750.8 | 101.0 | 101.0 | -86.41 | 351.6 | -3,196.9 | 1,089.3 | 888.8 | 200.49 | 5.433 | |
| 10,700.0 | 6,819.0 | 10,462.5 | 6,750.7 | 103.8 | 103.7 | -86.40 | 351.6 | -3,296.9 | 1,089.3 | 883.3 | 206.01 | 5.288 | |
| 10,800.0 | 6,819.0 | 10,562.5 | 6,750.5 | 106.5 | 106.5 | -86.40 | 351.6 | -3,396.9 | 1,089.3 | 877.8 | 211.53 | 5.150 | |
| 10,900.0 | 6,819.0 | 10,662.5 | 6,750.4 | 109.2 | 109.3 | -86.39 | 351.6 | -3,496.9 | 1,089.3 | 872.2 | 217.06 | 5.018 | |
| 11,000.0 | 6,819.0 | 10,762.5 | 6,750.3 | 112.0 | 112.1 | -86.38 | 351.6 | -3,596.9 | 1,089.3 | 866.7 | 222.60 | 4.894 | |
| 11,100.0 | 6,819.0 | 10,862.5 | 6,750.1 | 114.8 | 114.8 | -86.38 | 351.6 | -3,696.9 | 1,089.3 | 861.2 | 228.13 | 4.775 | |
| 11,200.0 | 6,819.0 | 10,962.5 | 6,750.0 | 117.5 | 117.6 | -86.37 | 351.6 | -3,796.9 | 1,089.3 | 855.7 | 233.68 | 4.662 | |
| 11,300.0 | 6,819.0 | 11,062.5 | 6,749.8 | 120.3 | 120.4 | -86.36 | 351.6 | -3,896.9 | 1,089.3 | 850.1 | 239.22 | 4.554 | |
| 11,400.0 | 6,819.0 | 11,162.5 | 6,749.7 | 123.0 | 123.2 | -86.35 | 351.6 | -3,996.9 | 1,089.3 | 844.6 | 244.77 | 4.451 | |
| 11,500.0 | 6,819.0 | 11,262.5 | 6,749.6 | 125.8 | 126.0 | -86.35 | 351.6 | -4,096.9 | 1,089.4 | 839.0 | 250.32 | 4.352 | |
| 11,600.0 | 6,819.0 | 11,362.5 | 6,749.4 | 128.6 | 128.8 | -86.34 | 351.6 | -4,196.9 | 1,089.4 | 833.5 | 255.87 | 4.258 | |
| 11,700.0 | 6,819.0 | 11,462.5 | 6,749.3 | 131.3 | 131.5 | -86.33 | 351.6 | -4,296.9 | 1,089.4 | 828.0 | 261.42 | 4.167 | |
| 11,800.0 | 6,819.0 | 11,562.5 | 6,749.2 | 134.1 | 134.3 | -86.33 | 351.6 | -4,396.9 | 1,089.4 | 822.4 | 266.98 | 4.080 | |
| 11,900.0 | 6,819.0 | 11,662.5 | 6,749.0 | 136.9 | 137.1 | -86.32 | 351.6 | -4,496.9 | 1,089.4 | 816.9 | 272.54 | 3.997 | |
| 12,000.0 | 6,819.0 | 11,762.5 | 6,748.9 | 139.6 | 139.9 | -86.31 | 351.6 | -4,596.9 | 1,089.4 | 811.3 | 278.10 | 3.917 | |
| 12,100.0 | 6,819.0 | 11,862.5 | 6,748.8 | 142.4 | 142.7 | -86.30 | 351.6 | -4,696.9 | 1,089.4 | 805.8 | 283.66 | 3.841 | |
| 12,200.0 | 6,819.0 | 11,962.5 | 6,748.6 | 145.2 | 145.5 | -86.30 | 351.6 | -4,796.9 | 1,089.4 | 800.2 | 289.22 | 3.767 | |
| 12,300.0 | 6,819.0 | 12,062.5 | 6,748.5 | 148.0 | 148.3 | -86.29 | 351.6 | -4,896.9 | 1,089.4 | 794.6 | 294.79 | 3.696 | |
| 12,400.0 | 6,819.0 | 12,162.5 | 6,748.3 | 150.8 | 151.1 | -86.28 | 351.6 | -4,996.9 | 1,089.4 | 789.1 | 300.36 | 3.627 | |
| 12,500.0 | 6,819.0 | 12,262.5 | 6,748.2 | 153.5 | 153.9 | -86.28 | 351.6 | -5,096.9 | 1,089.4 | 783.5 | 305.92 | 3.561 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-314 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 12,362.5 | 6,748.1 | 156.3 | 156.7 | -86.27 | 351.6 | -5,196.9 | 1,089.5 | 778.0 | 311.49 | 3.498 | |
| 12,700.0 | 6,819.0 | 12,462.5 | 6,747.9 | 159.1 | 159.5 | -86.26 | 351.6 | -5,296.9 | 1,089.5 | 772.4 | 317.06 | 3.436 | |
| 12,800.0 | 6,819.0 | 12,562.5 | 6,747.8 | 161.9 | 162.3 | -86.25 | 351.6 | -5,396.9 | 1,089.5 | 766.8 | 322.64 | 3.377 | |
| 12,900.0 | 6,819.0 | 12,662.5 | 6,747.6 | 164.7 | 165.0 | -86.25 | 351.6 | -5,496.9 | 1,089.5 | 761.3 | 328.21 | 3.319 | |
| 13,000.0 | 6,819.0 | 12,762.5 | 6,747.5 | 167.4 | 167.8 | -86.24 | 351.6 | -5,596.9 | 1,089.5 | 755.7 | 333.78 | 3.264 | |
| 13,100.0 | 6,819.0 | 12,862.5 | 6,747.4 | 170.2 | 170.6 | -86.23 | 351.6 | -5,696.9 | 1,089.5 | 750.1 | 339.36 | 3.210 | |
| 13,200.0 | 6,819.0 | 12,962.5 | 6,747.2 | 173.0 | 173.4 | -86.22 | 351.6 | -5,796.9 | 1,089.5 | 744.6 | 344.94 | 3.159 | |
| 13,300.0 | 6,819.0 | 13,062.5 | 6,747.1 | 175.8 | 176.2 | -86.22 | 351.6 | -5,896.9 | 1,089.5 | 739.0 | 350.51 | 3.108 | |
| 13,400.0 | 6,819.0 | 13,162.5 | 6,746.9 | 178.6 | 179.0 | -86.21 | 351.6 | -5,996.9 | 1,089.5 | 733.4 | 356.09 | 3.060 | |
| 13,500.0 | 6,819.0 | 13,262.5 | 6,746.8 | 181.4 | 181.8 | -86.20 | 351.6 | -6,096.9 | 1,089.5 | 727.9 | 361.67 | 3.013 | |
| 13,600.0 | 6,819.0 | 13,362.5 | 6,746.6 | 184.2 | 184.6 | -86.19 | 351.6 | -6,196.9 | 1,089.5 | 722.3 | 367.25 | 2.967 | |
| 13,700.0 | 6,819.0 | 13,462.5 | 6,746.5 | 187.0 | 187.4 | -86.19 | 351.6 | -6,296.9 | 1,089.6 | 716.7 | 372.83 | 2.922 | |
| 13,800.0 | 6,819.0 | 13,562.5 | 6,746.4 | 189.7 | 190.2 | -86.18 | 351.6 | -6,396.9 | 1,089.6 | 711.2 | 378.41 | 2.879 | |
| 13,900.0 | 6,819.0 | 13,662.5 | 6,746.2 | 192.5 | 193.0 | -86.17 | 351.6 | -6,496.9 | 1,089.6 | 705.6 | 383.99 | 2.837 | |
| 14,000.0 | 6,819.0 | 13,762.5 | 6,746.1 | 195.3 | 195.8 | -86.16 | 351.6 | -6,596.9 | 1,089.6 | 700.0 | 389.58 | 2.797 | |
| 14,100.0 | 6,819.0 | 13,862.5 | 6,745.9 | 198.1 | 198.6 | -86.16 | 351.6 | -6,696.9 | 1,089.6 | 694.4 | 395.16 | 2.757 | |
| 14,200.0 | 6,819.0 | 13,962.5 | 6,745.8 | 200.9 | 201.4 | -86.15 | 351.6 | -6,796.9 | 1,089.6 | 688.9 | 400.74 | 2.719 | |
| 14,300.0 | 6,819.0 | 14,062.5 | 6,745.6 | 203.7 | 204.2 | -86.14 | 351.6 | -6,896.9 | 1,089.6 | 683.3 | 406.33 | 2.682 | |
| 14,400.0 | 6,819.0 | 14,162.5 | 6,745.5 | 206.5 | 207.0 | -86.13 | 351.6 | -6,996.9 | 1,089.6 | 677.7 | 411.91 | 2.645 | |
| 14,500.0 | 6,819.0 | 14,262.5 | 6,745.3 | 209.3 | 209.8 | -86.13 | 351.6 | -7,096.9 | 1,089.6 | 672.1 | 417.49 | 2.610 | |
| 14,600.0 | 6,819.0 | 14,362.5 | 6,745.2 | 212.1 | 212.6 | -86.12 | 351.6 | -7,196.9 | 1,089.6 | 666.6 | 423.08 | 2.575 | |
| 14,700.0 | 6,819.0 | 14,462.5 | 6,745.0 | 214.9 | 215.4 | -86.11 | 351.6 | -7,296.9 | 1,089.6 | 661.0 | 428.67 | 2.542 | |
| 14,720.1 | 6,819.0 | 14,482.6 | 6,745.0 | 215.4 | 216.0 | -86.11 | 351.6 | -7,317.0 | 1,089.6 | 659.9 | 429.79 | 2.535 | |
| 14,720.3 | 6,819.0 | 14,482.8 | 6,745.0 | 215.4 | 216.0 | -86.11 | 351.6 | -7,317.2 | 1,089.6 | 659.8 | 429.80 | 2.535 | SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-334 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -72.89 | 4.4 | -14.2 | 14.9 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -72.89 | 4.4 | -14.2 | 14.9 | 14.7 | 0.17 | 85.845 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -72.89 | 4.4 | -14.2 | 14.9 | 14.2 | 0.62 | 23.863 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | -72.89 | 4.4 | -14.2 | 14.9 | 13.8 | 1.07 | 13.858 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -72.89 | 4.4 | -14.2 | 14.9 | 13.3 | 1.52 | 9.764 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | -72.89 | 4.4 | -14.2 | 14.9 | 12.9 | 1.97 | 7.537 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | -72.89 | 4.4 | -14.2 | 14.9 | 12.4 | 2.42 | 6.138 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.4 | 1.4 | -72.89 | 4.4 | -14.2 | 14.9 | 12.0 | 2.87 | 5.176 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | -72.89 | 4.4 | -14.2 | 14.9 | 11.5 | 3.32 | 4.475 | CC |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | -100.67 | 4.4 | -14.2 | 15.1 | 11.3 | 3.77 | 4.003 | |
| 1,000.0 | 999.8 | 1,000.3 | 1,000.3 | 2.1 | 2.1 | -120.93 | 3.9 | -12.5 | 15.2 | 11.0 | 4.20 | 3.632 | ES, SF |
| 1,100.0 | 1,099.5 | 1,100.3 | 1,100.1 | 2.3 | 2.3 | -153.67 | 2.6 | -7.4 | 17.8 | 13.2 | 4.61 | 3.851 | |
| 1,200.0 | 1,198.7 | 1,199.5 | 1,199.0 | 2.6 | 2.5 | 178.48 | 0.5 | 1.0 | 27.1 | 22.0 | 5.05 | 5.363 | |
| 1,300.0 | 1,297.5 | 1,297.7 | 1,296.4 | 2.9 | 2.7 | 162.79 | -2.5 | 12.5 | 43.2 | 37.7 | 5.52 | 7.822 | |
| 1,400.0 | 1,395.6 | 1,394.5 | 1,392.1 | 3.2 | 3.0 | 154.12 | -6.2 | 27.0 | 64.8 | 58.8 | 6.03 | 10.750 | |
| 1,500.0 | 1,493.1 | 1,489.8 | 1,485.6 | 3.5 | 3.3 | 148.85 | -10.7 | 44.4 | 91.4 | 84.8 | 6.59 | 13.869 | |
| 1,507.2 | 1,500.0 | 1,496.5 | 1,492.2 | 3.6 | 3.3 | 148.55 | -11.0 | 45.7 | 93.4 | 86.8 | 6.63 | 14.100 | |
| 1,572.2 | 1,563.0 | 1,558.5 | 1,552.9 | 3.8 | 3.6 | 146.44 | -14.2 | 58.2 | 112.5 | 105.5 | 7.02 | 16.029 | |
| 1,600.0 | 1,590.0 | 1,585.1 | 1,578.8 | 3.9 | 3.7 | 145.68 | -15.6 | 63.6 | 120.8 | 113.6 | 7.18 | 16.820 | |
| 1,700.0 | 1,686.3 | 1,679.9 | 1,671.6 | 4.4 | 4.0 | 144.03 | -20.5 | 82.7 | 152.4 | 144.6 | 7.80 | 19.533 | |
| 1,800.0 | 1,781.5 | 1,773.8 | 1,763.5 | 4.9 | 4.4 | 143.45 | -25.3 | 101.6 | 186.7 | 178.2 | 8.45 | 22.101 | |
| 1,817.6 | 1,798.2 | 1,790.3 | 1,779.5 | 5.0 | 4.4 | 143.42 | -26.2 | 104.9 | 193.0 | 184.4 | 8.56 | 22.537 | |
| 1,900.0 | 1,876.1 | 1,867.1 | 1,854.7 | 5.5 | 4.8 | 143.64 | -30.1 | 120.4 | 222.7 | 213.6 | 9.15 | 24.349 | |
| 2,000.0 | 1,970.6 | 1,960.3 | 1,945.9 | 6.0 | 5.1 | 143.85 | -35.0 | 139.2 | 258.8 | 248.9 | 9.87 | 26.218 | |
| 2,100.0 | 2,065.1 | 2,053.6 | 2,037.1 | 6.6 | 5.5 | 144.00 | -39.8 | 157.9 | 294.9 | 284.3 | 10.61 | 27.785 | |
| 2,200.0 | 2,159.6 | 2,146.9 | 2,128.4 | 7.2 | 5.9 | 144.12 | -44.6 | 176.7 | 331.0 | 319.6 | 11.37 | 29.118 | |
| 2,300.0 | 2,254.1 | 2,240.1 | 2,219.6 | 7.8 | 6.3 | 144.22 | -49.4 | 195.5 | 367.1 | 355.0 | 12.13 | 30.258 | |
| 2,400.0 | 2,348.7 | 2,333.4 | 2,310.8 | 8.4 | 6.7 | 144.30 | -54.2 | 214.3 | 403.2 | 390.3 | 12.91 | 31.242 | |
| 2,500.0 | 2,443.2 | 2,426.6 | 2,402.0 | 9.1 | 7.2 | 144.37 | -59.0 | 233.1 | 439.3 | 425.6 | 13.69 | 32.099 | |
| 2,600.0 | 2,537.7 | 2,519.9 | 2,493.2 | 9.7 | 7.6 | 144.42 | -63.9 | 251.8 | 475.4 | 460.9 | 14.47 | 32.849 | |
| 2,700.0 | 2,632.2 | 2,613.2 | 2,584.4 | 10.3 | 8.0 | 144.47 | -68.7 | 270.6 | 511.5 | 496.2 | 15.26 | 33.511 | |
| 2,800.0 | 2,726.8 | 2,706.4 | 2,675.7 | 10.9 | 8.4 | 144.52 | -73.5 | 289.4 | 547.6 | 531.5 | 16.06 | 34.099 | |
| 2,900.0 | 2,821.3 | 2,799.7 | 2,766.9 | 11.6 | 8.8 | 144.55 | -78.3 | 308.2 | 583.7 | 566.8 | 16.86 | 34.624 | |
| 3,000.0 | 2,915.8 | 2,892.9 | 2,858.1 | 12.2 | 9.2 | 144.58 | -83.1 | 327.0 | 619.8 | 602.1 | 17.66 | 35.094 | |
| 3,100.0 | 3,010.3 | 2,986.2 | 2,949.3 | 12.8 | 9.7 | 144.61 | -87.9 | 345.8 | 655.9 | 637.4 | 18.47 | 35.519 | |
| 3,200.0 | 3,104.8 | 3,079.4 | 3,040.5 | 13.5 | 10.1 | 144.64 | -92.7 | 364.5 | 691.9 | 672.7 | 19.27 | 35.903 | |
| 3,300.0 | 3,199.4 | 3,172.7 | 3,131.8 | 14.1 | 10.5 | 144.66 | -97.6 | 383.3 | 728.0 | 708.0 | 20.08 | 36.252 | |
| 3,400.0 | 3,293.9 | 3,266.0 | 3,223.0 | 14.8 | 10.9 | 144.68 | -102.4 | 402.1 | 764.1 | 743.2 | 20.89 | 36.572 | |
| 3,500.0 | 3,388.4 | 3,359.2 | 3,314.2 | 15.4 | 11.3 | 144.70 | -107.2 | 420.9 | 800.2 | 778.5 | 21.71 | 36.864 | |
| 3,600.0 | 3,482.9 | 3,452.5 | 3,405.4 | 16.0 | 11.8 | 144.72 | -112.0 | 439.7 | 836.3 | 813.8 | 22.52 | 37.133 | |
| 3,700.0 | 3,577.5 | 3,545.7 | 3,496.6 | 16.7 | 12.2 | 144.74 | -116.8 | 458.4 | 872.4 | 849.1 | 23.34 | 37.380 | |
| 3,800.0 | 3,672.0 | 3,639.0 | 3,587.9 | 17.3 | 12.6 | 144.75 | -121.6 | 477.2 | 908.5 | 884.4 | 24.16 | 37.609 | |
| 3,900.0 | 3,766.5 | 3,732.2 | 3,679.1 | 18.0 | 13.1 | 144.77 | -126.5 | 496.0 | 944.6 | 919.6 | 24.98 | 37.822 | |
| 4,000.0 | 3,861.0 | 3,834.5 | 3,779.3 | 18.6 | 13.5 | 144.81 | -131.6 | 516.0 | 980.5 | 954.7 | 25.78 | 38.035 | |
| 4,100.0 | 3,955.5 | 3,945.5 | 3,888.6 | 19.3 | 13.8 | 145.07 | -136.2 | 534.1 | 1,014.9 | 988.4 | 26.51 | 38.281 | |
| 4,200.0 | 4,050.1 | 4,057.4 | 3,999.5 | 19.9 | 14.1 | 145.53 | -139.9 | 548.2 | 1,047.8 | 1,020.6 | 27.19 | 38.537 | |
| 4,300.0 | 4,144.6 | 4,169.9 | 4,111.6 | 20.5 | 14.3 | 146.18 | -142.4 | 558.2 | 1,079.1 | 1,051.3 | 27.80 | 38.811 | |
| 4,400.0 | 4,239.1 | 4,282.6 | 4,224.2 | 21.2 | 14.5 | 147.00 | -143.9 | 563.9 | 1,108.9 | 1,080.6 | 28.35 | 39.111 | |
| 4,500.0 | 4,333.6 | 4,392.1 | 4,333.6 | 21.8 | 14.7 | 147.95 | -144.2 | 565.3 | 1,137.4 | 1,108.6 | 28.84 | 39.441 | |
| 4,600.0 | 4,428.2 | 4,486.6 | 4,428.2 | 22.5 | 14.8 | 148.79 | -144.2 | 565.3 | 1,165.6 | 1,136.3 | 29.30 | 39.776 | |
| 4,700.0 | 4,522.7 | 4,581.2 | 4,522.7 | 23.1 | 14.9 | 149.59 | -144.2 | 565.3 | 1,194.1 | 1,164.3 | 29.77 | 40.111 | |
| 4,800.0 | 4,617.2 | 4,675.7 | 4,617.2 | 23.8 | 15.1 | 150.36 | -144.2 | 565.3 | 1,222.7 | 1,192.5 | 30.23 | 40.447 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-334 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,770.2 | 4,711.7 | 24.4 | 15.2 | 151.09 | -144.2 | 565.3 | 1,251.5 | 1,220.9 | 30.69 | 40.783 | |
| 5,000.0 | 4,806.2 | 4,864.7 | 4,806.2 | 25.1 | 15.3 | 151.78 | -144.2 | 565.3 | 1,280.6 | 1,249.4 | 31.14 | 41.117 | |
| 5,100.0 | 4,900.8 | 4,959.2 | 4,900.8 | 25.7 | 15.5 | 152.45 | -144.2 | 565.3 | 1,309.8 | 1,278.2 | 31.60 | 41.449 | |
| 5,200.0 | 4,995.3 | 5,053.8 | 4,995.3 | 26.4 | 15.6 | 153.09 | -144.2 | 565.3 | 1,339.1 | 1,307.1 | 32.05 | 41.778 | |
| 5,300.0 | 5,089.8 | 5,148.3 | 5,089.8 | 27.0 | 15.7 | 153.70 | -144.2 | 565.3 | 1,368.6 | 1,336.1 | 32.51 | 42.104 | |
| 5,400.0 | 5,184.3 | 5,242.8 | 5,184.3 | 27.7 | 15.9 | 154.29 | -144.2 | 565.3 | 1,398.3 | 1,365.3 | 32.96 | 42.426 | |
| 5,500.0 | 5,278.9 | 5,337.3 | 5,278.9 | 28.3 | 16.0 | 154.85 | -144.2 | 565.3 | 1,428.0 | 1,394.6 | 33.41 | 42.743 | |
| 5,533.5 | 5,310.5 | 5,369.0 | 5,310.5 | 28.5 | 16.1 | 155.03 | -144.2 | 565.3 | 1,438.1 | 1,404.5 | 33.56 | 42.849 | |
| 5,600.0 | 5,373.6 | 5,432.1 | 5,373.6 | 28.9 | 16.2 | 155.55 | -144.2 | 565.3 | 1,457.3 | 1,423.4 | 33.91 | 42.974 | |
| 5,700.0 | 5,469.4 | 5,527.9 | 5,469.4 | 29.3 | 16.3 | 156.22 | -144.2 | 565.3 | 1,483.7 | 1,449.3 | 34.38 | 43.158 | |
| 5,800.0 | 5,566.1 | 5,624.6 | 5,566.1 | 29.8 | 16.5 | 156.80 | -144.2 | 565.3 | 1,507.1 | 1,472.3 | 34.82 | 43.284 | |
| 5,900.0 | 5,663.6 | 5,722.1 | 5,663.6 | 30.1 | 16.6 | 157.29 | -144.2 | 565.3 | 1,527.5 | 1,492.3 | 35.23 | 43.358 | |
| 6,000.0 | 5,761.9 | 5,820.4 | 5,761.9 | 30.5 | 16.8 | 157.69 | -144.2 | 565.3 | 1,544.7 | 1,509.1 | 35.61 | 43.381 | |
| 6,100.0 | 5,860.7 | 5,919.2 | 5,860.7 | 30.7 | 16.9 | 158.01 | -144.2 | 565.3 | 1,558.8 | 1,522.8 | 35.95 | 43.357 | |
| 6,200.0 | 5,960.0 | 6,018.5 | 5,960.0 | 31.0 | 17.1 | 158.25 | -144.2 | 565.3 | 1,569.7 | 1,533.4 | 36.26 | 43.287 | |
| 6,300.0 | 6,059.7 | 6,118.2 | 6,059.7 | 31.2 | 17.3 | 158.41 | -144.2 | 565.3 | 1,577.3 | 1,540.8 | 36.53 | 43.173 | |
| 6,400.0 | 6,159.6 | 6,218.0 | 6,159.6 | 31.3 | 17.4 | 158.51 | -144.2 | 565.3 | 1,581.7 | 1,545.0 | 36.77 | 43.016 | |
| 6,486.1 | 6,245.7 | 6,304.6 | 6,246.1 | 31.4 | 17.6 | 179.75 | -144.2 | 563.9 | 1,582.9 | 1,539.0 | 43.94 | 36.027 | |
| 6,500.0 | 6,259.6 | 6,318.6 | 6,260.1 | 31.4 | 17.6 | 179.78 | -144.2 | 562.9 | 1,582.9 | 1,539.0 | 43.98 | 35.995 | |
| 6,516.1 | 6,275.7 | 6,334.8 | 6,276.2 | 31.4 | 17.6 | 179.84 | -144.2 | 561.4 | 1,582.9 | 1,538.9 | 44.02 | 35.957 | |
| 6,550.0 | 6,309.5 | 6,368.6 | 6,309.7 | 31.5 | 17.6 | -90.04 | -144.2 | 557.1 | 1,582.9 | 1,545.9 | 37.00 | 42.783 | |
| 6,559.9 | 6,319.4 | 6,378.4 | 6,319.4 | 31.5 | 17.6 | -90.00 | -144.2 | 555.6 | 1,582.9 | 1,545.9 | 37.00 | 42.781 | |
| 6,600.0 | 6,359.4 | 6,418.2 | 6,358.5 | 31.5 | 17.6 | -89.85 | -144.2 | 547.9 | 1,582.9 | 1,545.9 | 37.00 | 42.782 | |
| 6,650.0 | 6,408.8 | 6,467.4 | 6,406.1 | 31.5 | 17.6 | -89.66 | -144.2 | 535.5 | 1,583.0 | 1,546.0 | 36.96 | 42.833 | |
| 6,700.0 | 6,457.5 | 6,515.8 | 6,451.6 | 31.5 | 17.5 | -89.44 | -144.2 | 519.1 | 1,583.0 | 1,546.1 | 36.86 | 42.946 | |
| 6,716.1 | 6,473.1 | 6,531.2 | 6,465.7 | 31.5 | 17.5 | -89.36 | -144.2 | 513.0 | 1,583.0 | 1,546.2 | 36.82 | 42.995 | |
| 6,725.0 | 6,481.6 | 6,539.7 | 6,473.4 | 31.5 | 17.5 | -89.32 | -144.2 | 509.4 | 1,583.0 | 1,546.2 | 36.79 | 43.024 | |
| 6,750.0 | 6,505.3 | 6,563.4 | 6,494.5 | 31.5 | 17.5 | -89.18 | -144.2 | 498.7 | 1,583.1 | 1,546.4 | 36.72 | 43.113 | |
| 6,775.0 | 6,528.5 | 6,586.9 | 6,514.9 | 31.4 | 17.4 | -89.06 | -144.2 | 487.0 | 1,583.1 | 1,546.5 | 36.64 | 43.210 | |
| 6,800.0 | 6,551.3 | 6,610.3 | 6,534.6 | 31.4 | 17.4 | -88.93 | -144.2 | 474.4 | 1,583.2 | 1,546.7 | 36.55 | 43.313 | |
| 6,825.0 | 6,573.4 | 6,633.5 | 6,553.5 | 31.4 | 17.4 | -88.81 | -144.2 | 460.9 | 1,583.3 | 1,546.8 | 36.47 | 43.417 | |
| 6,850.0 | 6,595.0 | 6,656.6 | 6,571.7 | 31.3 | 17.4 | -88.69 | -144.2 | 446.6 | 1,583.4 | 1,547.0 | 36.38 | 43.520 | |
| 6,875.0 | 6,615.8 | 6,679.6 | 6,589.0 | 31.3 | 17.3 | -88.57 | -144.2 | 431.6 | 1,583.4 | 1,547.1 | 36.30 | 43.617 | |
| 6,900.0 | 6,635.9 | 6,702.4 | 6,605.5 | 31.3 | 17.3 | -88.46 | -144.2 | 415.8 | 1,583.5 | 1,547.3 | 36.23 | 43.705 | |
| 6,925.0 | 6,655.1 | 6,725.0 | 6,621.1 | 31.2 | 17.3 | -88.35 | -144.2 | 399.4 | 1,583.6 | 1,547.4 | 36.17 | 43.778 | |
| 6,950.0 | 6,673.6 | 6,747.7 | 6,635.9 | 31.2 | 17.3 | -88.25 | -144.2 | 382.3 | 1,583.7 | 1,547.5 | 36.13 | 43.833 | |
| 6,975.0 | 6,691.1 | 6,770.2 | 6,649.8 | 31.1 | 17.3 | -88.15 | -144.2 | 364.6 | 1,583.8 | 1,547.7 | 36.11 | 43.865 | |
| 7,000.0 | 6,707.6 | 6,792.6 | 6,662.8 | 31.1 | 17.3 | -88.05 | -144.2 | 346.4 | 1,583.9 | 1,547.7 | 36.10 | 43.869 | |
| 7,025.0 | 6,723.1 | 6,814.9 | 6,674.9 | 31.0 | 17.4 | -87.96 | -144.2 | 327.6 | 1,583.9 | 1,547.8 | 36.13 | 43.843 | |
| 7,050.0 | 6,737.6 | 6,837.1 | 6,686.0 | 31.0 | 17.4 | -87.88 | -144.2 | 308.4 | 1,584.0 | 1,547.8 | 36.18 | 43.783 | |
| 7,075.0 | 6,751.0 | 6,859.2 | 6,696.2 | 30.9 | 17.5 | -87.80 | -144.2 | 288.8 | 1,584.1 | 1,547.8 | 36.26 | 43.686 | |
| 7,100.0 | 6,763.3 | 6,881.3 | 6,705.5 | 30.8 | 17.5 | -87.72 | -144.2 | 268.8 | 1,584.2 | 1,547.8 | 36.38 | 43.549 | |
| 7,125.0 | 6,774.5 | 6,903.2 | 6,713.8 | 30.8 | 17.6 | -87.66 | -144.2 | 248.4 | 1,584.3 | 1,547.7 | 36.53 | 43.371 | |
| 7,150.0 | 6,784.4 | 6,925.0 | 6,721.0 | 30.7 | 17.7 | -87.59 | -144.2 | 227.9 | 1,584.3 | 1,547.6 | 36.71 | 43.153 | |
| 7,175.0 | 6,793.1 | 6,947.0 | 6,727.4 | 30.7 | 17.9 | -87.54 | -144.2 | 206.8 | 1,584.4 | 1,547.5 | 36.94 | 42.889 | |
| 7,200.0 | 6,800.6 | 6,968.8 | 6,732.8 | 30.6 | 18.0 | -87.49 | -144.2 | 185.7 | 1,584.5 | 1,547.3 | 37.21 | 42.585 | |
| 7,225.0 | 6,806.8 | 6,990.6 | 6,737.2 | 30.6 | 18.2 | -87.44 | -144.2 | 164.4 | 1,584.5 | 1,547.0 | 37.51 | 42.243 | |
| 7,250.0 | 6,811.8 | 7,012.3 | 6,740.6 | 30.5 | 18.3 | -87.40 | -144.2 | 142.9 | 1,584.6 | 1,546.7 | 37.85 | 41.866 | |
| 7,275.0 | 6,815.5 | 7,034.0 | 6,743.1 | 30.5 | 18.5 | -87.37 | -144.2 | 121.3 | 1,584.6 | 1,546.4 | 38.22 | 41.458 | |
| 7,300.0 | 6,817.8 | 7,055.7 | 6,744.5 | 30.4 | 18.7 | -87.35 | -144.2 | 99.7 | 1,584.6 | 1,546.0 | 38.63 | 41.022 | |
| 7,325.0 | 6,818.9 | 7,077.4 | 6,745.0 | 30.4 | 19.0 | -87.33 | -144.2 | 78.0 | 1,584.7 | 1,545.6 | 39.07 | 40.563 | |
| 7,332.8 | 6,819.0 | 7,085.2 | 6,745.0 | 30.4 | 19.0 | -87.32 | -144.2 | 70.2 | 1,584.7 | 1,545.4 | 39.22 | 40.400 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-334 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 7,152.4 | 6,745.0 | 30.3 | 19.9 | -87.32 | -144.2 | 3.0 | 1,584.7 | 1,543.9 | 40.75 | 38.887 | |
| 7,500.0 | 6,819.0 | 7,252.4 | 6,745.0 | 30.2 | 21.3 | -87.32 | -144.2 | -97.0 | 1,584.7 | 1,541.2 | 43.48 | 36.450 | |
| 7,600.0 | 6,819.0 | 7,352.4 | 6,745.0 | 30.3 | 23.1 | -87.32 | -144.2 | -197.0 | 1,584.7 | 1,537.9 | 46.72 | 33.919 | |
| 7,700.0 | 6,819.0 | 7,452.4 | 6,745.0 | 30.6 | 25.0 | -87.32 | -144.2 | -297.0 | 1,584.7 | 1,534.3 | 50.38 | 31.454 | |
| 7,800.0 | 6,819.0 | 7,552.4 | 6,745.0 | 31.3 | 27.0 | -87.32 | -144.2 | -397.0 | 1,584.7 | 1,530.3 | 54.38 | 29.143 | |
| 7,900.0 | 6,819.0 | 7,652.4 | 6,745.0 | 32.5 | 29.2 | -87.32 | -144.2 | -497.0 | 1,584.7 | 1,526.0 | 58.64 | 27.024 | |
| 8,000.0 | 6,819.0 | 7,752.4 | 6,745.0 | 34.2 | 31.5 | -87.32 | -144.2 | -597.0 | 1,584.7 | 1,521.5 | 63.11 | 25.108 | |
| 8,100.0 | 6,819.0 | 7,852.4 | 6,745.0 | 36.1 | 33.9 | -87.32 | -144.2 | -697.0 | 1,584.7 | 1,516.9 | 67.76 | 23.387 | |
| 8,200.0 | 6,819.0 | 7,952.4 | 6,745.0 | 38.3 | 36.4 | -87.32 | -144.2 | -797.0 | 1,584.7 | 1,512.1 | 72.54 | 21.845 | |
| 8,300.0 | 6,819.0 | 8,052.4 | 6,745.0 | 40.6 | 38.8 | -87.32 | -144.2 | -897.0 | 1,584.7 | 1,507.2 | 77.44 | 20.464 | |
| 8,400.0 | 6,819.0 | 8,152.4 | 6,745.0 | 42.9 | 41.4 | -87.32 | -144.2 | -997.0 | 1,584.7 | 1,502.2 | 82.42 | 19.226 | |
| 8,500.0 | 6,819.0 | 8,252.4 | 6,745.0 | 45.3 | 43.9 | -87.32 | -144.2 | -1,097.0 | 1,584.7 | 1,497.2 | 87.49 | 18.113 | |
| 8,600.0 | 6,819.0 | 8,352.4 | 6,745.0 | 47.8 | 46.5 | -87.32 | -144.2 | -1,197.0 | 1,584.7 | 1,492.0 | 92.61 | 17.111 | |
| 8,700.0 | 6,819.0 | 8,452.4 | 6,745.0 | 50.3 | 49.2 | -87.32 | -144.2 | -1,297.0 | 1,584.7 | 1,486.9 | 97.79 | 16.204 | |
| 8,800.0 | 6,819.0 | 8,552.4 | 6,745.0 | 52.8 | 51.8 | -87.32 | -144.2 | -1,397.0 | 1,584.7 | 1,481.6 | 103.02 | 15.382 | |
| 8,900.0 | 6,819.0 | 8,652.4 | 6,745.0 | 55.4 | 54.4 | -87.32 | -144.2 | -1,497.0 | 1,584.7 | 1,476.4 | 108.29 | 14.634 | |
| 9,000.0 | 6,819.0 | 8,752.4 | 6,745.0 | 58.0 | 57.1 | -87.32 | -144.2 | -1,597.0 | 1,584.7 | 1,471.1 | 113.59 | 13.951 | |
| 9,100.0 | 6,819.0 | 8,852.4 | 6,745.0 | 60.6 | 59.8 | -87.32 | -144.2 | -1,697.0 | 1,584.7 | 1,465.7 | 118.92 | 13.326 | |
| 9,200.0 | 6,819.0 | 8,952.4 | 6,745.0 | 63.2 | 62.5 | -87.32 | -144.2 | -1,797.0 | 1,584.7 | 1,460.4 | 124.27 | 12.752 | |
| 9,300.0 | 6,819.0 | 9,052.4 | 6,745.0 | 65.9 | 65.2 | -87.32 | -144.2 | -1,897.0 | 1,584.7 | 1,455.0 | 129.65 | 12.223 | |
| 9,400.0 | 6,819.0 | 9,152.4 | 6,745.0 | 68.5 | 67.9 | -87.32 | -144.2 | -1,997.0 | 1,584.7 | 1,449.6 | 135.04 | 11.735 | |
| 9,500.0 | 6,819.0 | 9,252.4 | 6,745.0 | 71.2 | 70.6 | -87.32 | -144.2 | -2,097.0 | 1,584.7 | 1,444.2 | 140.45 | 11.282 | |
| 9,600.0 | 6,819.0 | 9,352.4 | 6,745.0 | 73.9 | 73.4 | -87.32 | -144.2 | -2,197.0 | 1,584.7 | 1,438.8 | 145.88 | 10.862 | |
| 9,700.0 | 6,819.0 | 9,452.4 | 6,745.0 | 76.5 | 76.1 | -87.32 | -144.2 | -2,297.0 | 1,584.7 | 1,433.3 | 151.33 | 10.472 | |
| 9,800.0 | 6,819.0 | 9,552.4 | 6,745.0 | 79.2 | 78.8 | -87.32 | -144.2 | -2,397.0 | 1,584.7 | 1,427.9 | 156.78 | 10.107 | |
| 9,900.0 | 6,819.0 | 9,652.4 | 6,745.0 | 81.9 | 81.6 | -87.32 | -144.2 | -2,497.0 | 1,584.7 | 1,422.4 | 162.25 | 9.767 | |
| 10,000.0 | 6,819.0 | 9,752.4 | 6,745.0 | 84.6 | 84.3 | -87.32 | -144.2 | -2,597.0 | 1,584.7 | 1,416.9 | 167.72 | 9.448 | |
| 10,100.0 | 6,819.0 | 9,852.4 | 6,745.0 | 87.4 | 87.1 | -87.32 | -144.2 | -2,697.0 | 1,584.7 | 1,411.4 | 173.21 | 9.149 | |
| 10,200.0 | 6,819.0 | 9,952.4 | 6,745.0 | 90.1 | 89.8 | -87.32 | -144.2 | -2,797.0 | 1,584.7 | 1,406.0 | 178.70 | 8.868 | |
| 10,300.0 | 6,819.0 | 10,052.4 | 6,745.0 | 92.8 | 92.6 | -87.32 | -144.2 | -2,897.0 | 1,584.7 | 1,400.5 | 184.20 | 8.603 | |
| 10,400.0 | 6,819.0 | 10,152.4 | 6,745.0 | 95.5 | 95.4 | -87.32 | -144.2 | -2,997.0 | 1,584.7 | 1,394.9 | 189.71 | 8.353 | |
| 10,500.0 | 6,819.0 | 10,252.4 | 6,745.0 | 98.3 | 98.1 | -87.32 | -144.2 | -3,097.0 | 1,584.7 | 1,389.4 | 195.22 | 8.117 | |
| 10,600.0 | 6,819.0 | 10,352.4 | 6,745.0 | 101.0 | 100.9 | -87.32 | -144.2 | -3,197.0 | 1,584.7 | 1,383.9 | 200.74 | 7.894 | |
| 10,700.0 | 6,819.0 | 10,452.4 | 6,745.0 | 103.8 | 103.7 | -87.32 | -144.2 | -3,297.0 | 1,584.7 | 1,378.4 | 206.26 | 7.683 | |
| 10,800.0 | 6,819.0 | 10,552.4 | 6,745.0 | 106.5 | 106.4 | -87.32 | -144.2 | -3,397.0 | 1,584.7 | 1,372.9 | 211.79 | 7.482 | |
| 10,900.0 | 6,819.0 | 10,652.4 | 6,745.0 | 109.2 | 109.2 | -87.32 | -144.2 | -3,497.0 | 1,584.7 | 1,367.3 | 217.33 | 7.292 | |
| 11,000.0 | 6,819.0 | 10,752.4 | 6,745.0 | 112.0 | 112.0 | -87.32 | -144.2 | -3,597.0 | 1,584.7 | 1,361.8 | 222.87 | 7.110 | |
| 11,100.0 | 6,819.0 | 10,852.4 | 6,745.0 | 114.8 | 114.8 | -87.32 | -144.2 | -3,697.0 | 1,584.7 | 1,356.2 | 228.41 | 6.938 | |
| 11,200.0 | 6,819.0 | 10,952.4 | 6,745.0 | 117.5 | 117.5 | -87.32 | -144.2 | -3,797.0 | 1,584.7 | 1,350.7 | 233.95 | 6.773 | |
| 11,300.0 | 6,819.0 | 11,052.4 | 6,745.0 | 120.3 | 120.3 | -87.32 | -144.2 | -3,897.0 | 1,584.7 | 1,345.2 | 239.50 | 6.616 | |
| 11,400.0 | 6,819.0 | 11,152.4 | 6,745.0 | 123.0 | 123.1 | -87.32 | -144.2 | -3,997.0 | 1,584.7 | 1,339.6 | 245.05 | 6.467 | |
| 11,500.0 | 6,819.0 | 11,252.4 | 6,745.0 | 125.8 | 125.9 | -87.32 | -144.2 | -4,097.0 | 1,584.7 | 1,334.0 | 250.61 | 6.323 | |
| 11,600.0 | 6,819.0 | 11,352.4 | 6,745.0 | 128.6 | 128.7 | -87.32 | -144.2 | -4,197.0 | 1,584.7 | 1,328.5 | 256.17 | 6.186 | |
| 11,700.0 | 6,819.0 | 11,452.4 | 6,745.0 | 131.3 | 131.5 | -87.32 | -144.2 | -4,297.0 | 1,584.7 | 1,322.9 | 261.72 | 6.055 | |
| 11,800.0 | 6,819.0 | 11,552.4 | 6,745.0 | 134.1 | 134.2 | -87.32 | -144.2 | -4,397.0 | 1,584.7 | 1,317.4 | 267.29 | 5.929 | |
| 11,900.0 | 6,819.0 | 11,652.4 | 6,745.0 | 136.9 | 137.0 | -87.32 | -144.2 | -4,497.0 | 1,584.7 | 1,311.8 | 272.85 | 5.808 | |
| 12,000.0 | 6,819.0 | 11,752.4 | 6,745.0 | 139.6 | 139.8 | -87.32 | -144.2 | -4,597.0 | 1,584.7 | 1,306.2 | 278.42 | 5.692 | |
| 12,100.0 | 6,819.0 | 11,852.4 | 6,745.0 | 142.4 | 142.6 | -87.32 | -144.2 | -4,697.0 | 1,584.7 | 1,300.7 | 283.99 | 5.580 | |
| 12,200.0 | 6,819.0 | 11,952.4 | 6,745.0 | 145.2 | 145.4 | -87.32 | -144.2 | -4,797.0 | 1,584.7 | 1,295.1 | 289.56 | 5.473 | |
| 12,300.0 | 6,819.0 | 12,052.4 | 6,745.0 | 148.0 | 148.2 | -87.32 | -144.2 | -4,897.0 | 1,584.7 | 1,289.5 | 295.13 | 5.369 | |
| 12,400.0 | 6,819.0 | 12,152.4 | 6,745.0 | 150.8 | 151.0 | -87.32 | -144.2 | -4,997.0 | 1,584.7 | 1,284.0 | 300.70 | 5.270 | |
| 12,500.0 | 6,819.0 | 12,252.4 | 6,745.0 | 153.5 | 153.8 | -87.32 | -144.2 | -5,097.0 | 1,584.7 | 1,278.4 | 306.28 | 5.174 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4X-334 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 12,352.4 | 6,745.0 | 156.3 | 156.6 | -87.32 | -144.2 | -5,197.0 | 1,584.7 | 1,272.8 | 311.86 | 5.081 | |
| 12,700.0 | 6,819.0 | 12,452.4 | 6,745.0 | 159.1 | 159.4 | -87.32 | -144.2 | -5,297.0 | 1,584.7 | 1,267.2 | 317.43 | 4.992 | |
| 12,800.0 | 6,819.0 | 12,552.4 | 6,745.0 | 161.9 | 162.2 | -87.32 | -144.2 | -5,397.0 | 1,584.7 | 1,261.6 | 323.01 | 4.906 | |
| 12,900.0 | 6,819.0 | 12,652.4 | 6,745.0 | 164.7 | 165.0 | -87.32 | -144.2 | -5,497.0 | 1,584.7 | 1,256.1 | 328.59 | 4.823 | |
| 13,000.0 | 6,819.0 | 12,752.4 | 6,745.0 | 167.4 | 167.8 | -87.32 | -144.2 | -5,597.0 | 1,584.7 | 1,250.5 | 334.18 | 4.742 | |
| 13,100.0 | 6,819.0 | 12,852.4 | 6,745.0 | 170.2 | 170.5 | -87.32 | -144.2 | -5,697.0 | 1,584.7 | 1,244.9 | 339.76 | 4.664 | |
| 13,200.0 | 6,819.0 | 12,952.4 | 6,745.0 | 173.0 | 173.3 | -87.32 | -144.2 | -5,797.0 | 1,584.7 | 1,239.3 | 345.34 | 4.589 | |
| 13,300.0 | 6,819.0 | 13,052.4 | 6,745.0 | 175.8 | 176.1 | -87.32 | -144.2 | -5,897.0 | 1,584.7 | 1,233.7 | 350.93 | 4.516 | |
| 13,400.0 | 6,819.0 | 13,152.4 | 6,745.0 | 178.6 | 178.9 | -87.32 | -144.2 | -5,997.0 | 1,584.7 | 1,228.1 | 356.52 | 4.445 | |
| 13,500.0 | 6,819.0 | 13,252.4 | 6,745.0 | 181.4 | 181.7 | -87.32 | -144.2 | -6,097.0 | 1,584.7 | 1,222.6 | 362.10 | 4.376 | |
| 13,600.0 | 6,819.0 | 13,352.4 | 6,745.0 | 184.2 | 184.5 | -87.32 | -144.2 | -6,197.0 | 1,584.7 | 1,217.0 | 367.69 | 4.310 | |
| 13,700.0 | 6,819.0 | 13,452.4 | 6,745.0 | 187.0 | 187.3 | -87.32 | -144.2 | -6,297.0 | 1,584.7 | 1,211.4 | 373.28 | 4.245 | |
| 13,800.0 | 6,819.0 | 13,552.4 | 6,745.0 | 189.7 | 190.1 | -87.32 | -144.2 | -6,397.0 | 1,584.7 | 1,205.8 | 378.87 | 4.183 | |
| 13,900.0 | 6,819.0 | 13,652.4 | 6,745.0 | 192.5 | 192.9 | -87.32 | -144.2 | -6,497.0 | 1,584.7 | 1,200.2 | 384.46 | 4.122 | |
| 14,000.0 | 6,819.0 | 13,752.4 | 6,745.0 | 195.3 | 195.7 | -87.32 | -144.2 | -6,597.0 | 1,584.7 | 1,194.6 | 390.05 | 4.063 | |
| 14,100.0 | 6,819.0 | 13,852.4 | 6,745.0 | 198.1 | 198.5 | -87.32 | -144.2 | -6,697.0 | 1,584.7 | 1,189.0 | 395.64 | 4.005 | |
| 14,200.0 | 6,819.0 | 13,952.4 | 6,745.0 | 200.9 | 201.3 | -87.32 | -144.2 | -6,797.0 | 1,584.7 | 1,183.4 | 401.24 | 3.949 | |
| 14,300.0 | 6,819.0 | 14,052.4 | 6,745.0 | 203.7 | 204.1 | -87.32 | -144.2 | -6,897.0 | 1,584.7 | 1,177.8 | 406.83 | 3.895 | |
| 14,400.0 | 6,819.0 | 14,152.4 | 6,745.0 | 206.5 | 206.9 | -87.32 | -144.2 | -6,997.0 | 1,584.7 | 1,172.2 | 412.42 | 3.842 | |
| 14,500.0 | 6,819.0 | 14,252.4 | 6,745.0 | 209.3 | 209.7 | -87.32 | -144.2 | -7,097.0 | 1,584.7 | 1,166.6 | 418.02 | 3.791 | |
| 14,600.0 | 6,819.0 | 14,352.4 | 6,745.0 | 212.1 | 212.5 | -87.32 | -144.2 | -7,197.0 | 1,584.7 | 1,161.0 | 423.61 | 3.741 | |
| 14,605.1 | 6,819.0 | 14,357.5 | 6,745.0 | 212.2 | 212.7 | -87.32 | -144.2 | -7,202.1 | 1,584.7 | 1,160.8 | 423.90 | 3.738 | |
| 14,700.0 | 6,819.0 | 14,451.7 | 6,745.0 | 214.9 | 215.3 | -87.32 | -144.3 | -7,296.2 | 1,584.7 | 1,155.5 | 429.19 | 3.692 | |
| 14,719.0 | 6,819.0 | 14,470.6 | 6,745.0 | 215.4 | 215.9 | -87.32 | -144.3 | -7,315.2 | 1,584.7 | 1,154.4 | 430.25 | 3.683 | |
| 14,720.3 | 6,819.0 | 14,472.0 | 6,745.0 | 215.4 | 215.9 | -87.32 | -144.3 | -7,316.6 | 1,584.7 | 1,154.3 | 430.33 | 3.682 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4Y-214 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -71.89 | 18.6 | -56.8 | 59.8 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -71.89 | 18.6 | -56.8 | 59.8 | 59.6 | 0.17 | 345.292 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -71.89 | 18.6 | -56.8 | 59.8 | 59.1 | 0.62 | 95.984 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | -71.89 | 18.6 | -56.8 | 59.8 | 58.7 | 1.07 | 55.739 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -71.89 | 18.6 | -56.8 | 59.8 | 58.2 | 1.52 | 39.273 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | -71.89 | 18.6 | -56.8 | 59.8 | 57.8 | 1.97 | 30.316 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | -71.89 | 18.6 | -56.8 | 59.8 | 57.3 | 2.42 | 24.687 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.4 | 1.4 | -71.89 | 18.6 | -56.8 | 59.8 | 56.9 | 2.87 | 20.820 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | -71.89 | 18.6 | -56.8 | 59.8 | 56.4 | 3.32 | 18.001 | CC |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | -94.71 | 18.6 | -56.8 | 59.9 | 56.1 | 3.77 | 15.893 | ES |
| 1,000.0 | 999.8 | 999.8 | 999.8 | 2.1 | 2.1 | -99.63 | 18.6 | -56.8 | 60.5 | 56.3 | 4.22 | 14.361 | |
| 1,100.0 | 1,099.5 | 1,099.5 | 1,099.5 | 2.3 | 2.3 | -107.46 | 18.6 | -56.8 | 62.6 | 57.9 | 4.67 | 13.405 | |
| 1,200.0 | 1,198.7 | 1,198.7 | 1,198.7 | 2.6 | 2.6 | -117.26 | 18.6 | -56.8 | 67.3 | 62.1 | 5.13 | 13.109 | |
| 1,300.0 | 1,297.5 | 1,298.3 | 1,298.3 | 2.9 | 2.8 | -128.91 | 17.2 | -55.8 | 75.2 | 69.7 | 5.57 | 13.507 | |
| 1,400.0 | 1,395.6 | 1,396.3 | 1,396.2 | 3.2 | 2.9 | -141.54 | 13.1 | -52.8 | 88.0 | 82.0 | 5.98 | 14.722 | |
| 1,500.0 | 1,493.1 | 1,492.3 | 1,491.8 | 3.5 | 3.1 | -153.15 | 6.5 | -48.0 | 107.3 | 100.9 | 6.37 | 16.837 | |
| 1,507.2 | 1,500.0 | 1,499.0 | 1,498.5 | 3.6 | 3.1 | -153.91 | 6.0 | -47.6 | 108.9 | 102.5 | 6.40 | 17.026 | |
| 1,572.2 | 1,563.0 | 1,560.8 | 1,559.9 | 3.8 | 3.3 | -160.08 | 0.7 | -43.8 | 124.9 | 118.2 | 6.66 | 18.754 | |
| 1,600.0 | 1,590.0 | 1,587.0 | 1,585.9 | 3.9 | 3.3 | -162.26 | -1.6 | -42.2 | 132.2 | 125.4 | 6.76 | 19.545 | |
| 1,700.0 | 1,686.3 | 1,679.0 | 1,677.2 | 4.4 | 3.5 | -169.14 | -11.1 | -35.3 | 162.6 | 155.4 | 7.17 | 22.681 | |
| 1,800.0 | 1,781.5 | 1,767.9 | 1,765.0 | 4.9 | 3.8 | -174.68 | -22.6 | -26.9 | 199.3 | 191.7 | 7.59 | 26.258 | |
| 1,817.6 | 1,798.2 | 1,783.3 | 1,780.1 | 5.0 | 3.8 | -175.53 | -24.8 | -25.3 | 206.4 | 198.7 | 7.66 | 26.926 | |
| 1,900.0 | 1,876.1 | 1,854.1 | 1,849.6 | 5.5 | 4.0 | -179.14 | -35.8 | -17.3 | 240.8 | 232.7 | 8.07 | 29.835 | |
| 2,000.0 | 1,970.6 | 1,938.1 | 1,931.5 | 6.0 | 4.3 | 177.26 | -50.6 | -6.6 | 284.9 | 276.3 | 8.59 | 33.168 | |
| 2,100.0 | 2,065.1 | 2,022.4 | 2,013.3 | 6.6 | 4.6 | 174.22 | -67.3 | 5.6 | 331.1 | 322.0 | 9.14 | 36.232 | |
| 2,200.0 | 2,159.6 | 2,109.5 | 2,097.7 | 7.2 | 5.0 | 171.77 | -84.8 | 18.3 | 378.3 | 368.6 | 9.71 | 38.955 | |
| 2,300.0 | 2,254.1 | 2,196.7 | 2,182.1 | 7.8 | 5.3 | 169.85 | -102.4 | 31.1 | 425.9 | 415.6 | 10.30 | 41.338 | |
| 2,400.0 | 2,348.7 | 2,283.8 | 2,266.5 | 8.4 | 5.7 | 168.32 | -120.0 | 43.8 | 473.8 | 462.9 | 10.91 | 43.442 | |
| 2,500.0 | 2,443.2 | 2,370.9 | 2,350.9 | 9.1 | 6.1 | 167.06 | -137.5 | 56.6 | 521.9 | 510.4 | 11.52 | 45.304 | |
| 2,600.0 | 2,537.7 | 2,458.1 | 2,435.3 | 9.7 | 6.5 | 166.02 | -155.1 | 69.3 | 570.2 | 558.1 | 12.14 | 46.957 | |
| 2,700.0 | 2,632.2 | 2,545.2 | 2,519.7 | 10.3 | 7.0 | 165.13 | -172.6 | 82.1 | 618.6 | 605.8 | 12.77 | 48.429 | |
| 2,800.0 | 2,726.8 | 2,632.4 | 2,604.1 | 10.9 | 7.4 | 164.38 | -190.2 | 94.8 | 667.1 | 653.7 | 13.41 | 49.746 | |
| 2,900.0 | 2,821.3 | 2,719.5 | 2,688.4 | 11.6 | 7.8 | 163.72 | -207.7 | 107.6 | 715.7 | 701.6 | 14.05 | 50.930 | |
| 3,000.0 | 2,915.8 | 2,806.6 | 2,772.8 | 12.2 | 8.2 | 163.15 | -225.3 | 120.3 | 764.3 | 749.6 | 14.70 | 51.996 | |
| 3,100.0 | 3,010.3 | 2,893.8 | 2,857.2 | 12.8 | 8.7 | 162.65 | -242.8 | 133.0 | 813.0 | 797.6 | 15.35 | 52.961 | |
| 3,200.0 | 3,104.8 | 2,980.9 | 2,941.6 | 13.5 | 9.1 | 162.20 | -260.4 | 145.8 | 861.7 | 845.7 | 16.01 | 53.837 | |
| 3,300.0 | 3,199.4 | 3,068.0 | 3,026.0 | 14.1 | 9.6 | 161.80 | -278.0 | 158.5 | 910.5 | 893.8 | 16.66 | 54.635 | |
| 3,400.0 | 3,293.9 | 3,155.2 | 3,110.4 | 14.8 | 10.0 | 161.45 | -295.5 | 171.3 | 959.3 | 942.0 | 17.33 | 55.365 | |
| 3,500.0 | 3,388.4 | 3,242.3 | 3,194.8 | 15.4 | 10.5 | 161.12 | -313.1 | 184.0 | 1,008.1 | 990.1 | 17.99 | 56.035 | |
| 3,600.0 | 3,482.9 | 3,329.4 | 3,279.2 | 16.0 | 10.9 | 160.83 | -330.6 | 196.8 | 1,057.0 | 1,038.3 | 18.66 | 56.651 | |
| 3,700.0 | 3,577.5 | 3,416.6 | 3,363.6 | 16.7 | 11.4 | 160.56 | -348.2 | 209.5 | 1,105.8 | 1,086.5 | 19.33 | 57.220 | |
| 3,800.0 | 3,672.0 | 3,503.7 | 3,448.0 | 17.3 | 11.8 | 160.31 | -365.7 | 222.3 | 1,154.7 | 1,134.7 | 20.00 | 57.745 | |
| 3,900.0 | 3,766.5 | 3,590.9 | 3,532.4 | 18.0 | 12.3 | 160.09 | -383.3 | 235.0 | 1,203.6 | 1,182.9 | 20.67 | 58.232 | |
| 4,000.0 | 3,861.0 | 3,678.0 | 3,616.8 | 18.6 | 12.7 | 159.88 | -400.8 | 247.8 | 1,252.5 | 1,231.2 | 21.34 | 58.685 | |
| 4,100.0 | 3,955.5 | 3,765.1 | 3,701.1 | 19.3 | 13.2 | 159.69 | -418.4 | 260.5 | 1,301.4 | 1,279.4 | 22.02 | 59.106 | |
| 4,200.0 | 4,050.1 | 3,852.3 | 3,785.5 | 19.9 | 13.6 | 159.51 | -435.9 | 273.3 | 1,350.4 | 1,327.7 | 22.70 | 59.500 | |
| 4,300.0 | 4,144.6 | 3,939.4 | 3,869.9 | 20.5 | 14.1 | 159.34 | -453.5 | 286.0 | 1,399.3 | 1,375.9 | 23.37 | 59.867 | |
| 4,400.0 | 4,239.1 | 4,026.5 | 3,954.3 | 21.2 | 14.6 | 159.19 | -471.1 | 298.8 | 1,448.2 | 1,424.2 | 24.05 | 60.212 | |
| 4,500.0 | 4,333.6 | 4,113.7 | 4,038.7 | 21.8 | 15.0 | 159.04 | -488.6 | 311.5 | 1,497.2 | 1,472.5 | 24.73 | 60.535 | |
| 4,600.0 | 4,428.2 | 4,200.8 | 4,123.1 | 22.5 | 15.5 | 158.91 | -506.2 | 324.3 | 1,546.2 | 1,520.8 | 25.41 | 60.839 | |
| 4,700.0 | 4,522.7 | 4,287.9 | 4,207.5 | 23.1 | 15.9 | 158.78 | -523.7 | 337.0 | 1,595.1 | 1,569.0 | 26.10 | 61.125 | |
| 4,800.0 | 4,617.2 | 4,375.1 | 4,291.9 | 23.8 | 16.4 | 158.66 | -541.3 | 349.8 | 1,644.1 | 1,617.3 | 26.78 | 61.395 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4Y-214 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,462.2 | 4,376.3 | 24.4 | 16.9 | 158.55 | -558.8 | 362.5 | 1,693.1 | 1,665.6 | 27.46 | 61.649 | |
| 5,000.0 | 4,806.2 | 4,549.4 | 4,460.7 | 25.1 | 17.3 | 158.44 | -576.4 | 375.3 | 1,742.1 | 1,713.9 | 28.15 | 61.890 | |
| 5,100.0 | 4,900.8 | 4,636.5 | 4,545.1 | 25.7 | 17.8 | 158.34 | -593.9 | 388.0 | 1,791.1 | 1,762.2 | 28.83 | 62.118 | |
| 5,200.0 | 4,995.3 | 4,723.6 | 4,629.5 | 26.4 | 18.2 | 158.25 | -611.5 | 400.8 | 1,840.1 | 1,810.5 | 29.52 | 62.334 | |
| 5,300.0 | 5,089.8 | 4,810.8 | 4,713.8 | 27.0 | 18.7 | 158.16 | -629.1 | 413.5 | 1,889.1 | 1,858.9 | 30.21 | 62.539 | |
| 5,400.0 | 5,184.3 | 4,897.9 | 4,798.2 | 27.7 | 19.2 | 158.07 | -646.6 | 426.3 | 1,938.1 | 1,907.2 | 30.89 | 62.733 | |
| 5,500.0 | 5,278.9 | 4,985.0 | 4,882.6 | 28.3 | 19.6 | 157.99 | -664.2 | 439.0 | 1,987.1 | 1,955.5 | 31.58 | 62.918 | |
| 5,533.5 | 5,310.5 | 5,014.2 | 4,910.9 | 28.5 | 19.8 | 157.96 | -670.1 | 443.3 | 2,003.5 | 1,971.7 | 31.81 | 62.978 | |
| 5,600.0 | 5,373.6 | 5,072.5 | 4,967.4 | 28.9 | 20.1 | 158.17 | -681.8 | 451.8 | 2,035.4 | 2,003.1 | 32.37 | 62.885 | |
| 5,700.0 | 5,469.4 | 5,161.4 | 5,053.4 | 29.3 | 20.6 | 158.43 | -699.7 | 464.8 | 2,081.1 | 2,048.0 | 33.15 | 62.784 | |
| 5,800.0 | 5,566.1 | 5,251.6 | 5,140.8 | 29.8 | 21.1 | 158.62 | -717.9 | 478.0 | 2,123.9 | 2,090.0 | 33.90 | 62.659 | |
| 5,900.0 | 5,663.6 | 5,343.1 | 5,229.4 | 30.1 | 21.6 | 158.76 | -736.3 | 491.4 | 2,163.8 | 2,129.1 | 34.61 | 62.516 | |
| 6,000.0 | 5,761.9 | 5,435.7 | 5,319.1 | 30.5 | 22.0 | 158.83 | -755.0 | 505.0 | 2,200.6 | 2,165.3 | 35.29 | 62.360 | |
| 6,100.0 | 5,860.7 | 5,558.6 | 5,438.3 | 30.7 | 22.7 | 158.77 | -779.4 | 522.7 | 2,234.4 | 2,198.3 | 36.02 | 62.036 | |
| 6,200.0 | 5,960.0 | 5,823.7 | 5,698.5 | 31.0 | 23.5 | 158.49 | -819.8 | 552.0 | 2,260.3 | 2,223.4 | 36.98 | 61.128 | |
| 6,300.0 | 6,059.7 | 6,100.6 | 5,974.1 | 31.2 | 24.1 | 158.43 | -840.9 | 567.4 | 2,275.6 | 2,237.9 | 37.72 | 60.328 | |
| 6,400.0 | 6,159.6 | 6,286.6 | 6,160.0 | 31.3 | 24.3 | 158.52 | -843.4 | 568.8 | 2,280.9 | 2,242.8 | 38.12 | 59.834 | |
| 6,486.1 | 6,245.7 | 6,373.3 | 6,246.3 | 31.4 | 24.4 | 179.90 | -843.4 | 560.8 | 2,282.1 | 2,230.5 | 51.59 | 44.232 | |
| 6,500.0 | 6,259.6 | 6,387.1 | 6,259.8 | 31.4 | 24.4 | 179.96 | -843.4 | 558.5 | 2,282.1 | 2,230.5 | 51.62 | 44.210 | |
| 6,509.3 | 6,268.9 | 6,396.2 | 6,268.9 | 31.4 | 24.4 | -180.00 | -843.4 | 556.9 | 2,282.1 | 2,230.5 | 51.64 | 44.195 | |
| 6,516.1 | 6,275.7 | 6,402.9 | 6,275.5 | 31.4 | 24.4 | -179.97 | -843.4 | 555.6 | 2,282.1 | 2,230.5 | 51.65 | 44.185 | |
| 6,550.0 | 6,309.5 | 6,435.9 | 6,307.7 | 31.5 | 24.4 | -89.81 | -843.4 | 548.5 | 2,282.1 | 2,243.9 | 38.27 | 59.635 | |
| 6,600.0 | 6,359.4 | 6,483.9 | 6,353.8 | 31.5 | 24.3 | -89.57 | -843.4 | 535.3 | 2,282.2 | 2,243.9 | 38.25 | 59.671 | |
| 6,650.0 | 6,408.8 | 6,530.5 | 6,397.2 | 31.5 | 24.3 | -89.31 | -843.4 | 518.5 | 2,282.3 | 2,244.1 | 38.17 | 59.791 | |
| 6,700.0 | 6,457.5 | 6,575.0 | 6,436.9 | 31.5 | 24.2 | -89.02 | -843.4 | 498.4 | 2,282.5 | 2,244.4 | 38.06 | 59.975 | |
| 6,716.1 | 6,473.1 | 6,590.0 | 6,449.9 | 31.5 | 24.2 | -88.92 | -843.4 | 490.9 | 2,282.6 | 2,244.5 | 38.01 | 60.049 | |
| 6,725.0 | 6,481.6 | 6,597.8 | 6,456.5 | 31.5 | 24.2 | -88.86 | -843.4 | 486.8 | 2,282.6 | 2,244.6 | 37.99 | 60.090 | |
| 6,750.0 | 6,505.3 | 6,619.7 | 6,474.8 | 31.5 | 24.1 | -88.70 | -843.4 | 474.7 | 2,282.7 | 2,244.8 | 37.91 | 60.216 | |
| 6,775.0 | 6,528.5 | 6,641.3 | 6,492.3 | 31.4 | 24.1 | -88.55 | -843.4 | 462.0 | 2,282.9 | 2,245.1 | 37.83 | 60.351 | |
| 6,800.0 | 6,551.3 | 6,662.8 | 6,509.0 | 31.4 | 24.0 | -88.39 | -843.4 | 448.6 | 2,283.1 | 2,245.3 | 37.74 | 60.493 | |
| 6,825.0 | 6,573.4 | 6,684.0 | 6,525.0 | 31.4 | 24.0 | -88.25 | -843.4 | 434.6 | 2,283.2 | 2,245.6 | 37.65 | 60.636 | |
| 6,850.0 | 6,595.0 | 6,705.0 | 6,540.2 | 31.3 | 23.9 | -88.11 | -843.4 | 420.0 | 2,283.4 | 2,245.9 | 37.57 | 60.778 | |
| 6,875.0 | 6,615.8 | 6,725.0 | 6,554.0 | 31.3 | 23.9 | -87.97 | -843.4 | 405.6 | 2,283.6 | 2,246.1 | 37.49 | 60.912 | |
| 6,900.0 | 6,635.9 | 6,746.6 | 6,568.3 | 31.3 | 23.9 | -87.83 | -843.4 | 389.4 | 2,283.8 | 2,246.4 | 37.42 | 61.037 | |
| 6,925.0 | 6,655.1 | 6,767.2 | 6,581.2 | 31.2 | 23.8 | -87.70 | -843.4 | 373.3 | 2,284.0 | 2,246.7 | 37.35 | 61.144 | |
| 6,950.0 | 6,673.6 | 6,787.6 | 6,593.2 | 31.2 | 23.8 | -87.58 | -843.4 | 356.9 | 2,284.2 | 2,246.9 | 37.31 | 61.230 | |
| 6,975.0 | 6,691.1 | 6,807.9 | 6,604.6 | 31.1 | 23.7 | -87.46 | -843.4 | 340.0 | 2,284.4 | 2,247.2 | 37.27 | 61.291 | |
| 7,000.0 | 6,707.6 | 6,828.1 | 6,615.1 | 31.1 | 23.7 | -87.35 | -843.4 | 322.8 | 2,284.6 | 2,247.4 | 37.26 | 61.321 | |
| 7,025.0 | 6,723.1 | 6,850.0 | 6,625.7 | 31.0 | 23.6 | -87.24 | -843.4 | 303.7 | 2,284.8 | 2,247.6 | 37.27 | 61.313 | |
| 7,050.0 | 6,737.6 | 6,868.2 | 6,633.8 | 31.0 | 23.6 | -87.15 | -843.4 | 287.4 | 2,285.0 | 2,247.7 | 37.30 | 61.266 | |
| 7,075.0 | 6,751.0 | 6,888.1 | 6,641.9 | 30.9 | 23.5 | -87.05 | -843.4 | 269.3 | 2,285.2 | 2,247.8 | 37.36 | 61.173 | |
| 7,100.0 | 6,763.3 | 6,907.9 | 6,649.3 | 30.8 | 23.5 | -86.97 | -843.4 | 250.9 | 2,285.4 | 2,247.9 | 37.44 | 61.035 | |
| 7,125.0 | 6,774.5 | 6,925.0 | 6,655.0 | 30.8 | 23.4 | -86.90 | -843.4 | 234.7 | 2,285.5 | 2,248.0 | 37.55 | 60.867 | |
| 7,150.0 | 6,784.4 | 6,947.2 | 6,661.6 | 30.7 | 23.4 | -86.82 | -843.4 | 213.5 | 2,285.7 | 2,248.0 | 37.71 | 60.608 | |
| 7,175.0 | 6,793.1 | 6,966.8 | 6,666.6 | 30.7 | 23.3 | -86.75 | -843.4 | 194.6 | 2,285.8 | 2,247.9 | 37.90 | 60.314 | |
| 7,200.0 | 6,800.6 | 6,986.3 | 6,670.8 | 30.6 | 23.3 | -86.69 | -843.4 | 175.5 | 2,286.0 | 2,247.8 | 38.12 | 59.971 | |
| 7,225.0 | 6,806.8 | 7,005.8 | 6,674.2 | 30.6 | 23.3 | -86.64 | -843.4 | 156.3 | 2,286.1 | 2,247.7 | 38.37 | 59.581 | |
| 7,250.0 | 6,811.8 | 7,025.0 | 6,676.8 | 30.5 | 23.2 | -86.60 | -843.4 | 137.3 | 2,286.2 | 2,247.5 | 38.65 | 59.148 | |
| 7,275.0 | 6,815.5 | 7,044.7 | 6,678.7 | 30.5 | 23.2 | -86.56 | -843.4 | 117.7 | 2,286.2 | 2,247.3 | 38.97 | 58.661 | |
| 7,300.0 | 6,817.8 | 7,064.1 | 6,679.7 | 30.4 | 23.2 | -86.54 | -843.4 | 98.4 | 2,286.3 | 2,247.0 | 39.32 | 58.139 | |
| 7,325.0 | 6,818.9 | 7,084.5 | 6,680.0 | 30.4 | 23.1 | -86.52 | -843.4 | 78.0 | 2,286.3 | 2,246.6 | 39.71 | 57.573 | |
| 7,332.8 | 6,819.0 | 7,092.3 | 6,680.0 | 30.4 | 23.1 | -86.51 | -843.4 | 70.2 | 2,286.3 | 2,246.5 | 39.85 | 57.367 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4Y-214 - ORIGINAL WELLBORE - PROP( **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 7,159.5 | 6,680.0 | 30.3 | 23.0 | -86.51 | -843.4 | 3.0 | 2,286.3 | 2,245.1 | 41.30 | 55.364 | |
| 7,500.0 | 6,819.0 | 7,259.5 | 6,680.0 | 30.2 | 23.1 | -86.51 | -843.4 | -97.0 | 2,286.3 | 2,242.4 | 43.90 | 52.080 | |
| 7,600.0 | 6,819.0 | 7,359.5 | 6,680.0 | 30.3 | 23.7 | -86.51 | -843.4 | -197.0 | 2,286.3 | 2,239.3 | 47.03 | 48.612 | |
| 7,700.0 | 6,819.0 | 7,459.5 | 6,680.0 | 30.6 | 25.2 | -86.51 | -843.4 | -297.0 | 2,286.3 | 2,235.8 | 50.60 | 45.188 | |
| 7,800.0 | 6,819.0 | 7,559.5 | 6,680.0 | 31.3 | 27.1 | -86.51 | -843.4 | -397.0 | 2,286.3 | 2,231.8 | 54.51 | 41.947 | |
| 7,900.0 | 6,819.0 | 7,659.5 | 6,680.0 | 32.5 | 29.3 | -86.51 | -843.4 | -497.0 | 2,286.3 | 2,227.7 | 58.69 | 38.955 | |
| 8,000.0 | 6,819.0 | 7,759.5 | 6,680.0 | 34.2 | 31.6 | -86.51 | -843.4 | -597.0 | 2,286.3 | 2,223.2 | 63.10 | 36.233 | |
| 8,100.0 | 6,819.0 | 7,859.5 | 6,680.0 | 36.1 | 33.9 | -86.51 | -843.4 | -697.0 | 2,286.3 | 2,218.7 | 67.69 | 33.777 | |
| 8,200.0 | 6,819.0 | 7,959.5 | 6,680.0 | 38.3 | 36.3 | -86.51 | -843.4 | -797.0 | 2,286.3 | 2,213.9 | 72.42 | 31.570 | |
| 8,300.0 | 6,819.0 | 8,059.5 | 6,680.0 | 40.6 | 38.8 | -86.51 | -843.4 | -897.0 | 2,286.3 | 2,209.1 | 77.27 | 29.589 | |
| 8,400.0 | 6,819.0 | 8,159.5 | 6,680.0 | 42.9 | 41.3 | -86.51 | -843.4 | -997.0 | 2,286.3 | 2,204.1 | 82.22 | 27.808 | |
| 8,500.0 | 6,819.0 | 8,259.5 | 6,680.0 | 45.3 | 43.9 | -86.51 | -843.4 | -1,097.0 | 2,286.3 | 2,199.1 | 87.25 | 26.205 | |
| 8,600.0 | 6,819.0 | 8,359.5 | 6,680.0 | 47.8 | 46.4 | -86.51 | -843.4 | -1,197.0 | 2,286.3 | 2,194.0 | 92.34 | 24.759 | |
| 8,700.0 | 6,819.0 | 8,459.5 | 6,680.0 | 50.3 | 49.0 | -86.51 | -843.4 | -1,297.0 | 2,286.3 | 2,188.9 | 97.49 | 23.451 | |
| 8,800.0 | 6,819.0 | 8,559.5 | 6,680.0 | 52.8 | 51.7 | -86.51 | -843.4 | -1,397.0 | 2,286.3 | 2,183.7 | 102.70 | 22.263 | |
| 8,900.0 | 6,819.0 | 8,659.5 | 6,680.0 | 55.4 | 54.3 | -86.51 | -843.4 | -1,497.0 | 2,286.3 | 2,178.4 | 107.94 | 21.182 | |
| 9,000.0 | 6,819.0 | 8,759.5 | 6,680.0 | 58.0 | 57.0 | -86.51 | -843.4 | -1,597.0 | 2,286.3 | 2,173.1 | 113.22 | 20.195 | |
| 9,100.0 | 6,819.0 | 8,859.5 | 6,680.0 | 60.6 | 59.6 | -86.51 | -843.4 | -1,697.0 | 2,286.3 | 2,167.8 | 118.52 | 19.290 | |
| 9,200.0 | 6,819.0 | 8,959.5 | 6,680.0 | 63.2 | 62.3 | -86.51 | -843.4 | -1,797.0 | 2,286.3 | 2,162.5 | 123.86 | 18.459 | |
| 9,300.0 | 6,819.0 | 9,059.5 | 6,680.0 | 65.9 | 65.0 | -86.51 | -843.4 | -1,897.0 | 2,286.3 | 2,157.1 | 129.22 | 17.694 | |
| 9,400.0 | 6,819.0 | 9,159.5 | 6,680.0 | 68.5 | 67.7 | -86.51 | -843.4 | -1,997.0 | 2,286.3 | 2,151.7 | 134.60 | 16.987 | |
| 9,500.0 | 6,819.0 | 9,259.5 | 6,680.0 | 71.2 | 70.4 | -86.51 | -843.4 | -2,097.0 | 2,286.3 | 2,146.3 | 139.99 | 16.332 | |
| 9,600.0 | 6,819.0 | 9,359.5 | 6,680.0 | 73.9 | 73.1 | -86.51 | -843.4 | -2,197.0 | 2,286.3 | 2,140.9 | 145.41 | 15.724 | |
| 9,700.0 | 6,819.0 | 9,459.5 | 6,680.0 | 76.5 | 75.8 | -86.51 | -843.4 | -2,297.0 | 2,286.3 | 2,135.5 | 150.84 | 15.158 | |
| 9,800.0 | 6,819.0 | 9,559.5 | 6,680.0 | 79.2 | 78.6 | -86.51 | -843.4 | -2,397.0 | 2,286.3 | 2,130.1 | 156.28 | 14.630 | |
| 9,900.0 | 6,819.0 | 9,659.5 | 6,680.0 | 81.9 | 81.3 | -86.51 | -843.4 | -2,497.0 | 2,286.3 | 2,124.6 | 161.73 | 14.137 | |
| 10,000.0 | 6,819.0 | 9,759.5 | 6,680.0 | 84.6 | 84.0 | -86.51 | -843.4 | -2,597.0 | 2,286.3 | 2,119.1 | 167.20 | 13.675 | |
| 10,100.0 | 6,819.0 | 9,859.5 | 6,680.0 | 87.4 | 86.8 | -86.51 | -843.4 | -2,697.0 | 2,286.3 | 2,113.7 | 172.67 | 13.241 | |
| 10,200.0 | 6,819.0 | 9,959.5 | 6,680.0 | 90.1 | 89.5 | -86.51 | -843.4 | -2,797.0 | 2,286.3 | 2,108.2 | 178.15 | 12.834 | |
| 10,300.0 | 6,819.0 | 10,059.5 | 6,680.0 | 92.8 | 92.3 | -86.51 | -843.4 | -2,897.0 | 2,286.3 | 2,102.7 | 183.64 | 12.450 | |
| 10,400.0 | 6,819.0 | 10,159.5 | 6,680.0 | 95.5 | 95.0 | -86.51 | -843.4 | -2,997.0 | 2,286.3 | 2,097.2 | 189.14 | 12.088 | |
| 10,500.0 | 6,819.0 | 10,259.5 | 6,680.0 | 98.3 | 97.8 | -86.51 | -843.4 | -3,097.0 | 2,286.3 | 2,091.7 | 194.64 | 11.746 | |
| 10,600.0 | 6,819.0 | 10,359.5 | 6,680.0 | 101.0 | 100.6 | -86.51 | -843.4 | -3,197.0 | 2,286.3 | 2,086.2 | 200.15 | 11.423 | |
| 10,700.0 | 6,819.0 | 10,459.5 | 6,680.0 | 103.8 | 103.3 | -86.51 | -843.4 | -3,297.0 | 2,286.3 | 2,080.7 | 205.67 | 11.117 | |
| 10,800.0 | 6,819.0 | 10,559.5 | 6,680.0 | 106.5 | 106.1 | -86.51 | -843.4 | -3,397.0 | 2,286.3 | 2,075.2 | 211.19 | 10.826 | |
| 10,900.0 | 6,819.0 | 10,659.5 | 6,680.0 | 109.2 | 108.8 | -86.51 | -843.4 | -3,497.0 | 2,286.3 | 2,069.6 | 216.71 | 10.550 | |
| 11,000.0 | 6,819.0 | 10,759.5 | 6,680.0 | 112.0 | 111.6 | -86.51 | -843.4 | -3,597.0 | 2,286.3 | 2,064.1 | 222.24 | 10.288 | |
| 11,100.0 | 6,819.0 | 10,859.5 | 6,680.0 | 114.8 | 114.4 | -86.51 | -843.4 | -3,697.0 | 2,286.3 | 2,058.6 | 227.78 | 10.038 | |
| 11,200.0 | 6,819.0 | 10,959.5 | 6,680.0 | 117.5 | 117.2 | -86.51 | -843.4 | -3,797.0 | 2,286.3 | 2,053.0 | 233.31 | 9.799 | |
| 11,300.0 | 6,819.0 | 11,059.5 | 6,680.0 | 120.3 | 119.9 | -86.51 | -843.4 | -3,897.0 | 2,286.3 | 2,047.5 | 238.85 | 9.572 | |
| 11,400.0 | 6,819.0 | 11,159.5 | 6,680.0 | 123.0 | 122.7 | -86.51 | -843.4 | -3,997.0 | 2,286.3 | 2,041.9 | 244.40 | 9.355 | |
| 11,500.0 | 6,819.0 | 11,259.5 | 6,680.0 | 125.8 | 125.5 | -86.51 | -843.4 | -4,097.0 | 2,286.3 | 2,036.4 | 249.95 | 9.147 | |
| 11,600.0 | 6,819.0 | 11,359.5 | 6,680.0 | 128.6 | 128.3 | -86.51 | -843.4 | -4,197.0 | 2,286.3 | 2,030.8 | 255.50 | 8.949 | |
| 11,700.0 | 6,819.0 | 11,459.5 | 6,680.0 | 131.3 | 131.1 | -86.51 | -843.4 | -4,297.0 | 2,286.3 | 2,025.3 | 261.05 | 8.758 | |
| 11,800.0 | 6,819.0 | 11,559.5 | 6,680.0 | 134.1 | 133.8 | -86.51 | -843.4 | -4,397.0 | 2,286.3 | 2,019.7 | 266.60 | 8.576 | |
| 11,900.0 | 6,819.0 | 11,659.5 | 6,680.0 | 136.9 | 136.6 | -86.51 | -843.4 | -4,497.0 | 2,286.3 | 2,014.2 | 272.16 | 8.401 | |
| 12,000.0 | 6,819.0 | 11,759.5 | 6,680.0 | 139.6 | 139.4 | -86.51 | -843.4 | -4,597.0 | 2,286.3 | 2,008.6 | 277.72 | 8.233 | |
| 12,100.0 | 6,819.0 | 11,859.5 | 6,680.0 | 142.4 | 142.2 | -86.51 | -843.4 | -4,697.0 | 2,286.3 | 2,003.1 | 283.28 | 8.071 | |
| 12,200.0 | 6,819.0 | 11,959.5 | 6,680.0 | 145.2 | 145.0 | -86.51 | -843.4 | -4,797.0 | 2,286.3 | 1,997.5 | 288.85 | 7.915 | |
| 12,300.0 | 6,819.0 | 12,059.5 | 6,680.0 | 148.0 | 147.8 | -86.51 | -843.4 | -4,897.0 | 2,286.3 | 1,991.9 | 294.41 | 7.766 | |
| 12,400.0 | 6,819.0 | 12,159.5 | 6,680.0 | 150.8 | 150.6 | -86.51 | -843.4 | -4,997.0 | 2,286.3 | 1,986.4 | 299.98 | 7.622 | |
| 12,500.0 | 6,819.0 | 12,259.5 | 6,680.0 | 153.5 | 153.3 | -86.51 | -843.4 | -5,097.0 | 2,286.3 | 1,980.8 | 305.55 | 7.483 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4Y-214 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 12,359.5 | 6,680.0 | 156.3 | 156.1 | -86.51 | -843.4 | -5,197.0 | 2,286.3 | 1,975.2 | 311.12 | 7.349 | |
| 12,700.0 | 6,819.0 | 12,459.5 | 6,680.0 | 159.1 | 158.9 | -86.51 | -843.4 | -5,297.0 | 2,286.3 | 1,969.6 | 316.69 | 7.219 | |
| 12,800.0 | 6,819.0 | 12,559.5 | 6,680.0 | 161.9 | 161.7 | -86.51 | -843.4 | -5,397.0 | 2,286.3 | 1,964.1 | 322.26 | 7.095 | |
| 12,900.0 | 6,819.0 | 12,659.5 | 6,680.0 | 164.7 | 164.5 | -86.51 | -843.4 | -5,497.0 | 2,286.3 | 1,958.5 | 327.84 | 6.974 | |
| 13,000.0 | 6,819.0 | 12,759.5 | 6,680.0 | 167.4 | 167.3 | -86.51 | -843.4 | -5,597.0 | 2,286.3 | 1,952.9 | 333.42 | 6.857 | |
| 13,100.0 | 6,819.0 | 12,859.5 | 6,680.0 | 170.2 | 170.1 | -86.51 | -843.4 | -5,697.0 | 2,286.3 | 1,947.3 | 338.99 | 6.744 | |
| 13,200.0 | 6,819.0 | 12,959.5 | 6,680.0 | 173.0 | 172.9 | -86.51 | -843.4 | -5,797.0 | 2,286.3 | 1,941.8 | 344.57 | 6.635 | |
| 13,300.0 | 6,819.0 | 13,059.5 | 6,680.0 | 175.8 | 175.7 | -86.51 | -843.4 | -5,897.0 | 2,286.3 | 1,936.2 | 350.15 | 6.530 | |
| 13,400.0 | 6,819.0 | 13,159.5 | 6,680.0 | 178.6 | 178.5 | -86.51 | -843.4 | -5,997.0 | 2,286.3 | 1,930.6 | 355.73 | 6.427 | |
| 13,500.0 | 6,819.0 | 13,259.5 | 6,680.0 | 181.4 | 181.3 | -86.51 | -843.4 | -6,097.0 | 2,286.3 | 1,925.0 | 361.31 | 6.328 | |
| 13,600.0 | 6,819.0 | 13,359.5 | 6,680.0 | 184.2 | 184.1 | -86.51 | -843.4 | -6,197.0 | 2,286.3 | 1,919.4 | 366.90 | 6.232 | |
| 13,700.0 | 6,819.0 | 13,459.5 | 6,680.0 | 187.0 | 186.9 | -86.51 | -843.4 | -6,297.0 | 2,286.3 | 1,913.9 | 372.48 | 6.138 | |
| 13,800.0 | 6,819.0 | 13,559.5 | 6,680.0 | 189.7 | 189.7 | -86.51 | -843.4 | -6,397.0 | 2,286.3 | 1,908.3 | 378.06 | 6.047 | |
| 13,900.0 | 6,819.0 | 13,659.5 | 6,680.0 | 192.5 | 192.5 | -86.51 | -843.4 | -6,497.0 | 2,286.3 | 1,902.7 | 383.65 | 5.959 | |
| 14,000.0 | 6,819.0 | 13,759.5 | 6,680.0 | 195.3 | 195.3 | -86.51 | -843.4 | -6,597.0 | 2,286.3 | 1,897.1 | 389.23 | 5.874 | |
| 14,100.0 | 6,819.0 | 13,859.5 | 6,680.0 | 198.1 | 198.1 | -86.51 | -843.4 | -6,697.0 | 2,286.3 | 1,891.5 | 394.82 | 5.791 | |
| 14,200.0 | 6,819.0 | 13,959.5 | 6,680.0 | 200.9 | 200.8 | -86.51 | -843.4 | -6,797.0 | 2,286.3 | 1,885.9 | 400.41 | 5.710 | |
| 14,300.0 | 6,819.0 | 14,059.5 | 6,680.0 | 203.7 | 203.6 | -86.51 | -843.4 | -6,897.0 | 2,286.3 | 1,880.3 | 406.00 | 5.631 | |
| 14,400.0 | 6,819.0 | 14,159.5 | 6,680.0 | 206.5 | 206.4 | -86.51 | -843.4 | -6,997.0 | 2,286.3 | 1,874.7 | 411.59 | 5.555 | |
| 14,500.0 | 6,819.0 | 14,259.5 | 6,680.0 | 209.3 | 209.2 | -86.51 | -843.4 | -7,097.0 | 2,286.3 | 1,869.2 | 417.17 | 5.481 | |
| 14,600.0 | 6,819.0 | 14,359.5 | 6,680.0 | 212.1 | 212.0 | -86.51 | -843.4 | -7,197.0 | 2,286.3 | 1,863.6 | 422.76 | 5.408 | |
| 14,700.0 | 6,819.0 | 14,460.1 | 6,680.0 | 214.9 | 214.9 | -86.51 | -843.4 | -7,297.6 | 2,286.3 | 1,857.9 | 428.37 | 5.337 | |
| 14,720.3 | 6,819.0 | 14,480.4 | 6,680.0 | 215.4 | 215.4 | -86.51 | -843.4 | -7,317.9 | 2,286.3 | 1,856.8 | 429.51 | 5.323 | SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4Y-304 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -72.15 | 23.0 | -71.3 | 74.9 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -72.15 | 23.0 | -71.3 | 74.9 | 74.7 | 0.17 | 432.658 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -72.15 | 23.0 | -71.3 | 74.9 | 74.3 | 0.62 | 120.270 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | -72.15 | 23.0 | -71.3 | 74.9 | 73.8 | 1.07 | 69.842 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -72.15 | 23.0 | -71.3 | 74.9 | 73.4 | 1.52 | 49.209 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | -72.15 | 23.0 | -71.3 | 74.9 | 72.9 | 1.97 | 37.987 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | -72.15 | 23.0 | -71.3 | 74.9 | 72.5 | 2.42 | 30.933 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.4 | 1.4 | -72.15 | 23.0 | -71.3 | 74.9 | 72.0 | 2.87 | 26.088 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | -72.15 | 23.0 | -71.3 | 74.9 | 71.6 | 3.32 | 22.556 | CC |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | -94.64 | 23.0 | -71.3 | 75.0 | 71.2 | 3.77 | 19.907 | ES |
| 1,000.0 | 999.8 | 999.8 | 999.8 | 2.1 | 2.1 | -98.58 | 23.0 | -71.3 | 75.6 | 71.4 | 4.22 | 17.936 | |
| 1,100.0 | 1,099.5 | 1,099.5 | 1,099.5 | 2.3 | 2.3 | -104.91 | 23.0 | -71.3 | 77.4 | 72.7 | 4.67 | 16.573 | |
| 1,200.0 | 1,198.7 | 1,198.7 | 1,198.7 | 2.6 | 2.6 | -113.10 | 23.0 | -71.3 | 81.4 | 76.3 | 5.13 | 15.853 | |
| 1,300.0 | 1,297.5 | 1,297.5 | 1,297.5 | 2.9 | 2.8 | -122.22 | 23.0 | -71.3 | 88.8 | 83.1 | 5.61 | 15.826 | |
| 1,400.0 | 1,395.6 | 1,396.2 | 1,396.2 | 3.2 | 3.0 | -132.16 | 21.6 | -70.5 | 100.1 | 94.0 | 6.05 | 16.534 | |
| 1,500.0 | 1,493.1 | 1,493.0 | 1,492.9 | 3.5 | 3.2 | -142.45 | 17.4 | -68.0 | 116.5 | 110.1 | 6.46 | 18.047 | |
| 1,507.2 | 1,500.0 | 1,499.8 | 1,499.7 | 3.6 | 3.2 | -143.17 | 17.0 | -67.7 | 118.0 | 111.5 | 6.48 | 18.191 | |
| 1,572.2 | 1,563.0 | 1,562.0 | 1,561.7 | 3.8 | 3.3 | -149.15 | 13.2 | -65.5 | 131.7 | 124.9 | 6.75 | 19.506 | |
| 1,600.0 | 1,590.0 | 1,588.4 | 1,588.0 | 3.9 | 3.3 | -151.33 | 11.6 | -64.5 | 138.1 | 131.2 | 6.86 | 20.130 | |
| 1,700.0 | 1,686.3 | 1,681.5 | 1,680.7 | 4.4 | 3.5 | -158.59 | 4.0 | -60.0 | 165.1 | 157.8 | 7.25 | 22.773 | |
| 1,800.0 | 1,781.5 | 1,771.5 | 1,770.0 | 4.9 | 3.7 | -164.76 | -5.7 | -54.3 | 198.4 | 190.8 | 7.63 | 25.988 | |
| 1,817.6 | 1,798.2 | 1,787.1 | 1,785.4 | 5.0 | 3.8 | -165.74 | -7.6 | -53.1 | 204.9 | 197.2 | 7.70 | 26.607 | |
| 1,900.0 | 1,876.1 | 1,858.8 | 1,856.2 | 5.5 | 3.9 | -169.97 | -17.5 | -47.3 | 236.9 | 228.9 | 8.07 | 29.359 | |
| 2,000.0 | 1,970.6 | 1,943.9 | 1,939.8 | 6.0 | 4.2 | -174.22 | -31.1 | -39.2 | 278.4 | 269.8 | 8.54 | 32.604 | |
| 2,100.0 | 2,065.1 | 2,026.8 | 2,020.8 | 6.6 | 4.4 | -177.74 | -46.4 | -30.1 | 322.4 | 313.4 | 9.03 | 35.710 | |
| 2,200.0 | 2,159.6 | 2,107.6 | 2,099.2 | 7.2 | 4.7 | 179.28 | -63.3 | -20.1 | 368.9 | 359.4 | 9.54 | 38.665 | |
| 2,300.0 | 2,254.1 | 2,186.1 | 2,174.8 | 7.8 | 5.1 | 176.72 | -81.5 | -9.3 | 417.7 | 407.7 | 10.08 | 41.451 | |
| 2,400.0 | 2,348.7 | 2,263.1 | 2,248.3 | 8.4 | 5.4 | 174.47 | -101.0 | 2.3 | 468.8 | 458.2 | 10.64 | 44.075 | |
| 2,500.0 | 2,443.2 | 2,347.0 | 2,328.1 | 9.1 | 5.8 | 172.39 | -123.1 | 15.4 | 521.1 | 509.8 | 11.24 | 46.356 | |
| 2,600.0 | 2,537.7 | 2,430.8 | 2,407.9 | 9.7 | 6.3 | 170.67 | -145.1 | 28.5 | 573.8 | 561.9 | 11.84 | 48.450 | |
| 2,700.0 | 2,632.2 | 2,514.6 | 2,487.7 | 10.3 | 6.7 | 169.24 | -167.2 | 41.5 | 626.8 | 614.3 | 12.46 | 50.304 | |
| 2,800.0 | 2,726.8 | 2,598.4 | 2,567.5 | 10.9 | 7.2 | 168.03 | -189.2 | 54.6 | 680.0 | 666.9 | 13.09 | 51.965 | |
| 2,900.0 | 2,821.3 | 2,682.2 | 2,647.3 | 11.6 | 7.6 | 167.00 | -211.3 | 67.7 | 733.4 | 719.7 | 13.72 | 53.453 | |
| 3,000.0 | 2,915.8 | 2,766.1 | 2,727.2 | 12.2 | 8.1 | 166.10 | -233.3 | 80.8 | 787.0 | 772.7 | 14.36 | 54.798 | |
| 3,100.0 | 3,010.3 | 2,849.9 | 2,807.0 | 12.8 | 8.6 | 165.31 | -255.4 | 93.9 | 840.7 | 825.7 | 15.01 | 56.017 | |
| 3,200.0 | 3,104.8 | 2,933.7 | 2,886.8 | 13.5 | 9.1 | 164.62 | -277.4 | 107.0 | 894.5 | 878.9 | 15.66 | 57.125 | |
| 3,300.0 | 3,199.4 | 3,017.5 | 2,966.6 | 14.1 | 9.6 | 164.01 | -299.5 | 120.1 | 948.4 | 932.1 | 16.31 | 58.135 | |
| 3,400.0 | 3,293.9 | 3,101.3 | 3,046.4 | 14.8 | 10.1 | 163.46 | -321.5 | 133.1 | 1,002.4 | 985.4 | 16.97 | 59.060 | |
| 3,500.0 | 3,388.4 | 3,185.2 | 3,126.2 | 15.4 | 10.6 | 162.96 | -343.6 | 146.2 | 1,056.4 | 1,038.8 | 17.63 | 59.906 | |
| 3,600.0 | 3,482.9 | 3,269.0 | 3,206.0 | 16.0 | 11.1 | 162.52 | -365.7 | 159.3 | 1,110.5 | 1,092.2 | 18.30 | 60.685 | |
| 3,700.0 | 3,577.5 | 3,352.8 | 3,285.8 | 16.7 | 11.6 | 162.11 | -387.7 | 172.4 | 1,164.6 | 1,145.6 | 18.97 | 61.403 | |
| 3,800.0 | 3,672.0 | 3,436.6 | 3,365.6 | 17.3 | 12.1 | 161.75 | -409.8 | 185.5 | 1,218.7 | 1,199.1 | 19.64 | 62.068 | |
| 3,900.0 | 3,766.5 | 3,520.5 | 3,445.4 | 18.0 | 12.7 | 161.41 | -431.8 | 198.6 | 1,272.9 | 1,252.6 | 20.31 | 62.684 | |
| 4,000.0 | 3,861.0 | 3,604.3 | 3,525.2 | 18.6 | 13.2 | 161.10 | -453.9 | 211.6 | 1,327.1 | 1,306.1 | 20.98 | 63.257 | |
| 4,100.0 | 3,955.5 | 3,688.1 | 3,605.0 | 19.3 | 13.7 | 160.81 | -475.9 | 224.7 | 1,381.4 | 1,359.7 | 21.65 | 63.790 | |
| 4,200.0 | 4,050.1 | 3,771.9 | 3,684.8 | 19.9 | 14.2 | 160.55 | -498.0 | 237.8 | 1,435.6 | 1,413.3 | 22.33 | 64.286 | |
| 4,300.0 | 4,144.6 | 3,855.7 | 3,764.6 | 20.5 | 14.8 | 160.30 | -520.0 | 250.9 | 1,489.9 | 1,466.9 | 23.01 | 64.751 | |
| 4,400.0 | 4,239.1 | 3,939.6 | 3,844.4 | 21.2 | 15.3 | 160.08 | -542.1 | 264.0 | 1,544.2 | 1,520.5 | 23.69 | 65.186 | |
| 4,500.0 | 4,333.6 | 4,023.4 | 3,924.2 | 21.8 | 15.8 | 159.86 | -564.1 | 277.1 | 1,598.5 | 1,574.1 | 24.37 | 65.595 | |
| 4,600.0 | 4,428.2 | 4,107.2 | 4,004.0 | 22.5 | 16.3 | 159.67 | -586.2 | 290.2 | 1,652.8 | 1,627.8 | 25.05 | 65.979 | |
| 4,700.0 | 4,522.7 | 4,191.0 | 4,083.8 | 23.1 | 16.9 | 159.48 | -608.2 | 303.2 | 1,707.2 | 1,681.4 | 25.73 | 66.340 | |
| 4,800.0 | 4,617.2 | 4,274.8 | 4,163.6 | 23.8 | 17.4 | 159.30 | -630.3 | 316.3 | 1,761.5 | 1,735.1 | 26.42 | 66.680 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4Y-304 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,358.7 | 4,243.4 | 24.4 | 17.9 | 159.14 | -652.3 | 329.4 | 1,815.9 | 1,788.8 | 27.10 | 67.002 | |
| 5,000.0 | 4,806.2 | 4,442.5 | 4,323.2 | 25.1 | 18.4 | 158.99 | -674.4 | 342.5 | 1,870.3 | 1,842.5 | 27.79 | 67.305 | |
| 5,100.0 | 4,900.8 | 4,526.3 | 4,403.0 | 25.7 | 19.0 | 158.84 | -696.4 | 355.6 | 1,924.6 | 1,896.2 | 28.47 | 67.593 | |
| 5,200.0 | 4,995.3 | 4,610.1 | 4,482.8 | 26.4 | 19.5 | 158.70 | -718.5 | 368.7 | 1,979.0 | 1,949.9 | 29.16 | 67.866 | |
| 5,300.0 | 5,089.8 | 4,694.0 | 4,562.6 | 27.0 | 20.0 | 158.57 | -740.5 | 381.7 | 2,033.4 | 2,003.6 | 29.85 | 68.124 | |
| 5,400.0 | 5,184.3 | 4,777.8 | 4,642.4 | 27.7 | 20.6 | 158.45 | -762.6 | 394.8 | 2,087.8 | 2,057.3 | 30.54 | 68.369 | |
| 5,500.0 | 5,278.9 | 4,861.6 | 4,722.2 | 28.3 | 21.1 | 158.33 | -784.6 | 407.9 | 2,142.3 | 2,111.0 | 31.23 | 68.603 | |
| 5,533.5 | 5,310.5 | 4,889.7 | 4,749.0 | 28.5 | 21.3 | 158.29 | -792.0 | 412.3 | 2,160.5 | 2,129.0 | 31.46 | 68.679 | |
| 5,600.0 | 5,373.6 | 4,945.8 | 4,802.4 | 28.9 | 21.6 | 158.52 | -806.8 | 421.1 | 2,196.1 | 2,164.0 | 32.03 | 68.561 | |
| 5,700.0 | 5,469.4 | 5,031.5 | 4,884.0 | 29.3 | 22.2 | 158.80 | -829.3 | 434.4 | 2,247.3 | 2,214.4 | 32.84 | 68.436 | |
| 5,800.0 | 5,566.1 | 5,118.8 | 4,967.1 | 29.8 | 22.7 | 159.02 | -852.3 | 448.1 | 2,295.7 | 2,262.1 | 33.62 | 68.293 | |
| 5,900.0 | 5,663.6 | 5,207.5 | 5,051.6 | 30.1 | 23.3 | 159.18 | -875.6 | 461.9 | 2,341.2 | 2,306.9 | 34.36 | 68.138 | |
| 6,000.0 | 5,761.9 | 5,297.5 | 5,137.3 | 30.5 | 23.9 | 159.28 | -899.3 | 476.0 | 2,383.9 | 2,348.8 | 35.07 | 67.979 | |
| 6,100.0 | 5,860.7 | 5,388.8 | 5,224.1 | 30.7 | 24.5 | 159.33 | -923.3 | 490.2 | 2,423.6 | 2,387.9 | 35.74 | 67.818 | |
| 6,200.0 | 5,960.0 | 5,560.6 | 5,388.3 | 31.0 | 25.4 | 159.11 | -966.9 | 516.0 | 2,459.9 | 2,423.3 | 36.61 | 67.194 | |
| 6,300.0 | 6,059.7 | 5,937.3 | 5,756.6 | 31.2 | 26.7 | 158.61 | -1,033.6 | 555.6 | 2,485.2 | 2,447.4 | 37.83 | 65.696 | |
| 6,400.0 | 6,159.6 | 6,335.1 | 6,153.1 | 31.3 | 27.4 | 158.51 | -1,058.3 | 570.3 | 2,495.9 | 2,457.2 | 38.70 | 64.487 | |
| 6,486.1 | 6,245.7 | 6,428.6 | 6,246.6 | 31.4 | 27.5 | 179.74 | -1,058.4 | 568.2 | 2,497.1 | 2,442.2 | 54.90 | 45.485 | |
| 6,500.0 | 6,259.6 | 6,442.6 | 6,260.5 | 31.4 | 27.5 | 179.77 | -1,058.4 | 567.0 | 2,497.1 | 2,442.1 | 54.92 | 45.464 | |
| 6,516.1 | 6,275.7 | 6,458.9 | 6,276.7 | 31.4 | 27.5 | 179.81 | -1,058.4 | 565.3 | 2,497.1 | 2,442.1 | 54.95 | 45.440 | |
| 6,550.0 | 6,309.5 | 6,492.8 | 6,310.3 | 31.5 | 27.5 | -90.10 | -1,058.3 | 560.4 | 2,497.1 | 2,458.1 | 38.99 | 64.044 | |
| 6,587.2 | 6,346.6 | 6,529.8 | 6,346.6 | 31.5 | 27.5 | -90.00 | -1,058.3 | 553.4 | 2,497.0 | 2,458.1 | 39.00 | 64.029 | |
| 6,600.0 | 6,359.4 | 6,542.6 | 6,359.0 | 31.5 | 27.5 | -89.97 | -1,058.3 | 550.5 | 2,497.1 | 2,458.1 | 39.00 | 64.027 | |
| 6,650.0 | 6,408.8 | 6,591.8 | 6,406.4 | 31.5 | 27.5 | -89.83 | -1,058.3 | 537.3 | 2,497.1 | 2,458.1 | 38.96 | 64.091 | |
| 6,700.0 | 6,457.5 | 6,640.2 | 6,451.5 | 31.5 | 27.4 | -89.66 | -1,058.3 | 519.9 | 2,497.1 | 2,458.2 | 38.87 | 64.240 | |
| 6,716.1 | 6,473.1 | 6,655.6 | 6,465.5 | 31.5 | 27.4 | -89.60 | -1,058.3 | 513.4 | 2,497.1 | 2,458.3 | 38.83 | 64.303 | |
| 6,725.0 | 6,481.6 | 6,664.0 | 6,473.0 | 31.5 | 27.4 | -89.57 | -1,058.3 | 509.7 | 2,497.1 | 2,458.3 | 38.81 | 64.341 | |
| 6,750.0 | 6,505.3 | 6,687.6 | 6,493.8 | 31.5 | 27.3 | -89.47 | -1,058.3 | 498.5 | 2,497.2 | 2,458.4 | 38.74 | 64.460 | |
| 6,775.0 | 6,528.5 | 6,711.0 | 6,513.9 | 31.4 | 27.3 | -89.38 | -1,058.3 | 486.4 | 2,497.2 | 2,458.5 | 38.66 | 64.593 | |
| 6,800.0 | 6,551.3 | 6,734.2 | 6,533.2 | 31.4 | 27.3 | -89.29 | -1,058.3 | 473.5 | 2,497.2 | 2,458.7 | 38.57 | 64.738 | |
| 6,825.0 | 6,573.4 | 6,757.3 | 6,551.7 | 31.4 | 27.2 | -89.20 | -1,058.3 | 459.7 | 2,497.3 | 2,458.8 | 38.49 | 64.889 | |
| 6,850.0 | 6,595.0 | 6,780.2 | 6,569.4 | 31.3 | 27.2 | -89.11 | -1,058.3 | 445.1 | 2,497.4 | 2,459.0 | 38.40 | 65.042 | |
| 6,875.0 | 6,615.8 | 6,803.0 | 6,586.3 | 31.3 | 27.1 | -89.03 | -1,058.3 | 429.9 | 2,497.4 | 2,459.1 | 38.31 | 65.192 | |
| 6,900.0 | 6,635.9 | 6,825.0 | 6,601.9 | 31.3 | 27.1 | -88.95 | -1,058.3 | 414.3 | 2,497.5 | 2,459.3 | 38.23 | 65.332 | |
| 6,925.0 | 6,655.1 | 6,848.1 | 6,617.4 | 31.2 | 27.0 | -88.86 | -1,058.3 | 397.3 | 2,497.6 | 2,459.4 | 38.15 | 65.460 | |
| 6,950.0 | 6,673.6 | 6,870.4 | 6,631.7 | 31.2 | 27.0 | -88.79 | -1,058.3 | 380.1 | 2,497.6 | 2,459.5 | 38.09 | 65.564 | |
| 6,975.0 | 6,691.1 | 6,892.7 | 6,645.1 | 31.1 | 26.9 | -88.71 | -1,058.3 | 362.4 | 2,497.7 | 2,459.6 | 38.05 | 65.642 | |
| 7,000.0 | 6,707.6 | 6,914.8 | 6,657.6 | 31.1 | 26.9 | -88.64 | -1,058.3 | 344.1 | 2,497.8 | 2,459.7 | 38.02 | 65.687 | |
| 7,025.0 | 6,723.1 | 6,936.8 | 6,669.2 | 31.0 | 26.8 | -88.57 | -1,058.3 | 325.4 | 2,497.8 | 2,459.8 | 38.02 | 65.694 | |
| 7,050.0 | 6,737.6 | 6,958.7 | 6,679.9 | 31.0 | 26.8 | -88.51 | -1,058.3 | 306.3 | 2,497.9 | 2,459.9 | 38.04 | 65.658 | |
| 7,075.0 | 6,751.0 | 6,980.5 | 6,689.6 | 30.9 | 26.7 | -88.45 | -1,058.3 | 286.8 | 2,498.0 | 2,459.9 | 38.09 | 65.574 | |
| 7,100.0 | 6,763.3 | 7,002.3 | 6,698.4 | 30.8 | 26.7 | -88.39 | -1,058.3 | 266.9 | 2,498.0 | 2,459.9 | 38.17 | 65.437 | |
| 7,125.0 | 6,774.5 | 7,025.0 | 6,706.6 | 30.8 | 26.6 | -88.34 | -1,058.3 | 245.7 | 2,498.1 | 2,459.8 | 38.29 | 65.239 | |
| 7,150.0 | 6,784.4 | 7,045.5 | 6,713.2 | 30.7 | 26.6 | -88.29 | -1,058.3 | 226.3 | 2,498.2 | 2,459.7 | 38.44 | 64.992 | |
| 7,175.0 | 6,793.1 | 7,067.0 | 6,719.1 | 30.7 | 26.5 | -88.25 | -1,058.3 | 205.6 | 2,498.2 | 2,459.6 | 38.62 | 64.681 | |
| 7,200.0 | 6,800.6 | 7,088.5 | 6,724.1 | 30.6 | 26.5 | -88.21 | -1,058.3 | 184.7 | 2,498.3 | 2,459.4 | 38.84 | 64.315 | |
| 7,225.0 | 6,806.8 | 7,109.9 | 6,728.2 | 30.6 | 26.4 | -88.17 | -1,058.3 | 163.7 | 2,498.3 | 2,459.2 | 39.10 | 63.893 | |
| 7,250.0 | 6,811.8 | 7,131.3 | 6,731.3 | 30.5 | 26.4 | -88.14 | -1,058.3 | 142.6 | 2,498.4 | 2,459.0 | 39.39 | 63.420 | |
| 7,275.0 | 6,815.5 | 7,152.6 | 6,733.5 | 30.5 | 26.3 | -88.11 | -1,058.3 | 121.3 | 2,498.4 | 2,458.7 | 39.72 | 62.899 | |
| 7,300.0 | 6,817.8 | 7,175.0 | 6,734.7 | 30.4 | 26.3 | -88.09 | -1,058.3 | 99.0 | 2,498.4 | 2,458.3 | 40.09 | 62.319 | |
| 7,325.0 | 6,818.9 | 7,195.9 | 6,735.0 | 30.4 | 26.2 | -88.07 | -1,058.3 | 78.1 | 2,498.5 | 2,458.0 | 40.48 | 61.720 | |
| 7,332.8 | 6,819.0 | 7,203.7 | 6,735.0 | 30.4 | 26.2 | -88.07 | -1,058.3 | 70.3 | 2,498.5 | 2,457.8 | 40.63 | 61.498 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4Y-304 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 7,270.9 | 6,734.9 | 30.3 | 26.1 | -88.07 | -1,058.3 | 3.1 | 2,498.5 | 2,456.4 | 42.04 | 59.426 | |
| 7,500.0 | 6,819.0 | 7,370.9 | 6,734.7 | 30.2 | 25.9 | -88.07 | -1,058.3 | -96.9 | 2,498.5 | 2,453.8 | 44.62 | 55.994 | |
| 7,600.0 | 6,819.0 | 7,470.9 | 6,734.6 | 30.3 | 25.8 | -88.07 | -1,058.3 | -196.9 | 2,498.5 | 2,450.7 | 47.72 | 52.354 | |
| 7,700.0 | 6,819.0 | 7,570.9 | 6,734.5 | 30.6 | 26.0 | -88.06 | -1,058.3 | -296.9 | 2,498.5 | 2,447.2 | 51.26 | 48.745 | |
| 7,800.0 | 6,819.0 | 7,670.9 | 6,734.4 | 31.3 | 27.6 | -88.06 | -1,058.3 | -396.9 | 2,498.5 | 2,443.3 | 55.14 | 45.315 | |
| 7,900.0 | 6,819.0 | 7,770.9 | 6,734.3 | 32.5 | 29.7 | -88.06 | -1,058.3 | -496.9 | 2,498.5 | 2,439.2 | 59.30 | 42.135 | |
| 8,000.0 | 6,819.0 | 7,870.9 | 6,734.1 | 34.2 | 32.0 | -88.05 | -1,058.3 | -596.9 | 2,498.5 | 2,434.8 | 63.68 | 39.234 | |
| 8,100.0 | 6,819.0 | 7,970.9 | 6,734.0 | 36.1 | 34.4 | -88.05 | -1,058.3 | -696.9 | 2,498.5 | 2,430.2 | 68.25 | 36.609 | |
| 8,200.0 | 6,819.0 | 8,070.9 | 6,733.9 | 38.3 | 36.8 | -88.05 | -1,058.3 | -796.9 | 2,498.5 | 2,425.5 | 72.96 | 34.244 | |
| 8,300.0 | 6,819.0 | 8,170.9 | 6,733.8 | 40.6 | 39.2 | -88.05 | -1,058.3 | -896.9 | 2,498.5 | 2,420.7 | 77.80 | 32.116 | |
| 8,400.0 | 6,819.0 | 8,270.9 | 6,733.6 | 42.9 | 41.7 | -88.04 | -1,058.3 | -996.9 | 2,498.5 | 2,415.8 | 82.73 | 30.201 | |
| 8,500.0 | 6,819.0 | 8,370.9 | 6,733.5 | 45.3 | 44.3 | -88.04 | -1,058.3 | -1,096.9 | 2,498.5 | 2,410.8 | 87.75 | 28.475 | |
| 8,600.0 | 6,819.0 | 8,470.9 | 6,733.4 | 47.8 | 46.8 | -88.04 | -1,058.3 | -1,196.9 | 2,498.5 | 2,405.7 | 92.83 | 26.915 | |
| 8,700.0 | 6,819.0 | 8,570.9 | 6,733.3 | 50.3 | 49.4 | -88.03 | -1,058.3 | -1,296.9 | 2,498.5 | 2,400.5 | 97.97 | 25.502 | |
| 8,800.0 | 6,819.0 | 8,670.9 | 6,733.1 | 52.8 | 52.0 | -88.03 | -1,058.3 | -1,396.9 | 2,498.5 | 2,395.4 | 103.17 | 24.218 | |
| 8,900.0 | 6,819.0 | 8,770.9 | 6,733.0 | 55.4 | 54.7 | -88.03 | -1,058.3 | -1,496.9 | 2,498.5 | 2,390.1 | 108.40 | 23.048 | |
| 9,000.0 | 6,819.0 | 8,870.9 | 6,732.9 | 58.0 | 57.3 | -88.03 | -1,058.3 | -1,596.9 | 2,498.5 | 2,384.9 | 113.68 | 21.979 | |
| 9,100.0 | 6,819.0 | 8,970.9 | 6,732.7 | 60.6 | 60.0 | -88.02 | -1,058.3 | -1,696.9 | 2,498.5 | 2,379.6 | 118.98 | 21.000 | |
| 9,200.0 | 6,819.0 | 9,070.9 | 6,732.6 | 63.2 | 62.6 | -88.02 | -1,058.3 | -1,796.9 | 2,498.5 | 2,374.2 | 124.31 | 20.099 | |
| 9,300.0 | 6,819.0 | 9,170.9 | 6,732.5 | 65.9 | 65.3 | -88.02 | -1,058.3 | -1,896.9 | 2,498.5 | 2,368.9 | 129.67 | 19.269 | |
| 9,400.0 | 6,819.0 | 9,270.9 | 6,732.4 | 68.5 | 68.0 | -88.01 | -1,058.3 | -1,996.9 | 2,498.5 | 2,363.5 | 135.05 | 18.501 | |
| 9,500.0 | 6,819.0 | 9,370.9 | 6,732.2 | 71.2 | 70.7 | -88.01 | -1,058.3 | -2,096.9 | 2,498.5 | 2,358.1 | 140.44 | 17.791 | |
| 9,600.0 | 6,819.0 | 9,470.9 | 6,732.1 | 73.9 | 73.4 | -88.01 | -1,058.3 | -2,196.9 | 2,498.6 | 2,352.7 | 145.86 | 17.130 | |
| 9,700.0 | 6,819.0 | 9,570.9 | 6,732.0 | 76.5 | 76.1 | -88.00 | -1,058.3 | -2,296.9 | 2,498.6 | 2,347.3 | 151.28 | 16.516 | |
| 9,800.0 | 6,819.0 | 9,670.9 | 6,731.8 | 79.2 | 78.9 | -88.00 | -1,058.3 | -2,396.9 | 2,498.6 | 2,341.8 | 156.73 | 15.942 | |
| 9,900.0 | 6,819.0 | 9,770.9 | 6,731.7 | 81.9 | 81.6 | -88.00 | -1,058.3 | -2,496.9 | 2,498.6 | 2,336.4 | 162.18 | 15.406 | |
| 10,000.0 | 6,819.0 | 9,870.9 | 6,731.6 | 84.6 | 84.3 | -88.00 | -1,058.3 | -2,596.9 | 2,498.6 | 2,330.9 | 167.64 | 14.904 | |
| 10,100.0 | 6,819.0 | 9,970.9 | 6,731.4 | 87.4 | 87.1 | -87.99 | -1,058.3 | -2,696.9 | 2,498.6 | 2,325.5 | 173.12 | 14.433 | |
| 10,200.0 | 6,819.0 | 10,070.9 | 6,731.3 | 90.1 | 89.8 | -87.99 | -1,058.3 | -2,796.9 | 2,498.6 | 2,320.0 | 178.60 | 13.990 | |
| 10,300.0 | 6,819.0 | 10,170.9 | 6,731.2 | 92.8 | 92.5 | -87.99 | -1,058.3 | -2,896.9 | 2,498.6 | 2,314.5 | 184.09 | 13.572 | |
| 10,400.0 | 6,819.0 | 10,270.9 | 6,731.0 | 95.5 | 95.3 | -87.98 | -1,058.3 | -2,996.9 | 2,498.6 | 2,309.0 | 189.59 | 13.179 | |
| 10,500.0 | 6,819.0 | 10,370.9 | 6,730.9 | 98.3 | 98.0 | -87.98 | -1,058.3 | -3,096.9 | 2,498.6 | 2,303.5 | 195.10 | 12.807 | |
| 10,600.0 | 6,819.0 | 10,470.9 | 6,730.8 | 101.0 | 100.8 | -87.98 | -1,058.3 | -3,196.9 | 2,498.6 | 2,298.0 | 200.61 | 12.455 | |
| 10,700.0 | 6,819.0 | 10,570.9 | 6,730.6 | 103.8 | 103.6 | -87.97 | -1,058.3 | -3,296.9 | 2,498.6 | 2,292.5 | 206.13 | 12.122 | |
| 10,800.0 | 6,819.0 | 10,670.9 | 6,730.5 | 106.5 | 106.3 | -87.97 | -1,058.3 | -3,396.9 | 2,498.6 | 2,287.0 | 211.65 | 11.805 | |
| 10,900.0 | 6,819.0 | 10,770.9 | 6,730.4 | 109.2 | 109.1 | -87.97 | -1,058.3 | -3,496.9 | 2,498.6 | 2,281.4 | 217.18 | 11.505 | |
| 11,000.0 | 6,819.0 | 10,870.9 | 6,730.2 | 112.0 | 111.8 | -87.97 | -1,058.3 | -3,596.9 | 2,498.6 | 2,275.9 | 222.71 | 11.219 | |
| 11,100.0 | 6,819.0 | 10,970.9 | 6,730.1 | 114.8 | 114.6 | -87.96 | -1,058.3 | -3,696.9 | 2,498.6 | 2,270.4 | 228.25 | 10.947 | |
| 11,200.0 | 6,819.0 | 11,070.9 | 6,730.0 | 117.5 | 117.4 | -87.96 | -1,058.3 | -3,796.9 | 2,498.6 | 2,264.8 | 233.79 | 10.687 | |
| 11,300.0 | 6,819.0 | 11,170.9 | 6,729.8 | 120.3 | 120.2 | -87.96 | -1,058.3 | -3,896.9 | 2,498.6 | 2,259.3 | 239.33 | 10.440 | |
| 11,400.0 | 6,819.0 | 11,270.9 | 6,729.7 | 123.0 | 122.9 | -87.95 | -1,058.3 | -3,996.9 | 2,498.6 | 2,253.7 | 244.88 | 10.203 | |
| 11,500.0 | 6,819.0 | 11,370.9 | 6,729.6 | 125.8 | 125.7 | -87.95 | -1,058.3 | -4,096.9 | 2,498.6 | 2,248.2 | 250.43 | 9.977 | |
| 11,600.0 | 6,819.0 | 11,470.9 | 6,729.4 | 128.6 | 128.5 | -87.95 | -1,058.3 | -4,196.9 | 2,498.6 | 2,242.7 | 255.99 | 9.761 | |
| 11,700.0 | 6,819.0 | 11,570.9 | 6,729.3 | 131.3 | 131.3 | -87.94 | -1,058.3 | -4,296.9 | 2,498.6 | 2,237.1 | 261.54 | 9.553 | |
| 11,800.0 | 6,819.0 | 11,670.9 | 6,729.2 | 134.1 | 134.0 | -87.94 | -1,058.3 | -4,396.9 | 2,498.6 | 2,231.5 | 267.10 | 9.355 | |
| 11,900.0 | 6,819.0 | 11,770.9 | 6,729.0 | 136.9 | 136.8 | -87.94 | -1,058.3 | -4,496.9 | 2,498.7 | 2,226.0 | 272.66 | 9.164 | |
| 12,000.0 | 6,819.0 | 11,870.9 | 6,728.9 | 139.6 | 139.6 | -87.93 | -1,058.3 | -4,596.9 | 2,498.7 | 2,220.4 | 278.23 | 8.981 | |
| 12,100.0 | 6,819.0 | 11,970.9 | 6,728.8 | 142.4 | 142.4 | -87.93 | -1,058.3 | -4,696.9 | 2,498.7 | 2,214.9 | 283.79 | 8.805 | |
| 12,200.0 | 6,819.0 | 12,070.9 | 6,728.6 | 145.2 | 145.2 | -87.93 | -1,058.3 | -4,796.9 | 2,498.7 | 2,209.3 | 289.36 | 8.635 | |
| 12,300.0 | 6,819.0 | 12,170.9 | 6,728.5 | 148.0 | 148.0 | -87.92 | -1,058.3 | -4,896.9 | 2,498.7 | 2,203.7 | 294.93 | 8.472 | |
| 12,400.0 | 6,819.0 | 12,270.9 | 6,728.3 | 150.8 | 150.7 | -87.92 | -1,058.3 | -4,996.9 | 2,498.7 | 2,198.2 | 300.50 | 8.315 | |
| 12,500.0 | 6,819.0 | 12,370.9 | 6,728.2 | 153.5 | 153.5 | -87.92 | -1,058.3 | -5,096.9 | 2,498.7 | 2,192.6 | 306.08 | 8.164 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4Y-304 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 12,470.9 | 6,728.1 | 156.3 | 156.3 | -87.91 | -1,058.3 | -5,196.9 | 2,498.7 | 2,187.0 | 311.65 | 8.018 | |
| 12,700.0 | 6,819.0 | 12,570.9 | 6,727.9 | 159.1 | 159.1 | -87.91 | -1,058.3 | -5,296.9 | 2,498.7 | 2,181.5 | 317.23 | 7.877 | |
| 12,800.0 | 6,819.0 | 12,670.9 | 6,727.8 | 161.9 | 161.9 | -87.91 | -1,058.3 | -5,396.9 | 2,498.7 | 2,175.9 | 322.80 | 7.741 | |
| 12,900.0 | 6,819.0 | 12,770.9 | 6,727.6 | 164.7 | 164.7 | -87.91 | -1,058.3 | -5,496.9 | 2,498.7 | 2,170.3 | 328.38 | 7.609 | |
| 13,000.0 | 6,819.0 | 12,870.9 | 6,727.5 | 167.4 | 167.5 | -87.90 | -1,058.3 | -5,596.9 | 2,498.7 | 2,164.7 | 333.96 | 7.482 | |
| 13,100.0 | 6,819.0 | 12,970.9 | 6,727.4 | 170.2 | 170.3 | -87.90 | -1,058.3 | -5,696.9 | 2,498.7 | 2,159.2 | 339.55 | 7.359 | |
| 13,200.0 | 6,819.0 | 13,070.9 | 6,727.2 | 173.0 | 173.1 | -87.90 | -1,058.3 | -5,796.9 | 2,498.7 | 2,153.6 | 345.13 | 7.240 | |
| 13,300.0 | 6,819.0 | 13,170.9 | 6,727.1 | 175.8 | 175.9 | -87.89 | -1,058.3 | -5,896.9 | 2,498.7 | 2,148.0 | 350.71 | 7.125 | |
| 13,400.0 | 6,819.0 | 13,270.9 | 6,726.9 | 178.6 | 178.6 | -87.89 | -1,058.3 | -5,996.9 | 2,498.7 | 2,142.4 | 356.30 | 7.013 | |
| 13,500.0 | 6,819.0 | 13,370.9 | 6,726.8 | 181.4 | 181.4 | -87.89 | -1,058.3 | -6,096.9 | 2,498.7 | 2,136.8 | 361.88 | 6.905 | |
| 13,600.0 | 6,819.0 | 13,470.9 | 6,726.6 | 184.2 | 184.2 | -87.88 | -1,058.3 | -6,196.9 | 2,498.7 | 2,131.3 | 367.47 | 6.800 | |
| 13,700.0 | 6,819.0 | 13,570.9 | 6,726.5 | 187.0 | 187.0 | -87.88 | -1,058.3 | -6,296.9 | 2,498.7 | 2,125.7 | 373.06 | 6.698 | |
| 13,800.0 | 6,819.0 | 13,670.9 | 6,726.4 | 189.7 | 189.8 | -87.88 | -1,058.3 | -6,396.9 | 2,498.7 | 2,120.1 | 378.65 | 6.599 | |
| 13,900.0 | 6,819.0 | 13,770.9 | 6,726.2 | 192.5 | 192.6 | -87.87 | -1,058.3 | -6,496.9 | 2,498.7 | 2,114.5 | 384.24 | 6.503 | |
| 14,000.0 | 6,819.0 | 13,870.9 | 6,726.1 | 195.3 | 195.4 | -87.87 | -1,058.3 | -6,596.9 | 2,498.8 | 2,108.9 | 389.83 | 6.410 | |
| 14,100.0 | 6,819.0 | 13,970.9 | 6,725.9 | 198.1 | 198.2 | -87.87 | -1,058.3 | -6,696.9 | 2,498.8 | 2,103.3 | 395.42 | 6.319 | |
| 14,200.0 | 6,819.0 | 14,070.9 | 6,725.8 | 200.9 | 201.0 | -87.86 | -1,058.3 | -6,796.9 | 2,498.8 | 2,097.8 | 401.01 | 6.231 | |
| 14,300.0 | 6,819.0 | 14,170.9 | 6,725.6 | 203.7 | 203.8 | -87.86 | -1,058.3 | -6,896.9 | 2,498.8 | 2,092.2 | 406.60 | 6.145 | |
| 14,400.0 | 6,819.0 | 14,270.9 | 6,725.5 | 206.5 | 206.6 | -87.86 | -1,058.3 | -6,996.9 | 2,498.8 | 2,086.6 | 412.20 | 6.062 | |
| 14,500.0 | 6,819.0 | 14,370.9 | 6,725.3 | 209.3 | 209.4 | -87.85 | -1,058.3 | -7,096.9 | 2,498.8 | 2,081.0 | 417.79 | 5.981 | |
| 14,600.0 | 6,819.0 | 14,470.9 | 6,725.2 | 212.1 | 212.2 | -87.85 | -1,058.3 | -7,196.9 | 2,498.8 | 2,075.4 | 423.38 | 5.902 | |
| 14,700.0 | 6,819.0 | 14,570.9 | 6,725.1 | 214.9 | 215.0 | -87.85 | -1,058.3 | -7,296.9 | 2,498.8 | 2,069.8 | 428.98 | 5.825 | |
| 14,720.2 | 6,819.0 | 14,591.0 | 6,725.0 | 215.4 | 215.6 | -87.85 | -1,058.3 | -7,317.1 | 2,498.8 | 2,068.7 | 430.11 | 5.810 | |
| 14,720.3 | 6,819.0 | 14,591.2 | 6,725.0 | 215.4 | 215.6 | -87.84 | -1,058.3 | -7,317.2 | 2,498.8 | 2,068.6 | 430.12 | 5.810 | SF |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4Y-314 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -72.00 | 13.8 | -42.6 | 44.8 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | -72.00 | 13.8 | -42.6 | 44.8 | 44.6 | 0.17 | 258.806 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -72.00 | 13.8 | -42.6 | 44.8 | 44.2 | 0.62 | 71.943 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | -72.00 | 13.8 | -42.6 | 44.8 | 43.7 | 1.07 | 41.778 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | -72.00 | 13.8 | -42.6 | 44.8 | 43.3 | 1.52 | 29.436 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | -72.00 | 13.8 | -42.6 | 44.8 | 42.8 | 1.97 | 22.723 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.2 | 1.2 | -72.00 | 13.8 | -42.6 | 44.8 | 42.4 | 2.42 | 18.503 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.4 | 1.4 | -72.00 | 13.8 | -42.6 | 44.8 | 41.9 | 2.87 | 15.605 | |
| 800.0 | 800.0 | 800.0 | 800.0 | 1.7 | 1.7 | -72.00 | 13.8 | -42.6 | 44.8 | 41.5 | 3.32 | 13.492 | CC |
| 900.0 | 900.0 | 900.0 | 900.0 | 1.9 | 1.9 | -95.38 | 13.8 | -42.6 | 44.9 | 41.2 | 3.77 | 11.923 | ES |
| 1,000.0 | 999.8 | 999.8 | 999.8 | 2.1 | 2.1 | -101.90 | 13.8 | -42.6 | 45.7 | 41.5 | 4.22 | 10.844 | |
| 1,100.0 | 1,099.5 | 1,099.5 | 1,099.5 | 2.3 | 2.3 | -111.99 | 13.8 | -42.6 | 48.3 | 43.6 | 4.67 | 10.340 | |
| 1,200.0 | 1,198.7 | 1,199.6 | 1,199.6 | 2.6 | 2.5 | -125.61 | 12.6 | -41.4 | 53.2 | 48.1 | 5.10 | 10.426 | |
| 1,300.0 | 1,297.5 | 1,298.6 | 1,298.5 | 2.9 | 2.7 | -141.47 | 8.9 | -37.8 | 62.2 | 56.7 | 5.51 | 11.300 | |
| 1,400.0 | 1,395.6 | 1,395.9 | 1,395.4 | 3.2 | 2.9 | -156.17 | 2.8 | -32.0 | 77.9 | 72.0 | 5.91 | 13.178 | |
| 1,500.0 | 1,493.1 | 1,491.1 | 1,489.9 | 3.5 | 3.1 | -167.80 | -5.4 | -24.1 | 101.0 | 94.7 | 6.33 | 15.963 | |
| 1,507.2 | 1,500.0 | 1,497.8 | 1,496.5 | 3.6 | 3.1 | -168.51 | -6.0 | -23.5 | 102.9 | 96.6 | 6.36 | 16.194 | |
| 1,572.2 | 1,563.0 | 1,559.3 | 1,557.4 | 3.8 | 3.3 | -174.09 | -12.2 | -17.5 | 121.2 | 114.5 | 6.65 | 18.227 | |
| 1,600.0 | 1,590.0 | 1,585.2 | 1,583.1 | 3.9 | 3.4 | -176.00 | -14.9 | -15.0 | 129.4 | 122.6 | 6.77 | 19.123 | |
| 1,700.0 | 1,686.3 | 1,676.5 | 1,673.1 | 4.4 | 3.6 | 178.19 | -25.5 | -4.8 | 162.8 | 155.6 | 7.22 | 22.557 | |
| 1,800.0 | 1,781.5 | 1,765.2 | 1,760.2 | 4.9 | 3.9 | 173.65 | -37.9 | 7.1 | 202.0 | 194.3 | 7.69 | 26.262 | |
| 1,817.6 | 1,798.2 | 1,780.5 | 1,775.1 | 5.0 | 3.9 | 172.97 | -40.2 | 9.3 | 209.5 | 201.7 | 7.78 | 26.930 | |
| 1,900.0 | 1,876.1 | 1,854.3 | 1,847.3 | 5.5 | 4.2 | 170.33 | -51.2 | 19.9 | 244.8 | 236.6 | 8.23 | 29.729 | |
| 2,000.0 | 1,970.6 | 1,943.9 | 1,935.0 | 6.0 | 4.5 | 167.99 | -64.7 | 32.9 | 288.1 | 279.3 | 8.80 | 32.727 | |
| 2,100.0 | 2,065.1 | 2,033.5 | 2,022.6 | 6.6 | 4.9 | 166.26 | -78.1 | 45.8 | 331.8 | 322.4 | 9.39 | 35.326 | |
| 2,200.0 | 2,159.6 | 2,123.1 | 2,110.2 | 7.2 | 5.2 | 164.93 | -91.5 | 58.7 | 375.6 | 365.6 | 9.99 | 37.583 | |
| 2,300.0 | 2,254.1 | 2,212.7 | 2,197.9 | 7.8 | 5.6 | 163.87 | -105.0 | 71.6 | 419.5 | 408.9 | 10.61 | 39.555 | |
| 2,400.0 | 2,348.7 | 2,302.2 | 2,285.5 | 8.4 | 5.9 | 163.02 | -118.4 | 84.5 | 463.5 | 452.3 | 11.23 | 41.283 | |
| 2,500.0 | 2,443.2 | 2,391.8 | 2,373.1 | 9.1 | 6.3 | 162.31 | -131.8 | 97.4 | 507.6 | 495.8 | 11.86 | 42.802 | |
| 2,600.0 | 2,537.7 | 2,481.4 | 2,460.7 | 9.7 | 6.7 | 161.71 | -145.3 | 110.3 | 551.8 | 539.3 | 12.50 | 44.147 | |
| 2,700.0 | 2,632.2 | 2,571.0 | 2,548.4 | 10.3 | 7.1 | 161.21 | -158.7 | 123.2 | 596.0 | 582.8 | 13.14 | 45.343 | |
| 2,800.0 | 2,726.8 | 2,660.6 | 2,636.0 | 10.9 | 7.5 | 160.77 | -172.1 | 136.1 | 640.2 | 626.4 | 13.79 | 46.412 | |
| 2,900.0 | 2,821.3 | 2,750.2 | 2,723.6 | 11.6 | 7.9 | 160.39 | -185.6 | 149.1 | 684.5 | 670.0 | 14.45 | 47.371 | |
| 3,000.0 | 2,915.8 | 2,839.8 | 2,811.3 | 12.2 | 8.2 | 160.05 | -199.0 | 162.0 | 728.7 | 713.6 | 15.11 | 48.236 | |
| 3,100.0 | 3,010.3 | 2,929.4 | 2,898.9 | 12.8 | 8.6 | 159.76 | -212.4 | 174.9 | 773.0 | 757.3 | 15.77 | 49.019 | |
| 3,200.0 | 3,104.8 | 3,019.0 | 2,986.5 | 13.5 | 9.0 | 159.49 | -225.9 | 187.8 | 817.3 | 800.9 | 16.44 | 49.731 | |
| 3,300.0 | 3,199.4 | 3,108.5 | 3,074.1 | 14.1 | 9.4 | 159.26 | -239.3 | 200.7 | 861.7 | 844.6 | 17.10 | 50.379 | |
| 3,400.0 | 3,293.9 | 3,198.1 | 3,161.8 | 14.8 | 9.8 | 159.04 | -252.7 | 213.6 | 906.0 | 888.2 | 17.77 | 50.972 | |
| 3,500.0 | 3,388.4 | 3,287.7 | 3,249.4 | 15.4 | 10.2 | 158.85 | -266.2 | 226.5 | 950.3 | 931.9 | 18.45 | 51.516 | |
| 3,600.0 | 3,482.9 | 3,377.3 | 3,337.0 | 16.0 | 10.6 | 158.67 | -279.6 | 239.4 | 994.7 | 975.6 | 19.12 | 52.017 | |
| 3,700.0 | 3,577.5 | 3,466.9 | 3,424.7 | 16.7 | 11.1 | 158.51 | -293.0 | 252.4 | 1,039.0 | 1,019.2 | 19.80 | 52.479 | |
| 3,800.0 | 3,672.0 | 3,556.5 | 3,512.3 | 17.3 | 11.5 | 158.36 | -306.5 | 265.3 | 1,083.4 | 1,062.9 | 20.48 | 52.907 | |
| 3,900.0 | 3,766.5 | 3,646.1 | 3,599.9 | 18.0 | 11.9 | 158.23 | -319.9 | 278.2 | 1,127.8 | 1,106.6 | 21.16 | 53.304 | |
| 4,000.0 | 3,861.0 | 3,735.7 | 3,687.6 | 18.6 | 12.3 | 158.10 | -333.3 | 291.1 | 1,172.1 | 1,150.3 | 21.84 | 53.673 | |
| 4,100.0 | 3,955.5 | 3,825.3 | 3,775.2 | 19.3 | 12.7 | 157.98 | -346.8 | 304.0 | 1,216.5 | 1,194.0 | 22.52 | 54.017 | |
| 4,200.0 | 4,050.1 | 3,914.8 | 3,862.8 | 19.9 | 13.1 | 157.87 | -360.2 | 316.9 | 1,260.9 | 1,237.7 | 23.20 | 54.338 | |
| 4,300.0 | 4,144.6 | 4,004.4 | 3,950.4 | 20.5 | 13.5 | 157.77 | -373.7 | 329.8 | 1,305.3 | 1,281.4 | 23.89 | 54.638 | |
| 4,400.0 | 4,239.1 | 4,094.0 | 4,038.1 | 21.2 | 13.9 | 157.68 | -387.1 | 342.7 | 1,349.6 | 1,325.1 | 24.57 | 54.919 | |
| 4,500.0 | 4,333.6 | 4,183.6 | 4,125.7 | 21.8 | 14.3 | 157.59 | -400.5 | 355.7 | 1,394.0 | 1,368.8 | 25.26 | 55.184 | |
| 4,600.0 | 4,428.2 | 4,273.2 | 4,213.3 | 22.5 | 14.7 | 157.50 | -414.0 | 368.6 | 1,438.4 | 1,412.5 | 25.95 | 55.432 | |
| 4,700.0 | 4,522.7 | 4,362.8 | 4,301.0 | 23.1 | 15.1 | 157.43 | -427.4 | 381.5 | 1,482.8 | 1,456.2 | 26.64 | 55.666 | |
| 4,800.0 | 4,617.2 | 4,452.4 | 4,388.6 | 23.8 | 15.6 | 157.35 | -440.8 | 394.4 | 1,527.2 | 1,499.9 | 27.33 | 55.887 | |

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

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4Y-314 - ORIGINAL WELLBORE - PROPC

**Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD

**Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,900.0 | 4,711.7 | 4,542.0 | 4,476.2 | 24.4 | 16.0 | 157.28 | -454.3 | 407.3 | 1,571.6 | 1,543.6 | 28.02 | 56.096 | |
| 5,000.0 | 4,806.2 | 4,631.5 | 4,563.8 | 25.1 | 16.4 | 157.22 | -467.7 | 420.2 | 1,616.0 | 1,587.3 | 28.71 | 56.293 | |
| 5,100.0 | 4,900.8 | 4,721.1 | 4,651.5 | 25.7 | 16.8 | 157.16 | -481.1 | 433.1 | 1,660.4 | 1,631.0 | 29.40 | 56.480 | |
| 5,200.0 | 4,995.3 | 4,810.7 | 4,739.1 | 26.4 | 17.2 | 157.10 | -494.6 | 446.0 | 1,704.8 | 1,674.7 | 30.09 | 56.657 | |
| 5,300.0 | 5,089.8 | 4,900.3 | 4,826.7 | 27.0 | 17.6 | 157.04 | -508.0 | 459.0 | 1,749.2 | 1,718.4 | 30.78 | 56.825 | |
| 5,400.0 | 5,184.3 | 4,989.9 | 4,914.4 | 27.7 | 18.0 | 156.99 | -521.4 | 471.9 | 1,793.6 | 1,762.1 | 31.47 | 56.985 | |
| 5,500.0 | 5,278.9 | 5,079.5 | 5,002.0 | 28.3 | 18.4 | 156.94 | -534.9 | 484.8 | 1,838.0 | 1,805.8 | 32.17 | 57.137 | |
| 5,533.5 | 5,310.5 | 5,109.5 | 5,031.4 | 28.5 | 18.6 | 156.92 | -539.4 | 489.1 | 1,852.9 | 1,820.5 | 32.40 | 57.187 | |
| 5,600.0 | 5,373.6 | 5,169.4 | 5,089.9 | 28.9 | 18.9 | 157.13 | -548.3 | 497.7 | 1,881.8 | 1,848.8 | 32.94 | 57.119 | |
| 5,700.0 | 5,469.4 | 5,260.5 | 5,179.1 | 29.3 | 19.3 | 157.38 | -562.0 | 510.9 | 1,922.8 | 1,889.1 | 33.71 | 57.047 | |
| 5,800.0 | 5,566.1 | 5,352.9 | 5,269.4 | 29.8 | 19.7 | 157.56 | -575.9 | 524.2 | 1,960.9 | 1,926.4 | 34.44 | 56.942 | |
| 5,900.0 | 5,663.6 | 5,539.1 | 5,452.6 | 30.1 | 20.3 | 157.60 | -599.7 | 547.0 | 1,993.9 | 1,958.6 | 35.31 | 56.474 | |
| 6,000.0 | 5,761.9 | 5,736.8 | 5,649.1 | 30.5 | 20.8 | 157.77 | -615.5 | 562.3 | 2,019.1 | 1,983.0 | 36.04 | 56.016 | |
| 6,100.0 | 5,860.7 | 5,940.1 | 5,852.2 | 30.7 | 21.1 | 158.07 | -621.5 | 568.1 | 2,036.1 | 1,999.5 | 36.64 | 55.578 | |
| 6,200.0 | 5,960.0 | 6,048.0 | 5,960.0 | 31.0 | 21.2 | 158.28 | -621.6 | 568.1 | 2,047.0 | 2,010.0 | 37.00 | 55.325 | |
| 6,300.0 | 6,059.7 | 6,147.6 | 6,059.7 | 31.2 | 21.3 | 158.42 | -621.6 | 568.1 | 2,054.7 | 2,017.4 | 37.30 | 55.078 | |
| 6,400.0 | 6,159.6 | 6,247.5 | 6,159.6 | 31.3 | 21.5 | 158.51 | -621.6 | 568.1 | 2,059.1 | 2,021.5 | 37.56 | 54.818 | |
| 6,486.1 | 6,245.7 | 6,334.3 | 6,246.4 | 31.4 | 21.5 | 179.74 | -621.6 | 566.4 | 2,060.3 | 2,011.8 | 48.45 | 42.527 | |
| 6,500.0 | 6,259.6 | 6,348.3 | 6,260.3 | 31.4 | 21.5 | 179.77 | -621.6 | 565.3 | 2,060.3 | 2,011.8 | 48.48 | 42.500 | |
| 6,516.1 | 6,275.7 | 6,364.6 | 6,276.5 | 31.4 | 21.6 | 179.81 | -621.6 | 563.6 | 2,060.3 | 2,011.8 | 48.51 | 42.469 | |
| 6,550.0 | 6,309.5 | 6,398.4 | 6,310.0 | 31.5 | 21.6 | -90.08 | -621.6 | 559.1 | 2,060.3 | 2,022.4 | 37.81 | 54.489 | |
| 6,577.1 | 6,336.6 | 6,425.5 | 6,336.6 | 31.5 | 21.6 | -90.00 | -621.6 | 554.3 | 2,060.3 | 2,022.4 | 37.81 | 54.483 | |
| 6,600.0 | 6,359.4 | 6,448.1 | 6,358.8 | 31.5 | 21.5 | -89.93 | -621.6 | 549.5 | 2,060.3 | 2,022.4 | 37.82 | 54.480 | |
| 6,650.0 | 6,408.8 | 6,497.4 | 6,406.3 | 31.5 | 21.5 | -89.78 | -621.6 | 536.7 | 2,060.3 | 2,022.5 | 37.77 | 54.543 | |
| 6,700.0 | 6,457.5 | 6,545.8 | 6,451.7 | 31.5 | 21.5 | -89.59 | -621.6 | 519.8 | 2,060.3 | 2,022.6 | 37.68 | 54.683 | |
| 6,716.1 | 6,473.1 | 6,561.2 | 6,465.7 | 31.5 | 21.4 | -89.52 | -621.6 | 513.4 | 2,060.3 | 2,022.7 | 37.64 | 54.743 | |
| 6,725.0 | 6,481.6 | 6,569.6 | 6,473.3 | 31.5 | 21.4 | -89.48 | -621.6 | 509.8 | 2,060.3 | 2,022.7 | 37.61 | 54.778 | |
| 6,750.0 | 6,505.3 | 6,593.3 | 6,494.3 | 31.5 | 21.4 | -89.38 | -621.6 | 498.8 | 2,060.4 | 2,022.8 | 37.54 | 54.889 | |
| 6,775.0 | 6,528.5 | 6,616.8 | 6,514.5 | 31.4 | 21.4 | -89.27 | -621.6 | 486.9 | 2,060.4 | 2,023.0 | 37.45 | 55.013 | |
| 6,800.0 | 6,551.3 | 6,640.1 | 6,534.0 | 31.4 | 21.3 | -89.17 | -621.6 | 474.1 | 2,060.5 | 2,023.1 | 37.36 | 55.146 | |
| 6,825.0 | 6,573.4 | 6,663.3 | 6,552.8 | 31.4 | 21.3 | -89.06 | -621.6 | 460.5 | 2,060.5 | 2,023.3 | 37.27 | 55.284 | |
| 6,850.0 | 6,595.0 | 6,686.3 | 6,570.7 | 31.3 | 21.2 | -88.96 | -621.6 | 446.1 | 2,060.6 | 2,023.4 | 37.18 | 55.423 | |
| 6,875.0 | 6,615.8 | 6,709.2 | 6,587.8 | 31.3 | 21.2 | -88.87 | -621.6 | 430.9 | 2,060.7 | 2,023.6 | 37.09 | 55.558 | |
| 6,900.0 | 6,635.9 | 6,731.9 | 6,604.1 | 31.3 | 21.1 | -88.77 | -621.6 | 415.0 | 2,060.7 | 2,023.7 | 37.01 | 55.685 | |
| 6,925.0 | 6,655.1 | 6,754.5 | 6,619.5 | 31.2 | 21.1 | -88.68 | -621.6 | 398.5 | 2,060.8 | 2,023.9 | 36.93 | 55.797 | |
| 6,950.0 | 6,673.6 | 6,777.0 | 6,634.0 | 31.2 | 21.0 | -88.60 | -621.6 | 381.3 | 2,060.9 | 2,024.0 | 36.87 | 55.891 | |
| 6,975.0 | 6,691.1 | 6,800.0 | 6,648.0 | 31.1 | 21.0 | -88.51 | -621.6 | 363.1 | 2,061.0 | 2,024.1 | 36.83 | 55.960 | |
| 7,000.0 | 6,707.6 | 6,821.6 | 6,660.4 | 31.1 | 20.9 | -88.43 | -621.6 | 345.4 | 2,061.0 | 2,024.2 | 36.81 | 55.995 | |
| 7,025.0 | 6,723.1 | 6,843.8 | 6,672.2 | 31.0 | 20.9 | -88.36 | -621.6 | 326.6 | 2,061.1 | 2,024.3 | 36.81 | 55.996 | |
| 7,050.0 | 6,737.6 | 6,865.8 | 6,683.1 | 31.0 | 20.8 | -88.29 | -621.6 | 307.4 | 2,061.2 | 2,024.4 | 36.84 | 55.956 | |
| 7,075.0 | 6,751.0 | 6,887.8 | 6,693.0 | 30.9 | 20.8 | -88.22 | -621.6 | 287.8 | 2,061.3 | 2,024.4 | 36.89 | 55.872 | |
| 7,100.0 | 6,763.3 | 6,909.7 | 6,702.0 | 30.8 | 20.8 | -88.16 | -621.6 | 267.9 | 2,061.3 | 2,024.4 | 36.98 | 55.740 | |
| 7,125.0 | 6,774.5 | 6,931.5 | 6,710.1 | 30.8 | 20.7 | -88.10 | -621.6 | 247.6 | 2,061.4 | 2,024.3 | 37.10 | 55.558 | |
| 7,150.0 | 6,784.4 | 6,953.3 | 6,717.2 | 30.7 | 20.7 | -88.04 | -621.6 | 227.0 | 2,061.5 | 2,024.2 | 37.26 | 55.325 | |
| 7,175.0 | 6,793.1 | 6,975.0 | 6,723.4 | 30.7 | 20.7 | -87.99 | -621.6 | 206.2 | 2,061.5 | 2,024.1 | 37.46 | 55.040 | |
| 7,200.0 | 6,800.6 | 6,996.6 | 6,728.5 | 30.6 | 20.7 | -87.95 | -621.6 | 185.2 | 2,061.6 | 2,023.9 | 37.69 | 54.700 | |
| 7,225.0 | 6,806.8 | 7,018.2 | 6,732.8 | 30.6 | 20.6 | -87.91 | -621.6 | 164.1 | 2,061.6 | 2,023.7 | 37.96 | 54.310 | |
| 7,250.0 | 6,811.8 | 7,039.8 | 6,736.0 | 30.5 | 20.6 | -87.88 | -621.6 | 142.8 | 2,061.7 | 2,023.4 | 38.27 | 53.875 | |
| 7,275.0 | 6,815.5 | 7,061.3 | 6,738.3 | 30.5 | 20.6 | -87.85 | -621.6 | 121.4 | 2,061.7 | 2,023.1 | 38.61 | 53.398 | |
| 7,300.0 | 6,817.8 | 7,082.8 | 6,739.6 | 30.4 | 20.6 | -87.82 | -621.6 | 99.9 | 2,061.7 | 2,022.8 | 38.99 | 52.884 | |
| 7,325.0 | 6,818.9 | 7,104.7 | 6,740.0 | 30.4 | 20.7 | -87.81 | -621.6 | 78.0 | 2,061.8 | 2,022.4 | 39.40 | 52.326 | |
| 7,332.8 | 6,819.0 | 7,112.5 | 6,740.0 | 30.4 | 20.7 | -87.80 | -621.6 | 70.2 | 2,061.8 | 2,022.2 | 39.56 | 52.119 | |

| | | | |
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4Y-314 - ORIGINAL WELLBORE - PROP( **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,400.0 | 6,819.0 | 7,179.7 | 6,740.0 | 30.3 | 20.9 | -87.80 | -621.6 | 3.0 | 2,061.8 | 2,020.8 | 40.99 | 50.296 | |
| 7,500.0 | 6,819.0 | 7,279.7 | 6,740.0 | 30.2 | 21.7 | -87.80 | -621.6 | -97.0 | 2,061.8 | 2,018.1 | 43.63 | 47.256 | |
| 7,600.0 | 6,819.0 | 7,379.7 | 6,740.0 | 30.3 | 23.1 | -87.80 | -621.6 | -197.0 | 2,061.8 | 2,015.0 | 46.79 | 44.060 | |
| 7,700.0 | 6,819.0 | 7,479.7 | 6,740.0 | 30.6 | 24.9 | -87.80 | -621.6 | -297.0 | 2,061.8 | 2,011.4 | 50.39 | 40.917 | |
| 7,800.0 | 6,819.0 | 7,579.7 | 6,740.0 | 31.3 | 26.9 | -87.80 | -621.6 | -397.0 | 2,061.8 | 2,007.4 | 54.33 | 37.950 | |
| 7,900.0 | 6,819.0 | 7,679.7 | 6,740.0 | 32.5 | 29.1 | -87.80 | -621.6 | -497.0 | 2,061.8 | 2,003.2 | 58.54 | 35.218 | |
| 8,000.0 | 6,819.0 | 7,779.7 | 6,740.0 | 34.2 | 31.3 | -87.80 | -621.6 | -597.0 | 2,061.8 | 1,998.8 | 62.98 | 32.739 | |
| 8,100.0 | 6,819.0 | 7,879.7 | 6,740.0 | 36.1 | 33.7 | -87.80 | -621.6 | -697.0 | 2,061.8 | 1,994.2 | 67.59 | 30.506 | |
| 8,200.0 | 6,819.0 | 7,979.7 | 6,740.0 | 38.3 | 36.1 | -87.80 | -621.6 | -797.0 | 2,061.8 | 1,989.4 | 72.34 | 28.501 | |
| 8,300.0 | 6,819.0 | 8,079.7 | 6,740.0 | 40.6 | 38.6 | -87.80 | -621.6 | -897.0 | 2,061.8 | 1,984.6 | 77.21 | 26.704 | |
| 8,400.0 | 6,819.0 | 8,179.7 | 6,740.0 | 42.9 | 41.1 | -87.80 | -621.6 | -997.0 | 2,061.8 | 1,979.6 | 82.17 | 25.090 | |
| 8,500.0 | 6,819.0 | 8,279.7 | 6,740.0 | 45.3 | 43.7 | -87.80 | -621.6 | -1,097.0 | 2,061.8 | 1,974.6 | 87.22 | 23.639 | |
| 8,600.0 | 6,819.0 | 8,379.7 | 6,740.0 | 47.8 | 46.2 | -87.80 | -621.6 | -1,197.0 | 2,061.8 | 1,969.4 | 92.33 | 22.331 | |
| 8,700.0 | 6,819.0 | 8,479.7 | 6,740.0 | 50.3 | 48.8 | -87.80 | -621.6 | -1,297.0 | 2,061.8 | 1,964.3 | 97.50 | 21.147 | |
| 8,800.0 | 6,819.0 | 8,579.7 | 6,740.0 | 52.8 | 51.5 | -87.80 | -621.6 | -1,397.0 | 2,061.8 | 1,959.1 | 102.71 | 20.074 | |
| 8,900.0 | 6,819.0 | 8,679.7 | 6,740.0 | 55.4 | 54.1 | -87.80 | -621.6 | -1,497.0 | 2,061.8 | 1,953.8 | 107.96 | 19.097 | |
| 9,000.0 | 6,819.0 | 8,779.7 | 6,740.0 | 58.0 | 56.8 | -87.80 | -621.6 | -1,597.0 | 2,061.8 | 1,948.5 | 113.25 | 18.205 | |
| 9,100.0 | 6,819.0 | 8,879.7 | 6,740.0 | 60.6 | 59.4 | -87.80 | -621.6 | -1,697.0 | 2,061.8 | 1,943.2 | 118.57 | 17.388 | |
| 9,200.0 | 6,819.0 | 8,979.7 | 6,740.0 | 63.2 | 62.1 | -87.80 | -621.6 | -1,797.0 | 2,061.8 | 1,937.8 | 123.92 | 16.638 | |
| 9,300.0 | 6,819.0 | 9,079.7 | 6,740.0 | 65.9 | 64.8 | -87.80 | -621.6 | -1,897.0 | 2,061.8 | 1,932.5 | 129.29 | 15.947 | |
| 9,400.0 | 6,819.0 | 9,179.7 | 6,740.0 | 68.5 | 67.5 | -87.80 | -621.6 | -1,997.0 | 2,061.8 | 1,927.1 | 134.68 | 15.309 | |
| 9,500.0 | 6,819.0 | 9,279.7 | 6,740.0 | 71.2 | 70.2 | -87.80 | -621.6 | -2,097.0 | 2,061.8 | 1,921.7 | 140.09 | 14.718 | |
| 9,600.0 | 6,819.0 | 9,379.7 | 6,740.0 | 73.9 | 73.0 | -87.80 | -621.6 | -2,197.0 | 2,061.8 | 1,916.3 | 145.51 | 14.169 | |
| 9,700.0 | 6,819.0 | 9,479.7 | 6,740.0 | 76.5 | 75.7 | -87.80 | -621.6 | -2,297.0 | 2,061.8 | 1,910.8 | 150.95 | 13.659 | |
| 9,800.0 | 6,819.0 | 9,579.7 | 6,740.0 | 79.2 | 78.4 | -87.80 | -621.6 | -2,397.0 | 2,061.8 | 1,905.4 | 156.40 | 13.183 | |
| 9,900.0 | 6,819.0 | 9,679.7 | 6,740.0 | 81.9 | 81.2 | -87.80 | -621.6 | -2,497.0 | 2,061.8 | 1,899.9 | 161.86 | 12.738 | |
| 10,000.0 | 6,819.0 | 9,779.7 | 6,740.0 | 84.6 | 83.9 | -87.80 | -621.6 | -2,597.0 | 2,061.8 | 1,894.4 | 167.34 | 12.321 | |
| 10,100.0 | 6,819.0 | 9,879.7 | 6,740.0 | 87.4 | 86.7 | -87.80 | -621.6 | -2,697.0 | 2,061.8 | 1,888.9 | 172.82 | 11.930 | |
| 10,200.0 | 6,819.0 | 9,979.7 | 6,740.0 | 90.1 | 89.4 | -87.80 | -621.6 | -2,797.0 | 2,061.8 | 1,883.5 | 178.31 | 11.563 | |
| 10,300.0 | 6,819.0 | 10,079.7 | 6,740.0 | 92.8 | 92.2 | -87.80 | -621.6 | -2,897.0 | 2,061.8 | 1,878.0 | 183.81 | 11.217 | |
| 10,400.0 | 6,819.0 | 10,179.7 | 6,740.0 | 95.5 | 94.9 | -87.80 | -621.6 | -2,997.0 | 2,061.8 | 1,872.5 | 189.31 | 10.891 | |
| 10,500.0 | 6,819.0 | 10,279.7 | 6,740.0 | 98.3 | 97.7 | -87.80 | -621.6 | -3,097.0 | 2,061.8 | 1,866.9 | 194.82 | 10.583 | |
| 10,600.0 | 6,819.0 | 10,379.7 | 6,740.0 | 101.0 | 100.4 | -87.80 | -621.6 | -3,197.0 | 2,061.8 | 1,861.4 | 200.34 | 10.291 | |
| 10,700.0 | 6,819.0 | 10,479.7 | 6,740.0 | 103.8 | 103.2 | -87.80 | -621.6 | -3,297.0 | 2,061.8 | 1,855.9 | 205.87 | 10.015 | |
| 10,800.0 | 6,819.0 | 10,579.7 | 6,740.0 | 106.5 | 106.0 | -87.80 | -621.6 | -3,397.0 | 2,061.8 | 1,850.4 | 211.39 | 9.753 | |
| 10,900.0 | 6,819.0 | 10,679.7 | 6,740.0 | 109.2 | 108.7 | -87.80 | -621.6 | -3,497.0 | 2,061.8 | 1,844.8 | 216.93 | 9.504 | |
| 11,000.0 | 6,819.0 | 10,779.7 | 6,740.0 | 112.0 | 111.5 | -87.80 | -621.5 | -3,597.0 | 2,061.8 | 1,839.3 | 222.46 | 9.268 | |
| 11,100.0 | 6,819.0 | 10,879.7 | 6,740.0 | 114.8 | 114.3 | -87.80 | -621.5 | -3,697.0 | 2,061.8 | 1,833.8 | 228.00 | 9.043 | |
| 11,200.0 | 6,819.0 | 10,979.7 | 6,740.0 | 117.5 | 117.1 | -87.80 | -621.5 | -3,797.0 | 2,061.8 | 1,828.2 | 233.55 | 8.828 | |
| 11,300.0 | 6,819.0 | 11,079.7 | 6,740.0 | 120.3 | 119.8 | -87.80 | -621.5 | -3,897.0 | 2,061.8 | 1,822.7 | 239.10 | 8.623 | |
| 11,400.0 | 6,819.0 | 11,179.7 | 6,740.0 | 123.0 | 122.6 | -87.80 | -621.5 | -3,997.0 | 2,061.8 | 1,817.1 | 244.65 | 8.427 | |
| 11,500.0 | 6,819.0 | 11,279.7 | 6,740.0 | 125.8 | 125.4 | -87.80 | -621.5 | -4,097.0 | 2,061.8 | 1,811.6 | 250.20 | 8.240 | |
| 11,600.0 | 6,819.0 | 11,379.7 | 6,740.0 | 128.6 | 128.2 | -87.80 | -621.5 | -4,197.0 | 2,061.8 | 1,806.0 | 255.76 | 8.061 | |
| 11,700.0 | 6,819.0 | 11,479.7 | 6,740.0 | 131.3 | 131.0 | -87.80 | -621.5 | -4,297.0 | 2,061.8 | 1,800.4 | 261.32 | 7.890 | |
| 11,800.0 | 6,819.0 | 11,579.7 | 6,740.0 | 134.1 | 133.8 | -87.80 | -621.5 | -4,397.0 | 2,061.8 | 1,794.9 | 266.88 | 7.725 | |
| 11,900.0 | 6,819.0 | 11,679.7 | 6,740.0 | 136.9 | 136.5 | -87.80 | -621.5 | -4,497.0 | 2,061.8 | 1,789.3 | 272.45 | 7.568 | |
| 12,000.0 | 6,819.0 | 11,779.7 | 6,740.0 | 139.6 | 139.3 | -87.80 | -621.5 | -4,597.0 | 2,061.8 | 1,783.7 | 278.02 | 7.416 | |
| 12,100.0 | 6,819.0 | 11,879.7 | 6,740.0 | 142.4 | 142.1 | -87.80 | -621.5 | -4,697.0 | 2,061.8 | 1,778.2 | 283.58 | 7.270 | |
| 12,200.0 | 6,819.0 | 11,979.7 | 6,740.0 | 145.2 | 144.9 | -87.80 | -621.5 | -4,797.0 | 2,061.8 | 1,772.6 | 289.16 | 7.130 | |
| 12,300.0 | 6,819.0 | 12,079.7 | 6,740.0 | 148.0 | 147.7 | -87.80 | -621.5 | -4,897.0 | 2,061.8 | 1,767.0 | 294.73 | 6.995 | |
| 12,400.0 | 6,819.0 | 12,179.7 | 6,740.0 | 150.8 | 150.5 | -87.80 | -621.5 | -4,997.0 | 2,061.8 | 1,761.5 | 300.30 | 6.866 | |
| 12,500.0 | 6,819.0 | 12,279.7 | 6,740.0 | 153.5 | 153.3 | -87.80 | -621.5 | -5,097.0 | 2,061.8 | 1,755.9 | 305.88 | 6.740 | |

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|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** SE SE SEC. 4 T5N R64W 6th P.M. - MCGLOTHLIN FARMS 4Y-314 - ORIGINAL WELLBORE - PROPC **Offset Site Error:** 0.0 usft

**Survey Program:** 0-MWD **Offset Well Error:** 0.0 usft

| Reference Measured Depth (usft) | Reference Vertical Depth (usft) | Offset Measured Depth (usft) | Offset Vertical Depth (usft) | Semi Major Axis Reference (usft) | Semi Major Axis Offset (usft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (usft) | Offset Wellbore Centre +E/-W (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Minimum Separation (usft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 6,819.0 | 12,379.7 | 6,740.0 | 156.3 | 156.1 | -87.80 | -621.5 | -5,197.0 | 2,061.8 | 1,750.3 | 311.46 | 6.620 | |
| 12,700.0 | 6,819.0 | 12,479.7 | 6,740.0 | 159.1 | 158.9 | -87.80 | -621.5 | -5,297.0 | 2,061.8 | 1,744.7 | 317.03 | 6.503 | |
| 12,800.0 | 6,819.0 | 12,579.7 | 6,740.0 | 161.9 | 161.7 | -87.80 | -621.5 | -5,397.0 | 2,061.8 | 1,739.1 | 322.62 | 6.391 | |
| 12,900.0 | 6,819.0 | 12,679.7 | 6,740.0 | 164.7 | 164.4 | -87.80 | -621.5 | -5,497.0 | 2,061.8 | 1,733.6 | 328.20 | 6.282 | |
| 13,000.0 | 6,819.0 | 12,779.7 | 6,740.0 | 167.4 | 167.2 | -87.80 | -621.5 | -5,597.0 | 2,061.8 | 1,728.0 | 333.78 | 6.177 | |
| 13,100.0 | 6,819.0 | 12,879.7 | 6,740.0 | 170.2 | 170.0 | -87.80 | -621.5 | -5,697.0 | 2,061.8 | 1,722.4 | 339.36 | 6.075 | |
| 13,200.0 | 6,819.0 | 12,979.7 | 6,740.0 | 173.0 | 172.8 | -87.80 | -621.5 | -5,797.0 | 2,061.8 | 1,716.8 | 344.95 | 5.977 | |
| 13,300.0 | 6,819.0 | 13,079.7 | 6,740.0 | 175.8 | 175.6 | -87.80 | -621.5 | -5,897.0 | 2,061.8 | 1,711.2 | 350.54 | 5.882 | |
| 13,400.0 | 6,819.0 | 13,179.7 | 6,740.0 | 178.6 | 178.4 | -87.80 | -621.5 | -5,997.0 | 2,061.8 | 1,705.6 | 356.12 | 5.789 | |
| 13,500.0 | 6,819.0 | 13,279.7 | 6,740.0 | 181.4 | 181.2 | -87.80 | -621.5 | -6,097.0 | 2,061.8 | 1,700.0 | 361.71 | 5.700 | |
| 13,600.0 | 6,819.0 | 13,379.7 | 6,740.0 | 184.2 | 184.0 | -87.80 | -621.5 | -6,197.0 | 2,061.8 | 1,694.5 | 367.30 | 5.613 | |
| 13,700.0 | 6,819.0 | 13,479.7 | 6,740.0 | 187.0 | 186.8 | -87.80 | -621.5 | -6,297.0 | 2,061.8 | 1,688.9 | 372.89 | 5.529 | |
| 13,800.0 | 6,819.0 | 13,579.7 | 6,740.0 | 189.7 | 189.6 | -87.80 | -621.5 | -6,397.0 | 2,061.8 | 1,683.3 | 378.48 | 5.447 | |
| 13,900.0 | 6,819.0 | 13,679.7 | 6,740.0 | 192.5 | 192.4 | -87.80 | -621.5 | -6,497.0 | 2,061.8 | 1,677.7 | 384.07 | 5.368 | |
| 14,000.0 | 6,819.0 | 13,779.7 | 6,740.0 | 195.3 | 195.2 | -87.80 | -621.5 | -6,597.0 | 2,061.8 | 1,672.1 | 389.67 | 5.291 | |
| 14,100.0 | 6,819.0 | 13,879.7 | 6,740.0 | 198.1 | 198.0 | -87.80 | -621.5 | -6,697.0 | 2,061.8 | 1,666.5 | 395.26 | 5.216 | |
| 14,200.0 | 6,819.0 | 13,979.7 | 6,740.0 | 200.9 | 200.8 | -87.80 | -621.5 | -6,797.0 | 2,061.8 | 1,660.9 | 400.85 | 5.143 | |
| 14,300.0 | 6,819.0 | 14,079.7 | 6,740.0 | 203.7 | 203.6 | -87.80 | -621.5 | -6,897.0 | 2,061.8 | 1,655.3 | 406.45 | 5.073 | |
| 14,400.0 | 6,819.0 | 14,179.7 | 6,740.0 | 206.5 | 206.4 | -87.80 | -621.5 | -6,997.0 | 2,061.8 | 1,649.7 | 412.04 | 5.004 | |
| 14,500.0 | 6,819.0 | 14,279.7 | 6,740.0 | 209.3 | 209.2 | -87.80 | -621.5 | -7,097.0 | 2,061.8 | 1,644.1 | 417.64 | 4.937 | |
| 14,600.0 | 6,819.0 | 14,379.7 | 6,740.0 | 212.1 | 212.0 | -87.80 | -621.5 | -7,197.0 | 2,061.8 | 1,638.5 | 423.24 | 4.871 | |
| 14,700.0 | 6,819.0 | 14,479.7 | 6,740.0 | 214.9 | 214.8 | -87.80 | -621.5 | -7,297.0 | 2,061.8 | 1,632.9 | 428.83 | 4.808 | |
| 14,720.3 | 6,819.0 | 14,505.2 | 6,740.0 | 215.4 | 215.5 | -87.80 | -621.5 | -7,322.5 | 2,061.7 | 1,631.6 | 430.11 | 4.793 | SF |

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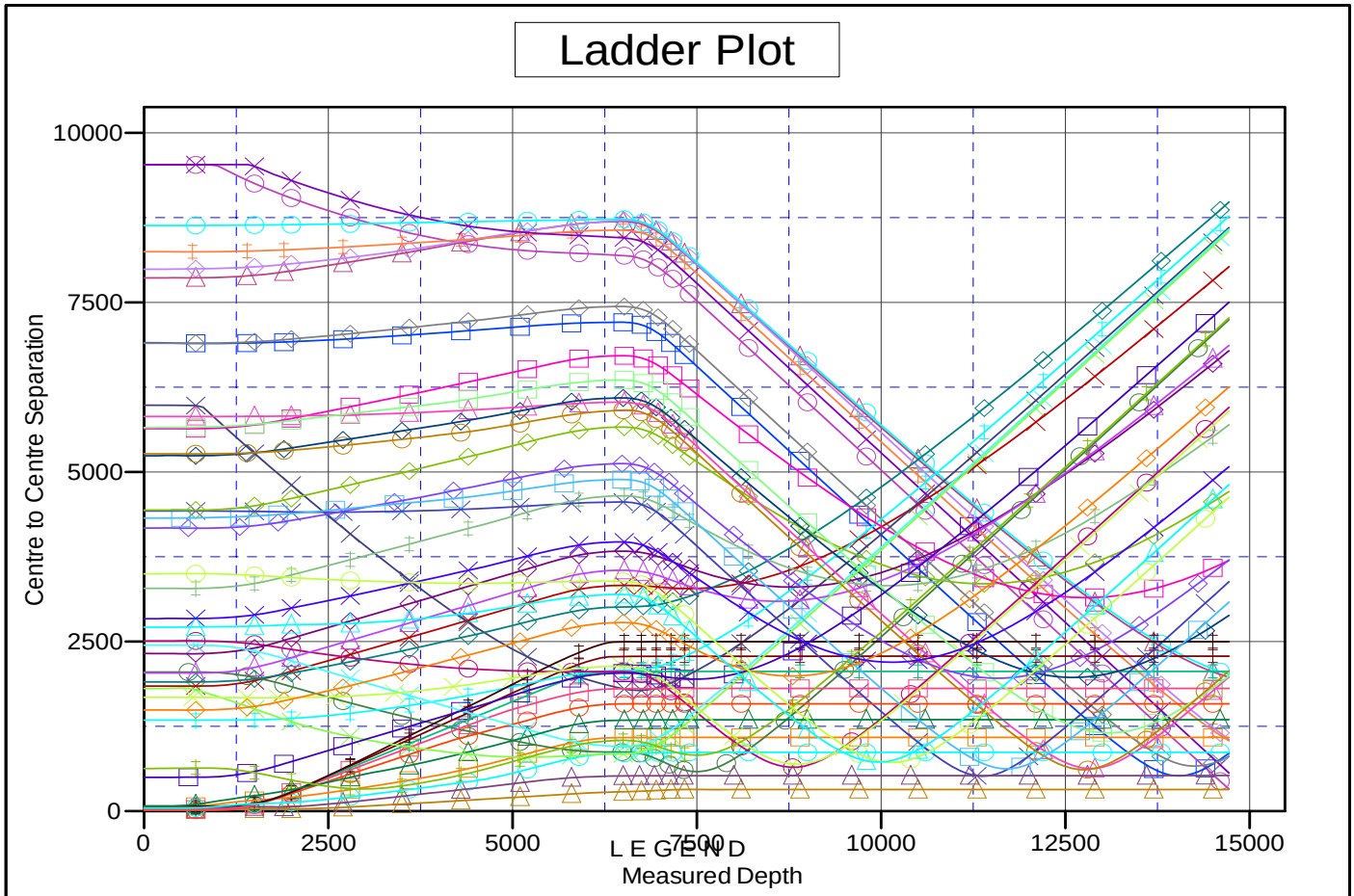
|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to KB-EST @ 4639.0usft (Original Well E
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: MCGLOTHLIN FARMS 4W-404
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.62°

## Ladder Plot



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|---|---|---|---|
| **Company:** | PDC ENERGY | **Local Co-ordinate Reference:** | Well MCGLOTHLIN FARMS 4W-404 |
| **Project:** | WELD COUNTY, COLORADO | **TVD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Reference Site:** | SE SE SEC. 4 T5N R64W 6th P.M. | **MD Reference:** | KB-EST @ 4639.0usft (Original Well Elev) |
| **Site Error:** | 0.0 usft | **North Reference:** | True |
| **Reference Well:** | MCGLOTHLIN FARMS 4W-404 | **Survey Calculation Method:** | Minimum Curvature |
| **Well Error:** | 0.0 usft | **Output errors are at** | 2.00 sigma |
| **Reference Wellbore** | ORIGINAL WELLBORE | **Database:** | EDM 5000.1 Single User Db |
| **Reference Design:** | PROPOSAL #1 | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to KB-EST @ 4639.0usft (Original Well E
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: MCGLOTHLIN FARMS 4W-404
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.62°