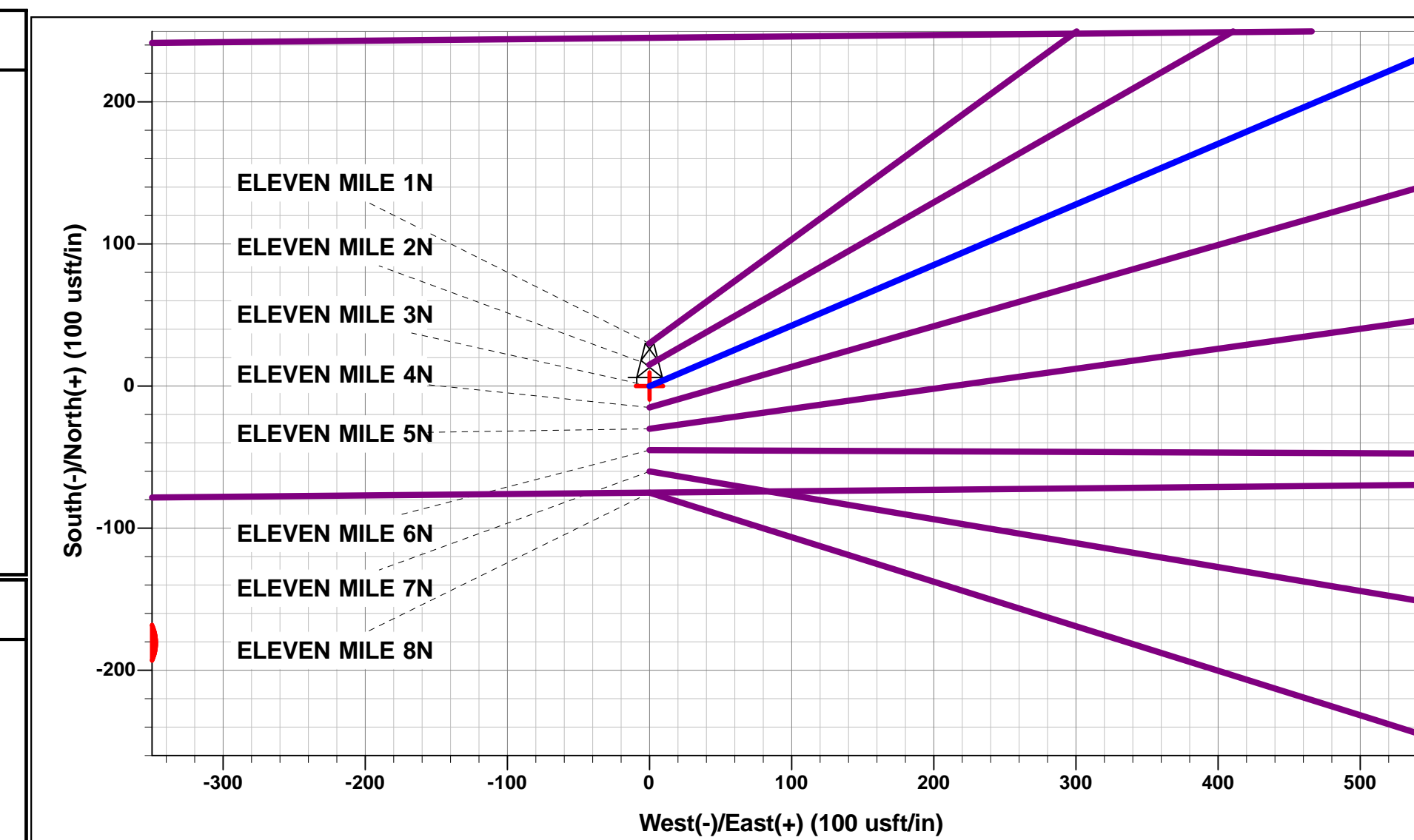




Project: WELD COUNTY, COLORADO (TRUE)
Site: SW NW SEC. 10 T3N R66W 6th P.M. (ELEVEN MILE)
Well: ELEVEN MILE 3N
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

| ANNOTATIONS | | | | | | | | | |
|-------------|----------|-------|--------|--------|----------|----------|----------|--|--|
| TVD | MD | Inc | Azi | +N/-S | +E/-W | VSect | Dep | Annotation | |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | SHL: 1716ft FNL & 1105ft FWL of Sec 10 | |
| 500.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | START NUDGE (2°/100ft BUR) | |
| 1804.38 | 1854.26 | 27.09 | 66.92 | 123.18 | 289.03 | -270.68 | 314.18 | EOB TO 27.09° INC | |
| 5043.43 | 5492.29 | 27.09 | 66.92 | 772.65 | 1812.84 | -1697.81 | 1970.63 | END OF TANGENT | |
| 6347.81 | 6846.55 | 0.00 | 0.00 | 895.83 | 2101.87 | -1968.49 | 2284.81 | EOD TO VERTICAL | |
| 6447.81 | 6946.55 | 0.00 | 0.00 | 895.83 | 2101.87 | -1968.49 | 2284.81 | KOP (8°/100ft BUR) | |
| 7164.00 | 8073.43 | 90.15 | 269.43 | 888.69 | 1383.83 | -1257.40 | 3002.89 | EP: 820ft FNL & 2490ft FWL of Sec 10 | |
| 7144.00 | 15699.86 | 90.15 | 269.44 | 813.41 | -6242.20 | 6294.98 | 10629.29 | BHL: 820ft FNL & 150ft FWL of Sec 9 | |

| WELLBORE TARGET DETAILS (LAT/LONG) | | | | | |
|------------------------------------|---------|--------|----------|-----------|-------------|
| Name | TVD | +N/-S | +E/-W | Latitude | Longitude |
| KOP - ELEVEN MILE 3N | 6447.81 | 895.83 | 2101.87 | 40.244515 | -104.761480 |
| EP - ELEVEN MILE 3N | 7164.00 | 888.69 | 1383.83 | 40.244495 | -104.764052 |
| BHL - ELEVEN MILE 3N | 7144.00 | 813.41 | -6242.20 | 40.244287 | -104.791369 |
| SHL - ELEVEN MILE 3N | 0.00 | 0.00 | 0.00 | 40.242056 | -104.769009 |



PROPOSED LOCAL COORDINATES:

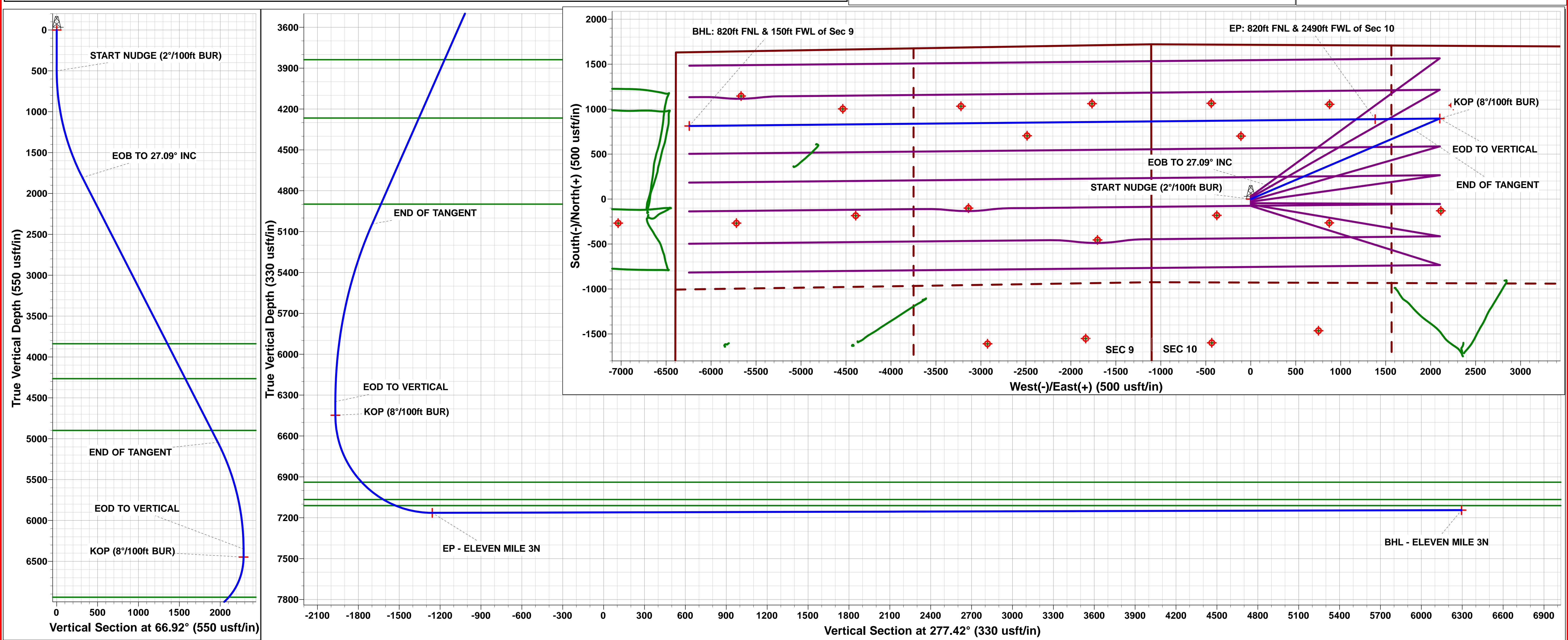
SHL: 1716ft FNL & 1105ft FWL of Sec 10

EP: 820ft FNL & 2490ft FWL of Sec 10

BHL: 820ft FNL & 150ft FWL of Sec 9

Azimuths to True North
Magnetic North: 8.11°

Magnetic Field
Strength: 52217.3snT
Dip Angle: 66.71°
Date: 08/04/2018
Model: IGRF2015



PDC ENERGY

WELD COUNTY, COLORADO (TRUE)

SW NW SEC. 10 T3N R66W 6th P.M. (ELEVEN MILE)

ELEVEN MILE 3N

ORIGINAL WELLBORE

PROPOSAL #1

Anticollision Report

09 April, 2018



Anticollision Report



| | | | |
|---------------------------|---|-------------------------------------|---|
| Company: | PDC ENERGY | Local Co-ordinate Reference: | Well ELEVEN MILE 3N |
| Project: | WELD COUNTY, COLORADO (TRUE) | TVD Reference: | KB-EST @ 4884.00usft (Original Well Elev) |
| Reference Site: | SW NW SEC. 10 T3N R66W 6th P.M. (ELEVEN MILE) | MD Reference: | KB-EST @ 4884.00usft (Original Well Elev) |
| Site Error: | 0.00 usft | North Reference: | True |
| Reference Well: | ELEVEN MILE 3N | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00 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 100.00usft | Error Model: | ISCWSA |
| Depth Range: | Unlimited | Scan Method: | Closest Approach 3D |
| Results Limited by: | Maximum center-center distance of 10,000.00 usft | Error Surface: | Elliptical Conic |
| Warning Levels Evaluated at: | 2.00 Sigma | Casing Method: | Not applied |

| | | | | |
|----------------------------|------------------|---------------------------------|------------------|--------------------|
| Survey Tool Program | Date | 09/04/2018 | | |
| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description |
| 0.00 | 15,699.86 | PROPOSAL #1 (ORIGINAL WELLBORE) | MWD | MWD - Standard |

| Summary | | | | | | |
|--|---------------------------------|------------------------------|---------------------------------|----------------------------------|-------------------|-----------------|
| Site Name | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation Factor | Warning |
| Offset Well - Wellbore - Design | | | | | | |
| SW NW SEC. 10 T3N R66W 6th P.M. (ELEVEN MILE) | | | | | | |
| ABDN VERT HSR-CRONHOLM #10-10A - Wellbore #1 - | 4,989.79 | 4,728.55 | 2,459.79 | 2,420.55 | 62.694 | CC |
| ABDN VERT HSR-CRONHOLM #10-10A - Wellbore #1 - | 5,000.00 | 4,734.23 | 2,459.80 | 2,420.47 | 62.539 | ES |
| ABDN VERT HSR-CRONHOLM #10-10A - Wellbore #1 - | 15,699.86 | 7,177.76 | 8,937.87 | 8,709.44 | 39.127 | SF |
| ABDN VERT UPRC #9-3K - Wellbore #1 - Design #1 | 13,990.87 | 7,084.47 | 173.17 | -147.70 | 0.540 | Level 1, CC, SF |
| ABDN VERT UPRC #9-3K - Wellbore #1 - Design #1 | 14,000.00 | 7,084.45 | 173.41 | -147.71 | 0.540 | Level 1, ES |
| ELEVEN MILE 1N - ORIGINAL WELLBORE - PROPOSA | 300.00 | 300.00 | 30.03 | 28.95 | 28.007 | CC, ES |
| ELEVEN MILE 1N - ORIGINAL WELLBORE - PROPOSA | 15,699.86 | 15,825.06 | 669.99 | 220.48 | 1.490 | Level 3, SF |
| ELEVEN MILE 2N - ORIGINAL WELLBORE - PROPOSA | 400.00 | 400.00 | 14.97 | 13.45 | 9.840 | CC |
| ELEVEN MILE 2N - ORIGINAL WELLBORE - PROPOSA | 15,699.86 | 15,831.55 | 332.42 | -100.95 | 0.767 | Level 1, ES, SF |
| ELEVEN MILE 4N - ORIGINAL WELLBORE - PROPOSA | 500.00 | 500.00 | 15.01 | 13.04 | 7.614 | CC |
| ELEVEN MILE 4N - ORIGINAL WELLBORE - PROPOSA | 15,699.86 | 15,735.78 | 320.12 | -119.65 | 0.728 | Level 1, ES, SF |
| ELEVEN MILE 5N - ORIGINAL WELLBORE - PROPOSA | 500.00 | 499.00 | 30.02 | 28.05 | 15.246 | CC, ES |
| ELEVEN MILE 5N - ORIGINAL WELLBORE - PROPOSA | 15,699.86 | 15,632.32 | 629.94 | 177.67 | 1.393 | Level 3, SF |
| ELEVEN MILE 6N - ORIGINAL WELLBORE - PROPOSA | 500.00 | 499.00 | 45.03 | 43.06 | 22.869 | CC, ES |
| ELEVEN MILE 6N - ORIGINAL WELLBORE - PROPOSA | 15,699.86 | 15,687.10 | 953.25 | 503.82 | 2.121 | SF |
| ELEVEN MILE 7N - ORIGINAL WELLBORE - PROPOSA | 400.00 | 399.00 | 60.00 | 58.48 | 39.489 | CC |
| ELEVEN MILE 7N - ORIGINAL WELLBORE - PROPOSA | 500.00 | 498.62 | 60.31 | 58.35 | 30.856 | ES |
| ELEVEN MILE 7N - ORIGINAL WELLBORE - PROPOSA | 15,699.86 | 15,605.11 | 1,309.87 | 858.24 | 2.900 | SF |
| ELEVEN MILE 8N - ORIGINAL WELLBORE - PROPOSA | 300.00 | 299.00 | 75.01 | 73.94 | 70.110 | CC, ES |
| ELEVEN MILE 8N - ORIGINAL WELLBORE - PROPOSA | 15,699.86 | 15,692.85 | 1,631.78 | 1,180.50 | 3.616 | SF |
| EXIST DD BANKSTROM #18-9 - Wellbore #1 - Wellbore | 14,543.68 | 7,125.73 | 466.16 | 269.26 | 2.368 | CC, ES |
| EXIST DD BANKSTROM #18-9 - Wellbore #1 - Wellbore | 14,600.00 | 7,126.03 | 469.55 | 271.11 | 2.366 | SF |
| EXIST DD BIRMINGHAM L #9-21D - Wellbore #1 - Wellb | 13,109.59 | 7,182.21 | 1,956.09 | 1,798.56 | 12.418 | CC |
| EXIST DD BIRMINGHAM L #9-21D - Wellbore #1 - Wellb | 13,200.00 | 7,187.97 | 1,958.17 | 1,798.19 | 12.240 | ES |
| EXIST DD BIRMINGHAM L #9-21D - Wellbore #1 - Wellb | 13,800.00 | 7,222.75 | 2,073.93 | 1,897.65 | 11.765 | SF |
| EXIST DD MORNING #24-10 - Wellbore #1 - Wellbore # | 6,950.00 | 6,595.80 | 1,945.51 | 1,895.01 | 38.530 | SF |
| EXIST DD MORNING #24-10 - Wellbore #1 - Wellbore # | 6,974.16 | 6,617.51 | 1,945.34 | 1,894.85 | 38.532 | CC, ES |
| EXIST DD MORNING #25-10 - Wellbore #1 - Wellbore # | 4,954.12 | 4,977.86 | 1,848.85 | 1,811.26 | 49.179 | CC |
| EXIST DD MORNING #25-10 - Wellbore #1 - Wellbore # | 5,000.00 | 5,013.48 | 1,849.06 | 1,811.15 | 48.776 | ES |
| EXIST DD MORNING #25-10 - Wellbore #1 - Wellbore # | 14,800.00 | 7,316.20 | 7,179.38 | 6,975.44 | 35.204 | SF |
| EXIST HZ EISENACH #32N-8HZ - Wellbore #1 - Wellbo | 15,699.86 | 6,975.00 | 1,646.99 | 1,408.16 | 6.896 | CC, ES, SF |
| EXIST HZ EISENACH FEDERAL #30C-8HZ - Wellbore # | 15,699.86 | 7,144.23 | 330.21 | 119.78 | 1.569 | CC, ES, SF |
| EXIST HZ EISENACH FEDERAL #30N-8HZ - Wellbore # | 15,699.86 | 7,066.06 | 535.47 | 322.90 | 2.519 | CC, ES, SF |
| EXIST HZ EISENACH FEDERAL #5N-8HZ - Wellbore #1 | 15,699.86 | 6,891.24 | 1,000.00 | 768.53 | 4.320 | CC, ES, SF |
| EXIST VERT ANDERSON #8-9 - Wellbore #1 - Design # | 11,173.70 | 7,113.86 | 1,311.87 | 1,065.58 | 5.326 | CC |
| EXIST VERT ANDERSON #8-9 - Wellbore #1 - Design # | 11,200.00 | 7,113.79 | 1,312.13 | 1,065.17 | 5.313 | ES |

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

| | | | |
|---------------------------|---|-------------------------------------|---|
| Company: | PDC ENERGY | Local Co-ordinate Reference: | Well ELEVEN MILE 3N |
| Project: | WELD COUNTY, COLORADO (TRUE) | TVD Reference: | KB-EST @ 4884.00usft (Original Well Elev) |
| Reference Site: | SW NW SEC. 10 T3N R66W 6th P.M. (ELEVEN MILE) | MD Reference: | KB-EST @ 4884.00usft (Original Well Elev) |
| Site Error: | 0.00 usft | North Reference: | True |
| Reference Well: | ELEVEN MILE 3N | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.00 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 | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation Factor | Warning |
|--|---------------------------------|------------------------------|---------------------------------|----------------------------------|-------------------|---------------------|
| SW NW SEC. 10 T3N R66W 6th P.M. (ELEVEN MILE) | | | | | | |
| EXIST VERT ANDERSON #8-9 - Wellbore #1 - Design # | 11,400.00 | 7,113.26 | 1,331.25 | 1,079.16 | 5.281 | SF |
| EXIST VERT ANDERSON UPRR #32-9A - Wellbore #1 - | 12,605.04 | 7,099.10 | 944.21 | 660.59 | 3.329 | CC, ES |
| EXIST VERT ANDERSON UPRR #32-9A - Wellbore #1 - | 12,700.00 | 7,098.86 | 948.97 | 662.82 | 3.316 | SF |
| EXIST VERT ANDERSON UPRR #41-9 - Wellbore #1 - D | 11,220.03 | 7,114.74 | 204.16 | -43.33 | 0.825 | Level 1, CC, ES, SF |
| EXIST VERT DILL UPRR #31-9 (2) - Wellbore #1 - Desig | 12,677.47 | 7,091.91 | 189.55 | -95.94 | 0.664 | Level 1, CC, ES, SF |
| EXIST VERT EDITH WEBBER UNIT #2 - Wellbore #1 - D | 9,568.21 | 7,156.07 | 172.93 | -35.65 | 0.829 | Level 1, CC, ES, SF |
| EXIST VERT EISENACH & PRESTON #8-8K - Wellbore | 15,699.86 | 7,097.00 | 1,338.84 | 971.02 | 3.640 | CC, ES, SF |
| EXIST VERT HSR BOYD #11-10 - Wellbore #1 - Design | 1,330.43 | 1,315.85 | 1,641.30 | 1,612.31 | 56.609 | CC |
| EXIST VERT HSR BOYD #11-10 - Wellbore #1 - Design | 1,700.00 | 1,662.21 | 1,646.30 | 1,607.95 | 42.928 | ES |
| EXIST VERT HSR BOYD #11-10 - Wellbore #1 - Design | 9,300.00 | 7,157.78 | 2,414.29 | 2,211.13 | 11.884 | SF |
| EXIST VERT HSR-COOPER #12-10A - Wellbore #1 - De | 500.00 | 475.00 | 1,655.47 | 1,645.84 | 171.838 | CC |
| EXIST VERT HSR-COOPER #12-10A - Wellbore #1 - De | 600.00 | 574.98 | 1,656.55 | 1,644.68 | 139.535 | ES |
| EXIST VERT HSR-COOPER #12-10A - Wellbore #1 - De | 10,600.00 | 7,132.36 | 2,561.67 | 2,329.55 | 11.036 | SF |
| EXIST VERT HSR-MAYNE #2-10 - Wellbore #1 - Design | 6,946.55 | 6,440.81 | 210.90 | 37.18 | 1.214 | Level 2, CC, ES, SF |
| EXIST VERT HSR-MILLER #7-10 - Wellbore #1 - Design | 5,321.79 | 4,911.63 | 947.69 | 810.62 | 6.914 | CC |
| EXIST VERT HSR-MILLER #7-10 - Wellbore #1 - Design | 5,400.00 | 4,981.26 | 948.36 | 809.14 | 6.812 | ES |
| EXIST VERT HSR-MILLER #7-10 - Wellbore #1 - Design | 7,400.00 | 6,891.57 | 1,034.97 | 853.76 | 5.712 | SF |
| EXIST VERT MORNING FRESH #11-10 - Wellbore #1 - | 1,906.41 | 1,853.81 | 2,137.90 | 2,093.96 | 48.655 | CC |
| EXIST VERT MORNING FRESH #11-10 - Wellbore #1 - | 2,200.00 | 2,115.20 | 2,142.08 | 2,090.17 | 41.267 | ES |
| EXIST VERT MORNING FRESH #11-10 - Wellbore #1 - | 9,000.00 | 7,164.56 | 2,800.50 | 2,602.77 | 14.163 | SF |
| EXIST VERT PRESLEY #10-3K - Wellbore #1 - Design # | 8,579.36 | 7,179.67 | 170.65 | -19.97 | 0.895 | Level 1, CC, ES, SF |
| EXIST VERT PRESLEY #10-4K - Wellbore #1 - Design # | 9,894.04 | 7,147.22 | 194.62 | -20.97 | 0.903 | Level 1, CC |
| EXIST VERT PRESLEY #10-4K - Wellbore #1 - Design # | 9,900.00 | 7,147.20 | 194.71 | -21.01 | 0.903 | Level 1, ES, SF |
| EXIST VERT PRESLEY #10-5K - Wellbore #1 - Design # | 500.00 | 473.00 | 418.26 | 408.65 | 43.512 | CC |
| EXIST VERT PRESLEY #10-5K - Wellbore #1 - Design # | 600.00 | 572.98 | 420.01 | 408.16 | 35.454 | ES |
| EXIST VERT PRESLEY #10-5K - Wellbore #1 - Design # | 10,000.00 | 7,131.94 | 1,063.20 | 845.36 | 4.881 | SF |
| EXIST VERT PRESLEY #10-6K - Wellbore #1 - Design # | 2,701.30 | 2,551.52 | 585.77 | 520.20 | 8.934 | CC |
| EXIST VERT PRESLEY #10-6K - Wellbore #1 - Design # | 2,800.00 | 2,639.40 | 587.49 | 519.25 | 8.610 | ES |
| EXIST VERT PRESLEY #10-6K - Wellbore #1 - Design # | 8,700.00 | 7,155.35 | 1,152.80 | 959.83 | 5.974 | SF |
| EXIST VERT UPRC #9-10K - Wellbore #1 - Design #1 | 12,407.93 | 7,116.62 | 2,454.46 | 2,175.91 | 8.812 | CC |
| EXIST VERT UPRC #9-10K - Wellbore #1 - Design #1 | 12,500.00 | 7,116.38 | 2,456.19 | 2,175.19 | 8.741 | ES |
| EXIST VERT UPRC #9-10K - Wellbore #1 - Design #1 | 13,000.00 | 7,115.07 | 2,524.87 | 2,230.50 | 8.577 | SF |
| EXIST VERT UPRC #9-11K - Wellbore #1 - Wellbore #1 | 13,913.95 | 7,072.72 | 2,460.79 | 2,282.34 | 13.789 | CC |
| EXIST VERT UPRC #9-11K - Wellbore #1 - Wellbore #1 | 14,000.00 | 7,072.62 | 2,462.30 | 2,281.50 | 13.619 | ES |
| EXIST VERT UPRC #9-11K - Wellbore #1 - Wellbore #1 | 14,800.00 | 7,071.69 | 2,615.46 | 2,412.79 | 12.905 | SF |
| EXIST VERT UPRC #9-12K - Wellbore #1 - Wellbore #1 | 15,285.81 | 7,131.80 | 2,422.38 | 2,206.27 | 11.209 | CC |
| EXIST VERT UPRC #9-12K - Wellbore #1 - Wellbore #1 | 15,400.00 | 7,128.44 | 2,425.07 | 2,205.81 | 11.061 | ES |
| EXIST VERT UPRC #9-12K - Wellbore #1 - Wellbore #1 | 15,699.86 | 7,119.17 | 2,457.49 | 2,229.98 | 10.802 | SF |
| EXIST VERT UPRC #9-4K - Wellbore #1 - Design #1 | 15,120.55 | 7,076.52 | 326.94 | -24.74 | 0.930 | Level 1, CC, ES, SF |
| EXIST VERT UPRC #9-5K - Wellbore #1 - Design #1 | 15,186.10 | 7,095.34 | 1,085.96 | 732.29 | 3.071 | CC |
| EXIST VERT UPRC #9-5K - Wellbore #1 - Design #1 | 15,200.00 | 7,095.31 | 1,086.05 | 732.00 | 3.067 | ES |
| EXIST VERT UPRC #9-5K - Wellbore #1 - Design #1 | 15,300.00 | 7,095.05 | 1,091.92 | 735.12 | 3.060 | SF |
| EXIST VERT UPRC #9-6K - Wellbore #1 - Design #1 | 13,859.28 | 7,097.82 | 1,015.47 | 698.04 | 3.199 | CC |
| EXIST VERT UPRC #9-6K - Wellbore #1 - Design #1 | 13,900.00 | 7,097.71 | 1,016.28 | 697.75 | 3.190 | ES, SF |
| EXIST VERT UPRC #9-9K - Wellbore #1 - Design #1 | 500.00 | 459.00 | 2,401.98 | 2,392.52 | 253.796 | CC |
| EXIST VERT UPRC #9-9K - Wellbore #1 - Design #1 | 11,400.00 | 7,114.26 | 2,408.53 | 2,156.43 | 9.554 | ES |
| EXIST VERT UPRC #9-9K - Wellbore #1 - Design #1 | 11,900.00 | 7,112.95 | 2,476.93 | 2,211.85 | 9.344 | SF |
| EXIST VERT UPRR 21 PAN AM UTL #1 - Wellbore #1 - | 11,945.14 | 7,103.83 | 145.65 | -120.54 | 0.547 | Level 1, CC, ES, SF |

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