

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Rieder 18Q-421**

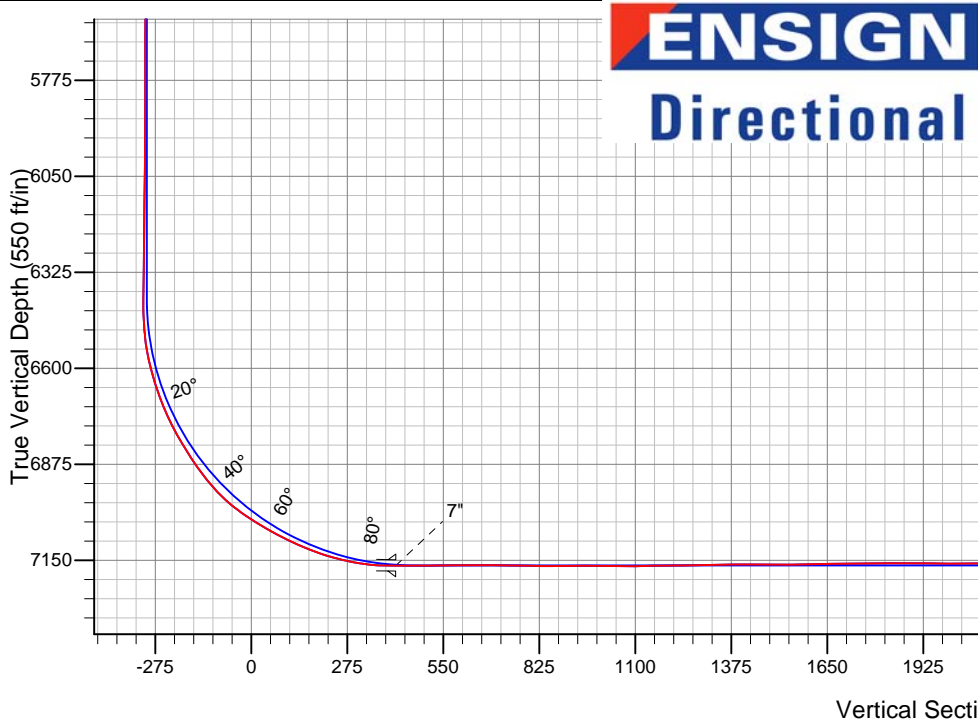
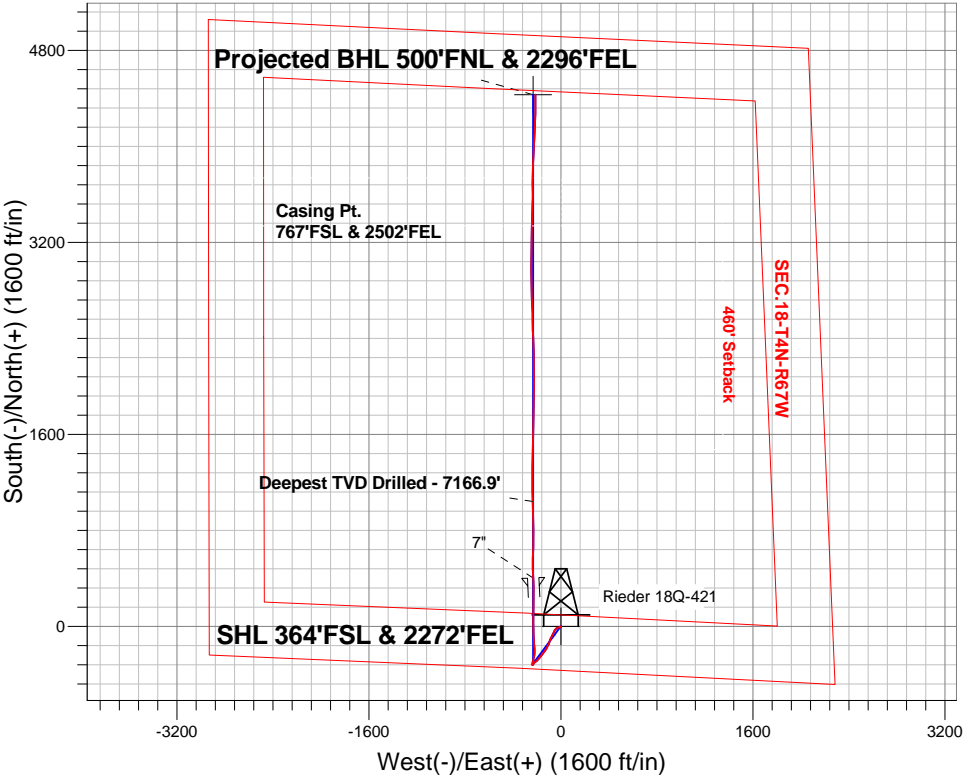
Surface Location: Rieder 4N67W18Q Pad Sec.18-T4N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4812.0

| | | | | | | |
|---|-------|------------|------------|-----------|-------------|------|
| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Slot |
| 0.0 | 0.0 | 1355266.28 | 3158621.27 | 40.307210 | -104.931240 | |
| Ensign Rig 134 RKB - 13' WELL @ 4825.0ft (Ensign Rig 134 RKB - 13') | | | | | | |

FINAL SURVEY

Projected Bottom Hole Location
11630'MD 7118'TVD 4430'N & 213'W of SHL
89.6 degree Incl @ 359.3 degree AZM



| | | | |
|--|-------------|--------|------------------------------|
| Rieder 4N67W18Q Pad Sec.18-T4N-R67W Rieder 18Q-421 Wellbore #1 | ANNOTATIONS | | |
| | TVD | MD | Annotation |
| | 7166.9 | 8239.0 | Deepest TVD Drilled - 7166.9 |

LEGEND

- Rieder 18Q-421, Wellbore #1, Plan #3 (5-7-15) V0
- Wellbore #1
- Survey #1

BHL 500'FNL & 2296'FEL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.18-T4N-R67W

Rieder 4N67W18Q Pad Sec.18-T4N-R67W

Rieder 18Q-421

Wellbore #1

Survey: Survey #1

Standard Survey Report

18 May, 2015

| | | | |
|------------------|---|-------------------------------------|--|
| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Rieder 18Q-421 |
| Project: | SEC.18-T4N-R67W | TVD Reference: | WELL @ 4825.0ft (Ensign Rig 134 RKB - 13') |
| Site: | Rieder 4N67W18Q Pad Sec.18-T4N-R67W | MD Reference: | WELL @ 4825.0ft (Ensign Rig 134 RKB - 13') |
| Well: | Rieder 18Q-421 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

| | | | |
|--------------------|----------------------------------|----------------------|-----------------------------|
| Project | SEC.18-T4N-R67W, Weld County, CO | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | Using Well Reference Point |
| Map Zone: | Colorado Northern Zone | | Using geodetic scale factor |

| | | | | | |
|-----------------------|-------------------------------------|--------------|----------------|-------------------|-------------|
| Site | Rieder 4N67W18Q Pad Sec.18-T4N-R67W | | | | |
| Site Position: | | Northing: | 1,355,266.69ft | Latitude: | 40.307210 |
| From: | Lat/Long | Easting: | 3,158,679.84ft | Longitude: | -104.931030 |
| Position Uncertainty: | 0.0 ft | Slot Radius: | " | Grid Convergence: | 0.37 ° |

| | | | | | | |
|----------------------|----------------|--------|---------------------|-----------------|---------------|-------------|
| Well | Rieder 18Q-421 | | | | | |
| Well Position | +N-S | 0.0 ft | Northing: | 1,355,266.28 ft | Latitude: | 40.307210 |
| | +E-W | 0.0 ft | Easting: | 3,158,621.27 ft | Longitude: | -104.931240 |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: | ft | Ground Level: | 4,812.0 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Wellbore #1 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 5/7/2015 | 8.42 | 66.81 | 52,655 |

| | | | | | |
|--------------------------|------------------------------|-------------------|-------------------|----------------------|-----|
| Design | Wellbore #1 | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) | |
| | 0.0 | 0.0 | 0.0 | 357.01 | |

| | | | | | |
|-----------------------|-----------------------|--------------------------|------------------|--------------------|--|
| Survey Program | Date 5/18/2015 | | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 106.0 | 11,630.0 | Survey #1 (Wellbore #1) | MWD | MWD - Standard | |

| | | | | | | | | | | |
|-----------------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|------------------------------|-----------------------------|----------------------------|--|
| Survey | | | | | | | | | | |
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | |
| 1.0 | 0.00 | 191.40 | 1.0 | 0.0 | 0.0 | 0.0 | 0.47 | 0.47 | 0.00 | |
| SHL 364'FSL & 2272'FEL | | | | | | | | | | |
| 106.0 | 0.50 | 191.40 | 106.0 | -0.5 | -0.1 | -0.4 | 0.47 | 0.47 | 0.00 | |
| 167.0 | 0.70 | 166.60 | 167.0 | -1.1 | -0.1 | -1.1 | 0.53 | 0.33 | -40.66 | |
| 260.0 | 0.80 | 157.70 | 260.0 | -2.2 | 0.3 | -2.2 | 0.16 | 0.11 | -9.57 | |
| 352.0 | 0.90 | 144.50 | 352.0 | -3.4 | 1.0 | -3.5 | 0.24 | 0.11 | -14.35 | |
| 444.0 | 1.20 | 139.60 | 444.0 | -4.7 | 2.0 | -4.8 | 0.34 | 0.33 | -5.33 | |
| 537.0 | 0.20 | 88.60 | 537.0 | -5.5 | 2.8 | -5.6 | 1.17 | -1.08 | -54.84 | |
| 629.0 | 0.30 | 17.20 | 629.0 | -5.2 | 3.1 | -5.4 | 0.33 | 0.11 | -77.61 | |
| 722.0 | 0.20 | 355.80 | 722.0 | -4.8 | 3.1 | -5.0 | 0.15 | -0.11 | -23.01 | |
| 814.0 | 0.00 | 54.30 | 814.0 | -4.7 | 3.1 | -4.8 | 0.22 | -0.22 | 0.00 | |

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|------------------|---|-------------------------------------|--|
| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Rieder 18Q-421 |
| Project: | SEC.18-T4N-R67W | TVD Reference: | WELL @ 4825.0ft (Ensign Rig 134 RKB - 13') |
| Site: | Rieder 4N67W18Q Pad Sec.18-T4N-R67W | MD Reference: | WELL @ 4825.0ft (Ensign Rig 134 RKB - 13') |
| Well: | Rieder 18Q-421 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 893.0 | 0.40 | 210.40 | 893.0 | -4.9 | 3.0 | -5.1 | 0.51 | 0.51 | 0.00 |
| 1,109.0 | 1.00 | 247.50 | 1,108.9 | -6.3 | 0.8 | -6.3 | 0.33 | 0.28 | 17.18 |
| 1,294.0 | 0.40 | 299.70 | 1,293.9 | -6.6 | -1.2 | -6.5 | 0.44 | -0.32 | 28.22 |
| 1,386.0 | 0.40 | 47.30 | 1,385.9 | -6.2 | -1.3 | -6.1 | 0.70 | 0.00 | 116.96 |
| 1,478.0 | 2.40 | 257.30 | 1,477.9 | -6.4 | -2.9 | -6.3 | 2.99 | 2.17 | -163.04 |
| 1,571.0 | 4.00 | 257.20 | 1,570.7 | -7.6 | -8.0 | -7.1 | 1.72 | 1.72 | -0.11 |
| 1,663.0 | 3.50 | 261.50 | 1,662.6 | -8.7 | -13.9 | -8.0 | 0.62 | -0.54 | 4.67 |
| 1,756.0 | 5.60 | 260.10 | 1,755.3 | -9.9 | -21.1 | -8.8 | 2.26 | 2.26 | -1.51 |
| 1,879.0 | 6.70 | 235.90 | 1,877.6 | -14.9 | -33.0 | -13.2 | 2.27 | 0.89 | -19.67 |
| 2,053.0 | 8.40 | 212.70 | 2,050.1 | -31.3 | -48.3 | -28.8 | 1.99 | 0.98 | -13.33 |
| 2,156.0 | 9.40 | 204.90 | 2,151.9 | -45.3 | -55.9 | -42.3 | 1.52 | 0.97 | -7.57 |
| 2,280.0 | 8.50 | 209.50 | 2,274.3 | -62.5 | -64.7 | -59.0 | 0.93 | -0.73 | 3.71 |
| 2,342.0 | 8.90 | 207.10 | 2,335.6 | -70.7 | -69.1 | -67.0 | 0.87 | 0.65 | -3.87 |
| 2,496.0 | 7.50 | 204.80 | 2,488.1 | -90.4 | -78.7 | -86.2 | 0.93 | -0.91 | -1.49 |
| 2,591.0 | 8.00 | 203.20 | 2,582.2 | -102.2 | -84.0 | -97.6 | 0.57 | 0.53 | -1.68 |
| 2,687.0 | 7.60 | 199.50 | 2,677.3 | -114.3 | -88.7 | -109.5 | 0.67 | -0.42 | -3.85 |
| 2,782.0 | 7.70 | 197.90 | 2,771.5 | -126.3 | -92.8 | -121.2 | 0.25 | 0.11 | -1.68 |
| 2,877.0 | 7.70 | 196.70 | 2,865.6 | -138.4 | -96.5 | -133.2 | 0.17 | 0.00 | -1.26 |
| 3,004.0 | 8.10 | 213.00 | 2,991.4 | -154.1 | -103.9 | -148.4 | 1.79 | 0.31 | 12.83 |
| 3,099.0 | 7.40 | 207.20 | 3,085.5 | -165.1 | -110.3 | -159.1 | 1.10 | -0.74 | -6.11 |
| 3,195.0 | 7.40 | 204.90 | 3,180.7 | -176.2 | -115.7 | -169.9 | 0.31 | 0.00 | -2.40 |
| 3,290.0 | 6.90 | 203.50 | 3,275.0 | -187.0 | -120.6 | -180.5 | 0.56 | -0.53 | -1.47 |
| 3,385.0 | 6.70 | 223.60 | 3,369.3 | -196.3 | -126.7 | -189.4 | 2.50 | -0.21 | 21.16 |
| 3,481.0 | 6.50 | 217.80 | 3,464.7 | -204.6 | -133.9 | -197.3 | 0.72 | -0.21 | -6.04 |
| 3,576.0 | 6.20 | 215.50 | 3,559.1 | -213.0 | -140.1 | -205.4 | 0.41 | -0.32 | -2.42 |
| 3,734.0 | 7.70 | 218.80 | 3,716.0 | -228.2 | -151.7 | -220.0 | 0.98 | 0.95 | 2.09 |
| 3,830.0 | 7.80 | 218.10 | 3,811.1 | -238.4 | -159.8 | -229.7 | 0.14 | 0.10 | -0.73 |
| 3,925.0 | 7.40 | 216.40 | 3,905.2 | -248.4 | -167.4 | -239.3 | 0.48 | -0.42 | -1.79 |
| 4,020.0 | 7.10 | 214.30 | 3,999.5 | -258.1 | -174.3 | -248.7 | 0.42 | -0.32 | -2.21 |
| 4,115.0 | 7.10 | 225.90 | 4,093.8 | -267.1 | -181.9 | -257.2 | 1.51 | 0.00 | 12.21 |
| 4,211.0 | 6.90 | 225.70 | 4,189.1 | -275.2 | -190.2 | -264.9 | 0.21 | -0.21 | -0.21 |
| 4,306.0 | 6.30 | 222.30 | 4,283.4 | -283.1 | -197.8 | -272.4 | 0.75 | -0.63 | -3.58 |
| 4,401.0 | 6.00 | 217.60 | 4,377.9 | -290.9 | -204.4 | -279.8 | 0.62 | -0.32 | -4.95 |
| 4,496.0 | 4.70 | 243.80 | 4,472.5 | -296.5 | -210.9 | -285.1 | 2.88 | -1.37 | 27.58 |
| 4,591.0 | 4.20 | 239.40 | 4,567.2 | -300.0 | -217.4 | -288.2 | 0.64 | -0.53 | -4.63 |
| 4,718.0 | 4.00 | 237.10 | 4,693.9 | -304.8 | -225.1 | -292.6 | 0.20 | -0.16 | -1.81 |
| 4,813.0 | 2.00 | 236.40 | 4,788.7 | -307.5 | -229.3 | -295.1 | 2.11 | -2.11 | -0.74 |
| 4,909.0 | 1.40 | 295.10 | 4,884.7 | -307.9 | -231.7 | -295.4 | 1.82 | -0.63 | 61.15 |
| 5,004.0 | 1.20 | 159.20 | 4,979.7 | -308.4 | -232.4 | -295.8 | 2.54 | -0.21 | -143.05 |
| 5,099.0 | 0.90 | 156.40 | 5,074.7 | -310.0 | -231.8 | -297.5 | 0.32 | -0.32 | -2.95 |
| 5,194.0 | 0.80 | 148.00 | 5,169.7 | -311.2 | -231.1 | -298.7 | 0.17 | -0.11 | -8.84 |
| 5,289.0 | 0.60 | 180.70 | 5,264.6 | -312.3 | -230.8 | -299.8 | 0.46 | -0.21 | 34.42 |
| 5,385.0 | 1.00 | 183.00 | 5,360.6 | -313.6 | -230.8 | -301.1 | 0.42 | 0.42 | 2.40 |
| 5,480.0 | 0.40 | 180.00 | 5,455.6 | -314.8 | -230.9 | -302.3 | 0.63 | -0.63 | -3.16 |
| 5,575.0 | 0.60 | 121.40 | 5,550.6 | -315.4 | -230.4 | -302.9 | 0.55 | 0.21 | -61.68 |
| 5,671.0 | 0.10 | 59.20 | 5,646.6 | -315.6 | -229.9 | -303.2 | 0.58 | -0.52 | -64.79 |
| 5,829.0 | 0.40 | 247.30 | 5,804.6 | -315.7 | -230.3 | -303.3 | 0.32 | 0.19 | -108.80 |
| 5,956.0 | 0.60 | 215.10 | 5,931.6 | -316.4 | -231.1 | -304.0 | 0.27 | 0.16 | -25.35 |
| 6,051.0 | 0.80 | 238.30 | 6,026.6 | -317.2 | -232.0 | -304.7 | 0.36 | 0.21 | 24.42 |
| 6,147.0 | 0.90 | 228.30 | 6,122.6 | -318.1 | -233.1 | -305.5 | 0.19 | 0.10 | -10.42 |
| 6,242.0 | 1.10 | 224.30 | 6,217.6 | -319.2 | -234.3 | -306.5 | 0.22 | 0.21 | -4.21 |
| 6,337.0 | 1.10 | 228.50 | 6,312.6 | -320.5 | -235.6 | -307.7 | 0.08 | 0.00 | 4.42 |
| 6,430.0 | 1.30 | 239.00 | 6,405.5 | -321.6 | -237.2 | -308.8 | 0.32 | 0.22 | 11.29 |
| 6,528.0 | 5.50 | 13.20 | 6,503.4 | -317.6 | -237.1 | -304.8 | 6.61 | 4.29 | 136.94 |

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|------------------|---|-------------------------------------|--|
| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Rieder 18Q-421 |
| Project: | SEC.18-T4N-R67W | TVD Reference: | WELL @ 4825.0ft (Ensign Rig 134 RKB - 13') |
| Site: | Rieder 4N67W18Q Pad Sec.18-T4N-R67W | MD Reference: | WELL @ 4825.0ft (Ensign Rig 134 RKB - 13') |
| Well: | Rieder 18Q-421 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

| Survey | | | | | | | | | |
|-------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 6,623.0 | 15.10 | 10.00 | 6,596.8 | -300.9 | -233.9 | -288.3 | 10.12 | 10.11 | -3.37 |
| 6,719.0 | 20.80 | 14.00 | 6,688.1 | -272.1 | -227.6 | -259.8 | 6.07 | 5.94 | 4.17 |
| 6,814.0 | 28.80 | 8.80 | 6,774.2 | -233.0 | -220.0 | -221.2 | 8.72 | 8.42 | -5.47 |
| 6,909.0 | 32.90 | 353.50 | 6,855.9 | -184.7 | -219.4 | -173.0 | 9.29 | 4.32 | -16.11 |
| 7,005.0 | 40.10 | 356.60 | 6,933.0 | -127.8 | -224.2 | -115.9 | 7.74 | 7.50 | 3.23 |
| 7,100.0 | 52.00 | 359.10 | 6,998.9 | -59.6 | -226.6 | -47.7 | 12.67 | 12.53 | 2.63 |
| 7,195.0 | 59.70 | 358.80 | 7,052.2 | 19.0 | -228.1 | 30.8 | 8.11 | 8.11 | -0.32 |
| 7,291.0 | 64.40 | 359.50 | 7,097.1 | 103.7 | -229.3 | 115.5 | 4.94 | 4.90 | 0.73 |
| 7,386.0 | 71.80 | 2.60 | 7,132.6 | 191.8 | -227.6 | 203.4 | 8.36 | 7.79 | 3.26 |
| 7,481.0 | 79.20 | 359.80 | 7,156.3 | 283.7 | -225.7 | 295.0 | 8.29 | 7.79 | -2.95 |
| 7,562.0 | 88.40 | 356.60 | 7,165.1 | 364.0 | -228.3 | 375.5 | 12.02 | 11.36 | -3.95 |
| 7,601.0 | 89.31 | 357.40 | 7,165.8 | 403.0 | -230.3 | 414.5 | 3.11 | 2.34 | 2.06 |
| 7" | | | | | | | | | |
| 7,669.0 | 90.90 | 358.80 | 7,165.7 | 470.9 | -232.6 | 482.4 | 3.11 | 2.34 | 2.06 |
| 7,764.0 | 90.30 | 1.20 | 7,164.7 | 565.9 | -232.6 | 577.3 | 2.60 | -0.63 | 2.53 |
| 7,859.0 | 90.00 | 1.70 | 7,164.5 | 660.9 | -230.2 | 672.0 | 0.61 | -0.32 | 0.53 |
| 7,954.0 | 88.50 | 359.80 | 7,165.7 | 755.9 | -228.9 | 766.8 | 2.55 | -1.58 | -2.00 |
| 8,050.0 | 90.60 | 359.10 | 7,166.5 | 851.9 | -229.9 | 862.7 | 2.31 | 2.19 | -0.73 |
| 8,145.0 | 89.70 | 358.90 | 7,166.2 | 946.8 | -231.5 | 957.6 | 0.97 | -0.95 | -0.21 |
| 8,239.0 | 89.50 | 358.20 | 7,166.9 | 1,040.8 | -233.9 | 1,051.6 | 0.77 | -0.21 | -0.74 |
| Deepest TVD Drilled - 7166.9' | | | | | | | | | |
| 8,335.0 | 91.10 | 359.30 | 7,166.4 | 1,136.8 | -236.0 | 1,147.5 | 2.02 | 1.67 | 1.15 |
| 8,430.0 | 90.80 | 0.30 | 7,164.8 | 1,231.8 | -236.3 | 1,242.4 | 1.10 | -0.32 | 1.05 |
| 8,525.0 | 91.20 | 1.00 | 7,163.1 | 1,326.7 | -235.2 | 1,337.2 | 0.85 | 0.42 | 0.74 |
| 8,620.0 | 89.90 | 1.00 | 7,162.2 | 1,421.7 | -233.6 | 1,432.0 | 1.37 | -1.37 | 0.00 |
| 8,715.0 | 89.40 | 0.30 | 7,162.8 | 1,516.7 | -232.5 | 1,526.8 | 0.91 | -0.53 | -0.74 |
| 8,811.0 | 92.20 | 1.70 | 7,161.5 | 1,612.7 | -230.8 | 1,622.5 | 3.26 | 2.92 | 1.46 |
| 8,906.0 | 90.60 | 1.60 | 7,159.2 | 1,707.6 | -228.1 | 1,717.2 | 1.69 | -1.68 | -0.11 |
| 9,001.0 | 89.90 | 0.90 | 7,158.7 | 1,802.6 | -226.0 | 1,811.9 | 1.04 | -0.74 | -0.74 |
| 9,096.0 | 89.50 | 1.40 | 7,159.2 | 1,897.6 | -224.1 | 1,906.7 | 0.67 | -0.42 | 0.53 |
| 9,191.0 | 89.80 | 0.00 | 7,159.8 | 1,992.6 | -223.0 | 2,001.5 | 1.51 | 0.32 | -1.47 |
| 9,286.0 | 91.30 | 359.10 | 7,158.9 | 2,087.5 | -223.7 | 2,096.4 | 1.84 | 1.58 | -0.95 |
| 9,381.0 | 88.50 | 358.80 | 7,159.1 | 2,182.5 | -225.4 | 2,191.3 | 2.96 | -2.95 | -0.32 |
| 9,477.0 | 90.20 | 358.60 | 7,160.2 | 2,278.5 | -227.6 | 2,287.3 | 1.78 | 1.77 | -0.21 |
| 9,572.0 | 90.50 | 358.00 | 7,159.6 | 2,373.4 | -230.4 | 2,382.2 | 0.71 | 0.32 | -0.63 |
| 9,667.0 | 91.40 | 359.10 | 7,158.0 | 2,468.4 | -232.8 | 2,477.2 | 1.50 | 0.95 | 1.16 |
| 9,762.0 | 90.20 | 359.60 | 7,156.7 | 2,563.4 | -233.9 | 2,572.1 | 1.37 | -1.26 | 0.53 |
| 9,857.0 | 88.20 | 357.30 | 7,158.0 | 2,658.3 | -236.5 | 2,667.0 | 3.21 | -2.11 | -2.42 |
| 9,952.0 | 90.70 | 357.20 | 7,158.9 | 2,753.2 | -241.0 | 2,762.0 | 2.63 | 2.63 | -0.11 |
| 10,048.0 | 92.50 | 358.80 | 7,156.2 | 2,849.1 | -244.4 | 2,858.0 | 2.51 | 1.88 | 1.67 |
| 10,143.0 | 92.30 | 359.10 | 7,152.3 | 2,944.0 | -246.1 | 2,952.8 | 0.38 | -0.21 | 0.32 |
| 10,238.0 | 92.20 | 0.00 | 7,148.5 | 3,038.9 | -246.9 | 3,047.7 | 0.95 | -0.11 | 0.95 |
| 10,333.0 | 92.40 | 1.70 | 7,144.7 | 3,133.8 | -245.5 | 3,142.4 | 1.80 | 0.21 | 1.79 |
| 10,428.0 | 90.90 | 1.70 | 7,142.0 | 3,228.7 | -242.7 | 3,237.0 | 1.58 | -1.58 | 0.00 |
| 10,523.0 | 90.00 | 1.20 | 7,141.2 | 3,323.7 | -240.2 | 3,331.7 | 1.08 | -0.95 | -0.53 |
| 10,618.0 | 90.10 | 2.10 | 7,141.1 | 3,418.7 | -237.5 | 3,426.4 | 0.95 | 0.11 | 0.95 |
| 10,714.0 | 90.20 | 2.30 | 7,140.9 | 3,514.6 | -233.8 | 3,522.0 | 0.23 | 0.10 | 0.21 |
| 10,809.0 | 91.90 | 358.20 | 7,139.2 | 3,609.6 | -233.4 | 3,616.8 | 4.67 | 1.79 | -4.32 |
| 10,904.0 | 91.80 | 0.20 | 7,136.1 | 3,704.5 | -234.7 | 3,711.7 | 2.11 | -0.11 | 2.11 |
| 10,999.0 | 92.30 | 1.90 | 7,132.7 | 3,799.4 | -233.0 | 3,806.4 | 1.86 | 0.53 | 1.79 |
| 11,095.0 | 91.20 | 3.10 | 7,129.8 | 3,895.3 | -228.8 | 3,901.9 | 1.70 | -1.15 | 1.25 |
| 11,190.0 | 90.80 | 1.20 | 7,128.1 | 3,990.2 | -225.2 | 3,996.5 | 2.04 | -0.42 | -2.00 |
| 11,285.0 | 92.20 | 3.70 | 7,125.6 | 4,085.1 | -221.2 | 4,091.0 | 3.02 | 1.47 | 2.63 |

| | | | |
|------------------|---|-------------------------------------|--|
| Company: | PETROLEUM DEVELOPMENT CORP Weld County CO | Local Co-ordinate Reference: | Well Rieder 18Q-421 |
| Project: | SEC.18-T4N-R67W | TVD Reference: | WELL @ 4825.0ft (Ensign Rig 134 RKB - 13') |
| Site: | Rieder 4N67W18Q Pad Sec.18-T4N-R67W | MD Reference: | WELL @ 4825.0ft (Ensign Rig 134 RKB - 13') |
| Well: | Rieder 18Q-421 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

| Survey | | | | | | | | | |
|------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 11,380.0 | 93.30 | 3.30 | 7,121.1 | 4,179.8 | -215.4 | 4,185.3 | 1.23 | 1.16 | -0.42 |
| 11,476.0 | 90.70 | 0.70 | 7,117.7 | 4,275.6 | -212.1 | 4,280.9 | 3.83 | -2.71 | -2.71 |
| 11,571.0 | 89.70 | 359.50 | 7,117.4 | 4,370.6 | -211.9 | 4,375.7 | 1.64 | -1.05 | -1.26 |
| 11,579.0 | 89.60 | 359.30 | 7,117.4 | 4,378.6 | -212.0 | 4,383.7 | 2.80 | -1.25 | -2.50 |
| 11,630.0 | 89.60 | 359.30 | 7,117.8 | 4,429.6 | -212.6 | 4,434.7 | 0.00 | 0.00 | 0.00 |
| BHL 500'FNL & 2315'FEL | | | | | | | | | |

| Casing Points | | | | |
|---------------------|---------------------|------|---------------------|-------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (") | Hole Diameter (") |
| 7,601.0 | 7,165.8 | 7" | 7 | 7-1/2 |

| Survey Annotations | | | | |
|---------------------|---------------------|------------------------------|------------|-------------------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | +E/-W (ft) | Comment |
| 8,239.0 | 7,166.9 | 1,040.8 | -233.9 | Deepest TVD Drilled - 7166.9' |

Checked By: _____ Approved By: _____ Date: _____