

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_COLFER PAD (Sec 34, Township 2N, Range 65W)

COLFER 13C-34HZ

COLFER 13C-34HZ

Plan: COLFER 13C-34HZ (wp01)

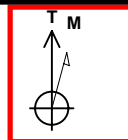
Standard Planning Report

06 June, 2011





Vest(-)/East(+) (1500 ft/in)



Azimuths to True North
Magnetic North: 8.78°
Magnetic Field
Strength: 52987.3snT
Dip Angle: 66.83°
Date: 6/6/2011
Model: IGRF2010

Project: COLORADO NORTHERN ZONE - 83
Site: WELD_COLFER PAD (Sec 34, Township 2N, Range 65W)
Well: COLFER 13C-34HZ
Wellbore: COLFER 13C-34HZ
Section:
SHL:
Design: COLFER 13C-34HZ (wp01)
Latitude: 40.100997
Longitude: -104.657180
GL: 4943.00
KB: 17' RKB + 4943' GL @ 4960.00ft

WELL DETAILS: COLFER 13C-34HZ

| +N/-S | +E/-W | Northing | Ground Level: Easting | 4943.00 Latitude | Longitude | Slot |
|-------|-------|------------|--------------------------|---------------------|-------------|------|
| 0.00 | 0.00 | 1280758.02 | 3235765.82 | 40.100997 | -104.657180 | |

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude | Shape |
|---------------------|---------|----------|--------|-----------|-------------|-------|
| COLFER 13C-34HZ BHL | 7268.00 | -4330.51 | 324.83 | 40.089109 | -104.656019 | Point |

SECTION DETAILS

| MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Target |
|----------|-------|--------|---------|----------|--------|-------|--------|---------|---------------------|
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1350.00 | 0.00 | 0.00 | 1350.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1633.86 | 5.68 | 33.73 | 1633.39 | 11.69 | 7.80 | 2.00 | 33.73 | -11.07 | |
| 6681.11 | 5.68 | 33.73 | 6655.89 | 426.91 | 285.07 | 0.00 | 0.00 | -404.39 | |
| 7629.19 | 90.09 | 179.94 | 7275.00 | -145.00 | 320.00 | 10.00 | 146.07 | 168.53 | |
| 7629.53 | 90.10 | 179.93 | 7275.00 | -145.34 | 320.00 | 1.00 | -34.62 | 168.87 | |
| 11814.72 | 90.10 | 179.93 | 7268.00 | -4330.51 | 324.83 | 0.00 | 0.00 | 4342.68 | COLFER 13C-34HZ BHL |

CASING DETAILS

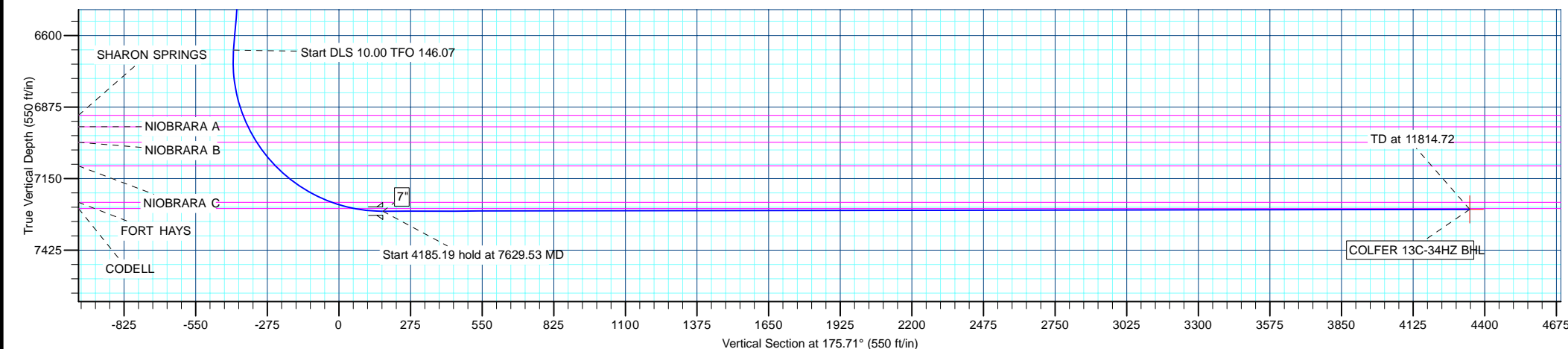
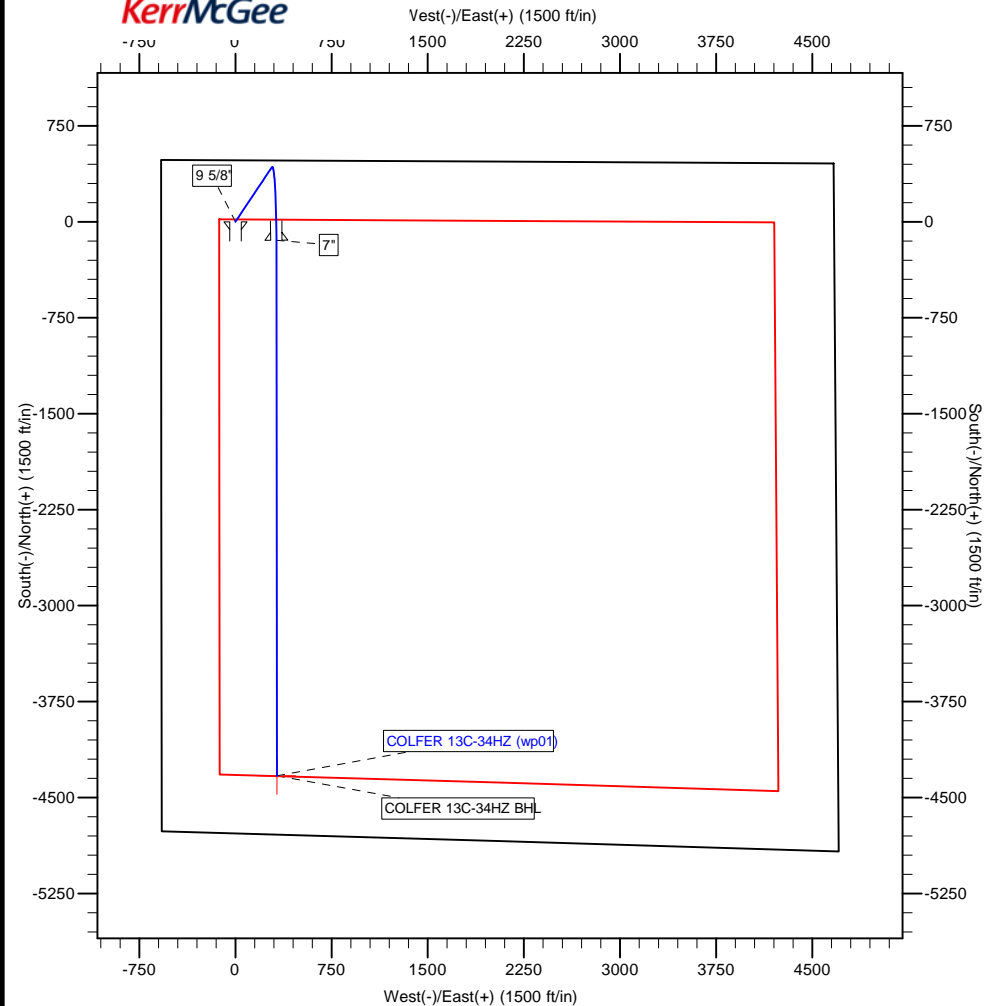
| TVD | MD | Name | Size |
|---------|---------|--------|-------|
| 1200.00 | 1200.00 | 9 5/8" | 9-5/8 |
| 7275.00 | 7629.19 | 7" | 7 |

FORMATION TOP DETAILS

| TVDPath | MDPath | Formation |
|---------|---------|----------------|
| 1079.00 | 1079.00 | FOX HILLS |
| 2900.00 | 2906.71 | PARKMAN |
| 4396.00 | 4410.08 | SUSSEX |
| 6907.00 | 6937.26 | SHARON SPRINGS |
| 6951.00 | 6985.26 | NIOBRARA A |
| 7010.00 | 7052.91 | NIOBRARA B |
| 7101.00 | 7169.21 | NIOBRARA C |
| 7241.00 | 7429.73 | FORT HAYS |
| 7265.00 | 7520.97 | CODELL |



Weatherford



| | | | |
|------------------|--|-------------------------------------|--------------------------------|
| Database: | edm5000p | Local Co-ordinate Reference: | Well COLFER 13C-34HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | 17' RKB + 4943' GL @ 4960.00ft |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | 17' RKB + 4943' GL @ 4960.00ft |
| Site: | WELD_COLFER PAD (Sec 34, Township 2N, Range 65W) | North Reference: | True |
| Well: | COLFER 13C-34HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | COLFER 13C-34HZ | | |
| Design: | COLFER 13C-34HZ (wp01) | | |

| | | | |
|--------------------|-----------------------------|----------------------|----------------|
| Project | COLORADO NORTHERN ZONE - 83 | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Northern Zone | | |

| Site | | | | | | WELD_COLFER PAD (Sec 34, Township 2N, Range 65W) | | | | | | | | | | | |
|-----------------------|--|--|-----------|--|--|--|--|--|-----------------|--|--|-------------------|--|--|-------------|--|--|
| Site Position: | | | Northing: | | | 1,280,758.26 ft | | | Latitude: | | | 40.100997 | | | | | |
| From: | | | Lat/Long | | | Easting: | | | 3,235,789.88 ft | | | Longitude: | | | -104.657094 | | |
| Position Uncertainty: | | | 0.00 ft | | | Slot Radius: | | | 0 " | | | Grid Convergence: | | | 0.54 | | |

| Well | COLFER 13C-34HZ | | | | | |
|----------------------|-----------------|-----------|---------------------|-----------------|---------------|-------------|
| Well Position | +N-S | -0.01 ft | Northing: | 1,280,758.02 ft | Latitude: | 40.100997 |
| | +E-W | -24.06 ft | Easting: | 3,235,765.82 ft | Longitude: | -104.657180 |
| Position Uncertainty | | 0.00 ft | Wellhead Elevation: | | Ground Level: | 4,943.00 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | COLFER 13C-34HZ | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 6/6/2011 | 8.78 | 66.83 | 52,987 |

| | | | | |
|--------------------------|------------------------------|-------------------|----------------------|----------------------|
| Design | COLFER 13C-34HZ (wp01) | | | |
| Audit Notes: | | | | |
| Version: | Phase: | PLAN | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) |
| | 0.00 | 0.00 | 0.00 | 175.71 |

| Plan Sections | | | | | | | | | | |
|----------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|----------------------|---------------------|---------|-----------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,350.00 | 0.00 | 0.00 | 1,350.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,633.86 | 5.68 | 33.73 | 1,633.39 | 11.69 | 7.80 | 2.00 | 2.00 | 0.00 | 33.73 | |
| 6,681.11 | 5.68 | 33.73 | 6,655.89 | 426.91 | 285.07 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7,629.19 | 90.09 | 179.94 | 7,275.00 | -145.00 | 320.00 | 10.00 | 8.90 | 15.42 | 146.07 | |
| 7,629.53 | 90.10 | 179.93 | 7,275.00 | -145.34 | 320.00 | 1.00 | 0.82 | -0.57 | -34.62 | |
| 11,814.72 | 90.10 | 179.93 | 7,268.00 | -4,330.51 | 324.83 | 0.00 | 0.00 | 0.00 | 0.00 | COLFER 13C-34HZ |

| | | | |
|------------------|--|-------------------------------------|--------------------------------|
| Database: | edm5000p | Local Co-ordinate Reference: | Well COLFER 13C-34HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | 17' RKB + 4943' GL @ 4960.00ft |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | 17' RKB + 4943' GL @ 4960.00ft |
| Site: | WELD_COLFER PAD (Sec 34, Township 2N, Range 65W) | North Reference: | True |
| Well: | COLFER 13C-34HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | COLFER 13C-34HZ | | |
| Design: | COLFER 13C-34HZ (wp01) | | |

| Planned Survey | | | | | | | | | |
|---|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 100.00 | 0.00 | 0.00 | 100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 300.00 | 0.00 | 0.00 | 300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 500.00 | 0.00 | 0.00 | 500.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 600.00 | 0.00 | 0.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 700.00 | 0.00 | 0.00 | 700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 800.00 | 0.00 | 0.00 | 800.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 900.00 | 0.00 | 0.00 | 900.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,000.00 | 0.00 | 0.00 | 1,000.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,079.00 | 0.00 | 0.00 | 1,079.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| FOX HILLS | | | | | | | | | |
| 1,100.00 | 0.00 | 0.00 | 1,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,200.00 | 0.00 | 0.00 | 1,200.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 5/8" | | | | | | | | | |
| 1,300.00 | 0.00 | 0.00 | 1,300.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,350.00 | 0.00 | 0.00 | 1,350.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Start Build 2.00 | | | | | | | | | |
| 1,400.00 | 1.00 | 33.73 | 1,400.00 | 0.36 | 0.24 | -0.34 | 2.00 | 2.00 | 0.00 |
| 1,500.00 | 3.00 | 33.73 | 1,499.93 | 3.27 | 2.18 | -3.09 | 2.00 | 2.00 | 0.00 |
| 1,600.00 | 5.00 | 33.73 | 1,599.68 | 9.07 | 6.05 | -8.59 | 2.00 | 2.00 | 0.00 |
| 1,633.86 | 5.68 | 33.73 | 1,633.39 | 11.69 | 7.80 | -11.07 | 2.00 | 2.00 | 0.00 |
| Start 5047.26 hold at 1633.86 MD | | | | | | | | | |
| 1,700.00 | 5.68 | 33.73 | 1,699.21 | 17.13 | 11.44 | -16.22 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 5.68 | 33.73 | 1,798.72 | 25.35 | 16.93 | -24.02 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 5.68 | 33.73 | 1,898.23 | 33.58 | 22.42 | -31.81 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 5.68 | 33.73 | 1,997.74 | 41.81 | 27.92 | -39.60 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 5.68 | 33.73 | 2,097.25 | 50.03 | 33.41 | -47.39 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 5.68 | 33.73 | 2,196.76 | 58.26 | 38.90 | -55.19 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 5.68 | 33.73 | 2,296.27 | 66.49 | 44.40 | -62.98 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 5.68 | 33.73 | 2,395.78 | 74.71 | 49.89 | -70.77 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 5.68 | 33.73 | 2,495.29 | 82.94 | 55.38 | -78.57 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 5.68 | 33.73 | 2,594.80 | 91.17 | 60.88 | -86.36 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 5.68 | 33.73 | 2,694.31 | 99.39 | 66.37 | -94.15 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 5.68 | 33.73 | 2,793.82 | 107.62 | 71.86 | -101.94 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 5.68 | 33.73 | 2,893.33 | 115.85 | 77.36 | -109.74 | 0.00 | 0.00 | 0.00 |
| 2,906.71 | 5.68 | 33.73 | 2,900.00 | 116.40 | 77.73 | -110.26 | 0.00 | 0.00 | 0.00 |
| PARKMAN | | | | | | | | | |
| 3,000.00 | 5.68 | 33.73 | 2,992.84 | 124.07 | 82.85 | -117.53 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 5.68 | 33.73 | 3,092.34 | 132.30 | 88.34 | -125.32 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 5.68 | 33.73 | 3,191.85 | 140.53 | 93.84 | -133.12 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 5.68 | 33.73 | 3,291.36 | 148.75 | 99.33 | -140.91 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 5.68 | 33.73 | 3,390.87 | 156.98 | 104.82 | -148.70 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 5.68 | 33.73 | 3,490.38 | 165.21 | 110.32 | -156.49 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 5.68 | 33.73 | 3,589.89 | 173.43 | 115.81 | -164.29 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 5.68 | 33.73 | 3,689.40 | 181.66 | 121.30 | -172.08 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 5.68 | 33.73 | 3,788.91 | 189.89 | 126.80 | -179.87 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 5.68 | 33.73 | 3,888.42 | 198.11 | 132.29 | -187.66 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 5.68 | 33.73 | 3,987.93 | 206.34 | 137.78 | -195.46 | 0.00 | 0.00 | 0.00 |
| 4,100.00 | 5.68 | 33.73 | 4,087.44 | 214.57 | 143.28 | -203.25 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 5.68 | 33.73 | 4,186.95 | 222.79 | 148.77 | -211.04 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 5.68 | 33.73 | 4,286.46 | 231.02 | 154.26 | -218.84 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|--|-------------------------------------|--------------------------------|
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| Company: | US ROCKIES REGION PLANNING | TVD Reference: | 17' RKB + 4943' GL @ 4960.00ft |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | 17' RKB + 4943' GL @ 4960.00ft |
| Site: | WELD_COLFER PAD (Sec 34, Township 2N, Range 65W) | North Reference: | True |
| Well: | COLFER 13C-34HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | COLFER 13C-34HZ | | |
| Design: | COLFER 13C-34HZ (wp01) | | |

| Planned Survey | | | | | | | | | |
|-----------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 4,400.00 | 5.68 | 33.73 | 4,385.97 | 239.25 | 159.76 | -226.63 | 0.00 | 0.00 | 0.00 |
| 4,410.08 | 5.68 | 33.73 | 4,396.00 | 240.08 | 160.31 | -227.41 | 0.00 | 0.00 | 0.00 |
| SUSSEX | | | | | | | | | |
| 4,500.00 | 5.68 | 33.73 | 4,485.48 | 247.48 | 165.25 | -234.42 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 5.68 | 33.73 | 4,584.99 | 255.70 | 170.74 | -242.21 | 0.00 | 0.00 | 0.00 |
| 4,700.00 | 5.68 | 33.73 | 4,684.50 | 263.93 | 176.24 | -250.01 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 5.68 | 33.73 | 4,784.01 | 272.16 | 181.73 | -257.80 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 5.68 | 33.73 | 4,883.52 | 280.38 | 187.22 | -265.59 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 5.68 | 33.73 | 4,983.03 | 288.61 | 192.72 | -273.38 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 5.68 | 33.73 | 5,082.54 | 296.84 | 198.21 | -281.18 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 5.68 | 33.73 | 5,182.04 | 305.06 | 203.70 | -288.97 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 5.68 | 33.73 | 5,281.55 | 313.29 | 209.20 | -296.76 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 5.68 | 33.73 | 5,381.06 | 321.52 | 214.69 | -304.56 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 5.68 | 33.73 | 5,480.57 | 329.74 | 220.18 | -312.35 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 5.68 | 33.73 | 5,580.08 | 337.97 | 225.68 | -320.14 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 5.68 | 33.73 | 5,679.59 | 346.20 | 231.17 | -327.93 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 5.68 | 33.73 | 5,779.10 | 354.42 | 236.67 | -335.73 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 5.68 | 33.73 | 5,878.61 | 362.65 | 242.16 | -343.52 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 5.68 | 33.73 | 5,978.12 | 370.88 | 247.65 | -351.31 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 5.68 | 33.73 | 6,077.63 | 379.10 | 253.15 | -359.11 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 5.68 | 33.73 | 6,177.14 | 387.33 | 258.64 | -366.90 | 0.00 | 0.00 | 0.00 |
| 6,300.00 | 5.68 | 33.73 | 6,276.65 | 395.56 | 264.13 | -374.69 | 0.00 | 0.00 | 0.00 |
| 6,400.00 | 5.68 | 33.73 | 6,376.16 | 403.78 | 269.63 | -382.48 | 0.00 | 0.00 | 0.00 |
| 6,500.00 | 5.68 | 33.73 | 6,475.67 | 412.01 | 275.12 | -390.28 | 0.00 | 0.00 | 0.00 |
| 6,600.00 | 5.68 | 33.73 | 6,575.18 | 420.24 | 280.61 | -398.07 | 0.00 | 0.00 | 0.00 |
| 6,681.11 | 5.68 | 33.73 | 6,655.89 | 426.91 | 285.07 | -404.39 | 0.00 | 0.00 | 0.00 |
| Start DLS 10.00 TFO 146.07 | | | | | | | | | |
| 6,700.00 | 4.24 | 48.13 | 6,674.71 | 428.15 | 286.11 | -405.55 | 10.00 | -7.59 | 76.24 |
| 6,800.00 | 7.84 | 156.24 | 6,774.36 | 424.37 | 291.62 | -401.37 | 10.00 | 3.60 | 108.11 |
| 6,900.00 | 17.45 | 169.80 | 6,871.84 | 403.32 | 297.04 | -379.97 | 10.00 | 9.62 | 13.56 |
| 6,937.26 | 21.13 | 171.70 | 6,907.00 | 391.17 | 299.00 | -367.71 | 10.00 | 9.86 | 5.10 |
| SHARON SPRINGS | | | | | | | | | |
| 6,985.26 | 25.88 | 173.38 | 6,951.00 | 372.19 | 301.45 | -348.60 | 10.00 | 9.90 | 3.51 |
| NIOBRARA A | | | | | | | | | |
| 7,000.00 | 27.34 | 173.79 | 6,964.18 | 365.63 | 302.19 | -342.00 | 10.00 | 9.92 | 2.75 |
| 7,052.91 | 32.60 | 174.97 | 7,010.00 | 339.33 | 304.76 | -315.58 | 10.00 | 9.94 | 2.23 |
| NIOBRARA B | | | | | | | | | |
| 7,100.00 | 37.29 | 175.77 | 7,048.59 | 312.45 | 306.92 | -288.62 | 10.00 | 9.95 | 1.69 |
| 7,169.21 | 44.18 | 176.67 | 7,101.00 | 267.41 | 309.88 | -243.48 | 10.00 | 9.96 | 1.30 |
| NIOBRARA C | | | | | | | | | |
| 7,200.00 | 47.25 | 177.00 | 7,122.49 | 245.41 | 311.09 | -221.45 | 10.00 | 9.97 | 1.08 |
| 7,300.00 | 57.23 | 177.89 | 7,183.65 | 166.52 | 314.57 | -142.53 | 10.00 | 9.98 | 0.89 |
| 7,400.00 | 67.21 | 178.60 | 7,230.20 | 78.20 | 317.25 | -54.25 | 10.00 | 9.98 | 0.71 |
| 7,429.73 | 70.18 | 178.79 | 7,241.00 | 50.51 | 317.88 | -26.59 | 10.00 | 9.98 | 0.64 |
| FORT HAYS | | | | | | | | | |
| 7,500.00 | 77.19 | 179.21 | 7,260.73 | -16.88 | 319.06 | 40.69 | 10.00 | 9.98 | 0.60 |
| 7,520.97 | 79.29 | 179.33 | 7,265.00 | -37.40 | 319.32 | 61.19 | 10.00 | 9.98 | 0.58 |
| CODELL | | | | | | | | | |
| 7,600.00 | 87.18 | 179.77 | 7,274.31 | -115.82 | 319.93 | 139.42 | 10.00 | 9.98 | 0.56 |
| 7,629.19 | 90.09 | 179.94 | 7,275.00 | -145.00 | 320.00 | 168.53 | 10.00 | 9.98 | 0.55 |
| 7" | | | | | | | | | |
| 7,629.53 | 90.10 | 179.93 | 7,275.00 | -145.34 | 320.00 | 168.87 | 1.09 | 0.94 | -0.55 |

| | | | |
|------------------|--|-------------------------------------|--------------------------------|
| Database: | edm5000p | Local Co-ordinate Reference: | Well COLFER 13C-34HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | 17' RKB + 4943' GL @ 4960.00ft |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | 17' RKB + 4943' GL @ 4960.00ft |
| Site: | WELD_COLFER PAD (Sec 34, Township 2N, Range 65W) | North Reference: | True |
| Well: | COLFER 13C-34HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | COLFER 13C-34HZ | | |
| Design: | COLFER 13C-34HZ (wp01) | | |

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Start 4185.19 hold at 7629.53 MD | | | | | | | | | |
| 7,700.00 | 90.10 | 179.93 | 7,274.88 | -215.81 | 320.08 | 239.14 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 90.10 | 179.93 | 7,274.71 | -315.81 | 320.20 | 338.87 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 90.10 | 179.93 | 7,274.55 | -415.81 | 320.31 | 438.60 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 90.10 | 179.93 | 7,274.38 | -515.80 | 320.43 | 538.33 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 90.10 | 179.93 | 7,274.21 | -615.80 | 320.54 | 638.06 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 90.10 | 179.93 | 7,274.05 | -715.80 | 320.66 | 737.78 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 90.10 | 179.93 | 7,273.88 | -815.80 | 320.77 | 837.51 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 90.10 | 179.93 | 7,273.71 | -915.80 | 320.89 | 937.24 | 0.00 | 0.00 | 0.00 |
| 8,500.00 | 90.10 | 179.93 | 7,273.54 | -1,015.80 | 321.01 | 1,036.97 | 0.00 | 0.00 | 0.00 |
| 8,600.00 | 90.10 | 179.93 | 7,273.38 | -1,115.80 | 321.12 | 1,136.70 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 90.10 | 179.93 | 7,273.21 | -1,215.80 | 321.24 | 1,236.43 | 0.00 | 0.00 | 0.00 |
| 8,800.00 | 90.10 | 179.93 | 7,273.04 | -1,315.80 | 321.35 | 1,336.15 | 0.00 | 0.00 | 0.00 |
| 8,900.00 | 90.10 | 179.93 | 7,272.87 | -1,415.80 | 321.47 | 1,435.88 | 0.00 | 0.00 | 0.00 |
| 9,000.00 | 90.10 | 179.93 | 7,272.71 | -1,515.80 | 321.58 | 1,535.61 | 0.00 | 0.00 | 0.00 |
| 9,100.00 | 90.10 | 179.93 | 7,272.54 | -1,615.80 | 321.70 | 1,635.34 | 0.00 | 0.00 | 0.00 |
| 9,200.00 | 90.10 | 179.93 | 7,272.37 | -1,715.80 | 321.81 | 1,735.07 | 0.00 | 0.00 | 0.00 |
| 9,300.00 | 90.10 | 179.93 | 7,272.21 | -1,815.80 | 321.93 | 1,834.80 | 0.00 | 0.00 | 0.00 |
| 9,400.00 | 90.10 | 179.93 | 7,272.04 | -1,915.80 | 322.04 | 1,934.52 | 0.00 | 0.00 | 0.00 |
| 9,500.00 | 90.10 | 179.93 | 7,271.87 | -2,015.80 | 322.16 | 2,034.25 | 0.00 | 0.00 | 0.00 |
| 9,600.00 | 90.10 | 179.93 | 7,271.70 | -2,115.80 | 322.28 | 2,133.98 | 0.00 | 0.00 | 0.00 |
| 9,700.00 | 90.10 | 179.93 | 7,271.54 | -2,215.80 | 322.39 | 2,233.71 | 0.00 | 0.00 | 0.00 |
| 9,800.00 | 90.10 | 179.93 | 7,271.37 | -2,315.80 | 322.51 | 2,333.44 | 0.00 | 0.00 | 0.00 |
| 9,900.00 | 90.10 | 179.93 | 7,271.20 | -2,415.80 | 322.62 | 2,433.17 | 0.00 | 0.00 | 0.00 |
| 10,000.00 | 90.10 | 179.93 | 7,271.04 | -2,515.80 | 322.74 | 2,532.89 | 0.00 | 0.00 | 0.00 |
| 10,100.00 | 90.10 | 179.93 | 7,270.87 | -2,615.80 | 322.85 | 2,632.62 | 0.00 | 0.00 | 0.00 |
| 10,200.00 | 90.10 | 179.93 | 7,270.70 | -2,715.80 | 322.97 | 2,732.35 | 0.00 | 0.00 | 0.00 |
| 10,300.00 | 90.10 | 179.93 | 7,270.53 | -2,815.80 | 323.08 | 2,832.08 | 0.00 | 0.00 | 0.00 |
| 10,400.00 | 90.10 | 179.93 | 7,270.37 | -2,915.80 | 323.20 | 2,931.81 | 0.00 | 0.00 | 0.00 |
| 10,500.00 | 90.10 | 179.93 | 7,270.20 | -3,015.80 | 323.32 | 3,031.54 | 0.00 | 0.00 | 0.00 |
| 10,600.00 | 90.10 | 179.93 | 7,270.03 | -3,115.80 | 323.43 | 3,131.26 | 0.00 | 0.00 | 0.00 |
| 10,700.00 | 90.10 | 179.93 | 7,269.86 | -3,215.80 | 323.55 | 3,230.99 | 0.00 | 0.00 | 0.00 |
| 10,800.00 | 90.10 | 179.93 | 7,269.70 | -3,315.80 | 323.66 | 3,330.72 | 0.00 | 0.00 | 0.00 |
| 10,900.00 | 90.10 | 179.93 | 7,269.53 | -3,415.80 | 323.78 | 3,430.45 | 0.00 | 0.00 | 0.00 |
| 11,000.00 | 90.10 | 179.93 | 7,269.36 | -3,515.80 | 323.89 | 3,530.18 | 0.00 | 0.00 | 0.00 |
| 11,100.00 | 90.10 | 179.93 | 7,269.20 | -3,615.80 | 324.01 | 3,629.90 | 0.00 | 0.00 | 0.00 |
| 11,200.00 | 90.10 | 179.93 | 7,269.03 | -3,715.80 | 324.12 | 3,729.63 | 0.00 | 0.00 | 0.00 |
| 11,300.00 | 90.10 | 179.93 | 7,268.86 | -3,815.80 | 324.24 | 3,829.36 | 0.00 | 0.00 | 0.00 |
| 11,400.00 | 90.10 | 179.93 | 7,268.69 | -3,915.80 | 324.35 | 3,929.09 | 0.00 | 0.00 | 0.00 |
| 11,500.00 | 90.10 | 179.93 | 7,268.53 | -4,015.80 | 324.47 | 4,028.82 | 0.00 | 0.00 | 0.00 |
| 11,600.00 | 90.10 | 179.93 | 7,268.36 | -4,115.80 | 324.59 | 4,128.55 | 0.00 | 0.00 | 0.00 |
| 11,700.00 | 90.10 | 179.93 | 7,268.19 | -4,215.80 | 324.70 | 4,228.27 | 0.00 | 0.00 | 0.00 |
| 11,800.00 | 90.10 | 179.93 | 7,268.02 | -4,315.80 | 324.82 | 4,328.00 | 0.00 | 0.00 | 0.00 |
| 11,814.72 | 90.10 | 179.93 | 7,268.00 | -4,330.51 | 324.83 | 4,342.68 | 0.00 | 0.00 | 0.00 |
| TD at 11814.72 - COLFER 13C-34HZ BHL | | | | | | | | | |

| | | | |
|------------------|--|-------------------------------------|--------------------------------|
| Database: | edm5000p | Local Co-ordinate Reference: | Well COLFER 13C-34HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | 17' RKB + 4943' GL @ 4960.00ft |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | 17' RKB + 4943' GL @ 4960.00ft |
| Site: | WELD_COLFER PAD (Sec 34, Township 2N, Range 65W) | North Reference: | True |
| Well: | COLFER 13C-34HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | COLFER 13C-34HZ | | |
| Design: | COLFER 13C-34HZ (wp01) | | |

Design Targets

| Target Name | Dip Angle | Dip Dir. | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---------------------------|-----------|----------|----------|-----------|--------|--------------|--------------|-----------|-------------|
| - hit/miss target | (°) | (°) | (ft) | (ft) | (ft) | (ft) | (ft) | | |
| - Shape | | | | | | | | | |
| COLFER 13C-34HZ E | 0.00 | 0.00 | 7,268.00 | -4,330.51 | 324.83 | 1,276,430.79 | 3,236,131.80 | 40.089109 | -104.656019 |
| - plan hits target center | | | | | | | | | |
| - Point | | | | | | | | | |

Casing Points

| Measured Depth | Vertical Depth | Name | Casing Diameter | Hole Diameter |
|----------------|----------------|--------|-----------------|---------------|
| (ft) | (ft) | | (") | (") |
| 1,200.00 | 1,200.00 | 9 5/8" | 9-5/8 | 12-1/4 |
| 7,629.19 | 7,275.00 | 7" | 7 | 8-3/4 |

Formations

| Measured Depth | Vertical Depth | Name | Lithology | Dip | Dip Direction |
|----------------|----------------|----------------|-----------|------|---------------|
| (ft) | (ft) | | | (°) | (°) |
| 1,079.00 | 1,079.00 | FOX HILLS | | 0.00 | |
| 2,906.71 | 2,900.00 | PARKMAN | | 0.00 | |
| 4,410.08 | 4,396.00 | SUSSEX | | 0.00 | |
| 6,937.26 | 6,907.00 | SHARON SPRINGS | | 0.00 | |
| 6,985.26 | 6,951.00 | NIOBRARA A | | 0.00 | |
| 7,052.91 | 7,010.00 | NIOBRARA B | | 0.00 | |
| 7,169.21 | 7,101.00 | NIOBRARA C | | 0.00 | |
| 7,429.73 | 7,241.00 | FORT HAYS | | 0.00 | |
| 7,520.97 | 7,265.00 | CODELL | | 0.00 | |

Plan Annotations

| Measured Depth | Vertical Depth | Local Coordinates | | Comment |
|----------------|----------------|-------------------|--------|----------------------------------|
| (ft) | (ft) | +N/-S | +E/-W | |
| (ft) | (ft) | (ft) | (ft) | |
| 1,350.00 | 1,350.00 | 0.00 | 0.00 | Start Build 2.00 |
| 1,633.86 | 1,633.39 | 11.69 | 7.80 | Start 5047.26 hold at 1633.86 MD |
| 6,681.11 | 6,655.89 | 426.91 | 285.07 | Start DLS 10.00 TFO 146.07 |
| 7,629.53 | 7,275.00 | -145.34 | 320.00 | Start 4185.19 hold at 7629.53 MD |
| 11,814.72 | 7,268.00 | -4,330.51 | 324.83 | TD at 11814.72 |