

Anadarko Petroleum Corp.

Weld County, CO (NAD 83)

Sec. 22-T3N-R68W

McKinstry 7N-21HZ

Plan A Rev 0

Plan: Plan A Rev 0 Permit

Sperry Drilling Services

Proposal Report

09 October, 2012

Well Coordinates: 1,321,290.81 N, 3,144,835.84 E (40° 12' 51.04" N, 104° 58' 52.97" W)

Ground Level: 4,984.00 ft

Local Coordinate Origin: Centered on Well McKinstry 7N-21HZ

Viewing Datum: RKB=17 @ 5001.00ft (Drilling Rig)

TVDs to System: N

North Reference: True

Unit System: API - US Survey Feet - Custom

Geodetic Scale Factor Applied

Version: 2003.16 Build: 431

HALLIBURTON

Project: Weld County, CO (NAD 83)
 Site: Sec. 22-T3N-R68W
 Well: McKinstry 7N-21HZ
 Wellbore: Plan A Rev 0
 Design: Plan A Rev 0 Permit

Anadarko Petroleum Corp.



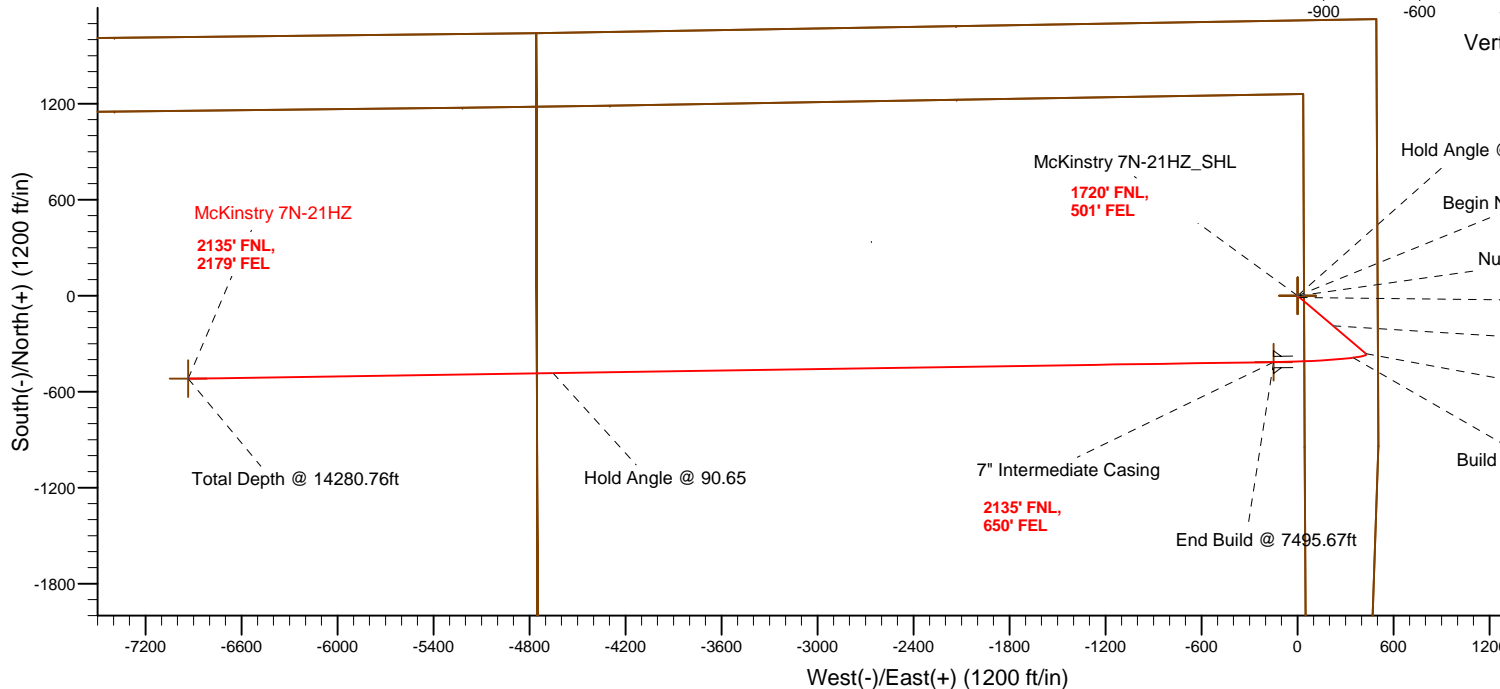
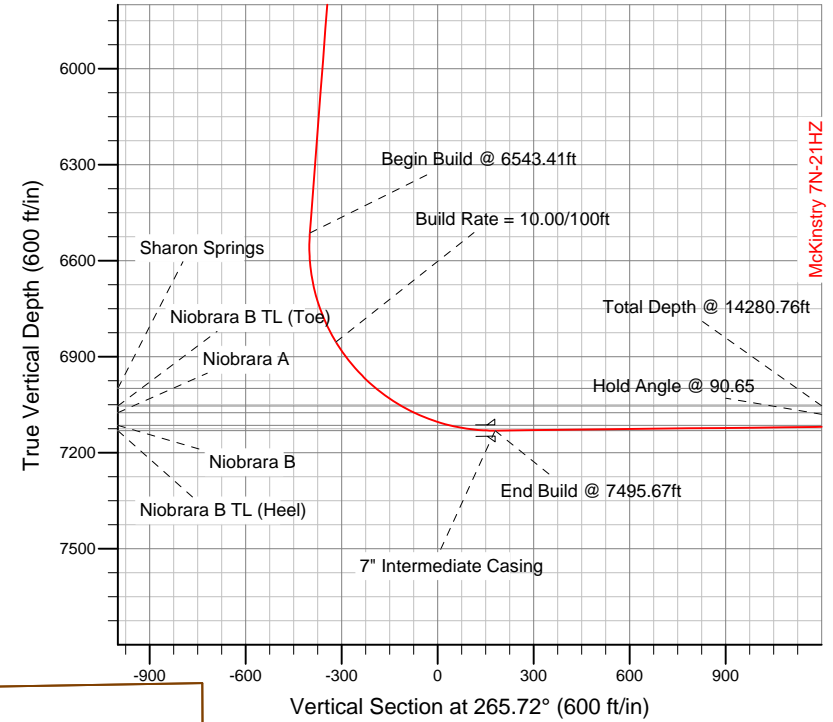
SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | DLeg | TFace | VSec | Target |
|-----|----------|-------|--------|---------|---------|----------|-------|--------|---------|--------------------------------|
| 1 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 2 | 1100.00 | 0.00 | 0.00 | 1100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 3 | 1404.14 | 6.08 | 130.26 | 1403.57 | -10.42 | 12.31 | 2.00 | 130.26 | -11.50 | |
| 4 | 6543.41 | 6.08 | 130.26 | 6513.90 | -362.40 | 427.88 | 0.00 | 0.00 | -399.64 | |
| 5 | 7495.67 | 90.65 | 269.12 | 7131.00 | -415.00 | -149.00 | 10.00 | 138.65 | 179.56 | McKinstry 7N-21HZ_Casing Point |
| 6 | 14280.76 | 90.65 | 269.12 | 7054.00 | -518.89 | -6932.86 | 0.00 | 0.00 | 6952.25 | McKinstry 7N-21HZ_BHL |

WELLBORE TARGET DETAILS (LAT/LONG)

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude | Shape |
|----------------------------------|---------|---------|----------|-----------|-------------|---------|
| McKinstry 7N-21HZ_Sec 21/22 Line | 0.00 | 0.00 | 0.00 | 40.214178 | -104.981381 | Polygon |
| McKinstry 7N-21HZ_Section Line | 0.00 | 0.00 | 0.00 | 40.214178 | -104.981381 | Polygon |
| McKinstry 7N-21HZ_Setback Line | 0.00 | 0.00 | 0.00 | 40.214178 | -104.981381 | Polygon |
| McKinstry 7N-21HZ_SHL | 0.00 | 0.00 | 0.00 | 40.214178 | -104.981381 | Point |
| McKinstry 7N-21HZ_BHL | 7054.00 | -518.89 | -6932.86 | 40.212751 | -105.006204 | Point |
| McKinstry 7N-21HZ_Casing Point | 7131.00 | -415.00 | -149.00 | 40.213039 | -104.981914 | Point |

Target Line:
7132.56' TVDkb @ 0° VS Drilling 90.65°



| | |
|--|-----------------------------------|
| WELL DETAILS: McKinstry 7N-21HZ | |
| Ground Level#4984.00 | RKB=17 @ 5001.00ft (Drilling Rig) |
| Plan: Plan A Rev 0 Permit (McKinstry 7N-21HZ/Plan A Rev 0) | |
| Created By: Fred Hartmann | Date: 10/08/2012 |
| Reviewed: _____ | Date: _____ |

Plan Report for McKinstry 7N-21HZ - Plan A Rev 0 Permit

| 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) | Toolface Azimuth (°) |
|--------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|----------------------|
| 0.00 | 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 | 0.00 |
| 200.00 | 0.00 | 0.00 | 200.00 | 0.00 | 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 | 0.00 |
| 400.00 | 0.00 | 0.00 | 400.00 | 0.00 | 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 | 0.00 |
| 600.00 | 0.00 | 0.00 | 600.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hold Angle @ 0.00 | | | | | | | | | | |
| 700.00 | 0.00 | 0.00 | 700.00 | 0.00 | 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 | 0.00 |
| 900.00 | 0.00 | 0.00 | 900.00 | 0.00 | 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 | 0.00 |
| 1,100.00 | 0.00 | 0.00 | 1,100.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Begin Nudge @ 1100.00ft | | | | | | | | | | |
| 1,200.00 | 2.00 | 130.26 | 1,199.98 | -1.13 | 1.33 | -1.24 | 2.00 | 2.00 | 0.00 | 130.26 |
| Nudge Rate = 2.00/100ft | | | | | | | | | | |
| 1,300.00 | 4.00 | 130.26 | 1,299.84 | -4.51 | 5.33 | -4.97 | 2.00 | 2.00 | 0.00 | 0.00 |
| 1,400.00 | 6.00 | 130.26 | 1,399.45 | -10.14 | 11.98 | -11.19 | 2.00 | 2.00 | 0.00 | 0.00 |
| 1,404.14 | 6.08 | 130.26 | 1,403.57 | -10.42 | 12.31 | -11.50 | 2.00 | 2.00 | 0.00 | 0.00 |
| End Nudge @ 1404.14ft | | | | | | | | | | |
| 1,500.00 | 6.08 | 130.26 | 1,498.89 | -16.99 | 20.06 | -18.74 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,600.00 | 6.08 | 130.26 | 1,598.33 | -23.84 | 28.15 | -26.29 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,700.00 | 6.08 | 130.26 | 1,697.76 | -30.69 | 36.23 | -33.84 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 6.08 | 130.26 | 1,797.20 | -37.54 | 44.32 | -41.39 | 0.00 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 6.08 | 130.26 | 1,896.64 | -44.38 | 52.40 | -48.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 6.08 | 130.26 | 1,996.07 | -51.23 | 60.49 | -56.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 6.08 | 130.26 | 2,095.51 | -58.08 | 68.58 | -64.05 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 6.08 | 130.26 | 2,194.95 | -64.93 | 76.66 | -71.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 6.08 | 130.26 | 2,294.38 | -71.78 | 84.75 | -79.16 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 6.08 | 130.26 | 2,393.82 | -78.63 | 92.84 | -86.71 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 6.08 | 130.26 | 2,493.26 | -85.48 | 100.92 | -94.26 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 6.08 | 130.26 | 2,592.70 | -92.32 | 109.01 | -101.81 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 6.08 | 130.26 | 2,692.13 | -99.17 | 117.09 | -109.37 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 6.08 | 130.26 | 2,791.57 | -106.02 | 125.18 | -116.92 | 0.00 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 6.08 | 130.26 | 2,891.01 | -112.87 | 133.27 | -124.47 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 6.08 | 130.26 | 2,990.44 | -119.72 | 141.35 | -132.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 6.08 | 130.26 | 3,089.88 | -126.57 | 149.44 | -139.57 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 6.08 | 130.26 | 3,189.32 | -133.42 | 157.52 | -147.13 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 6.08 | 130.26 | 3,288.75 | -140.27 | 165.61 | -154.68 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 6.08 | 130.26 | 3,388.19 | -147.11 | 173.70 | -162.23 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 6.08 | 130.26 | 3,487.63 | -153.96 | 181.78 | -169.78 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 6.08 | 130.26 | 3,587.07 | -160.81 | 189.87 | -177.34 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,629.10 | 6.08 | 130.26 | 3,616.00 | -162.80 | 192.22 | -179.53 | 0.00 | 0.00 | 0.00 | 0.00 |
| Parkman | | | | | | | | | | |
| 3,700.00 | 6.08 | 130.26 | 3,686.50 | -167.66 | 197.96 | -184.89 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 6.08 | 130.26 | 3,785.94 | -174.51 | 206.04 | -192.44 | 0.00 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 6.08 | 130.26 | 3,885.38 | -181.36 | 214.13 | -199.99 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 6.08 | 130.26 | 3,984.81 | -188.21 | 222.21 | -207.55 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hold Angle @ 6.08 | | | | | | | | | | |
| 4,100.00 | 6.08 | 130.26 | 4,084.25 | -195.05 | 230.30 | -215.10 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,128.91 | 6.08 | 130.26 | 4,113.00 | -197.03 | 232.64 | -217.28 | 0.00 | 0.00 | 0.00 | 0.00 |
| Sussex | | | | | | | | | | |
| 4,200.00 | 6.08 | 130.26 | 4,183.69 | -201.90 | 238.39 | -222.65 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 6.08 | 130.26 | 4,283.12 | -208.75 | 246.47 | -230.20 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,400.00 | 6.08 | 130.26 | 4,382.56 | -215.60 | 254.56 | -237.76 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 6.08 | 130.26 | 4,482.00 | -222.45 | 262.64 | -245.31 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 6.08 | 130.26 | 4,581.44 | -229.30 | 270.73 | -252.86 | 0.00 | 0.00 | 0.00 | 0.00 |

Plan Report for McKinstry 7N-21HZ - Plan A Rev 0 Permit

| 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) | Tooface Azimuth (°) |
|---|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|---------------------|
| 4,634.76 | 6.08 | 130.26 | 4,616.00 | -231.68 | 273.54 | -255.49 | 0.00 | 0.00 | 0.00 | 0.00 |
| Shannon | | | | | | | | | | |
| 4,700.00 | 6.08 | 130.26 | 4,680.87 | -236.15 | 278.82 | -260.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 6.08 | 130.26 | 4,780.31 | -243.00 | 286.90 | -267.97 | 0.00 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 6.08 | 130.26 | 4,879.75 | -249.84 | 294.99 | -275.52 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 6.08 | 130.26 | 4,979.18 | -256.69 | 303.08 | -283.07 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 6.08 | 130.26 | 5,078.62 | -263.54 | 311.16 | -290.62 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 6.08 | 130.26 | 5,178.06 | -270.39 | 319.25 | -298.18 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 6.08 | 130.26 | 5,277.49 | -277.24 | 327.33 | -305.73 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 6.08 | 130.26 | 5,376.93 | -284.09 | 335.42 | -313.28 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 6.08 | 130.26 | 5,476.37 | -290.94 | 343.51 | -320.83 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 6.08 | 130.26 | 5,575.80 | -297.78 | 351.59 | -328.39 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 6.08 | 130.26 | 5,675.24 | -304.63 | 359.68 | -335.94 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 6.08 | 130.26 | 5,774.68 | -311.48 | 367.77 | -343.49 | 0.00 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 6.08 | 130.26 | 5,874.12 | -318.33 | 375.85 | -351.04 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 6.08 | 130.26 | 5,973.55 | -325.18 | 383.94 | -358.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,100.00 | 6.08 | 130.26 | 6,072.99 | -332.03 | 392.02 | -366.15 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,200.00 | 6.08 | 130.26 | 6,172.43 | -338.88 | 400.11 | -373.70 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,300.00 | 6.08 | 130.26 | 6,271.86 | -345.73 | 408.20 | -381.25 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,400.00 | 6.08 | 130.26 | 6,371.30 | -352.57 | 416.28 | -388.81 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,500.00 | 6.08 | 130.26 | 6,470.74 | -359.42 | 424.37 | -396.36 | 0.00 | 0.00 | 0.00 | 0.00 |
| 6,543.41 | 6.08 | 130.26 | 6,513.90 | -362.40 | 427.88 | -399.64 | 0.00 | 0.00 | 0.00 | 0.00 |
| Begin Build @ 6543.41ft | | | | | | | | | | |
| 6,600.00 | 4.16 | 194.21 | 6,570.31 | -366.33 | 429.66 | -401.12 | 10.00 | -3.40 | 113.00 | 138.65 |
| 6,700.00 | 11.78 | 249.41 | 6,669.37 | -373.45 | 419.19 | -390.15 | 10.00 | 7.62 | 55.20 | 74.90 |
| 6,800.00 | 21.45 | 258.79 | 6,765.10 | -380.61 | 391.63 | -362.13 | 10.00 | 9.67 | 9.37 | 20.05 |
| 6,900.00 | 31.32 | 262.45 | 6,854.58 | -387.60 | 347.82 | -317.93 | 10.00 | 9.87 | 3.67 | 11.04 |
| Build Rate = 10.00/100ft | | | | | | | | | | |
| 7,000.00 | 41.25 | 264.49 | 6,935.09 | -394.19 | 289.10 | -258.87 | 10.00 | 9.93 | 2.03 | 7.74 |
| 7,091.78 | 50.38 | 265.75 | 6,999.00 | -399.73 | 223.59 | -193.14 | 10.00 | 9.95 | 1.37 | 6.10 |
| Sharon Springs | | | | | | | | | | |
| 7,100.00 | 51.20 | 265.84 | 7,004.20 | -400.20 | 217.24 | -186.77 | 10.00 | 9.96 | 1.17 | 5.21 |
| 7,200.00 | 61.16 | 266.86 | 7,059.78 | -405.44 | 134.43 | -103.80 | 10.00 | 9.96 | 1.02 | 5.15 |
| 7,233.32 | 64.48 | 267.16 | 7,075.00 | -406.98 | 104.84 | -74.17 | 10.00 | 9.97 | 0.89 | 4.58 |
| Niobrara A | | | | | | | | | | |
| 7,300.00 | 71.13 | 267.70 | 7,100.17 | -409.74 | 43.19 | -12.49 | 10.00 | 9.97 | 0.82 | 4.45 |
| 7,353.10 | 76.43 | 268.11 | 7,115.00 | -411.60 | -7.75 | 38.44 | 10.00 | 9.97 | 0.76 | 4.24 |
| Niobrara B | | | | | | | | | | |
| 7,400.00 | 81.11 | 268.45 | 7,124.13 | -412.98 | -53.71 | 84.38 | 10.00 | 9.97 | 0.73 | 4.13 |
| 7,495.67 | 90.65 | 269.12 | 7,131.00 | -415.00 | -149.00 | 179.56 | 10.00 | 9.98 | 0.71 | 4.06 |
| End Build @ 7495.67ft - Niobrara B TL (Heel) - 7" Intermediate Casing - McKinstry 7N-21HZ_Casing Point | | | | | | | | | | |
| 7,500.00 | 90.65 | 269.12 | 7,130.95 | -415.07 | -153.33 | 183.88 | 0.00 | 0.00 | 0.00 | 4.01 |
| 7,600.00 | 90.65 | 269.12 | 7,129.82 | -416.60 | -253.31 | 283.70 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,700.00 | 90.65 | 269.12 | 7,128.68 | -418.13 | -353.29 | 383.51 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 90.65 | 269.12 | 7,127.55 | -419.66 | -453.27 | 483.33 | 0.00 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 90.65 | 269.12 | 7,126.41 | -421.19 | -553.26 | 583.15 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 90.65 | 269.12 | 7,125.28 | -422.72 | -653.24 | 682.97 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 90.65 | 269.12 | 7,124.14 | -424.25 | -753.22 | 782.78 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 90.65 | 269.12 | 7,123.01 | -425.78 | -853.20 | 882.60 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,300.00 | 90.65 | 269.12 | 7,121.87 | -427.31 | -953.18 | 982.42 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,400.00 | 90.65 | 269.12 | 7,120.74 | -428.85 | -1,053.16 | 1,082.23 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,500.00 | 90.65 | 269.12 | 7,119.60 | -430.38 | -1,153.15 | 1,182.05 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,600.00 | 90.65 | 269.12 | 7,118.47 | -431.91 | -1,253.13 | 1,281.87 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,700.00 | 90.65 | 269.12 | 7,117.33 | -433.44 | -1,353.11 | 1,381.69 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,800.00 | 90.65 | 269.12 | 7,116.20 | -434.97 | -1,453.09 | 1,481.50 | 0.00 | 0.00 | 0.00 | 0.00 |
| 8,900.00 | 90.65 | 269.12 | 7,115.06 | -436.50 | -1,553.07 | 1,581.32 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,000.00 | 90.65 | 269.12 | 7,113.93 | -438.03 | -1,653.06 | 1,681.14 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,100.00 | 90.65 | 269.12 | 7,112.79 | -439.56 | -1,753.04 | 1,780.96 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,200.00 | 90.65 | 269.12 | 7,111.66 | -441.09 | -1,853.02 | 1,880.77 | 0.00 | 0.00 | 0.00 | 0.00 |

Plan Report for McKinstry 7N-21HZ - Plan A Rev 0 Permit

| 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) | Toolface Azimuth (°) |
|------------------------------|-----------------|-------------|---------------------|-----------|-----------|-----------------------|-----------------------|----------------------|---------------------|----------------------|
| 9,300.00 | 90.65 | 269.12 | 7,110.52 | -442.63 | -1,953.00 | 1,980.59 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,400.00 | 90.65 | 269.12 | 7,109.39 | -444.16 | -2,052.98 | 2,080.41 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,500.00 | 90.65 | 269.12 | 7,108.25 | -445.69 | -2,152.97 | 2,180.22 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,600.00 | 90.65 | 269.12 | 7,107.12 | -447.22 | -2,252.95 | 2,280.04 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,700.00 | 90.65 | 269.12 | 7,105.98 | -448.75 | -2,352.93 | 2,379.86 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,800.00 | 90.65 | 269.12 | 7,104.85 | -450.28 | -2,452.91 | 2,479.68 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9,900.00 | 90.65 | 269.12 | 7,103.71 | -451.81 | -2,552.89 | 2,579.49 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,000.00 | 90.65 | 269.12 | 7,102.58 | -453.34 | -2,652.87 | 2,679.31 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,100.00 | 90.65 | 269.12 | 7,101.44 | -454.87 | -2,752.86 | 2,779.13 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,200.00 | 90.65 | 269.12 | 7,100.31 | -456.41 | -2,852.84 | 2,878.95 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,300.00 | 90.65 | 269.12 | 7,099.18 | -457.94 | -2,952.82 | 2,978.76 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,400.00 | 90.65 | 269.12 | 7,098.04 | -459.47 | -3,052.80 | 3,078.58 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,500.00 | 90.65 | 269.12 | 7,096.91 | -461.00 | -3,152.78 | 3,178.40 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,600.00 | 90.65 | 269.12 | 7,095.77 | -462.53 | -3,252.77 | 3,278.21 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,700.00 | 90.65 | 269.12 | 7,094.64 | -464.06 | -3,352.75 | 3,378.03 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,800.00 | 90.65 | 269.12 | 7,093.50 | -465.59 | -3,452.73 | 3,477.85 | 0.00 | 0.00 | 0.00 | 0.00 |
| 10,900.00 | 90.65 | 269.12 | 7,092.37 | -467.12 | -3,552.71 | 3,577.67 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,000.00 | 90.65 | 269.12 | 7,091.23 | -468.65 | -3,652.69 | 3,677.48 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,100.00 | 90.65 | 269.12 | 7,090.10 | -470.19 | -3,752.67 | 3,777.30 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,200.00 | 90.65 | 269.12 | 7,088.96 | -471.72 | -3,852.66 | 3,877.12 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,300.00 | 90.65 | 269.12 | 7,087.83 | -473.25 | -3,952.64 | 3,976.93 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,400.00 | 90.65 | 269.12 | 7,086.69 | -474.78 | -4,052.62 | 4,076.75 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,500.00 | 90.65 | 269.12 | 7,085.56 | -476.31 | -4,152.60 | 4,176.57 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,600.00 | 90.65 | 269.12 | 7,084.42 | -477.84 | -4,252.58 | 4,276.39 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,700.00 | 90.65 | 269.12 | 7,083.29 | -479.37 | -4,352.57 | 4,376.20 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,800.00 | 90.65 | 269.12 | 7,082.15 | -480.90 | -4,452.55 | 4,476.02 | 0.00 | 0.00 | 0.00 | 0.00 |
| 11,900.00 | 90.65 | 269.12 | 7,081.02 | -482.43 | -4,552.53 | 4,575.84 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,000.00 | 90.65 | 269.12 | 7,079.88 | -483.96 | -4,652.51 | 4,675.66 | 0.00 | 0.00 | 0.00 | 0.00 |
| Hold Angle @ 90.65 | | | | | | | | | | |
| 12,100.00 | 90.65 | 269.12 | 7,078.75 | -485.50 | -4,752.49 | 4,775.47 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,200.00 | 90.65 | 269.12 | 7,077.61 | -487.03 | -4,852.47 | 4,875.29 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,300.00 | 90.65 | 269.12 | 7,076.48 | -488.56 | -4,952.46 | 4,975.11 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,400.00 | 90.65 | 269.12 | 7,075.34 | -490.09 | -5,052.44 | 5,074.92 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,500.00 | 90.65 | 269.12 | 7,074.21 | -491.62 | -5,152.42 | 5,174.74 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,600.00 | 90.65 | 269.12 | 7,073.07 | -493.15 | -5,252.40 | 5,274.56 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,700.00 | 90.65 | 269.12 | 7,071.94 | -494.68 | -5,352.38 | 5,374.38 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,800.00 | 90.65 | 269.12 | 7,070.80 | -496.21 | -5,452.37 | 5,474.19 | 0.00 | 0.00 | 0.00 | 0.00 |
| 12,900.00 | 90.65 | 269.12 | 7,069.67 | -497.74 | -5,552.35 | 5,574.01 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,000.00 | 90.65 | 269.12 | 7,068.53 | -499.28 | -5,652.33 | 5,673.83 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,100.00 | 90.65 | 269.12 | 7,067.40 | -500.81 | -5,752.31 | 5,773.65 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,200.00 | 90.65 | 269.12 | 7,066.26 | -502.34 | -5,852.29 | 5,873.46 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,300.00 | 90.65 | 269.12 | 7,065.13 | -503.87 | -5,952.28 | 5,973.28 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,400.00 | 90.65 | 269.12 | 7,064.00 | -505.40 | -6,052.26 | 6,073.10 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,500.00 | 90.65 | 269.12 | 7,062.86 | -506.93 | -6,152.24 | 6,172.91 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,600.00 | 90.65 | 269.12 | 7,061.73 | -508.46 | -6,252.22 | 6,272.73 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,700.00 | 90.65 | 269.12 | 7,060.59 | -509.99 | -6,352.20 | 6,372.55 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,800.00 | 90.65 | 269.12 | 7,059.46 | -511.52 | -6,452.18 | 6,472.37 | 0.00 | 0.00 | 0.00 | 0.00 |
| 13,900.00 | 90.65 | 269.12 | 7,058.32 | -513.06 | -6,552.17 | 6,572.18 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14,000.00 | 90.65 | 269.12 | 7,057.19 | -514.59 | -6,652.15 | 6,672.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14,100.00 | 90.65 | 269.12 | 7,056.05 | -516.12 | -6,752.13 | 6,771.82 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14,200.00 | 90.65 | 269.12 | 7,054.92 | -517.65 | -6,852.11 | 6,871.64 | 0.00 | 0.00 | 0.00 | 0.00 |
| 14,280.75 | 90.65 | 269.12 | 7,054.00 | -518.89 | -6,932.85 | 6,952.24 | 0.00 | 0.00 | 0.00 | 0.00 |
| Niobrara B TL (Toe) | | | | | | | | | | |
| 14,280.76 | 90.65 | 269.12 | 7,054.00 | -518.89 | -6,932.86 | 6,952.25 | 0.01 | 0.00 | 0.00 | 0.00 |
| McKinstry 7N-21HZ_BHL | | | | | | | | | | |

Plan Report for McKinstry 7N-21HZ - Plan A Rev 0 Permit**Plan Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment |
|---------------------------|---------------------------|-------------------|---------------|--------------------------|
| | | +N/-S (ft) | +E/-W (ft) | |
| 600.00 | 600.00 | 0.00 | 0.00 | Hold Angle @ 0.00 |
| 1,100.00 | 1,100.00 | 0.00 | 0.00 | Begin Nudge @ 1100.00ft |
| 1,200.00 | 1,199.98 | -1.13 | 1.33 | Nudge Rate = 2.00/100ft |
| 1,404.14 | 1,403.57 | -10.42 | 12.31 | End Nudge @ 1404.14ft |
| 4,000.00 | 3,984.81 | -188.21 | 222.21 | Hold Angle @ 6.08 |
| 6,543.41 | 6,513.90 | -362.40 | 427.88 | Begin Build @ 6543.41ft |
| 6,900.00 | 6,854.58 | -387.60 | 347.82 | Build Rate = 10.00/100ft |
| 7,495.67 | 7,131.00 | -415.00 | -149.00 | End Build @ 7495.67ft |
| 12,000.00 | 7,079.88 | -483.96 | -4,652.51 | Hold Angle @ 90.65 |
| 14,280.76 | 7,054.00 | -518.89 | -6,932.86 | Total Depth @ 14280.76ft |

Vertical Section Information

| Angle Type | Target | Azimuth (°) | Origin Type | Origin | | Start TVD (ft) |
|---------------|-----------------------|----------------|----------------|---------------|---------------|----------------------|
| | | | | +N/-S (ft) | +E/-W (ft) | |
| Target | McKinstry 7N-21HZ_BHL | 265.72 | Slot | 0.00 | 0.00 | 7,054.00 |

Survey tool program

| From (ft) | To (ft) | Survey/Plan | Survey Tool |
|--------------|------------|---------------------|-------------|
| 0.00 | 7,495.67 | Plan A Rev 0 Permit | MWD |
| 7,495.67 | 14,280.76 | Plan A Rev 0 Permit | MWD |

Casing Details

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (") | Hole Diameter (") |
|---------------------------|---------------------------|------------------------|---------------------------|-------------------------|
| 7,495.67 | 7,131.00 | 7" Intermediate Casing | 7 | 8-3/4 |

Formation Details

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---------------------------|---------------------------|----------------------|-----------|------------|-------------------------|
| 3,629.10 | 3,616.00 | Parkman | | 0.00 | |
| 4,128.91 | 4,113.00 | Sussex | | 0.00 | |
| 4,634.76 | 4,616.00 | Shannon | | 0.00 | |
| 7,091.78 | 6,999.00 | Sharon Springs | | 0.00 | |
| 7,233.32 | 7,075.00 | Niobrara A | | 0.00 | |
| 7,353.10 | 7,115.00 | Niobrara B | | 0.00 | |
| 7,495.67 | 7,131.00 | Niobrara B TL (Heel) | | 0.00 | |
| 14,280.75 | 7,054.00 | Niobrara B TL (Toe) | | 0.00 | |

Plan Report for McKinstry 7N-21HZ - Plan A Rev 0 Permit

Targets associated with this wellbore

| Target Name | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Shape |
|----------------------------------|-------------|---------------|---------------|---------|
| McKinstry 7N-21HZ_SHL | 0.00 | 0.00 | 0.00 | Point |
| McKinstry 7N-21HZ_Casing Point | 7,131.00 | -415.00 | -149.00 | Point |
| McKinstry 7N-21HZ_Setback Line | 0.00 | 0.00 | 0.00 | Polygon |
| McKinstry 7N-21HZ_Sec 21/22 Line | 0.00 | 0.00 | 0.00 | Polygon |
| McKinstry 7N-21HZ_BHL | 7,054.00 | -518.89 | -6,932.86 | Point |
| McKinstry 7N-21HZ_Section Line | 0.00 | 0.00 | 0.00 | Polygon |

North Reference Sheet for Sec. 22-T3N-R68W - McKinstry 7N-21HZ - Plan A Rev 0

All data is in US Feet unless otherwise stated. Directions and Coordinates are relative to True North Reference.
 Vertical Depths are relative to RKB=17 @ 5001.00ft (Drilling Rig). Northing and Easting are relative to McKinstry 7N-21HZ
 Coordinate System is US State Plane 1983, Colorado Northern Zone using datum North American Datum 1983, ellipsoid GRS 1980
 Projection method is Lambert Conformal Conic (2 parallel)
 Central Meridian is -105.50°, Longitude Origin:0.000000°, Latitude Origin:40.783333°
 False Easting: 3,000,000.00ft, False Northing: 1,000,000.00ft, Scale Reduction: 0.99995705

Grid Coordinates of Well: 1,321,290.81 ft N, 3,144,835.84 ft E
 Geographical Coordinates of Well: 40° 12' 51.04" N, 104° 58' 52.97" W
 Grid Convergence at Surface is: 0.34°

Based upon Minimum Curvature type calculations, at a Measured Depth of 14,280.76ft
 the Bottom Hole Displacement is 6,952.25ft in the Direction of 265.72° (True).
 Magnetic Convergence at surface is: -8.49° (9 October 2012, , BGGM2012)

Magnetic Model: BGGM 2012
 Date: 09-Oct-12
 Declination: 8.83°
 Inclination/Dip: 66.80°
 Field Strength: 52791

Grid North is 0.34° East of True North (Grid Convergence)
 Magnetic North is 8.83° East of True North (Magnetic Declination)
 Magnetic North is 8.49° East of Grid North (Magnetic Convergence)

To convert a True Direction to a Grid Direction, Subtract 0.34°
 To convert a Magnetic Direction to a True Direction, Add 8.83° East
 To convert a Magnetic Direction to a Grid Direction, Add 8.49°