



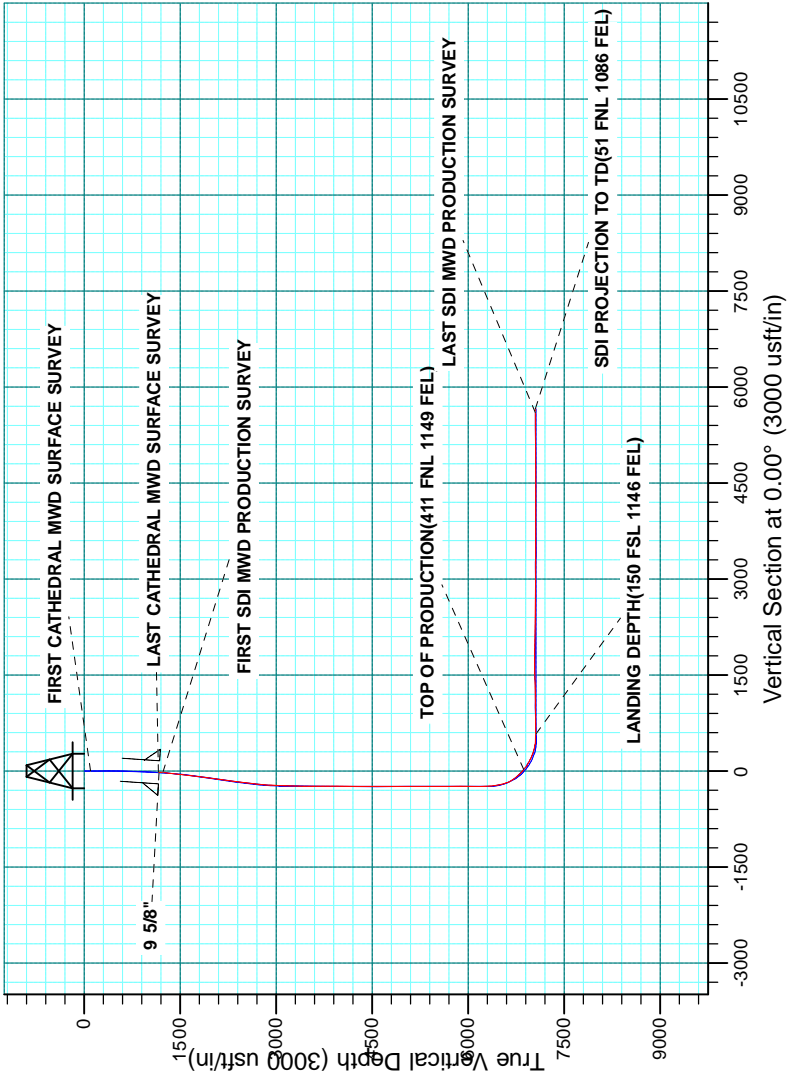
Project: WELD-NAD83-UTMFT13N
Site: 3N-65W-28 Cheese 1-28HZ Pad
Well: Cheese State 27N-21HZ
Wellbore: Plan A
Design: Plan A



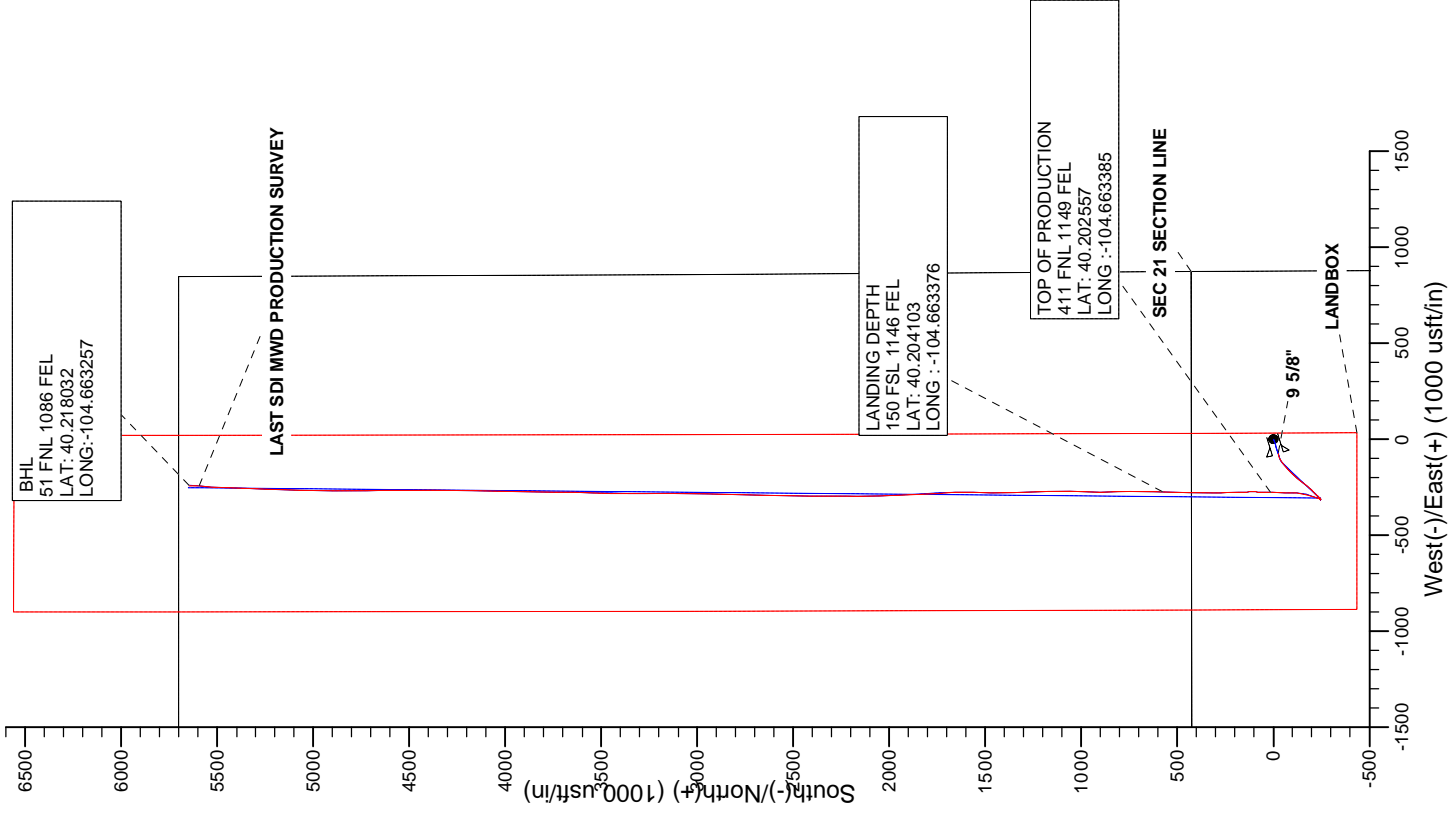
| WELL DETAILS: Cheese State 27N-21HZ | | | | |
|--|---------------|-------------------------|-----------------------|---|
| GL 4818 & KB 25 @ 4842.99usft (HP 307) | | | | |
| +N/-S 0.00 | +E/-W 0.00 | Northing 14600657.57 | Easting 1734684.02 | Latitude 40.202514 Longitude -104.662393 |

| PROJECT DETAILS: WELD-NAD83-UTMFT13N | |
|--|--|
| Geodetic System: Universal Transverse Mercator (US Survey Feet) Datum: North American Datum 1983 Ellipsoid: GRS 1980 Zone: Zone 13N (108 W to 102 W) Location: SECTION 28 T3N R65W System Datum: Mean Sea Level | |

| CASING DETAILS | | |
|----------------|---------|--------------|
| TVD | MD | Name |
| 1172.12 | 1177.00 | 9 5/8" 9.625 |



| |
|---|
| Survey: Survey #2 SDI MWD PRODUCTION (Cheese State 27N-21HZ/Plan A) |
| Created By: R.Scott Date: 15:10, May 20 2015 |



| | | | |
|------------------|--------------------------------|-------------------------------------|--|
| Company: | US ROCKIES WATTENBERG PLANNING | Local Co-ordinate Reference: | Well Cheese State 27N-21HZ |
| Project: | WELD-NAD83-UTMFT13N | TVD Reference: | GL 4818 & KB 25 @ 4842.99usft (HP 307) |
| Site: | 3N-65W-28 Cheese 1-28HZ Pad | MD Reference: | GL 4818 & KB 25 @ 4842.99usft (HP 307) |
| Well: | Cheese State 27N-21HZ | North Reference: | True |
| Wellbore: | Plan A | Survey Calculation Method: | Minimum Curvature |
| Design: | Plan A | Database: | Denver Sales |

| | | | |
|--------------------|--|----------------------|----------------|
| Project | WELD-NAD83-UTMFT13N | | |
| Map System: | Universal Transverse Mercator (US Survey Feet) | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Zone 13N (108 W to 102 W) | | |

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|-----------------------|--|--|--|--------------------|--|
| Site | | 3N-65W-28 Cheese 1-28HZ Pad, SECTION 28 T3N R65W | | | |
| Site Position: | | Northing: | | 14,600,657.57 usft | |
| From: | | Easting: | | 1,734,684.02 usft | |
| Position Uncertainty: | | Slot Radius: | | Grid Convergence: | |
| Lat/Long | | 0.00 usft | | 40.202514 | |
| | | 13.200 in | | -104.662393 | |
| | | | | 0.22 ° | |

| Well | | Cheese State 27N-21HZ, 428' FNL 875' FEL | | | | |
|----------------------|-------|--|---------------------|--------------------|---------------|---------------|
| Well Position | +N/-S | 0.00 usft | Northing: | 14,600,657.57 usft | Latitude: | 40.202514 |
| | +E/-W | 0.00 usft | Easting: | 1,734,684.02 usft | Longitude: | -104.662393 |
| Position Uncertainty | | 0.00 usft | Wellhead Elevation: | 0.00 usft | Ground Level: | 4,817.99 usft |

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|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Plan A | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 10/9/2014 | 8.35 | 66.79 | 52,689 |

| | | | | | |
|--------------------------|--------------------------------|---------------------|---------------------|----------------------|------|
| Design | Plan A | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (usft) | +N/-S (usft) | +E/-W (usft) | Direction (°) | |
| | 0.00 | 0.00 | 0.00 | 0.00 | |

| | | | | | |
|-----------------------|------------------|------------------------------------|-----------------------|------------------------------------|--|
| Survey Program | Date | 5/20/2015 | | | |
| From (usft) | To (usft) | Survey (Wellbore) | Tool Name | Description | |
| 20.00 | 1,162.00 | Survey #1 CATHEDRAL SURFACE SURV | APC_ISCWSA REV 2 MWD | Fixed:v2:standard declination | |
| 1,233.00 | 12,660.00 | Survey #2 SDI MWD PRODUCTION (Plan | APC_ISCWSA REV 2 MWD+ | Fixed:v2:crustal field declination | |

| | | | | | | | | | | |
|---|------------------------|--------------------|------------------------------|---------------------|---------------------|--------------------------------|--------------------------------|-------------------------------|------------------------------|--|
| Survey | | | | | | | | | | |
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 20.00 | 0.00 | 0.00 | 20.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 103.00 | 0.10 | 73.90 | 103.00 | 0.02 | 0.07 | 0.02 | 0.12 | 0.12 | 0.00 | |
| FIRST CATHEDRAL MWD SURFACE SURVEY | | | | | | | | | | |
| 165.00 | 0.20 | 118.80 | 165.00 | -0.02 | 0.22 | -0.02 | 0.24 | 0.16 | 72.42 | |
| 225.00 | 0.10 | 5.40 | 225.00 | -0.02 | 0.31 | -0.02 | 0.43 | -0.17 | -189.00 | |
| 282.00 | 0.10 | 19.50 | 282.00 | 0.08 | 0.33 | 0.08 | 0.04 | 0.00 | 24.74 | |
| 343.00 | 0.40 | 210.70 | 343.00 | -0.05 | 0.24 | -0.05 | 0.82 | 0.49 | -276.72 | |
| 407.00 | 1.20 | 245.10 | 406.99 | -0.53 | -0.48 | -0.53 | 1.40 | 1.25 | 53.75 | |
| 470.00 | 2.00 | 250.70 | 469.97 | -1.17 | -2.11 | -1.17 | 1.29 | 1.27 | 8.89 | |

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|------------------|--------------------------------|-------------------------------------|--|
| Company: | US ROCKIES WATTENBERG PLANNING | Local Co-ordinate Reference: | Well Cheese State 27N-21HZ |
| Project: | WELD-NAD83-UTMFT13N | TVD Reference: | GL 4818 & KB 25 @ 4842.99usft (HP 307) |
| Site: | 3N-65W-28 Cheese 1-28HZ Pad | MD Reference: | GL 4818 & KB 25 @ 4842.99usft (HP 307) |
| Well: | Cheese State 27N-21HZ | North Reference: | True |
| Wellbore: | Plan A | Survey Calculation Method: | Minimum Curvature |
| Design: | Plan A | Database: | Denver Sales |

| Survey | | | | | | | | | | |
|-----------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|--|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) | |
| 534.00 | 2.80 | 258.40 | 533.91 | -1.85 | -4.70 | -1.85 | 1.34 | 1.25 | 12.03 | |
| 598.00 | 4.00 | 250.00 | 597.80 | -2.93 | -8.33 | -2.93 | 2.03 | 1.88 | -13.13 | |
| 663.00 | 4.50 | 250.50 | 662.62 | -4.56 | -12.86 | -4.56 | 0.77 | 0.77 | 0.77 | |
| 727.00 | 4.90 | 251.40 | 726.40 | -6.26 | -17.82 | -6.26 | 0.64 | 0.63 | 1.41 | |
| 791.00 | 5.40 | 251.90 | 790.14 | -8.07 | -23.27 | -8.07 | 0.78 | 0.78 | 0.78 | |
| 855.00 | 6.30 | 253.40 | 853.81 | -10.01 | -29.50 | -10.01 | 1.43 | 1.41 | 2.34 | |
| 919.00 | 7.30 | 256.30 | 917.36 | -11.98 | -36.82 | -11.98 | 1.65 | 1.56 | 4.53 | |
| 983.00 | 8.10 | 253.70 | 980.78 | -14.21 | -45.09 | -14.21 | 1.36 | 1.25 | -4.06 | |
| 1,047.00 | 8.80 | 253.10 | 1,044.09 | -16.89 | -54.11 | -16.89 | 1.10 | 1.09 | -0.94 | |
| 1,110.00 | 9.90 | 251.30 | 1,106.25 | -20.03 | -63.85 | -20.03 | 1.81 | 1.75 | -2.86 | |
| 1,162.00 | 10.90 | 251.10 | 1,157.39 | -23.06 | -72.73 | -23.06 | 1.92 | 1.92 | -0.38 | |
| LAST CATHEDRAL MWD SURFACE SURVEY | | | | | | | | | | |
| 1,177.00 | 11.03 | 251.84 | 1,172.12 | -23.96 | -75.44 | -23.96 | 1.29 | 0.89 | 4.92 | |
| 9 5/8" | | | | | | | | | | |
| 1,233.00 | 11.55 | 254.44 | 1,227.04 | -27.14 | -85.93 | -27.14 | 1.29 | 0.92 | 4.65 | |
| FIRST SDI MWD PRODUCTION SURVEY | | | | | | | | | | |
| 1,296.00 | 11.82 | 248.88 | 1,288.73 | -31.16 | -98.03 | -31.16 | 1.84 | 0.43 | -8.83 | |
| 1,390.00 | 11.31 | 234.36 | 1,380.84 | -40.00 | -114.50 | -40.00 | 3.14 | -0.54 | -15.45 | |
| 1,485.00 | 11.65 | 233.31 | 1,473.94 | -51.16 | -129.77 | -51.16 | 0.42 | 0.36 | -1.11 | |
| 1,579.00 | 10.64 | 227.36 | 1,566.17 | -62.71 | -143.76 | -62.71 | 1.63 | -1.07 | -6.33 | |
| 1,674.00 | 9.92 | 226.83 | 1,659.65 | -74.25 | -156.18 | -74.25 | 0.76 | -0.76 | -0.56 | |
| 1,768.00 | 10.08 | 225.30 | 1,752.22 | -85.57 | -167.93 | -85.57 | 0.33 | 0.17 | -1.63 | |
| 1,863.00 | 9.79 | 226.98 | 1,845.79 | -96.93 | -179.75 | -96.93 | 0.43 | -0.31 | 1.77 | |
| 1,957.00 | 10.52 | 220.06 | 1,938.33 | -108.95 | -191.11 | -108.95 | 1.51 | 0.78 | -7.36 | |
| 2,051.00 | 9.90 | 222.12 | 2,030.84 | -121.51 | -202.06 | -121.51 | 0.77 | -0.66 | 2.19 | |
| 2,145.00 | 10.20 | 220.67 | 2,123.39 | -133.82 | -212.90 | -133.82 | 0.42 | 0.32 | -1.54 | |
| 2,240.00 | 10.86 | 219.04 | 2,216.79 | -147.15 | -224.02 | -147.15 | 0.76 | 0.69 | -1.72 | |
| 2,334.00 | 10.26 | 215.69 | 2,309.20 | -160.83 | -234.48 | -160.83 | 0.91 | -0.64 | -3.56 | |
| 2,429.00 | 9.96 | 218.85 | 2,402.73 | -174.10 | -244.57 | -174.10 | 0.66 | -0.32 | 3.33 | |
| 2,523.00 | 8.65 | 220.22 | 2,495.49 | -185.83 | -254.23 | -185.83 | 1.41 | -1.39 | 1.46 | |
| 2,618.00 | 8.42 | 223.18 | 2,589.44 | -196.35 | -263.61 | -196.35 | 0.52 | -0.24 | 3.12 | |
| 2,712.00 | 7.56 | 223.35 | 2,682.52 | -205.87 | -272.56 | -205.87 | 0.92 | -0.91 | 0.18 | |
| 2,807.00 | 7.42 | 226.47 | 2,776.71 | -214.64 | -281.30 | -214.64 | 0.45 | -0.15 | 3.28 | |
| 2,901.00 | 7.25 | 223.30 | 2,869.95 | -223.14 | -289.77 | -223.14 | 0.47 | -0.18 | -3.37 | |
| 2,996.00 | 4.76 | 225.84 | 2,964.42 | -230.24 | -296.71 | -230.24 | 2.64 | -2.62 | 2.67 | |
| 3,089.00 | 3.21 | 227.27 | 3,057.19 | -234.70 | -301.39 | -234.70 | 1.67 | -1.67 | 1.54 | |
| 3,184.00 | 1.12 | 211.72 | 3,152.12 | -237.29 | -303.83 | -237.29 | 2.27 | -2.20 | -16.37 | |
| 3,279.00 | 1.40 | 212.26 | 3,247.09 | -239.07 | -304.94 | -239.07 | 0.29 | 0.29 | 0.57 | |
| 3,373.00 | 0.14 | 280.08 | 3,341.08 | -240.02 | -305.66 | -240.02 | 1.44 | -1.34 | 72.15 | |
| 3,468.00 | 0.13 | 178.03 | 3,436.08 | -240.10 | -305.77 | -240.10 | 0.22 | -0.01 | -107.42 | |
| 3,562.00 | 0.54 | 199.24 | 3,530.08 | -240.63 | -305.92 | -240.63 | 0.45 | 0.44 | 22.56 | |
| 3,656.00 | 0.77 | 217.31 | 3,624.08 | -241.55 | -306.44 | -241.55 | 0.33 | 0.24 | 19.22 | |
| 3,751.00 | 1.05 | 201.30 | 3,719.06 | -242.87 | -307.15 | -242.87 | 0.40 | 0.29 | -16.85 | |
| 3,845.00 | 0.45 | 209.16 | 3,813.06 | -243.99 | -307.64 | -243.99 | 0.65 | -0.64 | 8.36 | |

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|------------------|--------------------------------|-------------------------------------|--|
| Company: | US ROCKIES WATTENBERG PLANNING | Local Co-ordinate Reference: | Well Cheese State 27N-21HZ |
| Project: | WELD-NAD83-UTMFT13N | TVD Reference: | GL 4818 & KB 25 @ 4842.99usft (HP 307) |
| Site: | 3N-65W-28 Cheese 1-28HZ Pad | MD Reference: | GL 4818 & KB 25 @ 4842.99usft (HP 307) |
| Well: | Cheese State 27N-21HZ | North Reference: | True |
| Wellbore: | Plan A | Survey Calculation Method: | Minimum Curvature |
| Design: | Plan A | Database: | Denver Sales |

| Survey | | | | | | | | | |
|-------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 3,940.00 | 0.47 | 249.62 | 3,908.05 | -244.45 | -308.19 | -244.45 | 0.34 | 0.02 | 42.59 |
| 4,129.00 | 0.58 | 237.59 | 4,097.04 | -245.24 | -309.72 | -245.24 | 0.08 | 0.06 | -6.37 |
| 4,223.00 | 1.20 | 253.72 | 4,191.03 | -245.77 | -311.07 | -245.77 | 0.71 | 0.66 | 17.16 |
| 4,318.00 | 0.49 | 258.92 | 4,286.02 | -246.13 | -312.42 | -246.13 | 0.75 | -0.75 | 5.47 |
| 4,412.00 | 0.95 | 257.70 | 4,380.01 | -246.37 | -313.58 | -246.37 | 0.49 | 0.49 | -1.30 |
| 4,506.00 | 1.06 | 313.90 | 4,474.00 | -245.93 | -314.97 | -245.93 | 1.01 | 0.12 | 59.79 |
| 4,601.00 | 1.04 | 343.40 | 4,568.99 | -244.50 | -315.85 | -244.50 | 0.56 | -0.02 | 31.05 |
| 4,695.00 | 0.73 | 68.79 | 4,662.98 | -243.46 | -315.53 | -243.46 | 1.30 | -0.33 | 90.84 |
| 4,790.00 | 0.55 | 136.00 | 4,757.97 | -243.57 | -314.65 | -243.57 | 0.76 | -0.19 | 70.75 |
| 4,884.00 | 0.97 | 232.17 | 4,851.97 | -244.38 | -314.96 | -244.38 | 1.24 | 0.45 | 102.31 |
| 4,979.00 | 0.34 | 296.76 | 4,946.96 | -244.75 | -315.85 | -244.75 | 0.93 | -0.66 | 67.99 |
| 5,073.00 | 0.89 | 90.24 | 5,040.96 | -244.63 | -315.37 | -244.63 | 1.28 | 0.59 | 163.28 |
| 5,168.00 | 0.97 | 90.62 | 5,135.95 | -244.64 | -313.83 | -244.64 | 0.08 | 0.08 | 0.40 |
| 5,262.00 | 0.45 | 80.03 | 5,229.94 | -244.58 | -312.67 | -244.58 | 0.57 | -0.55 | -11.27 |
| 5,451.00 | 0.21 | 110.96 | 5,418.94 | -244.58 | -311.62 | -244.58 | 0.15 | -0.13 | 16.37 |
| 5,546.00 | 0.03 | 41.30 | 5,513.94 | -244.62 | -311.44 | -244.62 | 0.21 | -0.19 | -73.33 |
| 5,640.00 | 0.31 | 323.64 | 5,607.94 | -244.40 | -311.57 | -244.40 | 0.32 | 0.30 | -82.62 |
| 5,735.00 | 0.07 | 259.23 | 5,702.93 | -244.20 | -311.78 | -244.20 | 0.30 | -0.25 | -67.80 |
| 5,924.00 | 0.38 | 323.15 | 5,891.93 | -243.72 | -312.27 | -243.72 | 0.19 | 0.16 | 33.82 |
| 6,019.00 | 0.54 | 355.29 | 5,986.93 | -243.03 | -312.50 | -243.03 | 0.31 | 0.17 | 33.83 |
| 6,113.00 | 1.04 | 102.41 | 6,080.92 | -242.77 | -311.70 | -242.77 | 1.39 | 0.53 | 113.96 |
| 6,208.00 | 0.81 | 71.88 | 6,175.91 | -242.74 | -310.22 | -242.74 | 0.56 | -0.24 | -32.14 |
| 6,302.00 | 0.50 | 62.04 | 6,269.91 | -242.34 | -309.22 | -242.34 | 0.35 | -0.33 | -10.47 |
| 6,397.00 | 3.79 | 0.68 | 6,364.83 | -239.01 | -308.82 | -239.01 | 3.77 | 3.46 | -64.59 |
| 6,493.00 | 9.81 | 9.03 | 6,460.11 | -227.75 | -307.50 | -227.75 | 6.34 | 6.27 | 8.70 |
| 6,587.00 | 17.07 | 20.88 | 6,551.50 | -206.92 | -301.31 | -206.92 | 8.22 | 7.72 | 12.61 |
| 6,682.00 | 29.97 | 19.18 | 6,638.42 | -171.33 | -288.50 | -171.33 | 13.60 | 13.58 | -1.79 |
| 6,776.00 | 36.18 | 359.56 | 6,717.38 | -121.22 | -280.97 | -121.22 | 13.10 | 6.61 | -20.87 |
| 6,871.00 | 42.93 | 1.42 | 6,790.58 | -60.76 | -280.38 | -60.76 | 7.21 | 7.11 | 1.96 |
| 6,965.00 | 47.75 | 3.45 | 6,856.64 | 6.01 | -277.49 | 6.01 | 5.35 | 5.13 | 2.16 |
| 6,978.00 | 48.96 | 3.01 | 6,865.28 | 15.71 | -276.94 | 15.71 | 9.64 | 9.29 | -3.42 |
| TOP OF PRODUCTION(411 FNL 1149 FEL) | | | | | | | | | |
| 7,060.00 | 56.61 | 0.53 | 6,914.84 | 80.92 | -275.00 | 80.92 | 9.64 | 9.33 | -3.02 |
| 7,154.00 | 63.17 | 358.99 | 6,961.97 | 162.19 | -275.38 | 162.19 | 7.12 | 6.98 | -1.64 |
| 7,248.00 | 67.39 | 357.23 | 7,001.28 | 247.51 | -278.22 | 247.51 | 4.80 | 4.49 | -1.87 |
| 7,343.00 | 76.16 | 359.60 | 7,030.96 | 337.61 | -280.66 | 337.61 | 9.53 | 9.23 | 2.49 |
| 7,438.00 | 84.10 | 2.11 | 7,047.24 | 431.11 | -279.24 | 431.11 | 8.75 | 8.36 | 2.64 |
| 7,533.00 | 88.05 | 2.09 | 7,053.74 | 525.81 | -275.77 | 525.81 | 4.16 | 4.16 | -0.02 |
| 7,586.00 | 89.72 | 1.07 | 7,054.77 | 578.77 | -274.31 | 578.77 | 3.69 | 3.15 | -1.93 |
| LANDING DEPTH(150 FSL 1146 FEL) | | | | | | | | | |
| 7,627.00 | 91.01 | 0.28 | 7,054.51 | 619.77 | -273.83 | 619.77 | 3.69 | 3.15 | -1.93 |
| 7,722.00 | 91.01 | 0.22 | 7,052.83 | 714.75 | -273.41 | 714.75 | 0.06 | 0.00 | -0.06 |
| 7,816.00 | 90.67 | 359.19 | 7,051.46 | 808.74 | -273.90 | 808.74 | 1.15 | -0.36 | -1.10 |

| | | | |
|------------------|--------------------------------|-------------------------------------|--|
| Company: | US ROCKIES WATTENBERG PLANNING | Local Co-ordinate Reference: | Well Cheese State 27N-21HZ |
| Project: | WELD-NAD83-UTMFT13N | TVD Reference: | GL 4818 & KB 25 @ 4842.99usft (HP 307) |
| Site: | 3N-65W-28 Cheese 1-28HZ Pad | MD Reference: | GL 4818 & KB 25 @ 4842.99usft (HP 307) |
| Well: | Cheese State 27N-21HZ | North Reference: | True |
| Wellbore: | Plan A | Survey Calculation Method: | Minimum Curvature |
| Design: | Plan A | Database: | Denver Sales |

| Survey | | | | | | | | | |
|-----------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 7,911.00 | 90.44 | 359.30 | 7,050.54 | 903.73 | -275.15 | 903.73 | 0.27 | -0.24 | 0.12 |
| 8,005.00 | 89.36 | 1.11 | 7,050.70 | 997.72 | -274.81 | 997.72 | 2.24 | -1.15 | 1.93 |
| 8,100.00 | 91.11 | 1.42 | 7,050.31 | 1,092.69 | -272.71 | 1,092.69 | 1.87 | 1.84 | 0.33 |
| 8,194.00 | 90.30 | 359.41 | 7,049.15 | 1,186.68 | -272.03 | 1,186.68 | 2.31 | -0.86 | -2.14 |
| 8,289.00 | 90.60 | 357.29 | 7,048.41 | 1,281.63 | -274.77 | 1,281.63 | 2.25 | 0.32 | -2.23 |
| 8,383.00 | 91.24 | 359.34 | 7,046.90 | 1,375.57 | -277.53 | 1,375.57 | 2.28 | 0.68 | 2.18 |
| 8,477.00 | 91.27 | 359.90 | 7,044.84 | 1,469.55 | -278.16 | 1,469.55 | 0.60 | 0.03 | 0.60 |
| 8,572.00 | 91.58 | 1.18 | 7,042.48 | 1,564.51 | -277.26 | 1,564.51 | 1.39 | 0.33 | 1.35 |
| 8,667.00 | 89.50 | 358.19 | 7,041.58 | 1,659.49 | -277.78 | 1,659.49 | 3.83 | -2.19 | -3.15 |
| 8,761.00 | 89.23 | 357.38 | 7,042.62 | 1,753.41 | -281.42 | 1,753.41 | 0.91 | -0.29 | -0.86 |
| 8,855.00 | 88.89 | 356.06 | 7,044.17 | 1,847.24 | -286.79 | 1,847.24 | 1.45 | -0.36 | -1.40 |
| 8,949.00 | 89.23 | 357.15 | 7,045.71 | 1,941.07 | -292.36 | 1,941.07 | 1.21 | 0.36 | 1.16 |
| 9,044.00 | 88.93 | 358.81 | 7,047.23 | 2,035.99 | -295.71 | 2,035.99 | 1.78 | -0.32 | 1.75 |
| 9,139.00 | 88.83 | 359.60 | 7,049.09 | 2,130.96 | -297.03 | 2,130.96 | 0.84 | -0.11 | 0.83 |
| 9,233.00 | 90.27 | 0.15 | 7,049.83 | 2,224.96 | -297.23 | 2,224.96 | 1.64 | 1.53 | 0.59 |
| 9,328.00 | 89.80 | 0.64 | 7,049.77 | 2,319.95 | -296.58 | 2,319.95 | 0.71 | -0.49 | 0.52 |
| 9,422.00 | 90.50 | 0.93 | 7,049.52 | 2,413.94 | -295.29 | 2,413.94 | 0.81 | 0.74 | 0.31 |
| 9,517.00 | 90.07 | 0.55 | 7,049.05 | 2,508.93 | -294.06 | 2,508.93 | 0.60 | -0.45 | -0.40 |
| 9,611.00 | 89.03 | 0.83 | 7,049.79 | 2,602.92 | -292.93 | 2,602.92 | 1.15 | -1.11 | 0.30 |
| 9,706.00 | 89.19 | 1.84 | 7,051.27 | 2,697.89 | -290.72 | 2,697.89 | 1.08 | 0.17 | 1.06 |
| 9,800.00 | 89.63 | 2.08 | 7,052.23 | 2,791.82 | -287.50 | 2,791.82 | 0.53 | 0.47 | 0.26 |
| 9,895.00 | 90.47 | 0.85 | 7,052.15 | 2,886.79 | -285.07 | 2,886.79 | 1.57 | 0.88 | -1.29 |
| 9,989.00 | 89.53 | 1.01 | 7,052.15 | 2,980.78 | -283.55 | 2,980.78 | 1.01 | -1.00 | 0.17 |
| 10,084.00 | 89.46 | 0.09 | 7,052.99 | 3,075.77 | -282.63 | 3,075.77 | 0.97 | -0.07 | -0.97 |
| 10,178.00 | 89.80 | 0.40 | 7,053.59 | 3,169.77 | -282.23 | 3,169.77 | 0.49 | 0.36 | 0.33 |
| 10,273.00 | 89.76 | 359.46 | 7,053.96 | 3,264.76 | -282.35 | 3,264.76 | 0.99 | -0.04 | -0.99 |
| 10,368.00 | 89.60 | 0.46 | 7,054.49 | 3,359.76 | -282.42 | 3,359.76 | 1.07 | -0.17 | 1.05 |
| 10,462.00 | 90.00 | 1.06 | 7,054.82 | 3,453.75 | -281.17 | 3,453.75 | 0.77 | 0.43 | 0.64 |
| 10,556.00 | 89.77 | 1.49 | 7,055.01 | 3,547.73 | -279.08 | 3,547.73 | 0.52 | -0.24 | 0.46 |
| 10,651.00 | 89.90 | 0.65 | 7,055.28 | 3,642.71 | -277.30 | 3,642.71 | 0.89 | 0.14 | -0.88 |
| 10,745.00 | 90.20 | 0.57 | 7,055.20 | 3,736.70 | -276.30 | 3,736.70 | 0.33 | 0.32 | -0.09 |
| 10,839.00 | 90.57 | 0.16 | 7,054.57 | 3,830.70 | -275.70 | 3,830.70 | 0.59 | 0.39 | -0.44 |
| 10,934.00 | 90.24 | 1.57 | 7,053.90 | 3,925.68 | -274.27 | 3,925.68 | 1.52 | -0.35 | 1.48 |
| 11,029.00 | 90.30 | 1.81 | 7,053.45 | 4,020.64 | -271.47 | 4,020.64 | 0.26 | 0.06 | 0.25 |
| 11,123.00 | 90.37 | 1.09 | 7,052.90 | 4,114.61 | -269.09 | 4,114.61 | 0.77 | 0.07 | -0.77 |
| 11,218.00 | 89.56 | 0.37 | 7,052.96 | 4,209.60 | -267.88 | 4,209.60 | 1.14 | -0.85 | -0.76 |
| 11,312.00 | 89.66 | 0.18 | 7,053.60 | 4,303.60 | -267.43 | 4,303.60 | 0.23 | 0.11 | -0.20 |
| 11,407.00 | 89.46 | 0.07 | 7,054.33 | 4,398.59 | -267.22 | 4,398.59 | 0.24 | -0.21 | -0.12 |
| 11,501.00 | 90.07 | 0.41 | 7,054.71 | 4,492.59 | -266.83 | 4,492.59 | 0.74 | 0.65 | 0.36 |
| 11,596.00 | 90.10 | 0.05 | 7,054.57 | 4,587.59 | -266.44 | 4,587.59 | 0.38 | 0.03 | -0.38 |
| 11,690.00 | 90.17 | 358.73 | 7,054.35 | 4,681.58 | -267.45 | 4,681.58 | 1.41 | 0.07 | -1.40 |
| 11,785.00 | 91.28 | 359.75 | 7,053.15 | 4,776.56 | -268.71 | 4,776.56 | 1.59 | 1.17 | 1.07 |
| 11,879.00 | 90.07 | 359.66 | 7,052.04 | 4,870.55 | -269.19 | 4,870.55 | 1.29 | -1.29 | -0.10 |
| 11,974.00 | 90.97 | 0.84 | 7,051.18 | 4,965.55 | -268.78 | 4,965.55 | 1.56 | 0.95 | 1.24 |

| | | | |
|------------------|--------------------------------|-------------------------------------|--|
| Company: | US ROCKIES WATTENBERG PLANNING | Local Co-ordinate Reference: | Well Cheese State 27N-21HZ |
| Project: | WELD-NAD83-UTMFT13N | TVD Reference: | GL 4818 & KB 25 @ 4842.99usft (HP 307) |
| Site: | 3N-65W-28 Cheese 1-28HZ Pad | MD Reference: | GL 4818 & KB 25 @ 4842.99usft (HP 307) |
| Well: | Cheese State 27N-21HZ | North Reference: | True |
| Wellbore: | Plan A | Survey Calculation Method: | Minimum Curvature |
| Design: | Plan A | Database: | Denver Sales |

| Survey | | | | | | | | | |
|--|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft) | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 12,068.00 | 91.44 | 2.05 | 7,049.20 | 5,059.49 | -266.41 | 5,059.49 | 1.38 | 0.50 | 1.29 |
| 12,162.00 | 90.37 | 0.61 | 7,047.72 | 5,153.45 | -264.22 | 5,153.45 | 1.91 | -1.14 | -1.53 |
| 12,257.00 | 90.27 | 2.43 | 7,047.18 | 5,248.41 | -261.70 | 5,248.41 | 1.92 | -0.11 | 1.92 |
| 12,351.00 | 90.40 | 2.02 | 7,046.64 | 5,342.34 | -258.06 | 5,342.34 | 0.46 | 0.14 | -0.44 |
| 12,446.00 | 89.76 | 2.53 | 7,046.50 | 5,437.27 | -254.28 | 5,437.27 | 0.86 | -0.67 | 0.54 |
| 12,540.00 | 89.76 | 3.67 | 7,046.90 | 5,531.13 | -249.20 | 5,531.13 | 1.21 | 0.00 | 1.21 |
| 12,606.00 | 91.24 | 3.94 | 7,046.32 | 5,596.98 | -244.82 | 5,596.98 | 2.28 | 2.24 | 0.41 |
| LAST SDI MWD PRODUCTION SURVEY | | | | | | | | | |
| 12,660.00 | 91.24 | 3.94 | 7,045.15 | 5,650.84 | -241.11 | 5,650.84 | 0.00 | 0.00 | 0.00 |
| SDI PROJECTION TO TD(51 FNL 1086 FEL) | | | | | | | | | |

| Casing Points | | | | |
|-----------------------|-----------------------|--------|----------------------|--------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Name | Casing Diameter (in) | Hole Diameter (in) |
| 1,177.00 | 1,172.12 | 9 5/8" | 9.625 | 13.500 |

| Design Annotations | | | | |
|-----------------------|-----------------------|-------------------|--------------|---------------------------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Local Coordinates | | Comment |
| | | +N/-S (usft) | +E/-W (usft) | |
| 103.00 | 103.00 | 0.02 | 0.07 | FIRST CATHEDRAL MWD SURFACE SURVEY |
| 1,162.00 | 1,157.39 | -23.06 | -72.73 | LAST CATHEDRAL MWD SURFACE SURVEY |
| 1,233.00 | 1,227.04 | -27.14 | -85.93 | FIRST SDI MWD PRODUCTION SURVEY |
| 6,978.00 | 6,865.28 | 15.71 | -276.94 | TOP OF PRODUCTION(411 FNL 1149 FEL) |
| 7,586.00 | 7,054.77 | 578.77 | -274.31 | LANDING DEPTH(150 FSL 1146 FEL) |
| 12,606.00 | 7,046.32 | 5,596.98 | -244.82 | LAST SDI MWD PRODUCTION SURVEY |
| 12,660.00 | 7,045.15 | 5,650.84 | -241.11 | SDI PROJECTION TO TD(51 FNL 1086 FEL) |

Checked By: _____ Approved By: _____ Date: _____