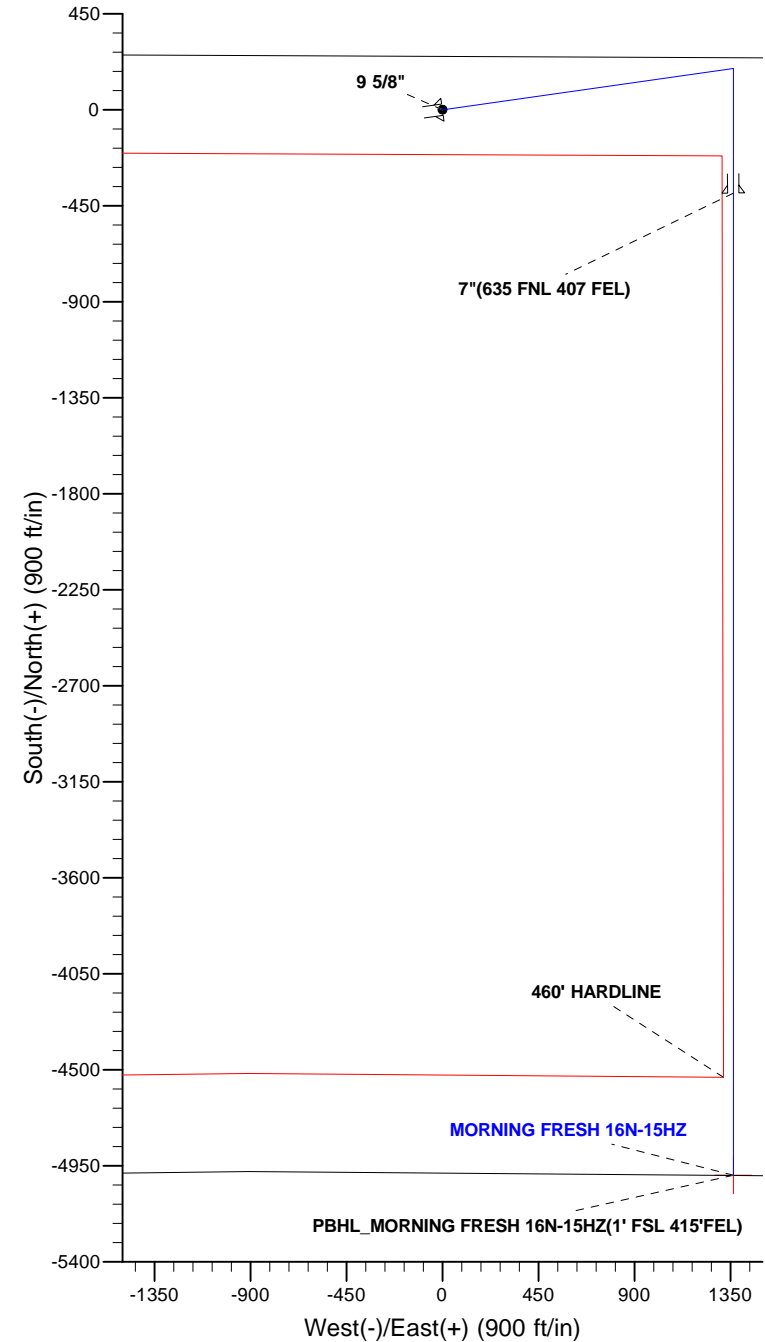
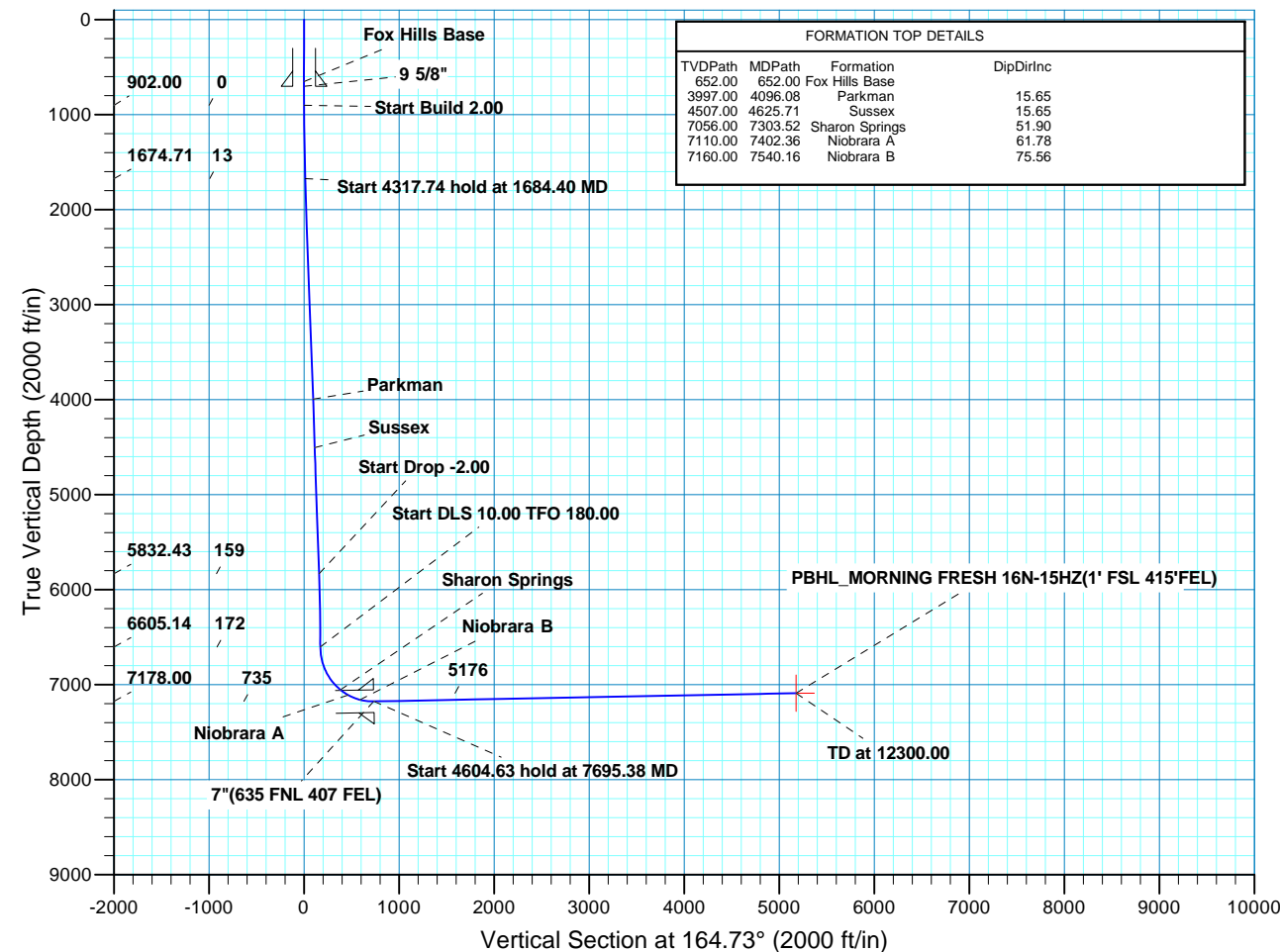


| WELL DETAILS: MORNING FRESH 16N-15HZ | | | | | | | | | | |
|---------------------------------------|---------|---------------|---------|------------------------|-----------------------|------------------------|----------------|---|--------|-------|
| GL 4885 & KB 17 @ 4902.00ft (ASSUMED) | | | | | | | | | | |
| +N/-S 0.00 | | +E/-W 0.00 | | Northing 1328048.20 | Easting 3206559.42 | Latitude 40.2315250 | | Longitude -104.7601720 | | |
| 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 | | |
| 902.00 | 0.00 | 0.00 | 902.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 1684.40 | 15.65 | 81.90 | 1674.71 | 14.96 | 105.12 | 2.00 | 81.90 | 13.26 | | |
| 6002.15 | 15.65 | 81.90 | 5832.43 | 179.04 | 1258.12 | 0.00 | 0.00 | 158.64 | | |
| 6784.55 | 0.00 | 0.00 | 6605.14 | 194.00 | 1363.24 | 2.00 | 180.00 | 171.90 | | |
| 7695.38 | 91.08 | 180.00 | 7178.00 | -389.78 | 1363.25 | 10.00 | 180.00 | 735.07 | | |
| 12300.00 | 91.08 | 180.00 | 7091.00 | -4993.59 | 1363.34 | 0.00 | 0.005176.35 | PBHL_MORNING FRESH 16N-15HZ(1' FSL 415'FEL) | | |
| DESIGN TARGET DETAILS | | | | | | | CASING DETAILS | | | |
| Name | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude | Shape | | |
| PBHL | 7091.00 | -4993.59 | 1363.34 | 1323066.17 | 3207964.37 | 40.2178170 | -104.7552900 | Point | | |
| - plan hits target center | | | | | | | | | | |
| | | | | | | | TVD | MD | Name | Size |
| | | | | | | | 702.00 | 702.00 | 9 5/8" | 9.625 |
| | | | | | | | 7178.00 | 7695.38 | 7" | 7.000 |





Scientific Drilling

US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

MORNING FRESH 2-15HZ

MORNING FRESH 16N-15HZ

OH

Plan: PLAN #1 PRELIMINARY

Standard Planning Report

04 October, 2013

| | | | |
|------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Database: | EDM5000-RobertS-Local | Local Co-ordinate Reference: | Well MORNING FRESH 16N-15HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | GL 4885 & KB 17 @ 4902.00ft (ASSUMED) |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | GL 4885 & KB 17 @ 4902.00ft (ASSUMED) |
| Site: | MORNING FRESH 2-15HZ | North Reference: | True |
| Well: | MORNING FRESH 16N-15HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OH | | |
| Design: | PLAN #1 PRELIMINARY | | |

| | | | |
|--------------------|--|----------------------|----------------|
| Project | COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Northern Zone | | |

| | | | | |
|------------------------------|--|---------------------|-------------------|---------------------------------|
| Site | MORNING FRESH 2-15HZ, NWNE SECTION 15 T3N R66W | | | |
| Site Position: | | Northing: | 1,328,048.20 usft | Latitude: 40.2315250 |
| From: | Lat/Long | Easting: | 3,206,559.42 usft | Longitude: -104.7601720 |
| Position Uncertainty: | 0.00 ft | Slot Radius: | 13.200 in | Grid Convergence: 0.48 ° |

| | | | | |
|-----------------------------|--|---------|----------------------------|-------------------|
| Well | MORNING FRESH 16N-15HZ, 250' FNL 1770' FEL | | | |
| Well Position | +N/-S | 0.00 ft | Northing: | 1,328,048.20 usft |
| | +E/-W | 0.00 ft | Easting: | 3,206,559.42 usft |
| Position Uncertainty | | 0.00 ft | Wellhead Elevation: | 0.00 ft |
| | | | Ground Level: | 4,885.00 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | OH | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | BGGM2013 | 10/03/13 | 8.57 | 66.83 | 52,728 |

| | | | | |
|--------------------------|------------------------------|-------------------|----------------------|----------------------|
| Design | PLAN #1 PRELIMINARY | | | |
| 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 | 164.73 |

| 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 | |
| 902.00 | 0.00 | 0.00 | 902.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,684.40 | 15.65 | 81.90 | 1,674.71 | 14.96 | 105.12 | 2.00 | 2.00 | 0.00 | 81.90 | |
| 6,002.15 | 15.65 | 81.90 | 5,832.43 | 179.04 | 1,258.12 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 6,784.55 | 0.00 | 0.00 | 6,605.14 | 194.00 | 1,363.24 | 2.00 | -2.00 | 0.00 | 180.00 | |
| 7,695.38 | 91.08 | 180.00 | 7,178.00 | -389.78 | 1,363.25 | 10.00 | 10.00 | 19.76 | 180.00 | |
| 12,300.00 | 91.08 | 180.00 | 7,091.00 | -4,993.59 | 1,363.34 | 0.00 | 0.00 | 0.00 | 0.00 | PBHL_MORNING FR |

| | | | |
|------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Database: | EDM5000-RobertS-Local | Local Co-ordinate Reference: | Well MORNING FRESH 16N-15HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | GL 4885 & KB 17 @ 4902.00ft (ASSUMED) |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | GL 4885 & KB 17 @ 4902.00ft (ASSUMED) |
| Site: | MORNING FRESH 2-15HZ | North Reference: | True |
| Well: | MORNING FRESH 16N-15HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OH | | |
| Design: | PLAN #1 PRELIMINARY | | |

| 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 |
| 652.00 | 0.00 | 0.00 | 652.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Fox Hills Base | | | | | | | | | |
| 700.00 | 0.00 | 0.00 | 700.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 702.00 | 0.00 | 0.00 | 702.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| 9 5/8" | | | | | | | | | |
| 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 |
| 902.00 | 0.00 | 0.00 | 902.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 |
| Start Build 2.00 | | | | | | | | | |
| 1,000.00 | 1.96 | 81.90 | 999.98 | 0.24 | 1.66 | 0.21 | 2.00 | 2.00 | 0.00 |
| 1,100.00 | 3.96 | 81.90 | 1,099.84 | 0.96 | 6.77 | 0.85 | 2.00 | 2.00 | 0.00 |
| 1,200.00 | 5.96 | 81.90 | 1,199.46 | 2.18 | 15.33 | 1.93 | 2.00 | 2.00 | 0.00 |
| 1,300.00 | 7.96 | 81.90 | 1,298.72 | 3.89 | 27.33 | 3.45 | 2.00 | 2.00 | 0.00 |
| 1,400.00 | 9.96 | 81.90 | 1,397.50 | 6.08 | 42.75 | 5.39 | 2.00 | 2.00 | 0.00 |
| 1,500.00 | 11.96 | 81.90 | 1,495.67 | 8.76 | 61.57 | 7.76 | 2.00 | 2.00 | 0.00 |
| 1,600.00 | 13.96 | 81.90 | 1,593.11 | 11.92 | 83.77 | 10.56 | 2.00 | 2.00 | 0.00 |
| 1,684.40 | 15.65 | 81.90 | 1,674.71 | 14.96 | 105.12 | 13.26 | 2.00 | 2.00 | 0.00 |
| Start 4317.74 hold at 1684.40 MD | | | | | | | | | |
| 1,700.00 | 15.65 | 81.90 | 1,689.73 | 15.55 | 109.28 | 13.78 | 0.00 | 0.00 | 0.00 |
| 1,800.00 | 15.65 | 81.90 | 1,786.03 | 19.35 | 135.99 | 17.15 | 0.00 | 0.00 | 0.00 |
| 1,900.00 | 15.65 | 81.90 | 1,882.32 | 23.15 | 162.69 | 20.51 | 0.00 | 0.00 | 0.00 |
| 2,000.00 | 15.65 | 81.90 | 1,978.61 | 26.95 | 189.40 | 23.88 | 0.00 | 0.00 | 0.00 |
| 2,100.00 | 15.65 | 81.90 | 2,074.91 | 30.75 | 216.10 | 27.25 | 0.00 | 0.00 | 0.00 |
| 2,200.00 | 15.65 | 81.90 | 2,171.20 | 34.55 | 242.80 | 30.62 | 0.00 | 0.00 | 0.00 |
| 2,300.00 | 15.65 | 81.90 | 2,267.49 | 38.35 | 269.51 | 33.98 | 0.00 | 0.00 | 0.00 |
| 2,400.00 | 15.65 | 81.90 | 2,363.79 | 42.15 | 296.21 | 37.35 | 0.00 | 0.00 | 0.00 |
| 2,500.00 | 15.65 | 81.90 | 2,460.08 | 45.95 | 322.91 | 40.72 | 0.00 | 0.00 | 0.00 |
| 2,600.00 | 15.65 | 81.90 | 2,556.37 | 49.75 | 349.62 | 44.09 | 0.00 | 0.00 | 0.00 |
| 2,700.00 | 15.65 | 81.90 | 2,652.67 | 53.55 | 376.32 | 47.45 | 0.00 | 0.00 | 0.00 |
| 2,800.00 | 15.65 | 81.90 | 2,748.96 | 57.35 | 403.03 | 50.82 | 0.00 | 0.00 | 0.00 |
| 2,900.00 | 15.65 | 81.90 | 2,845.26 | 61.15 | 429.73 | 54.19 | 0.00 | 0.00 | 0.00 |
| 3,000.00 | 15.65 | 81.90 | 2,941.55 | 64.95 | 456.43 | 57.55 | 0.00 | 0.00 | 0.00 |
| 3,100.00 | 15.65 | 81.90 | 3,037.84 | 68.75 | 483.14 | 60.92 | 0.00 | 0.00 | 0.00 |
| 3,200.00 | 15.65 | 81.90 | 3,134.14 | 72.55 | 509.84 | 64.29 | 0.00 | 0.00 | 0.00 |
| 3,300.00 | 15.65 | 81.90 | 3,230.43 | 76.35 | 536.54 | 67.66 | 0.00 | 0.00 | 0.00 |
| 3,400.00 | 15.65 | 81.90 | 3,326.72 | 80.15 | 563.25 | 71.02 | 0.00 | 0.00 | 0.00 |
| 3,500.00 | 15.65 | 81.90 | 3,423.02 | 83.95 | 589.95 | 74.39 | 0.00 | 0.00 | 0.00 |
| 3,600.00 | 15.65 | 81.90 | 3,519.31 | 87.76 | 616.66 | 77.76 | 0.00 | 0.00 | 0.00 |
| 3,700.00 | 15.65 | 81.90 | 3,615.60 | 91.56 | 643.36 | 81.13 | 0.00 | 0.00 | 0.00 |
| 3,800.00 | 15.65 | 81.90 | 3,711.90 | 95.36 | 670.06 | 84.49 | 0.00 | 0.00 | 0.00 |
| 3,900.00 | 15.65 | 81.90 | 3,808.19 | 99.16 | 696.77 | 87.86 | 0.00 | 0.00 | 0.00 |
| 4,000.00 | 15.65 | 81.90 | 3,904.49 | 102.96 | 723.47 | 91.23 | 0.00 | 0.00 | 0.00 |
| 4,096.08 | 15.65 | 81.90 | 3,997.00 | 106.61 | 749.13 | 94.46 | 0.00 | 0.00 | 0.00 |
| Parkman | | | | | | | | | |
| 4,100.00 | 15.65 | 81.90 | 4,000.78 | 106.76 | 750.18 | 94.59 | 0.00 | 0.00 | 0.00 |
| 4,200.00 | 15.65 | 81.90 | 4,097.07 | 110.56 | 776.88 | 97.96 | 0.00 | 0.00 | 0.00 |
| 4,300.00 | 15.65 | 81.90 | 4,193.37 | 114.36 | 803.58 | 101.33 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Database: | EDM5000-RobertS-Local | Local Co-ordinate Reference: | Well MORNING FRESH 16N-15HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | GL 4885 & KB 17 @ 4902.00ft (ASSUMED) |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | GL 4885 & KB 17 @ 4902.00ft (ASSUMED) |
| Site: | MORNING FRESH 2-15HZ | North Reference: | True |
| Well: | MORNING FRESH 16N-15HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OH | | |
| Design: | PLAN #1 PRELIMINARY | | |

| 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 | 15.65 | 81.90 | 4,289.66 | 118.16 | 830.29 | 104.70 | 0.00 | 0.00 | 0.00 |
| 4,500.00 | 15.65 | 81.90 | 4,385.95 | 121.96 | 856.99 | 108.06 | 0.00 | 0.00 | 0.00 |
| 4,600.00 | 15.65 | 81.90 | 4,482.25 | 125.76 | 883.69 | 111.43 | 0.00 | 0.00 | 0.00 |
| 4,625.71 | 15.65 | 81.90 | 4,507.00 | 126.73 | 890.56 | 112.30 | 0.00 | 0.00 | 0.00 |
| Sussex | | | | | | | | | |
| 4,700.00 | 15.65 | 81.90 | 4,578.54 | 129.56 | 910.40 | 114.80 | 0.00 | 0.00 | 0.00 |
| 4,800.00 | 15.65 | 81.90 | 4,674.83 | 133.36 | 937.10 | 118.16 | 0.00 | 0.00 | 0.00 |
| 4,900.00 | 15.65 | 81.90 | 4,771.13 | 137.16 | 963.81 | 121.53 | 0.00 | 0.00 | 0.00 |
| 5,000.00 | 15.65 | 81.90 | 4,867.42 | 140.96 | 990.51 | 124.90 | 0.00 | 0.00 | 0.00 |
| 5,100.00 | 15.65 | 81.90 | 4,963.72 | 144.76 | 1,017.21 | 128.27 | 0.00 | 0.00 | 0.00 |
| 5,200.00 | 15.65 | 81.90 | 5,060.01 | 148.56 | 1,043.92 | 131.63 | 0.00 | 0.00 | 0.00 |
| 5,300.00 | 15.65 | 81.90 | 5,156.30 | 152.36 | 1,070.62 | 135.00 | 0.00 | 0.00 | 0.00 |
| 5,400.00 | 15.65 | 81.90 | 5,252.60 | 156.16 | 1,097.32 | 138.37 | 0.00 | 0.00 | 0.00 |
| 5,500.00 | 15.65 | 81.90 | 5,348.89 | 159.96 | 1,124.03 | 141.74 | 0.00 | 0.00 | 0.00 |
| 5,600.00 | 15.65 | 81.90 | 5,445.18 | 163.76 | 1,150.73 | 145.10 | 0.00 | 0.00 | 0.00 |
| 5,700.00 | 15.65 | 81.90 | 5,541.48 | 167.56 | 1,177.44 | 148.47 | 0.00 | 0.00 | 0.00 |
| 5,800.00 | 15.65 | 81.90 | 5,637.77 | 171.36 | 1,204.14 | 151.84 | 0.00 | 0.00 | 0.00 |
| 5,900.00 | 15.65 | 81.90 | 5,734.07 | 175.16 | 1,230.84 | 155.20 | 0.00 | 0.00 | 0.00 |
| 6,000.00 | 15.65 | 81.90 | 5,830.36 | 178.96 | 1,257.55 | 158.57 | 0.00 | 0.00 | 0.00 |
| 6,002.15 | 15.65 | 81.90 | 5,832.43 | 179.04 | 1,258.12 | 158.64 | 0.00 | 0.00 | 0.00 |
| Start Drop -2.00 | | | | | | | | | |
| 6,100.00 | 13.69 | 81.90 | 5,927.08 | 182.53 | 1,282.65 | 161.74 | 2.00 | -2.00 | 0.00 |
| 6,200.00 | 11.69 | 81.90 | 6,024.64 | 185.63 | 1,304.40 | 164.48 | 2.00 | -2.00 | 0.00 |
| 6,300.00 | 9.69 | 81.90 | 6,122.90 | 188.24 | 1,322.77 | 166.80 | 2.00 | -2.00 | 0.00 |
| 6,400.00 | 7.69 | 81.90 | 6,221.74 | 190.37 | 1,337.73 | 168.68 | 2.00 | -2.00 | 0.00 |
| 6,500.00 | 5.69 | 81.90 | 6,321.06 | 192.01 | 1,349.26 | 170.14 | 2.00 | -2.00 | 0.00 |
| 6,600.00 | 3.69 | 81.90 | 6,420.72 | 193.16 | 1,357.36 | 171.16 | 2.00 | -2.00 | 0.00 |
| 6,700.00 | 1.69 | 81.90 | 6,520.60 | 193.82 | 1,362.00 | 171.74 | 2.00 | -2.00 | 0.00 |
| 6,784.55 | 0.00 | 0.00 | 6,605.14 | 194.00 | 1,363.24 | 171.90 | 2.00 | -2.00 | 0.00 |
| Start DLS 10.00 TFO 180.00 | | | | | | | | | |
| 6,800.00 | 1.54 | 180.00 | 6,620.59 | 193.79 | 1,363.24 | 172.10 | 10.00 | 10.00 | 0.00 |
| 6,900.00 | 11.54 | 180.00 | 6,719.81 | 182.41 | 1,363.24 | 183.08 | 10.00 | 10.00 | 0.00 |
| 7,000.00 | 21.54 | 180.00 | 6,815.55 | 153.97 | 1,363.24 | 210.52 | 10.00 | 10.00 | 0.00 |
| 7,100.00 | 31.54 | 180.00 | 6,904.89 | 109.33 | 1,363.24 | 253.58 | 10.00 | 10.00 | 0.00 |
| 7,200.00 | 41.54 | 180.00 | 6,985.13 | 49.86 | 1,363.24 | 310.95 | 10.00 | 10.00 | 0.00 |
| 7,300.00 | 51.54 | 180.00 | 7,053.82 | -22.63 | 1,363.24 | 380.89 | 10.00 | 10.00 | 0.00 |
| 7,303.52 | 51.90 | 180.00 | 7,056.00 | -25.40 | 1,363.24 | 383.55 | 10.00 | 10.00 | 0.00 |
| Sharon Springs | | | | | | | | | |
| 7,400.00 | 61.54 | 180.00 | 7,108.88 | -105.96 | 1,363.25 | 461.27 | 10.00 | 10.00 | 0.00 |
| 7,402.36 | 61.78 | 180.00 | 7,110.00 | -108.04 | 1,363.25 | 463.28 | 10.00 | 10.00 | 0.00 |
| Niobrara A | | | | | | | | | |
| 7,500.00 | 71.54 | 180.00 | 7,148.63 | -197.58 | 1,363.25 | 549.66 | 10.00 | 10.00 | 0.00 |
| 7,540.16 | 75.56 | 180.00 | 7,160.00 | -236.09 | 1,363.25 | 586.81 | 10.00 | 10.00 | 0.00 |
| Niobrara B | | | | | | | | | |
| 7,600.00 | 81.54 | 180.00 | 7,171.87 | -294.71 | 1,363.25 | 643.36 | 10.00 | 10.00 | 0.00 |
| 7,695.38 | 91.08 | 180.00 | 7,178.00 | -389.79 | 1,363.25 | 735.08 | 10.00 | 10.00 | 0.00 |
| Start 4604.63 hold at 7695.38 MD - 7"(635 FNL 407 FEL) | | | | | | | | | |
| 7,700.00 | 91.08 | 180.00 | 7,177.91 | -394.41 | 1,363.25 | 739.53 | 0.00 | 0.00 | 0.00 |
| 7,800.00 | 91.08 | 180.00 | 7,176.02 | -494.39 | 1,363.25 | 835.98 | 0.00 | 0.00 | 0.00 |
| 7,900.00 | 91.08 | 180.00 | 7,174.13 | -594.37 | 1,363.26 | 932.44 | 0.00 | 0.00 | 0.00 |
| 8,000.00 | 91.08 | 180.00 | 7,172.24 | -694.35 | 1,363.26 | 1,028.89 | 0.00 | 0.00 | 0.00 |
| 8,100.00 | 91.08 | 180.00 | 7,170.35 | -794.33 | 1,363.26 | 1,125.34 | 0.00 | 0.00 | 0.00 |
| 8,200.00 | 91.08 | 180.00 | 7,168.46 | -894.32 | 1,363.26 | 1,221.79 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Database: | EDM5000-RobertS-Local | Local Co-ordinate Reference: | Well MORNING FRESH 16N-15HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | GL 4885 & KB 17 @ 4902.00ft (ASSUMED) |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | GL 4885 & KB 17 @ 4902.00ft (ASSUMED) |
| Site: | MORNING FRESH 2-15HZ | North Reference: | True |
| Well: | MORNING FRESH 16N-15HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OH | | |
| Design: | PLAN #1 PRELIMINARY | | |

| 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) | |
| 8,300.00 | 91.08 | 180.00 | 7,166.57 | -994.30 | 1,363.26 | 1,318.25 | 0.00 | 0.00 | 0.00 | |
| 8,400.00 | 91.08 | 180.00 | 7,164.68 | -1,094.28 | 1,363.27 | 1,414.70 | 0.00 | 0.00 | 0.00 | |
| 8,500.00 | 91.08 | 180.00 | 7,162.79 | -1,194.26 | 1,363.27 | 1,511.15 | 0.00 | 0.00 | 0.00 | |
| 8,600.00 | 91.08 | 180.00 | 7,160.90 | -1,294.24 | 1,363.27 | 1,607.60 | 0.00 | 0.00 | 0.00 | |
| 8,700.00 | 91.08 | 180.00 | 7,159.02 | -1,394.23 | 1,363.27 | 1,704.06 | 0.00 | 0.00 | 0.00 | |
| 8,800.00 | 91.08 | 180.00 | 7,157.13 | -1,494.21 | 1,363.27 | 1,800.51 | 0.00 | 0.00 | 0.00 | |
| 8,900.00 | 91.08 | 180.00 | 7,155.24 | -1,594.19 | 1,363.28 | 1,896.96 | 0.00 | 0.00 | 0.00 | |
| 9,000.00 | 91.08 | 180.00 | 7,153.35 | -1,694.17 | 1,363.28 | 1,993.42 | 0.00 | 0.00 | 0.00 | |
| 9,100.00 | 91.08 | 180.00 | 7,151.46 | -1,794.16 | 1,363.28 | 2,089.87 | 0.00 | 0.00 | 0.00 | |
| 9,200.00 | 91.08 | 180.00 | 7,149.57 | -1,894.14 | 1,363.28 | 2,186.32 | 0.00 | 0.00 | 0.00 | |
| 9,300.00 | 91.08 | 180.00 | 7,147.68 | -1,994.12 | 1,363.28 | 2,282.77 | 0.00 | 0.00 | 0.00 | |
| 9,400.00 | 91.08 | 180.00 | 7,145.79 | -2,094.10 | 1,363.29 | 2,379.23 | 0.00 | 0.00 | 0.00 | |
| 9,500.00 | 91.08 | 180.00 | 7,143.90 | -2,194.08 | 1,363.29 | 2,475.68 | 0.00 | 0.00 | 0.00 | |
| 9,600.00 | 91.08 | 180.00 | 7,142.01 | -2,294.07 | 1,363.29 | 2,572.13 | 0.00 | 0.00 | 0.00 | |
| 9,700.00 | 91.08 | 180.00 | 7,140.12 | -2,394.05 | 1,363.29 | 2,668.58 | 0.00 | 0.00 | 0.00 | |
| 9,800.00 | 91.08 | 180.00 | 7,138.23 | -2,494.03 | 1,363.29 | 2,765.04 | 0.00 | 0.00 | 0.00 | |
| 9,900.00 | 91.08 | 180.00 | 7,136.34 | -2,594.01 | 1,363.30 | 2,861.49 | 0.00 | 0.00 | 0.00 | |
| 10,000.00 | 91.08 | 180.00 | 7,134.45 | -2,693.99 | 1,363.30 | 2,957.94 | 0.00 | 0.00 | 0.00 | |
| 10,100.00 | 91.08 | 180.00 | 7,132.56 | -2,793.98 | 1,363.30 | 3,054.39 | 0.00 | 0.00 | 0.00 | |
| 10,200.00 | 91.08 | 180.00 | 7,130.68 | -2,893.96 | 1,363.30 | 3,150.85 | 0.00 | 0.00 | 0.00 | |
| 10,300.00 | 91.08 | 180.00 | 7,128.79 | -2,993.94 | 1,363.30 | 3,247.30 | 0.00 | 0.00 | 0.00 | |
| 10,400.00 | 91.08 | 180.00 | 7,126.90 | -3,093.92 | 1,363.31 | 3,343.75 | 0.00 | 0.00 | 0.00 | |
| 10,500.00 | 91.08 | 180.00 | 7,125.01 | -3,193.91 | 1,363.31 | 3,440.20 | 0.00 | 0.00 | 0.00 | |
| 10,600.00 | 91.08 | 180.00 | 7,123.12 | -3,293.89 | 1,363.31 | 3,536.66 | 0.00 | 0.00 | 0.00 | |
| 10,700.00 | 91.08 | 180.00 | 7,121.23 | -3,393.87 | 1,363.31 | 3,633.11 | 0.00 | 0.00 | 0.00 | |
| 10,800.00 | 91.08 | 180.00 | 7,119.34 | -3,493.85 | 1,363.31 | 3,729.56 | 0.00 | 0.00 | 0.00 | |
| 10,900.00 | 91.08 | 180.00 | 7,117.45 | -3,593.83 | 1,363.32 | 3,826.01 | 0.00 | 0.00 | 0.00 | |
| 11,000.00 | 91.08 | 180.00 | 7,115.56 | -3,693.82 | 1,363.32 | 3,922.47 | 0.00 | 0.00 | 0.00 | |
| 11,100.00 | 91.08 | 180.00 | 7,113.67 | -3,793.80 | 1,363.32 | 4,018.92 | 0.00 | 0.00 | 0.00 | |
| 11,200.00 | 91.08 | 180.00 | 7,111.78 | -3,893.78 | 1,363.32 | 4,115.37 | 0.00 | 0.00 | 0.00 | |
| 11,300.00 | 91.08 | 180.00 | 7,109.89 | -3,993.76 | 1,363.32 | 4,211.82 | 0.00 | 0.00 | 0.00 | |
| 11,400.00 | 91.08 | 180.00 | 7,108.00 | -4,093.74 | 1,363.33 | 4,308.28 | 0.00 | 0.00 | 0.00 | |
| 11,500.00 | 91.08 | 180.00 | 7,106.11 | -4,193.73 | 1,363.33 | 4,404.73 | 0.00 | 0.00 | 0.00 | |
| 11,600.00 | 91.08 | 180.00 | 7,104.23 | -4,293.71 | 1,363.33 | 4,501.18 | 0.00 | 0.00 | 0.00 | |
| 11,700.00 | 91.08 | 180.00 | 7,102.34 | -4,393.69 | 1,363.33 | 4,597.63 | 0.00 | 0.00 | 0.00 | |
| 11,800.00 | 91.08 | 180.00 | 7,100.45 | -4,493.67 | 1,363.33 | 4,694.09 | 0.00 | 0.00 | 0.00 | |
| 11,900.00 | 91.08 | 180.00 | 7,098.56 | -4,593.66 | 1,363.34 | 4,790.54 | 0.00 | 0.00 | 0.00 | |
| 12,000.00 | 91.08 | 180.00 | 7,096.67 | -4,693.64 | 1,363.34 | 4,886.99 | 0.00 | 0.00 | 0.00 | |
| 12,100.00 | 91.08 | 180.00 | 7,094.78 | -4,793.62 | 1,363.34 | 4,983.44 | 0.00 | 0.00 | 0.00 | |
| 12,200.00 | 91.08 | 180.00 | 7,092.89 | -4,893.60 | 1,363.34 | 5,079.90 | 0.00 | 0.00 | 0.00 | |
| 12,300.00 | 91.08 | 180.00 | 7,091.00 | -4,993.59 | 1,363.34 | 5,176.35 | 0.00 | 0.00 | 0.00 | |
| TD at 12300.00 - PBHL_MORNING FRESH 16N-15HZ(1' FSL 415'FEL) | | | | | | | | | | |

| Design Targets | | | | | | | | | |
|---------------------------|---------------|--------------|----------|------------|------------|-----------------|----------------|------------|--------------|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (usft) | Easting (usft) | Latitude | Longitude |
| - hit/miss target | | | | | | | | | |
| - Shape | | | | | | | | | |
| PBHL_MORNING FRES | 0.00 | 0.00 | 7,091.00 | -4,993.59 | 1,363.34 | 1,323,066.17 | 3,207,964.37 | 40.2178170 | -104.7552900 |
| - plan hits target center | | | | | | | | | |
| - Point | | | | | | | | | |

| | | | |
|------------------|-----------------------------|-------------------------------------|---------------------------------------|
| Database: | EDM5000-RobertS-Local | Local Co-ordinate Reference: | Well MORNING FRESH 16N-15HZ |
| Company: | US ROCKIES REGION PLANNING | TVD Reference: | GL 4885 & KB 17 @ 4902.00ft (ASSUMED) |
| Project: | COLORADO NORTHERN ZONE - 83 | MD Reference: | GL 4885 & KB 17 @ 4902.00ft (ASSUMED) |
| Site: | MORNING FRESH 2-15HZ | North Reference: | True |
| Well: | MORNING FRESH 16N-15HZ | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | OH | | |
| Design: | PLAN #1 PRELIMINARY | | |

| Casing Points | | | | | |
|---------------------|---------------------|---------------------|----------------------|--------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (in) | Hole Diameter (in) | |
| 702.00 | 702.00 | 9 5/8" | 9.625 | 12.250 | |
| 7,695.38 | 7,178.00 | 7"(635 FNL 407 FEL) | 7.000 | 7.500 | |

| Formations | | | | | | |
|---------------------|---------------------|----------------|-----------|---------|-------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) | |
| 652.00 | 651.00 | Fox Hills Base | | | | |
| 4,096.08 | 3,996.00 | Parkman | | | | |
| 4,625.71 | 4,506.00 | Sussex | | | | |
| 7,303.52 | 7,055.00 | Sharon Springs | | | | |
| 7,402.36 | 7,109.00 | Niobrara A | | | | |
| 7,540.16 | 7,159.00 | Niobrara B | | | | |

| Plan Annotations | | | | | |
|---------------------|---------------------|-------------------|------------|----------------------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment | |
| | | +N/-S (ft) | +E/-W (ft) | | |
| 902.00 | 902.00 | 0.00 | 0.00 | Start Build 2.00 | |
| 1,684.40 | 1,674.71 | 14.96 | 105.12 | Start 4317.74 hold at 1684.40 MD | |
| 6,002.15 | 5,832.43 | 179.04 | 1,258.12 | Start Drop -2.00 | |
| 6,784.55 | 6,605.14 | 194.00 | 1,363.24 | Start DLS 10.00 TFO 180.00 | |
| 7,695.38 | 7,178.00 | -389.78 | 1,363.25 | Start 4604.63 hold at 7695.38 MD | |
| 12,300.00 | 7,091.00 | -4,993.59 | 1,363.34 | TD at 12300.00 | |