

Chesapeake Operating Inc.



Project: Weld County, CO NAD 27
Site: Sec 28-T10N-R67W
Well: State 10-67 28-1H
Wellbore: Original Hole
Plan: Final Surveys
Rig: Cyclone 11

SECTION DETAILS Plan 1

| 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 | |
| 7303.96 | 0.00 | 0.00 | 7303.96 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 8213.96 | 91.00 | 180.43 | 7876.83 | -582.94 | -4.39 | 10.00 | 180.43 | 582.96 | |
| 12012.64 | 91.00 | 180.43 | 7810.53 | -4380.93 | -33.02 | 0.00 | 0.00 | 4381.05 | PBHL |

Surface Location:
SHL 250' FNL & 660' FWL Sec 28-T10N-R67W

US State Plane 1927 (Exact solution)
 Colorado North 501

Elevation: 5684' GL + 14' KB @ 5698.00ft (Cyclone 11)

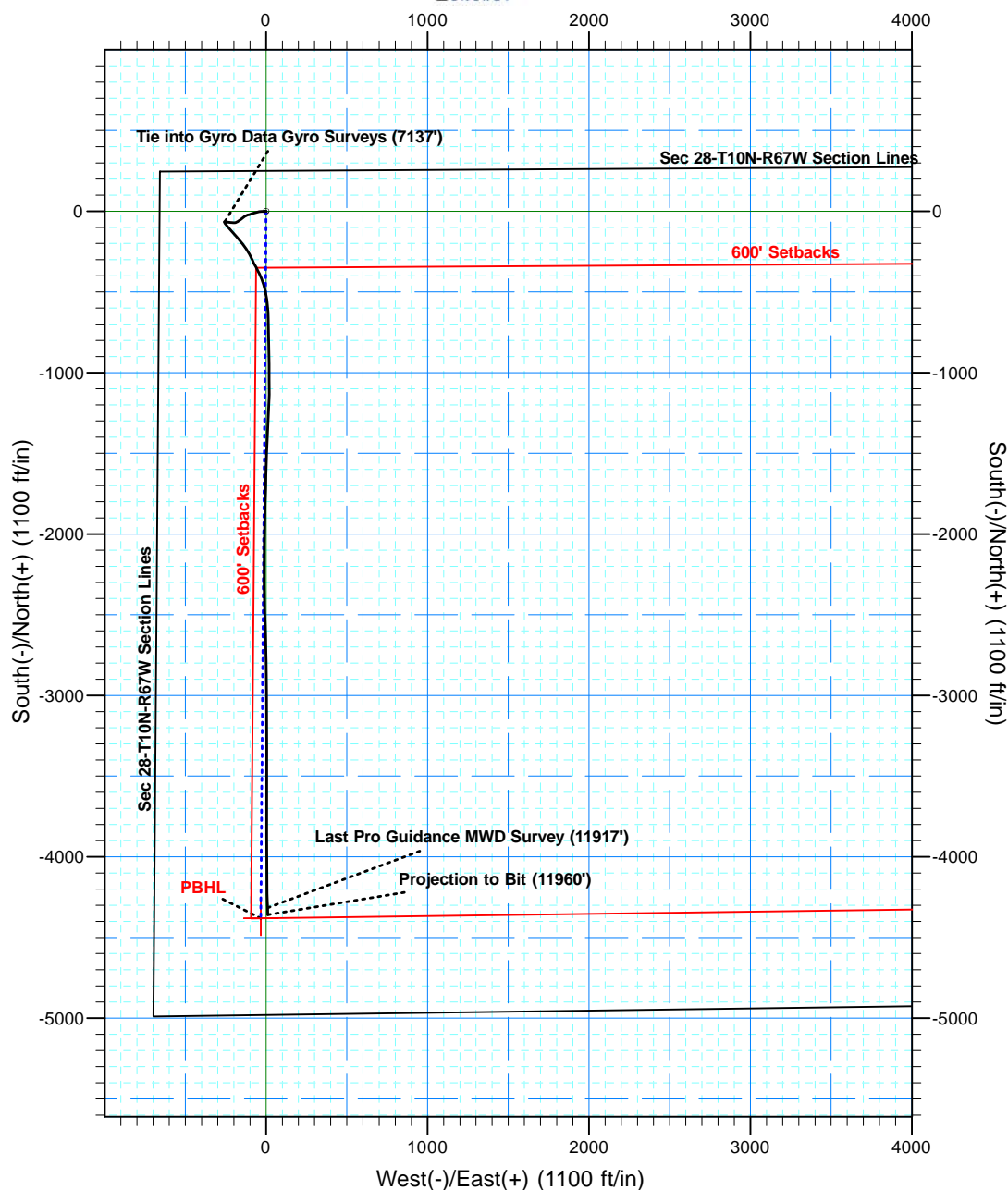
| Northing | Easting | Latitude | Longitude |
|-----------|------------|------------------|------------------|
| 539040.89 | 2165389.97 | 40° 48' 41.564 N | 104° 54' 9.168 W |

WELLBORE TARGET DETAILS (LAT/LONG)

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude |
|-------------|---------|----------|--------|------------------|------------------|
| PBHL | 7882.41 | -4380.93 | -33.02 | 40° 47' 58.279 N | 104° 54' 9.981 W |

To convert a Magnetic Direction to a Grid Direction, Add 8.63°

Magnetic Model: IGRF2010 Date: 03-Mar-11
Azimuths & Coordinates to NAD27 Grid



Chesapeake Operating Inc.



Project: Weld County, CO NAD 27
 Site: Sec 28-T10N-R67W
 Well: State 10-67 28-1H
 Wellbore: Original Hole
 Plan: Final Surveys
 Rig: Cyclone 11



SECTION DETAILS Plan 1

| 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 | |
| 7303.96 | 0.00 | 0.00 | 7303.96 | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 8213.96 | 91.00 | 180.43 | 7876.83 | -582.94 | -4.39 | 10.00 | 180.43 | 582.96 | |
| 12012.64 | 91.00 | 180.43 | 7810.53 | -4380.93 | -33.02 | 0.00 | 0.00 | 4381.05 | PBHL |

Surface Location: SHL 250' FNL & 660' FWL Sec 28-T10N-R67W

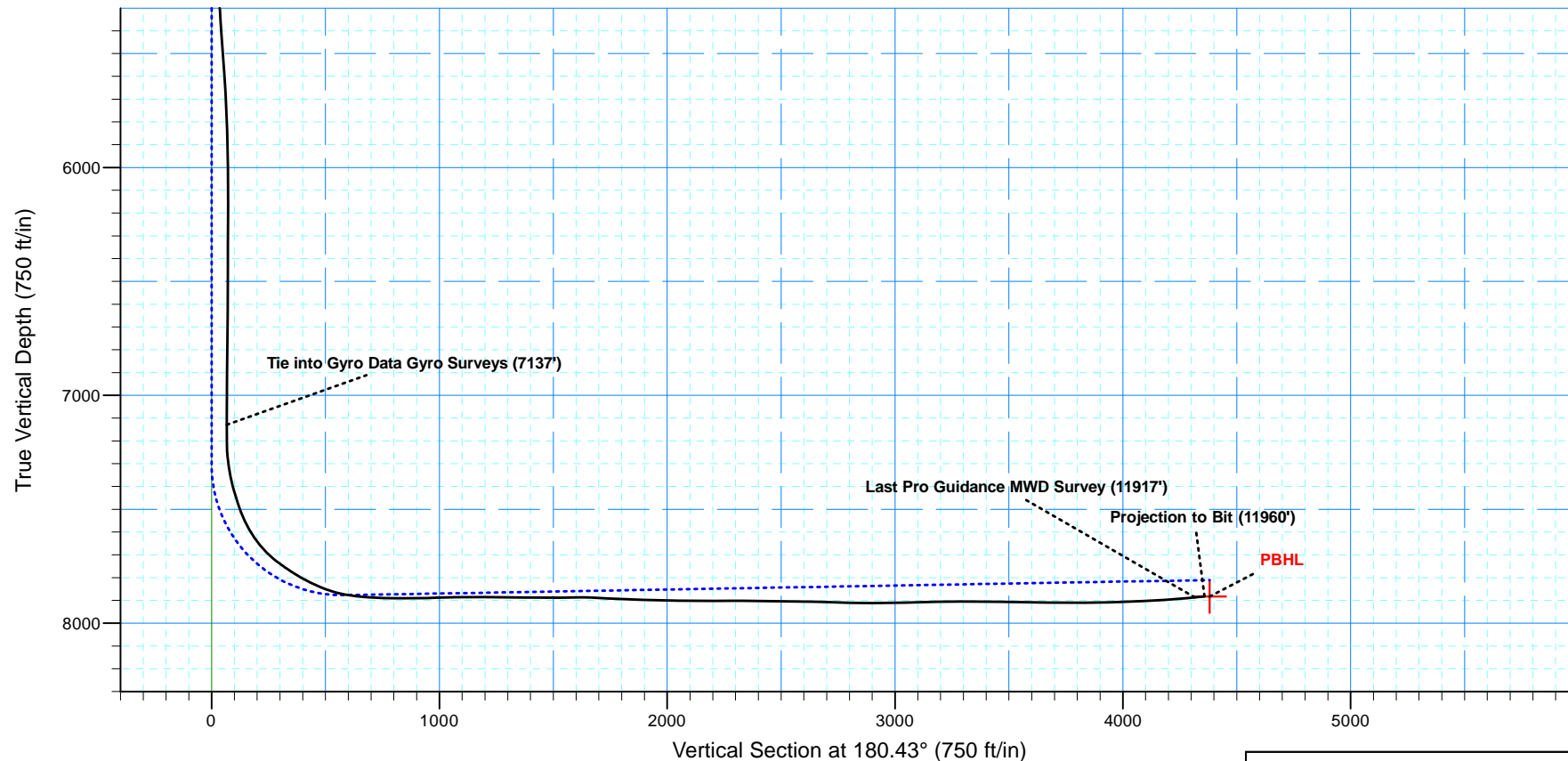
US State Plane 1927 (Exact solution)
 Colorado North 501

Elevation: 5684' GL + 14' KB @ 5698.00ft (Cyclone 11)

| Northing | Easting | Latitude | Longitude |
|-----------|------------|------------------|------------------|
| 539040.89 | 2165389.97 | 40° 48' 41.564 N | 104° 54' 9.168 W |

WELLBORE TARGET DETAILS (LAT/LONG)

| Name | TVD | +N-S | +E-W | Latitude | Longitude |
|------|---------|----------|--------|------------------|------------------|
| PBHL | 7882.41 | -4380.93 | -33.02 | 40° 47' 58.279 N | 104° 54' 9.981 W |





Chesapeake Operating Inc.

Weld County, CO NAD 27

Sec 28-T10N-R67W

State 10-67 28-1H

Original Hole

Design: Final Surveys

Standard Survey Report

31 March, 2011



| | | | |
|------------------|---------------------------|-------------------------------------|--|
| Company: | Chesapeake Operating Inc. | Local Co-ordinate Reference: | Well State 10-67 28-1H |
| Project: | Weld County, CO NAD 27 | TVD Reference: | 5684' GL + 14' KB @ 5698.00ft (Cyclone 11) |
| Site: | Sec 28-T10N-R67W | MD Reference: | 5684' GL + 14' KB @ 5698.00ft (Cyclone 11) |
| Well: | State 10-67 28-1H | North Reference: | Grid |
| Wellbore: | Original Hole | Survey Calculation Method: | Minimum Curvature |
| Design: | Final Surveys | Database: | EDM 5000.1 Single User Db |

| | | | |
|--------------------|--------------------------------------|----------------------|----------------|
| Project | Weld County, CO NAD 27 | | |
| Map System: | US State Plane 1927 (Exact solution) | System Datum: | Mean Sea Level |
| Geo Datum: | NAD 1927 (NADCON CONUS) | | |
| Map Zone: | Colorado North 501 | | |

| | | | |
|------------------------------|------------------|--------------------------|-------------------|
| Site | Sec 28-T10N-R67W | | |
| Site Position: | | Northing: | 539,041.05 usft |
| From: | Lat/Long | Easting: | 2,165,390.12 usft |
| Position Uncertainty: | 0.00 ft | Slot Radius: | 13-3/16 " |
| | | Latitude: | 40° 48' 41.566 N |
| | | Longitude: | 104° 54' 9.166 W |
| | | Grid Convergence: | 0.39 ° |

| | | | |
|-----------------------------|-------------------|---------|----------------------------|
| Well | State 10-67 28-1H | | |
| Well Position | +N/-S | 0.00 ft | Northing: |
| | +E/-W | 0.00 ft | Easting: |
| Position Uncertainty | 0.00 ft | | Wellhead Elevation: |
| | | | Latitude: |
| | | | Longitude: |
| | | | Ground Level: |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Original Hole | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 2011/03/03 | 9.01 | 67.37 | 53,354 |

| | | | | | |
|--------------------------|------------------------------|-------------------|-------------------|----------------------|------|
| Design | Final Surveys | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.00 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) | |
| | 0.00 | 0.00 | 0.00 | 180.43 | |

| | | | | | |
|-----------------------|----------------|--|------------------|--------------------|--|
| Survey Program | Date | 2011/03/31 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 132.00 | 7,137.00 | Gyro Survey (Original Hole) | Gyro Survey | Gyro Survey | |
| 7,137.00 | 11,917.00 | Pro Guidance MWD Surveys (Original Hol | MWD | MWD | |
| 11,960.00 | 11,960.00 | Projection to Bit (Original Hole) | Projection | Projection | |

| | | | | | | | | | | |
|----------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|------------------------------|-----------------------------|----------------------------|--|
| 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 | |
| 132.00 | 0.18 | 195.60 | 132.00 | -0.20 | -0.06 | 0.20 | 0.14 | 0.14 | 0.00 | |
| 213.00 | 0.15 | 168.98 | 213.00 | -0.43 | -0.07 | 0.43 | 0.10 | -0.04 | -32.86 | |
| 303.00 | 0.15 | 155.86 | 303.00 | -0.65 | 0.00 | 0.65 | 0.04 | 0.00 | -14.58 | |
| 394.00 | 0.06 | 51.40 | 394.00 | -0.73 | 0.09 | 0.73 | 0.19 | -0.10 | -114.79 | |
| 484.00 | 0.03 | 245.90 | 484.00 | -0.71 | 0.10 | 0.71 | 0.10 | -0.03 | -183.89 | |
| 579.00 | 0.01 | 46.72 | 579.00 | -0.71 | 0.09 | 0.71 | 0.04 | -0.02 | 169.28 | |
| 674.00 | 0.07 | 286.94 | 674.00 | -0.69 | 0.04 | 0.69 | 0.08 | 0.06 | -126.08 | |
| 767.00 | 0.16 | 266.59 | 767.00 | -0.68 | -0.15 | 0.68 | 0.10 | 0.10 | -21.88 | |

| | | | |
|------------------|---------------------------|-------------------------------------|--|
| Company: | Chesapeake Operating Inc. | Local Co-ordinate Reference: | Well State 10-67 28-1H |
| Project: | Weld County, CO NAD 27 | TVD Reference: | 5684' GL + 14' KB @ 5698.00ft (Cyclone 11) |
| Site: | Sec 28-T10N-R67W | MD Reference: | 5684' GL + 14' KB @ 5698.00ft (Cyclone 11) |
| Well: | State 10-67 28-1H | North Reference: | Grid |
| Wellbore: | Original Hole | Survey Calculation Method: | Minimum Curvature |
| Design: | Final Surveys | Database: | EDM 5000.1 Single User Db |

| 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) | |
| 862.00 | 0.02 | 221.03 | 862.00 | -0.70 | -0.29 | 0.70 | 0.15 | -0.15 | -47.96 | |
| 957.00 | 0.11 | 122.81 | 957.00 | -0.76 | -0.23 | 0.77 | 0.12 | 0.09 | -103.39 | |
| 1,051.00 | 0.13 | 161.83 | 1,051.00 | -0.91 | -0.12 | 0.92 | 0.09 | 0.02 | 41.51 | |
| 1,145.00 | 0.18 | 182.94 | 1,145.00 | -1.16 | -0.09 | 1.16 | 0.08 | 0.05 | 22.46 | |
| 1,240.00 | 0.17 | 228.60 | 1,240.00 | -1.41 | -0.20 | 1.41 | 0.14 | -0.01 | 48.06 | |
| 1,335.00 | 0.33 | 273.72 | 1,335.00 | -1.48 | -0.58 | 1.49 | 0.25 | 0.17 | 47.49 | |
| 1,431.00 | 0.48 | 283.01 | 1,430.99 | -1.37 | -1.25 | 1.38 | 0.17 | 0.16 | 9.68 | |
| 1,524.00 | 0.63 | 288.25 | 1,523.99 | -1.12 | -2.12 | 1.14 | 0.17 | 0.16 | 5.63 | |
| 1,619.00 | 0.78 | 291.06 | 1,618.98 | -0.73 | -3.21 | 0.75 | 0.16 | 0.16 | 2.96 | |
| 1,713.00 | 0.89 | 290.28 | 1,712.97 | -0.25 | -4.50 | 0.28 | 0.12 | 0.12 | -0.83 | |
| 1,810.00 | 0.80 | 286.02 | 1,809.96 | 0.20 | -5.85 | -0.16 | 0.11 | -0.09 | -4.39 | |
| 1,905.00 | 0.68 | 281.46 | 1,904.95 | 0.50 | -7.04 | -0.44 | 0.14 | -0.13 | -4.80 | |
| 1,999.00 | 0.63 | 267.45 | 1,998.95 | 0.59 | -8.11 | -0.52 | 0.18 | -0.05 | -14.90 | |
| 2,094.00 | 0.61 | 260.42 | 2,093.94 | 0.48 | -9.13 | -0.41 | 0.08 | -0.02 | -7.40 | |
| 2,188.00 | 0.61 | 254.59 | 2,187.94 | 0.26 | -10.10 | -0.19 | 0.07 | 0.00 | -6.20 | |
| 2,282.00 | 0.69 | 262.99 | 2,281.93 | 0.06 | -11.15 | 0.02 | 0.13 | 0.09 | 8.94 | |
| 2,377.00 | 1.09 | 251.03 | 2,376.92 | -0.30 | -12.57 | 0.40 | 0.46 | 0.42 | -12.59 | |
| 2,471.00 | 1.34 | 258.95 | 2,470.90 | -0.81 | -14.49 | 0.91 | 0.32 | 0.27 | 8.43 | |
| 2,565.00 | 1.33 | 264.53 | 2,564.87 | -1.12 | -16.66 | 1.25 | 0.14 | -0.01 | 5.94 | |
| 2,658.00 | 1.13 | 264.00 | 2,657.85 | -1.32 | -18.65 | 1.46 | 0.22 | -0.22 | -0.57 | |
| 2,752.00 | 1.11 | 272.12 | 2,751.83 | -1.38 | -20.48 | 1.54 | 0.17 | -0.02 | 8.64 | |
| 2,847.00 | 1.30 | 264.19 | 2,846.81 | -1.46 | -22.47 | 1.63 | 0.27 | 0.20 | -8.35 | |
| 2,942.00 | 1.56 | 266.94 | 2,941.78 | -1.64 | -24.83 | 1.82 | 0.28 | 0.27 | 2.89 | |
| 3,037.00 | 1.67 | 272.05 | 3,036.75 | -1.65 | -27.51 | 1.86 | 0.19 | 0.12 | 5.38 | |
| 3,132.00 | 2.10 | 266.37 | 3,131.69 | -1.72 | -30.63 | 1.95 | 0.49 | 0.45 | -5.98 | |
| 3,227.00 | 2.70 | 265.45 | 3,226.61 | -2.00 | -34.59 | 2.26 | 0.63 | 0.63 | -0.97 | |
| 3,320.00 | 3.25 | 266.21 | 3,319.48 | -2.35 | -39.41 | 2.65 | 0.59 | 0.59 | 0.82 | |
| 3,415.00 | 3.23 | 265.16 | 3,414.33 | -2.75 | -44.76 | 3.09 | 0.07 | -0.02 | -1.11 | |
| 3,510.00 | 3.29 | 252.64 | 3,509.18 | -3.79 | -50.03 | 4.17 | 0.75 | 0.06 | -13.18 | |
| 3,604.00 | 3.34 | 251.86 | 3,603.02 | -5.45 | -55.21 | 5.87 | 0.07 | 0.05 | -0.83 | |
| 3,698.00 | 3.34 | 253.00 | 3,696.86 | -7.10 | -60.43 | 7.56 | 0.07 | 0.00 | 1.21 | |
| 3,793.00 | 3.37 | 256.40 | 3,791.70 | -8.57 | -65.79 | 9.07 | 0.21 | 0.03 | 3.58 | |
| 3,887.00 | 3.15 | 255.10 | 3,885.55 | -9.88 | -70.97 | 10.42 | 0.25 | -0.23 | -1.38 | |
| 3,981.00 | 2.93 | 252.10 | 3,979.42 | -11.29 | -75.75 | 11.86 | 0.29 | -0.23 | -3.19 | |
| 4,076.00 | 2.62 | 250.61 | 4,074.30 | -12.75 | -80.11 | 13.36 | 0.34 | -0.33 | -1.57 | |
| 4,170.00 | 2.38 | 258.81 | 4,168.22 | -13.85 | -84.05 | 14.48 | 0.46 | -0.26 | 8.72 | |
| 4,265.00 | 2.43 | 252.11 | 4,263.13 | -14.85 | -87.90 | 15.51 | 0.30 | 0.05 | -7.05 | |
| 4,359.00 | 2.47 | 249.90 | 4,357.05 | -16.16 | -91.70 | 16.85 | 0.11 | 0.04 | -2.35 | |
| 4,454.00 | 2.72 | 245.86 | 4,451.95 | -17.78 | -95.68 | 18.50 | 0.33 | 0.26 | -4.25 | |
| 4,548.00 | 2.67 | 251.06 | 4,545.84 | -19.40 | -99.79 | 20.15 | 0.27 | -0.05 | 5.53 | |
| 4,643.00 | 2.58 | 249.97 | 4,640.75 | -20.85 | -103.89 | 21.64 | 0.11 | -0.09 | -1.15 | |
| 4,739.00 | 2.68 | 254.22 | 4,736.64 | -22.20 | -108.08 | 23.02 | 0.23 | 0.10 | 4.43 | |
| 4,834.00 | 2.60 | 259.35 | 4,831.54 | -23.21 | -112.33 | 24.05 | 0.26 | -0.08 | 5.40 | |

| | | | |
|------------------|---------------------------|-------------------------------------|--|
| Company: | Chesapeake Operating Inc. | Local Co-ordinate Reference: | Well State 10-67 28-1H |
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| Site: | Sec 28-T10N-R67W | MD Reference: | 5684' GL + 14' KB @ 5698.00ft (Cyclone 11) |
| Well: | State 10-67 28-1H | North Reference: | Grid |
| Wellbore: | Original Hole | Survey Calculation Method: | Minimum Curvature |
| Design: | Final Surveys | Database: | EDM 5000.1 Single User Db |

| 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) | |
| 4,929.00 | 2.91 | 257.57 | 4,926.43 | -24.12 | -116.81 | 25.00 | 0.34 | 0.33 | -1.87 | |
| 5,023.00 | 3.11 | 249.61 | 5,020.30 | -25.53 | -121.53 | 26.44 | 0.49 | 0.21 | -8.47 | |
| 5,119.00 | 3.66 | 241.37 | 5,116.14 | -27.90 | -126.66 | 28.86 | 0.76 | 0.57 | -8.58 | |
| 5,214.00 | 4.23 | 238.78 | 5,210.91 | -31.17 | -132.32 | 32.17 | 0.63 | 0.60 | -2.73 | |
| 5,309.00 | 4.85 | 233.30 | 5,305.61 | -35.39 | -138.53 | 36.43 | 0.80 | 0.65 | -5.77 | |
| 5,404.00 | 5.86 | 228.87 | 5,400.20 | -40.98 | -145.40 | 42.07 | 1.15 | 1.06 | -4.66 | |
| 5,499.00 | 6.51 | 231.42 | 5,494.64 | -47.52 | -153.27 | 48.68 | 0.74 | 0.68 | 2.68 | |
| 5,594.00 | 6.45 | 232.88 | 5,589.04 | -54.10 | -161.73 | 55.32 | 0.18 | -0.06 | 1.54 | |
| 5,688.00 | 5.72 | 235.30 | 5,682.51 | -59.96 | -169.79 | 61.23 | 0.82 | -0.78 | 2.57 | |
| 5,783.00 | 4.60 | 241.14 | 5,777.12 | -64.49 | -177.02 | 65.82 | 1.30 | -1.18 | 6.15 | |
| 5,877.00 | 4.09 | 245.84 | 5,870.85 | -67.68 | -183.38 | 69.06 | 0.66 | -0.54 | 5.00 | |
| 5,972.00 | 3.25 | 254.04 | 5,965.66 | -69.81 | -189.06 | 71.23 | 1.04 | -0.88 | 8.63 | |
| 6,066.00 | 3.07 | 265.18 | 6,059.51 | -70.75 | -194.13 | 72.21 | 0.68 | -0.19 | 11.85 | |
| 6,161.00 | 3.19 | 270.70 | 6,154.37 | -70.93 | -199.31 | 72.43 | 0.34 | 0.13 | 5.81 | |
| 6,255.00 | 3.52 | 274.29 | 6,248.21 | -70.69 | -204.80 | 72.23 | 0.42 | 0.35 | 3.82 | |
| 6,350.00 | 4.14 | 276.35 | 6,343.00 | -70.09 | -211.12 | 71.68 | 0.67 | 0.65 | 2.17 | |
| 6,444.00 | 3.98 | 274.52 | 6,436.76 | -69.46 | -217.74 | 71.10 | 0.22 | -0.17 | -1.95 | |
| 6,537.00 | 3.67 | 275.78 | 6,529.56 | -68.90 | -223.92 | 70.59 | 0.35 | -0.33 | 1.35 | |
| 6,633.00 | 3.40 | 274.66 | 6,625.37 | -68.36 | -229.82 | 70.09 | 0.29 | -0.28 | -1.17 | |
| 6,728.00 | 3.12 | 275.57 | 6,720.22 | -67.88 | -235.20 | 69.65 | 0.30 | -0.29 | 0.96 | |
| 6,822.00 | 2.95 | 281.13 | 6,814.09 | -67.17 | -240.12 | 68.98 | 0.36 | -0.18 | 5.91 | |
| 6,917.00 | 2.89 | 283.44 | 6,908.96 | -66.14 | -244.85 | 67.98 | 0.14 | -0.06 | 2.43 | |
| 7,011.00 | 2.85 | 280.36 | 7,002.85 | -65.17 | -249.45 | 67.05 | 0.17 | -0.04 | -3.28 | |
| 7,106.00 | 2.69 | 275.88 | 7,097.74 | -64.51 | -253.99 | 66.43 | 0.28 | -0.17 | -4.72 | |
| 7,137.00 | 2.61 | 268.95 | 7,128.70 | -64.45 | -255.42 | 66.38 | 1.06 | -0.26 | -22.35 | |
| Last Gyro Data Gyro Survey (7137') - Tie into Gyro Data Gyro Surveys (7137') | | | | | | | | | | |
| 7,209.00 | 2.30 | 257.00 | 7,200.64 | -64.81 | -258.47 | 66.75 | 0.83 | -0.43 | -16.60 | |
| 7,241.00 | 2.50 | 193.90 | 7,232.61 | -65.63 | -259.26 | 67.58 | 7.87 | 0.63 | -197.19 | |
| 7,273.00 | 5.20 | 161.60 | 7,264.54 | -67.68 | -258.97 | 69.63 | 10.51 | 8.44 | -100.94 | |
| 7,305.00 | 8.40 | 150.10 | 7,296.31 | -71.09 | -257.35 | 73.03 | 10.82 | 10.00 | -35.94 | |
| 7,336.00 | 11.50 | 144.70 | 7,326.84 | -75.57 | -254.43 | 77.49 | 10.43 | 10.00 | -17.42 | |
| 7,368.00 | 14.60 | 141.70 | 7,358.02 | -81.34 | -250.09 | 83.23 | 9.91 | 9.69 | -9.38 | |
| 7,400.00 | 17.70 | 140.10 | 7,388.75 | -88.24 | -244.47 | 90.08 | 9.79 | 9.69 | -5.00 | |
| 7,432.00 | 20.50 | 141.30 | 7,418.98 | -96.35 | -237.84 | 98.14 | 8.84 | 8.75 | 3.75 | |
| 7,464.00 | 23.10 | 140.30 | 7,448.69 | -105.55 | -230.33 | 107.29 | 8.21 | 8.13 | -3.13 | |
| 7,496.00 | 24.80 | 137.20 | 7,477.94 | -115.31 | -221.75 | 116.98 | 6.61 | 5.31 | -9.69 | |
| 7,527.00 | 27.20 | 138.40 | 7,505.80 | -125.38 | -212.63 | 126.98 | 7.93 | 7.74 | 3.87 | |
| 7,559.00 | 30.30 | 135.60 | 7,533.85 | -136.62 | -202.13 | 138.14 | 10.56 | 9.69 | -8.75 | |
| 7,591.00 | 33.30 | 137.30 | 7,561.05 | -148.84 | -190.52 | 150.28 | 9.78 | 9.38 | 5.31 | |
| 7,621.00 | 35.90 | 141.00 | 7,585.74 | -161.74 | -179.39 | 163.08 | 11.14 | 8.67 | 12.33 | |
| 7,655.00 | 40.30 | 140.90 | 7,612.49 | -178.02 | -166.18 | 179.27 | 12.94 | 12.94 | -0.29 | |
| 7,687.00 | 44.00 | 140.60 | 7,636.21 | -194.65 | -152.59 | 195.79 | 11.58 | 11.56 | -0.94 | |
| 7,719.00 | 46.90 | 142.10 | 7,658.66 | -212.46 | -138.36 | 213.50 | 9.66 | 9.06 | 4.69 | |
| 7,750.00 | 49.00 | 145.50 | 7,679.42 | -231.04 | -124.78 | 231.97 | 10.59 | 6.77 | 10.97 | |

| | | | |
|------------------|---------------------------|-------------------------------------|--|
| Company: | Chesapeake Operating Inc. | Local Co-ordinate Reference: | Well State 10-67 28-1H |
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| 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) |
| 7,782.00 | 51.60 | 150.00 | 7,699.87 | -251.86 | -111.66 | 252.69 | 13.53 | 8.13 | 14.06 |
| 7,814.00 | 53.80 | 153.30 | 7,719.26 | -274.26 | -99.59 | 275.00 | 10.70 | 6.88 | 10.31 |
| 7,846.00 | 55.80 | 154.10 | 7,737.71 | -297.70 | -88.00 | 298.35 | 6.58 | 6.25 | 2.50 |
| 7,878.00 | 57.90 | 152.70 | 7,755.21 | -321.65 | -76.01 | 322.22 | 7.52 | 6.56 | -4.38 |
| 7,909.00 | 60.10 | 152.20 | 7,771.17 | -345.21 | -63.72 | 345.68 | 7.23 | 7.10 | -1.61 |
| 7,941.00 | 62.00 | 152.70 | 7,786.66 | -370.03 | -50.77 | 370.41 | 6.09 | 5.94 | 1.56 |
| 7,973.00 | 63.50 | 154.40 | 7,801.31 | -395.50 | -38.10 | 395.78 | 6.65 | 4.69 | 5.31 |
| 8,004.00 | 64.00 | 158.70 | 7,815.03 | -421.00 | -27.04 | 421.19 | 12.54 | 1.61 | 13.87 |
| 8,036.00 | 66.00 | 162.10 | 7,828.55 | -448.32 | -17.32 | 448.44 | 11.48 | 6.25 | 10.63 |
| 8,068.00 | 67.70 | 166.40 | 7,841.14 | -476.63 | -9.34 | 476.69 | 13.45 | 5.31 | 13.44 |
| 8,100.00 | 70.40 | 169.60 | 7,852.58 | -505.86 | -3.14 | 505.87 | 12.58 | 8.44 | 10.00 |
| 8,132.00 | 73.90 | 171.50 | 7,862.39 | -535.90 | 1.86 | 535.87 | 12.31 | 10.94 | 5.94 |
| 8,164.00 | 77.80 | 172.00 | 7,870.21 | -566.60 | 6.31 | 566.54 | 12.28 | 12.19 | 1.56 |
| 8,195.00 | 80.90 | 174.00 | 7,875.94 | -596.83 | 10.02 | 596.74 | 11.84 | 10.00 | 6.45 |
| 8,227.00 | 82.30 | 178.40 | 7,880.62 | -628.41 | 12.11 | 628.30 | 14.29 | 4.38 | 13.75 |
| 8,259.00 | 85.20 | 178.60 | 7,884.10 | -660.21 | 12.94 | 660.09 | 9.08 | 9.06 | 0.63 |
| 8,354.00 | 88.80 | 178.70 | 7,889.07 | -755.03 | 15.18 | 754.90 | 3.79 | 3.79 | 0.11 |
| 8,450.00 | 90.00 | 179.50 | 7,890.08 | -851.02 | 16.69 | 850.87 | 1.50 | 1.25 | 0.83 |
| 8,545.00 | 90.90 | 179.50 | 7,889.33 | -946.01 | 17.52 | 945.85 | 0.95 | 0.95 | 0.00 |
| 8,641.00 | 91.30 | 179.60 | 7,887.49 | -1,041.99 | 18.27 | 1,041.82 | 0.43 | 0.42 | 0.10 |
| 8,736.00 | 91.70 | 179.30 | 7,885.00 | -1,136.95 | 19.18 | 1,136.77 | 0.53 | 0.42 | -0.32 |
| 8,832.00 | 88.00 | 184.10 | 7,885.25 | -1,232.86 | 16.34 | 1,232.70 | 6.31 | -3.85 | 5.00 |
| 8,927.00 | 88.90 | 183.10 | 7,887.82 | -1,327.64 | 10.37 | 1,327.52 | 1.42 | 0.95 | -1.05 |
| 9,022.00 | 90.90 | 181.90 | 7,887.99 | -1,422.54 | 6.23 | 1,422.45 | 2.46 | 2.11 | -1.26 |
| 9,118.00 | 90.50 | 182.50 | 7,886.82 | -1,518.46 | 2.54 | 1,518.40 | 0.75 | -0.42 | 0.63 |
| 9,213.00 | 90.00 | 181.20 | 7,886.40 | -1,613.41 | -0.52 | 1,613.37 | 1.47 | -0.53 | -1.37 |
| 9,309.00 | 86.50 | 181.90 | 7,889.33 | -1,709.31 | -3.12 | 1,709.29 | 3.72 | -3.65 | 0.73 |
| 9,404.00 | 87.70 | 181.50 | 7,894.14 | -1,804.15 | -5.93 | 1,804.14 | 1.33 | 1.26 | -0.42 |
| 9,500.00 | 88.00 | 181.20 | 7,897.74 | -1,900.05 | -8.19 | 1,900.06 | 0.44 | 0.31 | -0.31 |
| 9,595.00 | 88.60 | 180.90 | 7,900.56 | -1,995.00 | -9.93 | 1,995.01 | 0.71 | 0.63 | -0.32 |
| 9,691.00 | 90.80 | 181.30 | 7,901.06 | -2,090.97 | -11.77 | 2,091.00 | 2.33 | 2.29 | 0.42 |
| 9,786.00 | 89.40 | 180.50 | 7,900.90 | -2,185.96 | -13.27 | 2,185.99 | 1.70 | -1.47 | -0.84 |
| 9,882.00 | 90.00 | 179.50 | 7,901.40 | -2,281.95 | -13.27 | 2,281.99 | 1.21 | 0.63 | -1.04 |
| 9,976.00 | 88.90 | 178.60 | 7,902.30 | -2,375.93 | -11.71 | 2,375.95 | 1.51 | -1.17 | -0.96 |
| 10,071.00 | 89.80 | 177.90 | 7,903.38 | -2,470.88 | -8.81 | 2,470.88 | 1.20 | 0.95 | -0.74 |
| 10,166.00 | 89.40 | 177.60 | 7,904.04 | -2,565.81 | -5.08 | 2,565.77 | 0.53 | -0.42 | -0.32 |
| 10,261.00 | 88.00 | 179.10 | 7,906.20 | -2,660.74 | -2.34 | 2,660.68 | 2.16 | -1.47 | 1.58 |
| 10,356.00 | 88.30 | 178.20 | 7,909.26 | -2,755.66 | -0.11 | 2,755.58 | 1.00 | 0.32 | -0.95 |
| 10,451.00 | 89.50 | 179.90 | 7,911.09 | -2,850.62 | 1.47 | 2,850.53 | 2.19 | 1.26 | 1.79 |
| 10,546.00 | 90.40 | 179.80 | 7,911.17 | -2,945.62 | 1.72 | 2,945.53 | 0.95 | 0.95 | -0.11 |
| 10,641.00 | 91.50 | 179.20 | 7,909.60 | -3,040.60 | 2.55 | 3,040.50 | 1.32 | 1.16 | -0.63 |
| 10,737.00 | 91.40 | 180.20 | 7,907.17 | -3,136.57 | 3.05 | 3,136.46 | 1.05 | -0.10 | 1.04 |
| 10,832.00 | 90.80 | 179.80 | 7,905.34 | -3,231.55 | 3.05 | 3,231.44 | 0.76 | -0.63 | -0.42 |

| | | | |
|------------------|---------------------------|-------------------------------------|--|
| Company: | Chesapeake Operating Inc. | Local Co-ordinate Reference: | Well State 10-67 28-1H |
| Project: | Weld County, CO NAD 27 | TVD Reference: | 5684' GL + 14' KB @ 5698.00ft (Cyclone 11) |
| Site: | Sec 28-T10N-R67W | MD Reference: | 5684' GL + 14' KB @ 5698.00ft (Cyclone 11) |
| Well: | State 10-67 28-1H | North Reference: | Grid |
| Wellbore: | Original Hole | Survey Calculation Method: | Minimum Curvature |
| Design: | Final Surveys | Database: | EDM 5000.1 Single User Db |

| 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) | |
| 10,926.00 | 89.90 | 180.00 | 7,904.77 | -3,325.55 | 3.21 | 3,325.43 | 0.98 | -0.96 | 0.21 | |
| 11,021.00 | 89.30 | 179.90 | 7,905.43 | -3,420.55 | 3.30 | 3,420.42 | 0.64 | -0.63 | -0.11 | |
| 11,116.00 | 89.40 | 179.10 | 7,906.51 | -3,515.54 | 4.12 | 3,515.41 | 0.85 | 0.11 | -0.84 | |
| 11,212.00 | 89.10 | 179.40 | 7,907.77 | -3,611.52 | 5.38 | 3,611.38 | 0.44 | -0.31 | 0.31 | |
| 11,307.00 | 89.10 | 180.70 | 7,909.26 | -3,706.51 | 5.30 | 3,706.36 | 1.37 | 0.00 | 1.37 | |
| 11,402.00 | 89.90 | 180.40 | 7,910.09 | -3,801.50 | 4.39 | 3,801.36 | 0.90 | 0.84 | -0.32 | |
| 11,498.00 | 91.30 | 180.60 | 7,909.08 | -3,897.49 | 3.55 | 3,897.35 | 1.47 | 1.46 | 0.21 | |
| 11,593.00 | 91.90 | 180.10 | 7,906.43 | -3,992.45 | 2.97 | 3,992.31 | 0.82 | 0.63 | -0.53 | |
| 11,688.00 | 92.50 | 179.10 | 7,902.78 | -4,087.37 | 3.63 | 4,087.23 | 1.23 | 0.63 | -1.05 | |
| 11,783.00 | 94.00 | 179.10 | 7,897.40 | -4,182.20 | 5.12 | 4,182.05 | 1.58 | 1.58 | 0.00 | |
| 11,879.00 | 95.10 | 178.00 | 7,889.78 | -4,277.87 | 7.54 | 4,277.69 | 1.62 | 1.15 | -1.15 | |
| 11,917.00 | 95.80 | 177.70 | 7,886.17 | -4,315.67 | 8.96 | 4,315.48 | 2.00 | 1.84 | -0.79 | |
| Last Pro Guidance MWD Survey (11917') | | | | | | | | | | |
| 11,960.00 | 95.80 | 177.70 | 7,881.83 | -4,358.42 | 10.68 | 4,358.21 | 0.00 | 0.00 | 0.00 | |
| Projection to Bit (11960') | | | | | | | | | | |

| Design Annotations | | | | | |
|---------------------|---------------------|-------------------|------------|---|--|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment | |
| | | +N/-S (ft) | +E/-W (ft) | | |
| 7,137.00 | 7,128.70 | -64.45 | -255.42 | Last Gyro Data Gyro Survey (7137') | |
| 7,137.00 | 7,128.70 | -64.45 | -255.42 | Tie into Gyro Data Gyro Surveys (7137') | |
| 11,917.00 | 7,886.17 | -4,315.67 | 8.96 | Last Pro Guidance MWD Survey (11917') | |
| 11,960.00 | 7,881.83 | -4,358.42 | 10.68 | Projection to Bit (11960') | |