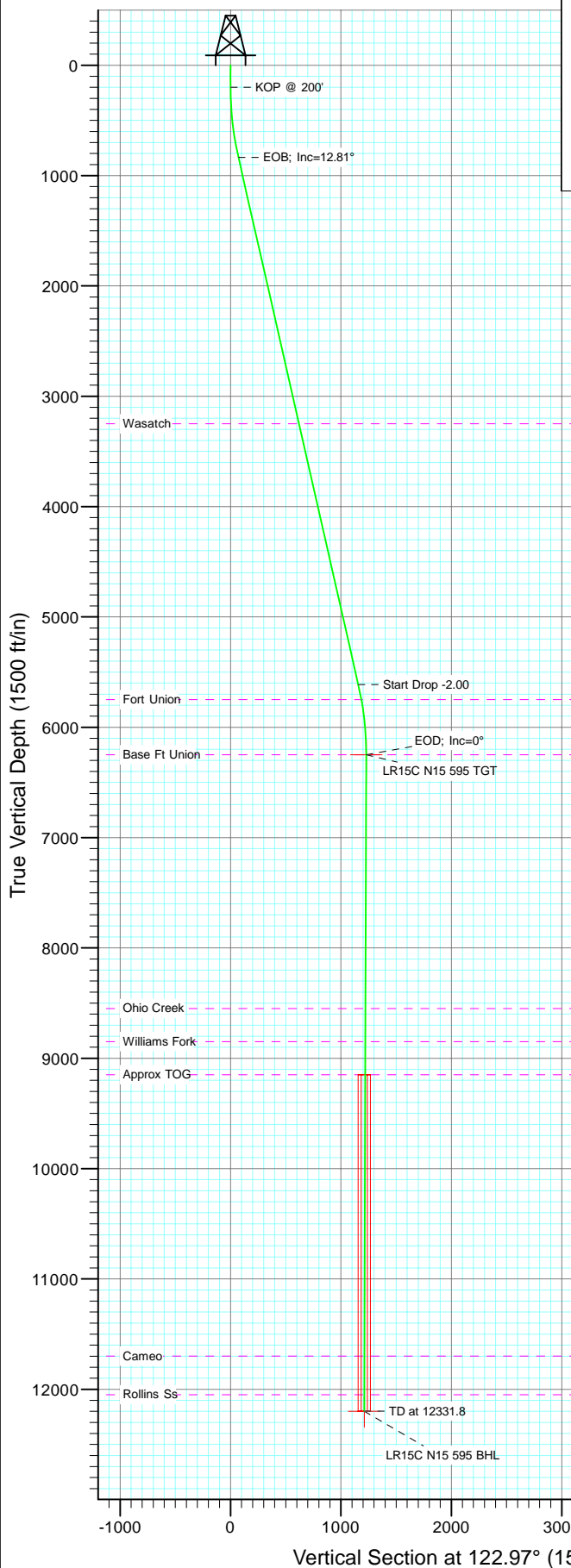
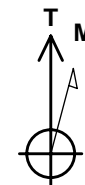
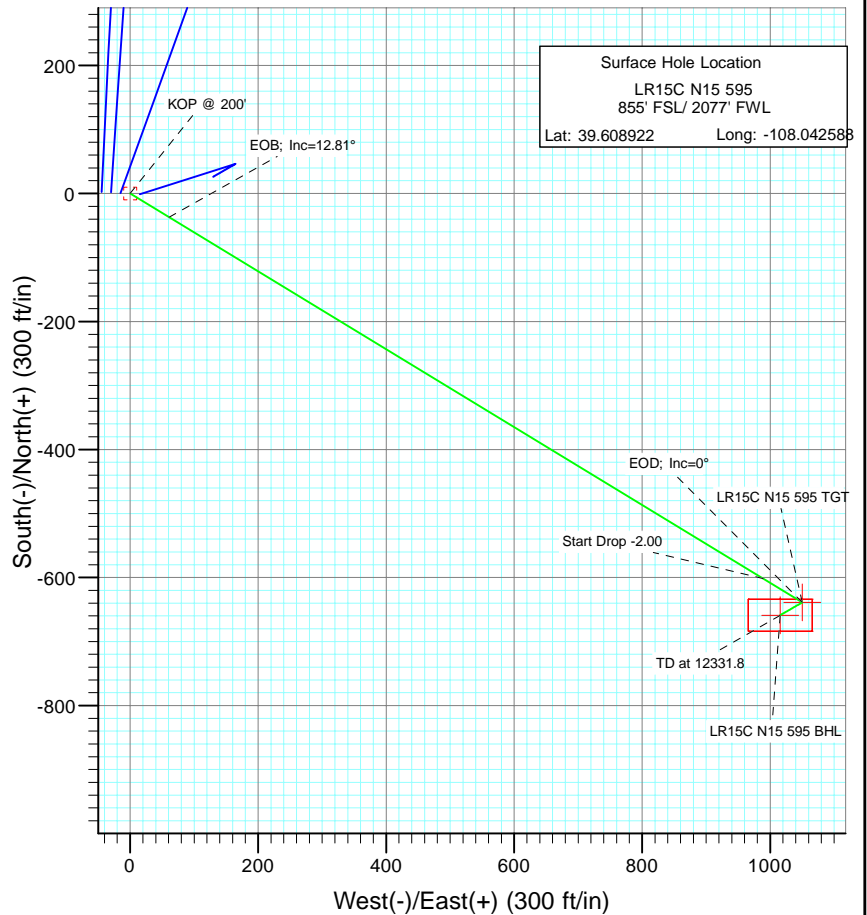




Project: Garfield County  
Site: N15 595 Pad  
Well: LR15C N15 595  
Wellbore: DD  
Design: Plan #1



| SECTION DETAILS |         |       |        |         |        |        |      |        |        |                   |
|-----------------|---------|-------|--------|---------|--------|--------|------|--------|--------|-------------------|
| Sec             | MD      | Inc   | Azi    | TVD     | +N/-S  | +E/-W  | Dleg | TFace  | VSec   | Target            |
| 1               | 0.0     | 0.00  | 0.00   | 0.0     | 0.0    | 0.0    | 0.00 | 0.00   | 0.0    |                   |
| 2               | 200.0   | 0.00  | 0.00   | 200.0   | 0.0    | 0.0    | 0.00 | 0.00   | 0.0    |                   |
| 3               | 840.6   | 12.81 | 121.31 | 835.3   | -37.1  | 60.9   | 2.00 | 121.31 | 71.3   |                   |
| 4               | 5741.0  | 12.81 | 121.31 | 5613.7  | -601.8 | 989.4  | 0.00 | 0.00   | 1157.6 |                   |
| 5               | 6381.7  | 0.00  | 0.00   | 6249.0  | -638.9 | 1050.4 | 2.00 | 180.00 | 1228.9 | LR15C N15 595 TGT |
| 6               | 6537.7  | 0.39  | 239.98 | 6405.1  | -639.2 | 1049.9 | 0.25 | 239.98 | 1228.6 |                   |
| 7               | 12331.8 | 0.39  | 239.98 | 12199.0 | -658.9 | 1015.7 | 0.00 | 0.00   | 1210.7 | LR15C N15 595 BHL |



Azimuths to True North  
Magnetic North: 10.47°

Magnetic Field  
Strength: 52402.1snT  
Dip Angle: 65.86°  
Date: 8/9/2010  
Model: IGRF200510

#### FORMATION TOP DETAILS

| TVDPath | MDPath  | Formation     |
|---------|---------|---------------|
| 3249.0  | 3316.0  | Wasatch       |
| 5749.0  | 5879.1  | Fort Union    |
| 6249.0  | 6381.7  | Base Ft Union |
| 8549.0  | 8681.7  | Ohio Creek    |
| 8849.0  | 8981.7  | Williams Fork |
| 9149.0  | 9281.7  | Approx TOG    |
| 11699.0 | 11831.8 | Cameo         |
| 12049.0 | 12181.8 | Rollins Ss    |

#### DESIGN DETAILS: Plan #1

105XXX; BH  
KBE @ 8391.0ft (Patterson 302)

| Target            | Azimuth | Origin | N/S | E/W | From TVD |
|-------------------|---------|--------|-----|-----|----------|
| LR15C N15 595 BHL | 122.97  | Slot   | 0.0 | 0.0 | 0.0      |



# Cathedral Energy Services

## Planning Report

|                  |                                  |                                     |                                |
|------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Database:</b> | EDM 5000.1 US Multi Users Db     | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Company:</b>  | Berry Petroleum Company (NAD 83) | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Project:</b>  | Garfield County                  | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site:</b>     | N15 595 Pad                      | <b>North Reference:</b>             | True                           |
| <b>Well:</b>     | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Wellbore:</b> | DD                               |                                     |                                |
| <b>Design:</b>   | Plan #1                          |                                     |                                |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project</b>     | Garfield County           |                      |                |
| <b>Map System:</b> | US State Plane 1983       | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983 |                      |                |
| <b>Map Zone:</b>   | Colorado Central Zone     |                      |                |

|                       |          |              |                 |                   |             |
|-----------------------|----------|--------------|-----------------|-------------------|-------------|
| Site                  |          | N15 595 Pad  |                 |                   |             |
| Site Position:        |          | Northing:    | 1,656,704.15 ft | Latitude:         | 39.608919   |
| From:                 | Lat/Long | Easting:     | 2,283,744.91 ft | Longitude:        | -108.042534 |
| Position Uncertainty: | 0.0 ft   | Slot Radius: | 13.200 in       | Grid Convergence: | -1.60 °     |

| Well                 | LR15C N15 595 |        |                     |                 |               |             |
|----------------------|---------------|--------|---------------------|-----------------|---------------|-------------|
| Well Position        | +N/-S         | 0.0 ft | Northing:           | 1,656,705.66 ft | Latitude:     | 39.608922   |
|                      | +E/-W         | 0.0 ft | Easting:            | 2,283,729.73 ft | Longitude:    | -108.042588 |
| Position Uncertainty |               | 0.0 ft | Wellhead Elevation: | ft              | Ground Level: | 8,376.0 ft  |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | DD                |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF200510        | 8/9/2010           | 10.47                  | 65.86                | 52,402                     |

|                          |                              |                   |                      |                      |
|--------------------------|------------------------------|-------------------|----------------------|----------------------|
| <b>Design</b>            | Plan #1                      |                   |                      |                      |
| <b>Audit Notes:</b>      |                              |                   |                      |                      |
| <b>Version:</b>          | <b>Phase:</b>                | PLAN              | <b>Tie On Depth:</b> | 0.0                  |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (ft)</b> | <b>+N/-S (ft)</b> | <b>+E/-W (ft)</b>    | <b>Direction (°)</b> |
|                          | 0.0                          | 0.0               | 0.0                  | 122.97               |

| <b>Plan Sections</b> |                 |             |                     |            |            |                       |                      |                     |         |                   |
|----------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|----------------------|---------------------|---------|-------------------|
| 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            |
| 0.0                  | 0.00            | 0.00        | 0.0                 | 0.0        | 0.0        | 0.00                  | 0.00                 | 0.00                | 0.00    |                   |
| 200.0                | 0.00            | 0.00        | 200.0               | 0.0        | 0.0        | 0.00                  | 0.00                 | 0.00                | 0.00    |                   |
| 840.6                | 12.81           | 121.31      | 835.3               | -37.1      | 60.9       | 2.00                  | 2.00                 | 0.00                | 121.31  |                   |
| 5,741.0              | 12.81           | 121.31      | 5,613.7             | -601.8     | 989.4      | 0.00                  | 0.00                 | 0.00                | 0.00    |                   |
| 6,381.7              | 0.00            | 0.00        | 6,249.0             | -638.9     | 1,050.4    | 2.00                  | -2.00                | 0.00                | 180.00  | LR15C N15 595 TGT |
| 6,537.7              | 0.39            | 239.98      | 6,405.1             | -639.2     | 1,049.9    | 0.25                  | 0.25                 | -76.91              | 239.98  |                   |
| 12,331.8             | 0.39            | 239.98      | 12,199.0            | -658.9     | 1,015.7    | 0.00                  | 0.00                 | 0.00                | 0.00    | LR15C N15 595 BHL |



# Cathedral Energy Services

## Planning Report

|                  |                                  |                                     |                                |
|------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Database:</b> | EDM 5000.1 US Multi Users Db     | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Company:</b>  | Berry Petroleum Company (NAD 83) | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Project:</b>  | Garfield County                  | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site:</b>     | N15 595 Pad                      | <b>North Reference:</b>             | True                           |
| <b>Well:</b>     | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Wellbore:</b> | DD                               |                                     |                                |
| <b>Design:</b>   | Plan #1                          |                                     |                                |

| 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) | Comments / Formations |
| 0.0                 | 0.00            | 0.00        | 0.0                 | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 |                       |
| 30.0                | 0.00            | 0.00        | 30.0                | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 |                       |
| 60.0                | 0.00            | 0.00        | 60.0                | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 |                       |
| 90.0                | 0.00            | 0.00        | 90.0                | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 |                       |
| 120.0               | 0.00            | 0.00        | 120.0               | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 |                       |
| 150.0               | 0.00            | 0.00        | 150.0               | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 |                       |
| 180.0               | 0.00            | 0.00        | 180.0               | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 |                       |
| 200.0               | 0.00            | 0.00        | 200.0               | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 | KOP @ 200'            |
| 210.0               | 0.20            | 121.31      | 210.0               | 0.0        | 0.0        | 0.0                   | 2.00                  | 2.00                 |                       |
| 240.0               | 0.80            | 121.31      | 240.0               | -0.1       | 0.2        | 0.3                   | 2.00                  | 2.00                 |                       |
| 270.0               | 1.40            | 121.31      | 270.0               | -0.4       | 0.7        | 0.9                   | 2.00                  | 2.00                 |                       |
| 300.0               | 2.00            | 121.31      | 300.0               | -0.9       | 1.5        | 1.7                   | 2.00                  | 2.00                 |                       |
| 330.0               | 2.60            | 121.31      | 330.0               | -1.5       | 2.5        | 2.9                   | 2.00                  | 2.00                 |                       |
| 360.0               | 3.20            | 121.31      | 359.9               | -2.3       | 3.8        | 4.5                   | 2.00                  | 2.00                 |                       |
| 390.0               | 3.80            | 121.31      | 389.9               | -3.3       | 5.4        | 6.3                   | 2.00                  | 2.00                 |                       |
| 420.0               | 4.40            | 121.31      | 419.8               | -4.4       | 7.2        | 8.4                   | 2.00                  | 2.00                 |                       |
| 450.0               | 5.00            | 121.31      | 449.7               | -5.7       | 9.3        | 10.9                  | 2.00                  | 2.00                 |                       |
| 480.0               | 5.60            | 121.31      | 479.6               | -7.1       | 11.7       | 13.7                  | 2.00                  | 2.00                 |                       |
| 510.0               | 6.20            | 121.31      | 509.4               | -8.7       | 14.3       | 16.7                  | 2.00                  | 2.00                 |                       |
| 540.0               | 6.80            | 121.31      | 539.2               | -10.5      | 17.2       | 20.1                  | 2.00                  | 2.00                 |                       |
| 570.0               | 7.40            | 121.31      | 569.0               | -12.4      | 20.4       | 23.9                  | 2.00                  | 2.00                 |                       |
| 600.0               | 8.00            | 121.31      | 598.7               | -14.5      | 23.8       | 27.9                  | 2.00                  | 2.00                 |                       |
| 630.0               | 8.60            | 121.31      | 628.4               | -16.7      | 27.5       | 32.2                  | 2.00                  | 2.00                 |                       |
| 660.0               | 9.20            | 121.31      | 658.0               | -19.2      | 31.5       | 36.8                  | 2.00                  | 2.00                 |                       |
| 690.0               | 9.80            | 121.31      | 687.6               | -21.7      | 35.7       | 41.8                  | 2.00                  | 2.00                 |                       |
| 720.0               | 10.40           | 121.31      | 717.1               | -24.5      | 40.2       | 47.0                  | 2.00                  | 2.00                 |                       |
| 750.0               | 11.00           | 121.31      | 746.6               | -27.4      | 45.0       | 52.6                  | 2.00                  | 2.00                 |                       |
| 780.0               | 11.60           | 121.31      | 776.0               | -30.4      | 50.0       | 58.5                  | 2.00                  | 2.00                 |                       |
| 810.0               | 12.20           | 121.31      | 805.4               | -33.6      | 55.3       | 64.7                  | 2.00                  | 2.00                 |                       |
| 840.0               | 12.80           | 121.31      | 834.7               | -37.0      | 60.8       | 71.2                  | 2.00                  | 2.00                 |                       |
| 840.6               | 12.81           | 121.31      | 835.3               | -37.1      | 60.9       | 71.3                  | 2.00                  | 2.00                 | EOB; Inc=12.81°       |
| 870.0               | 12.81           | 121.31      | 863.9               | -40.5      | 66.5       | 77.8                  | 0.00                  | 0.00                 |                       |
| 900.0               | 12.81           | 121.31      | 893.2               | -43.9      | 72.2       | 84.5                  | 0.00                  | 0.00                 |                       |
| 930.0               | 12.81           | 121.31      | 922.4               | -47.4      | 77.9       | 91.1                  | 0.00                  | 0.00                 |                       |
| 960.0               | 12.81           | 121.31      | 951.7               | -50.8      | 83.6       | 97.8                  | 0.00                  | 0.00                 |                       |
| 990.0               | 12.81           | 121.31      | 981.0               | -54.3      | 89.2       | 104.4                 | 0.00                  | 0.00                 |                       |
| 1,020.0             | 12.81           | 121.31      | 1,010.2             | -57.7      | 94.9       | 111.1                 | 0.00                  | 0.00                 |                       |
| 1,050.0             | 12.81           | 121.31      | 1,039.5             | -61.2      | 100.6      | 117.7                 | 0.00                  | 0.00                 |                       |
| 1,080.0             | 12.81           | 121.31      | 1,068.7             | -64.7      | 106.3      | 124.4                 | 0.00                  | 0.00                 |                       |
| 1,110.0             | 12.81           | 121.31      | 1,098.0             | -68.1      | 112.0      | 131.0                 | 0.00                  | 0.00                 |                       |
| 1,140.0             | 12.81           | 121.31      | 1,127.2             | -71.6      | 117.7      | 137.7                 | 0.00                  | 0.00                 |                       |
| 1,170.0             | 12.81           | 121.31      | 1,156.5             | -75.0      | 123.3      | 144.3                 | 0.00                  | 0.00                 |                       |
| 1,200.0             | 12.81           | 121.31      | 1,185.7             | -78.5      | 129.0      | 151.0                 | 0.00                  | 0.00                 |                       |
| 1,230.0             | 12.81           | 121.31      | 1,215.0             | -81.9      | 134.7      | 157.6                 | 0.00                  | 0.00                 |                       |
| 1,260.0             | 12.81           | 121.31      | 1,244.2             | -85.4      | 140.4      | 164.3                 | 0.00                  | 0.00                 |                       |
| 1,290.0             | 12.81           | 121.31      | 1,273.5             | -88.9      | 146.1      | 170.9                 | 0.00                  | 0.00                 |                       |
| 1,320.0             | 12.81           | 121.31      | 1,302.7             | -92.3      | 151.8      | 177.6                 | 0.00                  | 0.00                 |                       |
| 1,350.0             | 12.81           | 121.31      | 1,332.0             | -95.8      | 157.5      | 184.2                 | 0.00                  | 0.00                 |                       |
| 1,380.0             | 12.81           | 121.31      | 1,361.2             | -99.2      | 163.1      | 190.9                 | 0.00                  | 0.00                 |                       |
| 1,410.0             | 12.81           | 121.31      | 1,390.5             | -102.7     | 168.8      | 197.5                 | 0.00                  | 0.00                 |                       |
| 1,440.0             | 12.81           | 121.31      | 1,419.7             | -106.1     | 174.5      | 204.2                 | 0.00                  | 0.00                 |                       |
| 1,470.0             | 12.81           | 121.31      | 1,449.0             | -109.6     | 180.2      | 210.8                 | 0.00                  | 0.00                 |                       |



# Cathedral Energy Services

## Planning Report

|                  |                                  |                                     |                                |
|------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Database:</b> | EDM 5000.1 US Multi Users Db     | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Company:</b>  | Berry Petroleum Company (NAD 83) | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Project:</b>  | Garfield County                  | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site:</b>     | N15 595 Pad                      | <b>North Reference:</b>             | True                           |
| <b>Well:</b>     | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Wellbore:</b> | DD                               |                                     |                                |
| <b>Design:</b>   | Plan #1                          |                                     |                                |

| 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) | Comments / Formations |
| 1,500.0             | 12.81           | 121.31      | 1,478.3             | -113.1     | 185.9      | 217.5                 | 0.00                  | 0.00                 |                       |
| 1,530.0             | 12.81           | 121.31      | 1,507.5             | -116.5     | 191.6      | 224.1                 | 0.00                  | 0.00                 |                       |
| 1,560.0             | 12.81           | 121.31      | 1,536.8             | -120.0     | 197.2      | 230.8                 | 0.00                  | 0.00                 |                       |
| 1,590.0             | 12.81           | 121.31      | 1,566.0             | -123.4     | 202.9      | 237.4                 | 0.00                  | 0.00                 |                       |
| 1,620.0             | 12.81           | 121.31      | 1,595.3             | -126.9     | 208.6      | 244.1                 | 0.00                  | 0.00                 |                       |
| 1,650.0             | 12.81           | 121.31      | 1,624.5             | -130.3     | 214.3      | 250.7                 | 0.00                  | 0.00                 |                       |
| 1,680.0             | 12.81           | 121.31      | 1,653.8             | -133.8     | 220.0      | 257.4                 | 0.00                  | 0.00                 |                       |
| 1,710.0             | 12.81           | 121.31      | 1,683.0             | -137.3     | 225.7      | 264.0                 | 0.00                  | 0.00                 |                       |
| 1,740.0             | 12.81           | 121.31      | 1,712.3             | -140.7     | 231.3      | 270.7                 | 0.00                  | 0.00                 |                       |
| 1,770.0             | 12.81           | 121.31      | 1,741.5             | -144.2     | 237.0      | 277.3                 | 0.00                  | 0.00                 |                       |
| 1,800.0             | 12.81           | 121.31      | 1,770.8             | -147.6     | 242.7      | 284.0                 | 0.00                  | 0.00                 |                       |
| 1,830.0             | 12.81           | 121.31      | 1,800.0             | -151.1     | 248.4      | 290.6                 | 0.00                  | 0.00                 |                       |
| 1,860.0             | 12.81           | 121.31      | 1,829.3             | -154.5     | 254.1      | 297.3                 | 0.00                  | 0.00                 |                       |
| 1,890.0             | 12.81           | 121.31      | 1,858.5             | -158.0     | 259.8      | 303.9                 | 0.00                  | 0.00                 |                       |
| 1,920.0             | 12.81           | 121.31      | 1,887.8             | -161.5     | 265.4      | 310.6                 | 0.00                  | 0.00                 |                       |
| 1,950.0             | 12.81           | 121.31      | 1,917.1             | -164.9     | 271.1      | 317.2                 | 0.00                  | 0.00                 |                       |
| 1,980.0             | 12.81           | 121.31      | 1,946.3             | -168.4     | 276.8      | 323.9                 | 0.00                  | 0.00                 |                       |
| 2,010.0             | 12.81           | 121.31      | 1,975.6             | -171.8     | 282.5      | 330.5                 | 0.00                  | 0.00                 |                       |
| 2,040.0             | 12.81           | 121.31      | 2,004.8             | -175.3     | 288.2      | 337.2                 | 0.00                  | 0.00                 |                       |
| 2,070.0             | 12.81           | 121.31      | 2,034.1             | -178.8     | 293.9      | 343.8                 | 0.00                  | 0.00                 |                       |
| 2,100.0             | 12.81           | 121.31      | 2,063.3             | -182.2     | 299.6      | 350.5                 | 0.00                  | 0.00                 |                       |
| 2,130.0             | 12.81           | 121.31      | 2,092.6             | -185.7     | 305.2      | 357.1                 | 0.00                  | 0.00                 |                       |
| 2,160.0             | 12.81           | 121.31      | 2,121.8             | -189.1     | 310.9      | 363.8                 | 0.00                  | 0.00                 |                       |
| 2,190.0             | 12.81           | 121.31      | 2,151.1             | -192.6     | 316.6      | 370.4                 | 0.00                  | 0.00                 |                       |
| 2,220.0             | 12.81           | 121.31      | 2,180.3             | -196.0     | 322.3      | 377.1                 | 0.00                  | 0.00                 |                       |
| 2,250.0             | 12.81           | 121.31      | 2,209.6             | -199.5     | 328.0      | 383.7                 | 0.00                  | 0.00                 |                       |
| 2,280.0             | 12.81           | 121.31      | 2,238.8             | -203.0     | 333.7      | 390.4                 | 0.00                  | 0.00                 |                       |
| 2,310.0             | 12.81           | 121.31      | 2,268.1             | -206.4     | 339.3      | 397.0                 | 0.00                  | 0.00                 |                       |
| 2,340.0             | 12.81           | 121.31      | 2,297.3             | -209.9     | 345.0      | 403.7                 | 0.00                  | 0.00                 |                       |
| 2,370.0             | 12.81           | 121.31      | 2,326.6             | -213.3     | 350.7      | 410.3                 | 0.00                  | 0.00                 |                       |
| 2,400.0             | 12.81           | 121.31      | 2,355.8             | -216.8     | 356.4      | 417.0                 | 0.00                  | 0.00                 |                       |
| 2,430.0             | 12.81           | 121.31      | 2,385.1             | -220.2     | 362.1      | 423.6                 | 0.00                  | 0.00                 |                       |
| 2,460.0             | 12.81           | 121.31      | 2,414.4             | -223.7     | 367.8      | 430.3                 | 0.00                  | 0.00                 |                       |
| 2,490.0             | 12.81           | 121.31      | 2,443.6             | -227.2     | 373.4      | 436.9                 | 0.00                  | 0.00                 |                       |

| Targets  |               |              |          |            |            |               |              |           |             |
|--|---------------|--------------|----------|------------|------------|---------------|--------------|-----------|-------------|
| Target Name  | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude  | Longitude   |
| LR15C N15 595 BHL  | 0.00          | 0.00         | 12,199.0 | -658.9     | 1,015.7    | 1,656,018.59  | 2,284,726.63 | 39.607113 | -108.038983 |
| - hit/miss target  |               |              |          |            |            |               |              |           |             |
| - Shape  |               |              |          |            |            |               |              |           |             |
| - plan misses target center by 9786.0ft at 2490.0ft MD (2443.6 TVD, -227.2 N, 373.4 E) |               |              |          |            |            |               |              |           |             |
| - Rectangle (sides W50.0 H100.0 D0.0)  |               |              |          |            |            |               |              |           |             |
| LR15C N15 595 TGT  | 0.00          | 0.00         | 6,249.0  | -638.9     | 1,050.4    | 1,656,037.62  | 2,284,761.79 | 39.607168 | -108.038860 |
| - hit/miss target  |               |              |          |            |            |               |              |           |             |
| - Shape  |               |              |          |            |            |               |              |           |             |
| - plan misses target center by 3887.0ft at 2490.0ft MD (2443.6 TVD, -227.2 N, 373.4 E) |               |              |          |            |            |               |              |           |             |
| - Point  |               |              |          |            |            |               |              |           |             |



# Cathedral Energy Services

## Planning Report

|                  |                                  |                                     |                                |
|------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Database:</b> | EDM 5000.1 US Multi Users Db     | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Company:</b>  | Berry Petroleum Company (NAD 83) | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Project:</b>  | Garfield County                  | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site:</b>     | N15 595 Pad                      | <b>North Reference:</b>             | True                           |
| <b>Well:</b>     | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Wellbore:</b> | DD                               |                                     |                                |
| <b>Design:</b>   | Plan #1                          |                                     |                                |

| 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) | Comments / Formations                       |
| 2,500.0             | 12.81           | 121.31      | 2,453.4             | -228.3     | 375.3      | 439.1                 | 0.00                  | 0.00                 |   |
| 2,600.0             | 12.81           | 121.31      | 2,550.9             | -239.8     | 394.3      | 461.3                 | 0.00                  | 0.00                 |   |
| 2,700.0             | 12.81           | 121.31      | 2,648.4             | -251.4     | 413.2      | 483.5                 | 0.00                  | 0.00                 |   |
| 2,800.0             | 12.81           | 121.31      | 2,745.9             | -262.9     | 432.2      | 505.6                 | 0.00                  | 0.00                 |   |
| 2,900.0             | 12.81           | 121.31      | 2,843.4             | -274.4     | 451.1      | 527.8                 | 0.00                  | 0.00                 |   |
| 3,000.0             | 12.81           | 121.31      | 2,940.9             | -285.9     | 470.1      | 550.0                 | 0.00                  | 0.00                 |   |
| 3,100.0             | 12.81           | 121.31      | 3,038.4             | -297.5     | 489.0      | 572.1                 | 0.00                  | 0.00                 |   |
| 3,200.0             | 12.81           | 121.31      | 3,135.9             | -309.0     | 508.0      | 594.3                 | 0.00                  | 0.00                 |   |
| 3,300.0             | 12.81           | 121.31      | 3,233.4             | -320.5     | 526.9      | 616.5                 | 0.00                  | 0.00                 |   |
| 3,316.0             | 12.81           | 121.31      | 3,249.0             | -322.3     | 529.9      | 620.0                 | 0.00                  | 0.00                 | Wasatch                                     |
| 3,400.0             | 12.81           | 121.31      | 3,330.9             | -332.0     | 545.9      | 638.6                 | 0.00                  | 0.00                 |   |
| 3,500.0             | 12.81           | 121.31      | 3,428.5             | -343.6     | 564.8      | 660.8                 | 0.00                  | 0.00                 |   |
| 3,600.0             | 12.81           | 121.31      | 3,526.0             | -355.1     | 583.8      | 683.0                 | 0.00                  | 0.00                 |   |
| 3,700.0             | 12.81           | 121.31      | 3,623.5             | -366.6     | 602.7      | 705.1                 | 0.00                  | 0.00                 |   |
| 3,800.0             | 12.81           | 121.31      | 3,721.0             | -378.1     | 621.6      | 727.3                 | 0.00                  | 0.00                 |   |
| 3,900.0             | 12.81           | 121.31      | 3,818.5             | -389.7     | 640.6      | 749.5                 | 0.00                  | 0.00                 |   |
| 4,000.0             | 12.81           | 121.31      | 3,916.0             | -401.2     | 659.5      | 771.6                 | 0.00                  | 0.00                 |   |
| 4,100.0             | 12.81           | 121.31      | 4,013.5             | -412.7     | 678.5      | 793.8                 | 0.00                  | 0.00                 |   |
| 4,200.0             | 12.81           | 121.31      | 4,111.0             | -424.2     | 697.4      | 816.0                 | 0.00                  | 0.00                 |   |
| 4,300.0             | 12.81           | 121.31      | 4,208.5             | -435.8     | 716.4      | 838.1                 | 0.00                  | 0.00                 |   |
| 4,400.0             | 12.81           | 121.31      | 4,306.0             | -447.3     | 735.3      | 860.3                 | 0.00                  | 0.00                 |   |
| 4,500.0             | 12.81           | 121.31      | 4,403.6             | -458.8     | 754.3      | 882.5                 | 0.00                  | 0.00                 |   |
| 4,600.0             | 12.81           | 121.31      | 4,501.1             | -470.3     | 773.2      | 904.6                 | 0.00                  | 0.00                 |   |
| 4,700.0             | 12.81           | 121.31      | 4,598.6             | -481.9     | 792.2      | 926.8                 | 0.00                  | 0.00                 |   |
| 4,800.0             | 12.81           | 121.31      | 4,696.1             | -493.4     | 811.1      | 949.0                 | 0.00                  | 0.00                 |   |
| 4,900.0             | 12.81           | 121.31      | 4,793.6             | -504.9     | 830.1      | 971.1                 | 0.00                  | 0.00                 |   |
| 5,000.0             | 12.81           | 121.31      | 4,891.1             | -516.4     | 849.0      | 993.3                 | 0.00                  | 0.00                 |   |
| 5,100.0             | 12.81           | 121.31      | 4,988.6             | -528.0     | 868.0      | 1,015.5               | 0.00                  | 0.00                 |   |
| 5,200.0             | 12.81           | 121.31      | 5,086.1             | -539.5     | 886.9      | 1,037.7               | 0.00                  | 0.00                 |   |
| 5,300.0             | 12.81           | 121.31      | 5,183.6             | -551.0     | 905.8      | 1,059.8               | 0.00                  | 0.00                 |   |
| 5,400.0             | 12.81           | 121.31      | 5,281.1             | -562.5     | 924.8      | 1,082.0               | 0.00                  | 0.00                 |   |
| 5,500.0             | 12.81           | 121.31      | 5,378.7             | -574.1     | 943.7      | 1,104.2               | 0.00                  | 0.00                 |   |
| 5,600.0             | 12.81           | 121.31      | 5,476.2             | -585.6     | 962.7      | 1,126.3               | 0.00                  | 0.00                 |   |
| 5,700.0             | 12.81           | 121.31      | 5,573.7             | -597.1     | 981.6      | 1,148.5               | 0.00                  | 0.00                 |   |
| 5,741.0             | 12.81           | 121.31      | 5,613.7             | -601.8     | 989.4      | 1,157.6               | 0.00                  | 0.00                 | Start Drop -2.00                            |
| 5,800.0             | 11.63           | 121.31      | 5,671.3             | -608.3     | 1,000.1    | 1,170.1               | 2.00                  | -2.00                |   |
| 5,879.1             | 10.05           | 121.31      | 5,749.0             | -616.0     | 1,012.8    | 1,184.9               | 2.00                  | -2.00                | Fort Union                                  |
| 5,900.0             | 9.63            | 121.31      | 5,769.6             | -617.9     | 1,015.8    | 1,188.5               | 2.00                  | -2.00                |   |
| 6,000.0             | 7.63            | 121.31      | 5,868.5             | -625.7     | 1,028.7    | 1,203.5               | 2.00                  | -2.00                |   |
| 6,100.0             | 5.63            | 121.31      | 5,967.8             | -631.7     | 1,038.5    | 1,215.1               | 2.00                  | -2.00                |   |
| 6,200.0             | 3.63            | 121.31      | 6,067.5             | -635.9     | 1,045.4    | 1,223.1               | 2.00                  | -2.00                |   |
| 6,300.0             | 1.63            | 121.31      | 6,167.3             | -638.3     | 1,049.4    | 1,227.7               | 2.00                  | -2.00                |   |
| 6,381.7             | 0.00            | 0.00        | 6,249.0             | -638.9     | 1,050.4    | 1,228.9               | 2.00                  | -2.00                | EOD; Inc=0° - Base Ft Union - LR15C N15 595 |
| 6,400.0             | 0.05            | 239.98      | 6,267.3             | -638.9     | 1,050.3    | 1,228.9               | 0.25                  | 0.25                 |   |
| 6,500.0             | 0.30            | 239.98      | 6,367.3             | -639.1     | 1,050.1    | 1,228.7               | 0.25                  | 0.25                 |   |
| 6,537.7             | 0.39            | 239.98      | 6,405.1             | -639.2     | 1,049.9    | 1,228.6               | 0.25                  | 0.25                 |   |
| 6,600.0             | 0.39            | 239.98      | 6,467.3             | -639.4     | 1,049.5    | 1,228.5               | 0.00                  | 0.00                 |   |
| 6,700.0             | 0.39            | 239.98      | 6,567.3             | -639.7     | 1,048.9    | 1,228.1               | 0.00                  | 0.00                 |   |
| 6,800.0             | 0.39            | 239.98      | 6,667.3             | -640.1     | 1,048.3    | 1,227.8               | 0.00                  | 0.00                 |   |
| 6,900.0             | 0.39            | 239.98      | 6,767.3             | -640.4     | 1,047.8    | 1,227.5               | 0.00                  | 0.00                 |   |
| 7,000.0             | 0.39            | 239.98      | 6,867.3             | -640.7     | 1,047.2    | 1,227.2               | 0.00                  | 0.00                 |   |
| 7,100.0             | 0.39            | 239.98      | 6,967.3             | -641.1     | 1,046.6    | 1,226.9               | 0.00                  | 0.00                 |   |



# Cathedral Energy Services

## Planning Report

|                  |                                  |                                     |                                |
|------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Database:</b> | EDM 5000.1 US Multi Users Db     | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Company:</b>  | Berry Petroleum Company (NAD 83) | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Project:</b>  | Garfield County                  | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site:</b>     | N15 595 Pad                      | <b>North Reference:</b>             | True                           |
| <b>Well:</b>     | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Wellbore:</b> | DD                               |                                     |                                |
| <b>Design:</b>   | Plan #1                          |                                     |                                |

| 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) | Comments / Formations |
| 7,200.0             | 0.39            | 239.98      | 7,067.3             | -641.4     | 1,046.0    | 1,226.6               | 0.00                  | 0.00                 |                       |
| 7,300.0             | 0.39            | 239.98      | 7,167.3             | -641.8     | 1,045.4    | 1,226.3               | 0.00                  | 0.00                 |                       |
| 7,400.0             | 0.39            | 239.98      | 7,267.3             | -642.1     | 1,044.8    | 1,226.0               | 0.00                  | 0.00                 |                       |
| 7,500.0             | 0.39            | 239.98      | 7,367.3             | -642.4     | 1,044.2    | 1,225.7               | 0.00                  | 0.00                 |                       |
| 7,600.0             | 0.39            | 239.98      | 7,467.3             | -642.8     | 1,043.6    | 1,225.4               | 0.00                  | 0.00                 |                       |
| 7,700.0             | 0.39            | 239.98      | 7,567.3             | -643.1     | 1,043.0    | 1,225.1               | 0.00                  | 0.00                 |                       |
| 7,800.0             | 0.39            | 239.98      | 7,667.3             | -643.5     | 1,042.4    | 1,224.7               | 0.00                  | 0.00                 |                       |
| 7,900.0             | 0.39            | 239.98      | 7,767.3             | -643.8     | 1,041.9    | 1,224.4               | 0.00                  | 0.00                 |                       |
| 8,000.0             | 0.39            | 239.98      | 7,867.3             | -644.1     | 1,041.3    | 1,224.1               | 0.00                  | 0.00                 |                       |
| 8,100.0             | 0.39            | 239.98      | 7,967.3             | -644.5     | 1,040.7    | 1,223.8               | 0.00                  | 0.00                 |                       |
| 8,200.0             | 0.39            | 239.98      | 8,067.3             | -644.8     | 1,040.1    | 1,223.5               | 0.00                  | 0.00                 |                       |
| 8,300.0             | 0.39            | 239.98      | 8,167.3             | -645.2     | 1,039.5    | 1,223.2               | 0.00                  | 0.00                 |                       |
| 8,400.0             | 0.39            | 239.98      | 8,267.3             | -645.5     | 1,038.9    | 1,222.9               | 0.00                  | 0.00                 |                       |
| 8,500.0             | 0.39            | 239.98      | 8,367.3             | -645.9     | 1,038.3    | 1,222.6               | 0.00                  | 0.00                 |                       |
| 8,600.0             | 0.39            | 239.98      | 8,467.3             | -646.2     | 1,037.7    | 1,222.3               | 0.00                  | 0.00                 |                       |
| 8,681.7             | 0.39            | 239.98      | 8,549.0             | -646.5     | 1,037.2    | 1,222.0               | 0.00                  | 0.00                 | Ohio Creek            |
| 8,700.0             | 0.39            | 239.98      | 8,567.3             | -646.5     | 1,037.1    | 1,222.0               | 0.00                  | 0.00                 |                       |
| 8,800.0             | 0.39            | 239.98      | 8,667.3             | -646.9     | 1,036.6    | 1,221.6               | 0.00                  | 0.00                 |                       |
| 8,900.0             | 0.39            | 239.98      | 8,767.3             | -647.2     | 1,036.0    | 1,221.3               | 0.00                  | 0.00                 |                       |
| 8,981.7             | 0.39            | 239.98      | 8,849.0             | -647.5     | 1,035.5    | 1,221.1               | 0.00                  | 0.00                 | Williams Fork         |
| 9,000.0             | 0.39            | 239.98      | 8,867.3             | -647.6     | 1,035.4    | 1,221.0               | 0.00                  | 0.00                 |                       |
| 9,100.0             | 0.39            | 239.98      | 8,967.3             | -647.9     | 1,034.8    | 1,220.7               | 0.00                  | 0.00                 |                       |
| 9,200.0             | 0.39            | 239.98      | 9,067.3             | -648.2     | 1,034.2    | 1,220.4               | 0.00                  | 0.00                 |                       |
| 9,281.7             | 0.39            | 239.98      | 9,149.0             | -648.5     | 1,033.7    | 1,220.2               | 0.00                  | 0.00                 | Approx TOG            |
| 9,300.0             | 0.39            | 239.98      | 9,167.3             | -648.6     | 1,033.6    | 1,220.1               | 0.00                  | 0.00                 |                       |
| 9,400.0             | 0.39            | 239.98      | 9,267.3             | -648.9     | 1,033.0    | 1,219.8               | 0.00                  | 0.00                 |                       |
| 9,500.0             | 0.39            | 239.98      | 9,367.3             | -649.3     | 1,032.4    | 1,219.5               | 0.00                  | 0.00                 |                       |
| 9,600.0             | 0.39            | 239.98      | 9,467.3             | -649.6     | 1,031.8    | 1,219.2               | 0.00                  | 0.00                 |                       |
| 9,700.0             | 0.39            | 239.98      | 9,567.3             | -649.9     | 1,031.2    | 1,218.9               | 0.00                  | 0.00                 |                       |
| 9,800.0             | 0.39            | 239.98      | 9,667.3             | -650.3     | 1,030.7    | 1,218.6               | 0.00                  | 0.00                 |                       |
| 9,900.0             | 0.39            | 239.98      | 9,767.2             | -650.6     | 1,030.1    | 1,218.2               | 0.00                  | 0.00                 |                       |
| 10,000.0            | 0.39            | 239.98      | 9,867.2             | -651.0     | 1,029.5    | 1,217.9               | 0.00                  | 0.00                 |                       |
| 10,100.0            | 0.39            | 239.98      | 9,967.2             | -651.3     | 1,028.9    | 1,217.6               | 0.00                  | 0.00                 |                       |
| 10,200.0            | 0.39            | 239.98      | 10,067.2            | -651.6     | 1,028.3    | 1,217.3               | 0.00                  | 0.00                 |                       |
| 10,300.0            | 0.39            | 239.98      | 10,167.2            | -652.0     | 1,027.7    | 1,217.0               | 0.00                  | 0.00                 |                       |
| 10,400.0            | 0.39            | 239.98      | 10,267.2            | -652.3     | 1,027.1    | 1,216.7               | 0.00                  | 0.00                 |                       |
| 10,500.0            | 0.39            | 239.98      | 10,367.2            | -652.7     | 1,026.5    | 1,216.4               | 0.00                  | 0.00                 |                       |
| 10,600.0            | 0.39            | 239.98      | 10,467.2            | -653.0     | 1,025.9    | 1,216.1               | 0.00                  | 0.00                 |                       |
| 10,700.0            | 0.39            | 239.98      | 10,567.2            | -653.3     | 1,025.3    | 1,215.8               | 0.00                  | 0.00                 |                       |
| 10,800.0            | 0.39            | 239.98      | 10,667.2            | -653.7     | 1,024.8    | 1,215.5               | 0.00                  | 0.00                 |                       |
| 10,900.0            | 0.39            | 239.98      | 10,767.2            | -654.0     | 1,024.2    | 1,215.2               | 0.00                  | 0.00                 |                       |
| 11,000.0            | 0.39            | 239.98      | 10,867.2            | -654.4     | 1,023.6    | 1,214.8               | 0.00                  | 0.00                 |                       |
| 11,100.0            | 0.39            | 239.98      | 10,967.2            | -654.7     | 1,023.0    | 1,214.5               | 0.00                  | 0.00                 |                       |
| 11,200.0            | 0.39            | 239.98      | 11,067.2            | -655.0     | 1,022.4    | 1,214.2               | 0.00                  | 0.00                 |                       |
| 11,300.0            | 0.39            | 239.98      | 11,167.2            | -655.4     | 1,021.8    | 1,213.9               | 0.00                  | 0.00                 |                       |
| 11,400.0            | 0.39            | 239.98      | 11,267.2            | -655.7     | 1,021.2    | 1,213.6               | 0.00                  | 0.00                 |                       |
| 11,500.0            | 0.39            | 239.98      | 11,367.2            | -656.1     | 1,020.6    | 1,213.3               | 0.00                  | 0.00                 |                       |
| 11,600.0            | 0.39            | 239.98      | 11,467.2            | -656.4     | 1,020.0    | 1,213.0               | 0.00                  | 0.00                 |                       |
| 11,700.0            | 0.39            | 239.98      | 11,567.2            | -656.8     | 1,019.5    | 1,212.7               | 0.00                  | 0.00                 |                       |
| 11,800.0            | 0.39            | 239.98      | 11,667.2            | -657.1     | 1,018.9    | 1,212.4               | 0.00                  | 0.00                 |                       |
| 11,831.8            | 0.39            | 239.98      | 11,699.0            | -657.2     | 1,018.7    | 1,212.3               | 0.00                  | 0.00                 | Cameo                 |
| 11,900.0            | 0.39            | 239.98      | 11,767.2            | -657.4     | 1,018.3    | 1,212.1               | 0.00                  | 0.00                 |                       |



# Cathedral Energy Services

## Planning Report

|                  |                                  |                                     |                                |
|------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Database:</b> | EDM 5000.1 US Multi Users Db     | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Company:</b>  | Berry Petroleum Company (NAD 83) | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Project:</b>  | Garfield County                  | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site:</b>     | N15 595 Pad                      | <b>North Reference:</b>             | True                           |
| <b>Well:</b>     | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Wellbore:</b> | DD                               |                                     |                                |
| <b>Design:</b>   | Plan #1                          |                                     |                                |

| 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) | Comments / Formations             |
| 12,000.0            | 0.39            | 239.98      | 11,867.2            | -657.8     | 1,017.7    | 1,211.8               | 0.00                  | 0.00                 |                                   |
| 12,100.0            | 0.39            | 239.98      | 11,967.2            | -658.1     | 1,017.1    | 1,211.4               | 0.00                  | 0.00                 |                                   |
| 12,181.8            | 0.39            | 239.98      | 12,049.0            | -658.4     | 1,016.6    | 1,211.2               | 0.00                  | 0.00                 | Rollins Ss                        |
| 12,200.0            | 0.39            | 239.98      | 12,067.2            | -658.5     | 1,016.5    | 1,211.1               | 0.00                  | 0.00                 |                                   |
| 12,300.0            | 0.39            | 239.98      | 12,167.2            | -658.8     | 1,015.9    | 1,210.8               | 0.00                  | 0.00                 |                                   |
| 12,331.8            | 0.39            | 239.98      | 12,199.0            | -658.9     | 1,015.7    | 1,210.7               | 0.00                  | 0.00                 | TD at 12331.8 - LR15C N15 595 BHL |

| Targets   |               |              |          |            |            |               |              |           |             |
|---|---------------|--------------|----------|------------|------------|---------------|--------------|-----------|-------------|
| Target Name   | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude  | Longitude   |
| LR15C N15 595 BHL<br>- hit/miss target<br>- Shape<br>- plan hits target center<br>- Rectangle (sides W50.0 H100.0 D0.0) | 0.00          | 0.00         | 12,199.0 | -658.9     | 1,015.7    | 1,656,018.59  | 2,284,726.63 | 39.607113 | -108.038983 |
| LR15C N15 595 TGT<br>- plan hits target center<br>- Point   | 0.00          | 0.00         | 6,249.0  | -638.9     | 1,050.4    | 1,656,037.62  | 2,284,761.79 | 39.607168 | -108.038860 |

| Formations          |                     |               |           |         |                   |
|---------------------|---------------------|---------------|-----------|---------|-------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Name          | Lithology | Dip (°) | Dip Direction (°) |
| 3,316.0             | 3,249.0             | Wasatch       |           | 0.00    |                   |
| 5,879.1             | 5,749.0             | Fort Union    |           | 0.00    |                   |
| 6,381.7             | 6,249.0             | Base Ft Union |           | 0.00    |                   |
| 8,681.7             | 8,549.0             | Ohio Creek    |           | 0.00    |                   |
| 8,981.7             | 8,849.0             | Williams Fork |           | 0.00    |                   |
| 9,281.7             | 9,149.0             | Approx TOG    |           | 0.00    |                   |
| 11,831.8            | 11,699.0            | Cameo         |           | 0.00    |                   |
| 12,181.8            | 12,049.0            | Rollins Ss    |           | 0.00    |                   |

| Plan Annotations    |                     |            |            |                  |
|---------------------|---------------------|------------|------------|------------------|
| Measured Depth (ft) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Comment          |
| 200.0               | 200.0               | 0.0        | 0.0        | KOP @ 200'       |
| 840.6               | 835.3               | -37.1      | 60.9       | EOB; Inc=12.81°  |
| 5,741.0             | 5,613.7             | -601.8     | 989.4      | Start Drop -2.00 |
| 6,381.7             | 6,249.0             | -638.9     | 1,050.4    | EOD; Inc=0°      |
| 12,331.8            | 12,199.0            | -658.9     | 1,015.7    | TD at 12331.8    |

# **Berry Petroleum Company (NAD 83)**

**Garfield County**

**N15 595 Pad**

**LR15C N15 595**

**DD**

**Plan #1**

## **Anticollision Report**

**10 August, 2010**

# Cathedral Energy Services

## Anticollision Report

|                           |                                  |                                     |                                |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>           | Berry Petroleum Company (NAD 83) | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Project:</b>           | Garfield County                  | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Reference Site:</b>    | N15 595 Pad                      | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site Error:</b>        | 0.0ft                            | <b>North Reference:</b>             | True                           |
| <b>Reference Well:</b>    | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Well Error:</b>        | 0.0ft                            | <b>Output errors are at</b>         | 2.00 sigma                     |
| <b>Reference Wellbore</b> | DD                               | <b>Database:</b>                    | EDM 5000.1 US Multi Users DB   |
| <b>Reference Design:</b>  | Plan #1                          | <b>Offset TVD Reference:</b>        | Offset Datum                   |

| Reference                    | Plan #1   |                |                     |
|------------------------------|---|----------------|---------------------|
| Filter type:                 | NO GLOBAL FILTER: Using user defined selection & filtering criteria |                |                     |
| Interpolation Method:        | Stations  | Error Model:   | Systematic Ellipse  |
| Depth Range:                 | Unlimited   | Scan Method:   | Closest Approach 3D |
| Results Limited by:          | Maximum center-center distance of 100.0ft                           | Error Surface: | Elliptical Conic    |
| Warning Levels Evaluated at: | 2.00 Sigma  |                |                     |

| Survey Tool Program |            | Date              | 8/10/2010 |             |  |
|---------------------|------------|-------------------|-----------|-------------|--|
| From<br>(ft)        | To<br>(ft) | Survey (Wellbore) | Tool Name | Description |  |
| 0.0                 | 12,331.8   | Plan #1 (DD)      | MWD       | Geolink MWD |  |

| Summary                         |                               |                            |                               |                                |                   |              |
|---------------------------------|-------------------------------|----------------------------|-------------------------------|--------------------------------|-------------------|--------------|
| Site Name                       | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning      |
| Offset Well - Wellbore - Design |                               |                            |                               |                                |                   |              |
| N15 595 Pad                     |                               |                            |                               |                                |                   |              |
| LR05D N15 595 - DD - Plan #1    |                               |                            |                               |                                |                   | Out of range |
| LR06B N15 595 - DD - Plan #1    | 200.0                         | 200.0                      | 90.0                          | 89.4                           | 139.372           | CC, ES       |
| LR06B N15 595 - DD - Plan #1    | 400.0                         | 397.7                      | 98.3                          | 96.9                           | 72.079            | SF           |
| LR11A N15 595 - DD - Plan #1    | 200.0                         | 200.0                      | 29.9                          | 29.3                           | 46.333            | CC, ES       |
| LR11A N15 595 - DD - Plan #1    | 400.0                         | 399.3                      | 37.5                          | 36.1                           | 27.456            | SF           |
| LR11B N15 595 - DD - Plan #1    | 200.0                         | 200.0                      | 75.1                          | 74.4                           | 116.221           | CC, ES       |
| LR11B N15 595 - DD - Plan #1    | 500.0                         | 496.5                      | 93.6                          | 91.9                           | 53.455            | SF           |
| LR11C N15 595 - DD - Plan #1    | 200.0                         | 200.0                      | 59.8                          | 59.2                           | 92.634            | CC, ES       |
| LR11C N15 595 - DD - Plan #1    | 600.0                         | 597.9                      | 85.9                          | 83.8                           | 41.892            | SF           |
| LR11D N15 595 - DD - Plan #1    | 200.0                         | 200.0                      | 15.0                          | 14.3                           | 23.151            | CC, ES       |
| LR11D N15 595 - DD - Plan #1    | 400.0                         | 399.8                      | 21.3                          | 20.0                           | 15.871            | SF           |
| LR14A N15 595 - DD - Plan #1    | 200.0                         | 200.0                      | 44.6                          | 43.9                           | 69.048            | CC, ES       |
| LR14A N15 595 - DD - Plan #1    | 600.0                         | 598.7                      | 70.4                          | 68.4                           | 34.396            | SF           |
| LR14B N15 595 - DD - Plan #1    | 478.9                         | 478.5                      | 7.0                           | 5.3                            | 4.143             | CC, ES       |
| LR14B N15 595 - DD - Plan #1    | 500.0                         | 499.5                      | 7.3                           | 5.5                            | 4.139             | SF           |

# Cathedral Energy Services

## Anticollision Report

|                           |                                  |                                     |                                |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>           | Berry Petroleum Company (NAD 83) | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Project:</b>           | Garfield County                  | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Reference Site:</b>    | N15 595 Pad                      | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site Error:</b>        | 0.0ft                            | <b>North Reference:</b>             | True                           |
| <b>Reference Well:</b>    | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Well Error:</b>        | 0.0ft                            | <b>Output errors are at</b>         | 2.00 sigma                     |
| <b>Reference Wellbore</b> | DD                               | <b>Database:</b>                    | EDM 5000.1 US Multi Users DB   |
| <b>Reference Design:</b>  | Plan #1                          | <b>Offset TVD Reference:</b>        | Offset Datum                   |

| Offset Design   |                |                |                |                 |        |                   |                        |            |                 |                  |                        | N15 595 Pad - LR06B N15 595 - DD - Plan #1 |  | Offset Site Error: |  | 0.0 ft |  |
|-----------------|----------------|----------------|----------------|-----------------|--------|-------------------|------------------------|------------|-----------------|------------------|------------------------|--|--|--------------------|--|--------|--|
| Survey Program: |                |                |                |                 |        |                   |                        |            |                 |                  |                        | 0-MWD                                      |  | Offset Well Error: |  | 0.0 ft |  |
| Reference       |                | Offset         |                | Semi Major Axis |        |                   | Distance               |            |                 |                  |                        |  |  | Warning            |  |        |  |
| Measured Depth  | Vertical Depth | Measured Depth | Vertical Depth | Reference       | Offset | Highside Toolface | Offset Wellbore Centre |            | Between Centres | Between Ellipses | Total Uncertainty Axis | Separation Factor                          |  |                    |  |        |  |
| (ft)            | (ft)           | (ft)           | (ft)           | (ft)            | (ft)   | (°)               | +N/-S (ft)             | +E/-W (ft) | (ft)            | (ft)             |                        |  |  |                    |  |        |  |
| 0.0             | 0.0            | 0.0            | 0.0            | 0.0             | 0.0    | -86.98            | 4.7                    | -89.9      | 90.0            |                  |                        |  |  |                    |  |        |  |
| 100.0           | 100.0          | 100.0          | 100.0          | 0.1             | 0.1    | -86.98            | 4.7                    | -89.9      | 90.0            | 89.7             | 0.30                   | 303.338                                    |  |                    |  |        |  |
| 200.0           | 200.0          | 200.0          | 200.0          | 0.3             | 0.3    | -86.98            | 4.7                    | -89.9      | 90.0            | 89.4             | 0.65                   | 139.372 CC, ES                             |  |                    |  |        |  |
| 300.0           | 300.0          | 299.2          | 299.2          | 0.5             | 0.5    | 153.24            | 6.4                    | -90.2      | 92.0            | 91.0             | 1.00                   | 92.227                                     |  |                    |  |        |  |
| 400.0           | 399.8          | 397.7          | 397.6          | 0.7             | 0.7    | 157.43            | 11.4                   | -91.1      | 98.3            | 96.9             | 1.36                   | 72.079 SF                                  |  |                    |  |        |  |

# Cathedral Energy Services

## Anticollision Report

|                           |                                  |                                     |                                |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>           | Berry Petroleum Company (NAD 83) | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Project:</b>           | Garfield County                  | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Reference Site:</b>    | N15 595 Pad                      | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site Error:</b>        | 0.0ft                            | <b>North Reference:</b>             | True                           |
| <b>Reference Well:</b>    | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Well Error:</b>        | 0.0ft                            | <b>Output errors are at</b>         | 2.00 sigma                     |
| <b>Reference Wellbore</b> | DD                               | <b>Database:</b>                    | EDM 5000.1 US Multi Users DB   |
| <b>Reference Design:</b>  | Plan #1                          | <b>Offset TVD Reference:</b>        | Offset Datum                   |

| <b>Offset Design</b> N15 595 Pad - LR11A N15 595 - DD - Plan #1 |                        |                        |                        |                   |                |                             |   |               |                            |                             |                              |                      | <b>Offset Site Error:</b> | 0.0 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|------------------------------|----------------------|---------------------------|--------|
| Survey Program: 0-MWD   |                        |                        |                        |                   |                |                             |   |               |                            |                             |                              |                      | <b>Offset Well Error:</b> | 0.0 ft |
| Reference   |                        | Offset                 |                        | Semi Major Axis   |                |                             | Distance                                |               |                            |                             |                              |                      | Warning                   |        |
| Measured Depth<br>(ft)  | Vertical Depth<br>(ft) | Measured Depth<br>(ft) | Vertical Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) | Highside<br>Toolface<br>(°) | Offset Wellbore Centre<br>+N/-S<br>(ft) | +E/-W<br>(ft) | Between<br>Centres<br>(ft) | Between<br>Ellipses<br>(ft) | Total<br>Uncertainty<br>Axis | Separation<br>Factor |                           |        |
| 0.0   | 0.0                    | 0.0                    | 0.0                    | 0.0               | 0.0            | -86.51                      | 1.8                                     | -29.9         | 29.9                       |                             |                              |                      |                           |        |
| 100.0   | 100.0                  | 100.0                  | 100.0                  | 0.1               | 0.1            | -86.51                      | 1.8                                     | -29.9         | 29.9                       | 29.6                        | 0.30                         | 100.843              |                           |        |
| 200.0   | 200.0                  | 200.0                  | 200.0                  | 0.3               | 0.3            | -86.51                      | 1.8                                     | -29.9         | 29.9                       | 29.3                        | 0.65                         | 46.333 CC, ES        |                           |        |
| 300.0   | 300.0                  | 299.9                  | 299.9                  | 0.5               | 0.5            | 156.81                      | 3.6                                     | -29.7         | 31.6                       | 30.6                        | 1.00                         | 31.599               |                           |        |
| 400.0   | 399.8                  | 399.3                  | 399.1                  | 0.7               | 0.7            | 167.92                      | 8.7                                     | -29.4         | 37.5                       | 36.1                        | 1.36                         | 27.456 SF            |                           |        |
| 500.0   | 499.5                  | 497.6                  | 497.1                  | 0.9               | 0.9            | 179.70                      | 17.2                                    | -28.8         | 49.3                       | 47.6                        | 1.74                         | 28.312               |                           |        |
| 600.0   | 598.7                  | 594.4                  | 593.2                  | 1.2               | 1.2            | -171.23                     | 28.9                                    | -28.0         | 67.8                       | 65.7                        | 2.13                         | 31.809               |                           |        |
| 700.0   | 697.5                  | 689.2                  | 686.9                  | 1.5               | 1.5            | -165.01                     | 43.4                                    | -27.1         | 92.7                       | 90.2                        | 2.54                         | 36.520               |                           |        |

# Cathedral Energy Services

## Anticollision Report

|                           |                                  |                                     |                                |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>           | Berry Petroleum Company (NAD 83) | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Project:</b>           | Garfield County                  | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Reference Site:</b>    | N15 595 Pad                      | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site Error:</b>        | 0.0ft                            | <b>North Reference:</b>             | True                           |
| <b>Reference Well:</b>    | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Well Error:</b>        | 0.0ft                            | <b>Output errors are at</b>         | 2.00 sigma                     |
| <b>Reference Wellbore</b> | DD                               | <b>Database:</b>                    | EDM 5000.1 US Multi Users DB   |
| <b>Reference Design:</b>  | Plan #1                          | <b>Offset TVD Reference:</b>        | Offset Datum                   |

| <b>Offset Design</b> N15 595 Pad - LR11B N15 595 - DD - Plan #1 |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                        |                   | <b>Offset Site Error:</b> | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|---------------------------|--------|
| Survey Program: 0-MWD   |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                        |                   | <b>Offset Well Error:</b> | 0.0 ft |
| Reference   |                     | Offset              |                     | Semi Major Axis |             |                       | Distance                          |            |                      |                       |                        | Separation Factor | Warning                   |        |
| Measured Depth (ft)   | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft)  | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis |                   |                           |        |
| 0.0   | 0.0                 | 0.0                 | 0.0                 | 0.0             | 0.0         | -86.94                | 4.0                               | -74.9      | 75.1                 |                       |                        |                   |                           |        |
| 100.0   | 100.0               | 100.0               | 100.0               | 0.1             | 0.1         | -86.94                | 4.0                               | -74.9      | 75.1                 | 74.8                  | 0.30                   | 252.951           |                           |        |
| 200.0   | 200.0               | 200.0               | 200.0               | 0.3             | 0.3         | -86.94                | 4.0                               | -74.9      | 75.1                 | 74.4                  | 0.65                   | 116.221 CC, ES    |                           |        |
| 300.0   | 300.0               | 299.6               | 299.6               | 0.5             | 0.5         | 153.63                | 5.7                               | -75.1      | 76.8                 | 75.8                  | 1.00                   | 76.986            |                           |        |
| 400.0   | 399.8               | 398.6               | 398.4               | 0.7             | 0.7         | 158.72                | 10.9                              | -75.4      | 82.7                 | 81.3                  | 1.37                   | 60.536            |                           |        |
| 500.0   | 499.5               | 496.5               | 496.0               | 0.9             | 0.9         | 165.63                | 19.3                              | -76.0      | 93.6                 | 91.9                  | 1.75                   | 53.455 SF         |                           |        |

# Cathedral Energy Services

## Anticollision Report

|                           |                                  |                                     |                                |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>           | Berry Petroleum Company (NAD 83) | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Project:</b>           | Garfield County                  | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Reference Site:</b>    | N15 595 Pad                      | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site Error:</b>        | 0.0ft                            | <b>North Reference:</b>             | True                           |
| <b>Reference Well:</b>    | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Well Error:</b>        | 0.0ft                            | <b>Output errors are at</b>         | 2.00 sigma                     |
| <b>Reference Wellbore</b> | DD                               | <b>Database:</b>                    | EDM 5000.1 US Multi Users DB   |
| <b>Reference Design:</b>  | Plan #1                          | <b>Offset TVD Reference:</b>        | Offset Datum                   |

| <b>Offset Design</b> N15 595 Pad - LR11C N15 595 - DD - Plan #1 |                        |                        |                        |                   |                |                             |   |               |                            |                             |                              |                      | <b>Offset Site Error:</b> | 0.0 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|------------------------------|----------------------|---------------------------|--------|
| Survey Program: 0-MWD   |                        |                        |                        |                   |                |                             |   |               |                            |                             |                              |                      | <b>Offset Well Error:</b> | 0.0 ft |
| Reference   |                        | Offset                 |                        | Semi Major Axis   |                |                             | Distance                                |               |                            |                             |                              |                      |                           |        |
| Measured Depth<br>(ft)  | Vertical Depth<br>(ft) | Measured Depth<br>(ft) | Vertical Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) | Highside<br>Toolface<br>(°) | Offset Wellbore Centre<br>+N/-S<br>(ft) | +E/-W<br>(ft) | Between<br>Centres<br>(ft) | Between<br>Ellipses<br>(ft) | Total<br>Uncertainty<br>Axis | Separation<br>Factor | Warning                   |        |
| 0.0   | 0.0                    | 0.0                    | 0.0                    | 0.0               | 0.0            | -86.86                      | 3.3                                     | -59.7         | 59.8                       |                             |                              |                      |                           |        |
| 100.0   | 100.0                  | 100.0                  | 100.0                  | 0.1               | 0.1            | -86.86                      | 3.3                                     | -59.7         | 59.8                       | 59.5                        | 0.30                         | 201.615              |                           |        |
| 200.0   | 200.0                  | 200.0                  | 200.0                  | 0.3               | 0.3            | -86.86                      | 3.3                                     | -59.7         | 59.8                       | 59.2                        | 0.65                         | 92.634 CC, ES        |                           |        |
| 300.0   | 300.0                  | 300.0                  | 300.0                  | 0.5               | 0.5            | 152.59                      | 3.3                                     | -59.7         | 61.4                       | 60.4                        | 1.00                         | 61.654               |                           |        |
| 400.0   | 399.8                  | 399.8                  | 399.8                  | 0.7               | 0.7            | 154.64                      | 3.3                                     | -59.7         | 66.1                       | 64.7                        | 1.35                         | 49.047               |                           |        |
| 500.0   | 499.5                  | 499.5                  | 499.5                  | 0.9               | 0.8            | 157.46                      | 3.3                                     | -59.7         | 74.0                       | 72.3                        | 1.70                         | 43.554               |                           |        |
| 600.0   | 598.7                  | 597.9                  | 597.9                  | 1.2               | 1.0            | 161.58                      | 4.9                                     | -59.8         | 85.9                       | 83.8                        | 2.05                         | 41.892 SF            |                           |        |

# Cathedral Energy Services

## Anticollision Report

|                           |                                  |                                     |                                |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>           | Berry Petroleum Company (NAD 83) | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Project:</b>           | Garfield County                  | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Reference Site:</b>    | N15 595 Pad                      | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site Error:</b>        | 0.0ft                            | <b>North Reference:</b>             | True                           |
| <b>Reference Well:</b>    | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Well Error:</b>        | 0.0ft                            | <b>Output errors are at</b>         | 2.00 sigma                     |
| <b>Reference Wellbore</b> | DD                               | <b>Database:</b>                    | EDM 5000.1 US Multi Users DB   |
| <b>Reference Design:</b>  | Plan #1                          | <b>Offset TVD Reference:</b>        | Offset Datum                   |

| <b>Offset Design</b> N15 595 Pad - LR11D N15 595 - DD - Plan #1 |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                        |                   | <b>Offset Site Error:</b> | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|---------------------------|--------|
| Survey Program: 0-MWD   |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                        |                   | <b>Offset Well Error:</b> | 0.0 ft |
| Reference   |                     | Offset              |                     | Semi Major Axis |             |                       | Distance                          |            |                      |                       |                        |                   | Warning                   |        |
| Measured Depth (ft)   | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft)  | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor |                           |        |
| 0.0   | 0.0                 | 0.0                 | 0.0                 | 0.0             | 0.0         | -87.21                | 0.7                               | -14.9      | 15.0                 |                       |                        |                   |                           |        |
| 100.0   | 100.0               | 100.0               | 100.0               | 0.1             | 0.1         | -87.21                | 0.7                               | -14.9      | 15.0                 | 14.7                  | 0.30                   | 50.388            |                           |        |
| 200.0   | 200.0               | 200.0               | 200.0               | 0.3             | 0.3         | -87.21                | 0.7                               | -14.9      | 15.0                 | 14.3                  | 0.65                   | 23.151 CC, ES     |                           |        |
| 300.0   | 300.0               | 300.0               | 300.0               | 0.5             | 0.5         | 154.36                | 0.7                               | -14.9      | 16.5                 | 15.5                  | 1.00                   | 16.584            |                           |        |
| 400.0   | 399.8               | 399.8               | 399.8               | 0.7             | 0.7         | 160.42                | 0.7                               | -14.9      | 21.3                 | 20.0                  | 1.34                   | 15.871 SF         |                           |        |
| 500.0   | 499.5               | 499.5               | 499.5               | 0.9             | 0.8         | 166.02                | 0.7                               | -14.9      | 29.7                 | 28.0                  | 1.69                   | 17.550            |                           |        |
| 600.0   | 598.7               | 598.6               | 598.6               | 1.2             | 1.0         | 172.38                | 2.3                               | -14.4      | 41.7                 | 39.7                  | 2.04                   | 20.496            |                           |        |
| 700.0   | 697.5               | 696.9               | 696.7               | 1.5             | 1.2         | 179.48                | 7.1                               | -12.6      | 58.0                 | 55.6                  | 2.38                   | 24.360            |                           |        |
| 800.0   | 795.6               | 793.8               | 793.2               | 1.9             | 1.4         | -174.32               | 14.9                              | -9.8       | 79.1                 | 76.4                  | 2.75                   | 28.797            |                           |        |
| 840.6   | 835.3               | 832.7               | 831.9               | 2.0             | 1.5         | -172.15               | 18.9                              | -8.4       | 89.2                 | 86.3                  | 2.91                   | 30.653            |                           |        |

# Cathedral Energy Services

## Anticollision Report

|                           |                                  |                                     |                                |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>           | Berry Petroleum Company (NAD 83) | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Project:</b>           | Garfield County                  | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Reference Site:</b>    | N15 595 Pad                      | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site Error:</b>        | 0.0ft                            | <b>North Reference:</b>             | True                           |
| <b>Reference Well:</b>    | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Well Error:</b>        | 0.0ft                            | <b>Output errors are at</b>         | 2.00 sigma                     |
| <b>Reference Wellbore</b> | DD                               | <b>Database:</b>                    | EDM 5000.1 US Multi Users DB   |
| <b>Reference Design:</b>  | Plan #1                          | <b>Offset TVD Reference:</b>        | Offset Datum                   |

| <b>Offset Design</b> N15 595 Pad - LR14A N15 595 - DD - Plan #1 |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                        |                   | <b>Offset Site Error:</b> | 0.0 ft |
|---|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|---------------------------|--------|
| Survey Program: 0-MWD   |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                        |                   | <b>Offset Well Error:</b> | 0.0 ft |
| Reference   |                     | Offset              |                     | Semi Major Axis |             |                       | Distance                          |            |                      |                       |                        | Separation Factor | Warning                   |        |
| Measured Depth (ft)   | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft)  | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis |                   |                           |        |
| 0.0   | 0.0                 | 0.0                 | 0.0                 | 0.0             | 0.0         | -86.72                | 2.5                               | -44.5      | 44.6                 |                       |                        |                   |                           |        |
| 100.0   | 100.0               | 100.0               | 100.0               | 0.1             | 0.1         | -86.72                | 2.5                               | -44.5      | 44.6                 | 44.3                  | 0.30                   | 150.281           |                           |        |
| 200.0   | 200.0               | 200.0               | 200.0               | 0.3             | 0.3         | -86.72                | 2.5                               | -44.5      | 44.6                 | 43.9                  | 0.65                   | 69.048 CC, ES     |                           |        |
| 300.0   | 300.0               | 300.0               | 300.0               | 0.5             | 0.5         | 152.97                | 2.5                               | -44.5      | 46.1                 | 45.1                  | 1.00                   | 46.355            |                           |        |
| 400.0   | 399.8               | 399.8               | 399.8               | 0.7             | 0.7         | 155.61                | 2.5                               | -44.5      | 50.9                 | 49.5                  | 1.35                   | 37.770            |                           |        |
| 500.0   | 499.5               | 499.5               | 499.5               | 0.9             | 0.8         | 159.06                | 2.5                               | -44.5      | 58.9                 | 57.2                  | 1.70                   | 34.689            |                           |        |
| 600.0   | 598.7               | 598.7               | 598.7               | 1.2             | 1.0         | 162.53                | 2.5                               | -44.5      | 70.4                 | 68.4                  | 2.05                   | 34.396 SF         |                           |        |
| 700.0   | 697.5               | 697.5               | 697.5               | 1.5             | 1.2         | 165.60                | 2.5                               | -44.5      | 85.5                 | 83.1                  | 2.39                   | 35.730            |                           |        |

# Cathedral Energy Services

## Anticollision Report

|                           |                                  |                                     |                                |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>           | Berry Petroleum Company (NAD 83) | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Project:</b>           | Garfield County                  | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Reference Site:</b>    | N15 595 Pad                      | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site Error:</b>        | 0.0ft                            | <b>North Reference:</b>             | True                           |
| <b>Reference Well:</b>    | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Well Error:</b>        | 0.0ft                            | <b>Output errors are at</b>         | 2.00 sigma                     |
| <b>Reference Wellbore</b> | DD                               | <b>Database:</b>                    | EDM 5000.1 US Multi Users DB   |
| <b>Reference Design:</b>  | Plan #1                          | <b>Offset TVD Reference:</b>        | Offset Datum                   |

| <b>Offset Design</b> N15 595 Pad - LR14B N15 595 - DD - Plan #1 |                        |                        |                        |                   |                |                             |   |               |                            |                             |                              |                      | <b>Offset Site Error:</b> | 0.0 ft |
|---|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|---|---------------|----------------------------|-----------------------------|------------------------------|----------------------|---------------------------|--------|
| Survey Program: 0-MWD   |                        |                        |                        |                   |                |                             |   |               |                            |                             |                              |                      | <b>Offset Well Error:</b> | 0.0 ft |
| Reference   |                        | Offset                 |                        | Semi Major Axis   |                |                             | Distance                                |               |                            |                             |                              |                      | Warning                   |        |
| Measured Depth<br>(ft)  | Vertical Depth<br>(ft) | Measured Depth<br>(ft) | Vertical Depth<br>(ft) | Reference<br>(ft) | Offset<br>(ft) | Highside<br>Toolface<br>(°) | Offset Wellbore Centre<br>+N/-S<br>(ft) | +E/-W<br>(ft) | Between<br>Centres<br>(ft) | Between<br>Ellipses<br>(ft) | Total<br>Uncertainty<br>Axis | Separation<br>Factor |                           |        |
| 0.0   | 0.0                    | 0.0                    | 0.0                    | 0.0               | 0.0            | 94.11                       | -1.1                                    | 15.2          | 15.3                       |                             |                              |                      |                           |        |
| 100.0   | 100.0                  | 100.0                  | 100.0                  | 0.1               | 0.1            | 94.11                       | -1.1                                    | 15.2          | 15.3                       | 15.0                        | 0.30                         | 51.410               |                           |        |
| 200.0   | 200.0                  | 200.0                  | 200.0                  | 0.3               | 0.3            | 94.11                       | -1.1                                    | 15.2          | 15.3                       | 14.6                        | 0.65                         | 23.621               |                           |        |
| 300.0   | 300.0                  | 300.0                  | 300.0                  | 0.5               | 0.5            | -30.55                      | -1.1                                    | 15.2          | 13.7                       | 12.7                        | 1.00                         | 13.787               |                           |        |
| 400.0   | 399.8                  | 399.8                  | 399.8                  | 0.7               | 0.7            | -46.70                      | -1.1                                    | 15.2          | 9.6                        | 8.2                         | 1.36                         | 7.075                |                           |        |
| 478.9   | 478.5                  | 478.5                  | 478.5                  | 0.9               | 0.8            | -90.00                      | -1.1                                    | 15.2          | 7.0                        | 5.3                         | 1.68                         | 4.143 CC, ES         |                           |        |
| 500.0   | 499.5                  | 499.5                  | 499.5                  | 0.9               | 0.8            | -106.88                     | -1.1                                    | 15.2          | 7.3                        | 5.5                         | 1.76                         | 4.139 SF             |                           |        |
| 600.0   | 598.7                  | 598.7                  | 598.7                  | 1.2               | 1.0            | -153.80                     | -1.1                                    | 15.2          | 15.9                       | 13.9                        | 2.07                         | 7.702                |                           |        |
| 700.0   | 697.5                  | 697.5                  | 697.5                  | 1.5               | 1.2            | -166.70                     | -1.1                                    | 15.2          | 30.8                       | 28.4                        | 2.39                         | 12.872               |                           |        |
| 800.0   | 795.6                  | 795.6                  | 795.6                  | 1.9               | 1.4            | -171.73                     | -1.1                                    | 15.2          | 49.5                       | 46.8                        | 2.72                         | 18.218               |                           |        |
| 840.6   | 835.3                  | 835.3                  | 835.3                  | 2.0               | 1.4            | -172.94                     | -1.1                                    | 15.2          | 58.2                       | 55.3                        | 2.85                         | 20.400               |                           |        |
| 900.0   | 893.2                  | 893.2                  | 893.2                  | 2.3               | 1.5            | -174.24                     | -1.1                                    | 15.2          | 71.3                       | 68.2                        | 3.05                         | 23.334               |                           |        |
| 1,000.0   | 990.7                  | 990.7                  | 990.7                  | 2.7               | 1.7            | -175.61                     | -1.1                                    | 15.2          | 93.4                       | 90.0                        | 3.40                         | 27.493               |                           |        |

# Cathedral Energy Services

## Anticollision Report

|                           |                                  |                                     |                                |
|---------------------------|----------------------------------|-------------------------------------|--------------------------------|
| <b>Company:</b>           | Berry Petroleum Company (NAD 83) | <b>Local Co-ordinate Reference:</b> | Well LR15C N15 595             |
| <b>Project:</b>           | Garfield County                  | <b>TVD Reference:</b>               | KBE @ 8391.0ft (Patterson 302) |
| <b>Reference Site:</b>    | N15 595 Pad                      | <b>MD Reference:</b>                | KBE @ 8391.0ft (Patterson 302) |
| <b>Site Error:</b>        | 0.0ft                            | <b>North Reference:</b>             | True                           |
| <b>Reference Well:</b>    | LR15C N15 595                    | <b>Survey Calculation Method:</b>   | Minimum Curvature              |
| <b>Well Error:</b>        | 0.0ft                            | <b>Output errors are at</b>         | 2.00 sigma                     |
| <b>Reference Wellbore</b> | DD                               | <b>Database:</b>                    | EDM 5000.1 US Multi Users DB   |
| <b>Reference Design:</b>  | Plan #1                          | <b>Offset TVD Reference:</b>        | Offset Datum                   |

Reference Depths are relative to KBE @ 8391.0ft (Patterson 302)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: LR15C N15 595  
Coordinate System is US State Plane 1983, Colorado Central Zone  
Grid Convergence at Surface is: -1.60°

