

# **Berry Petroleum Company**

**Garfield Co., CO (CO83C)**

**OM C15-696 Pad (Sec.15-T6S-R96W)**

**SHP OM07D C15 696**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**18 October, 2013**

# **Archer**



Project: Garfield Co., CO (CO83C)  
 Site: OM C15-696 Pad (Sec.15-T6S-R96W)  
 Well: SHP OM07D C15 696  
 Wellbore: Wellbore #1  
 Design: Design #1  
 Latitude: 39° 31' 45.876 N  
 Longitude: 108° 5' 44.347 W  
 Ground Level: 8355.00  
 WELL @ 8375.00usft

# Archer

## PROJECT DETAILS: Garfield Co., CO (CO83C)

Geodetic System: US State Plane 1983  
 Datum: North American Datum 1983  
 Ellipsoid: GRS 1980  
 Zone: Colorado Central Zone  
 System Datum: Mean Sea Level

## REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well SHP OM07D C15 696, True North  
 Vertical (TVD) Reference: WELL @ 8375.00usft  
 Section (VS) Reference: Slot - (0.00N, 0.00E)  
 Measured Depth Reference: WELL @ 8375.00usft  
 Calculation Method: Minimum Curvature

## WELL DETAILS: SHP OM07D C15 696

| +N/-S | +E/-W | Northing    | Ground Level: Easting | 8355.00 Latitude | Longitude        | Slot |
|-------|-------|-------------|-----------------------|------------------|------------------|------|
| 0.00  | 0.00  | 1628174.842 | 2267953.095           | 39° 31' 29.359 N | 108° 5' 44.347 W |      |

## DESIGN TARGET DETAILS

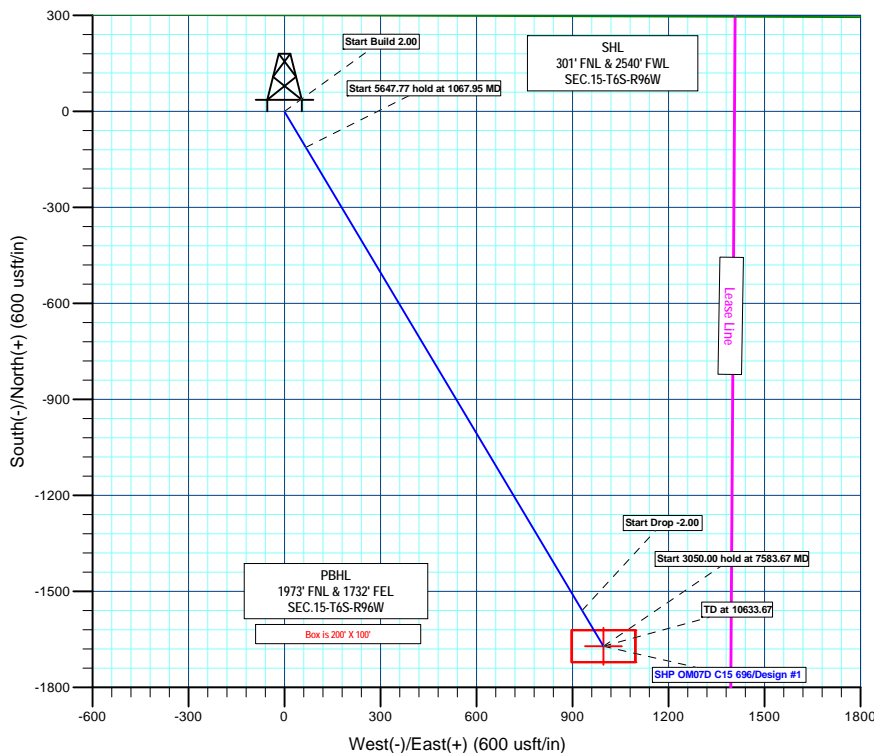
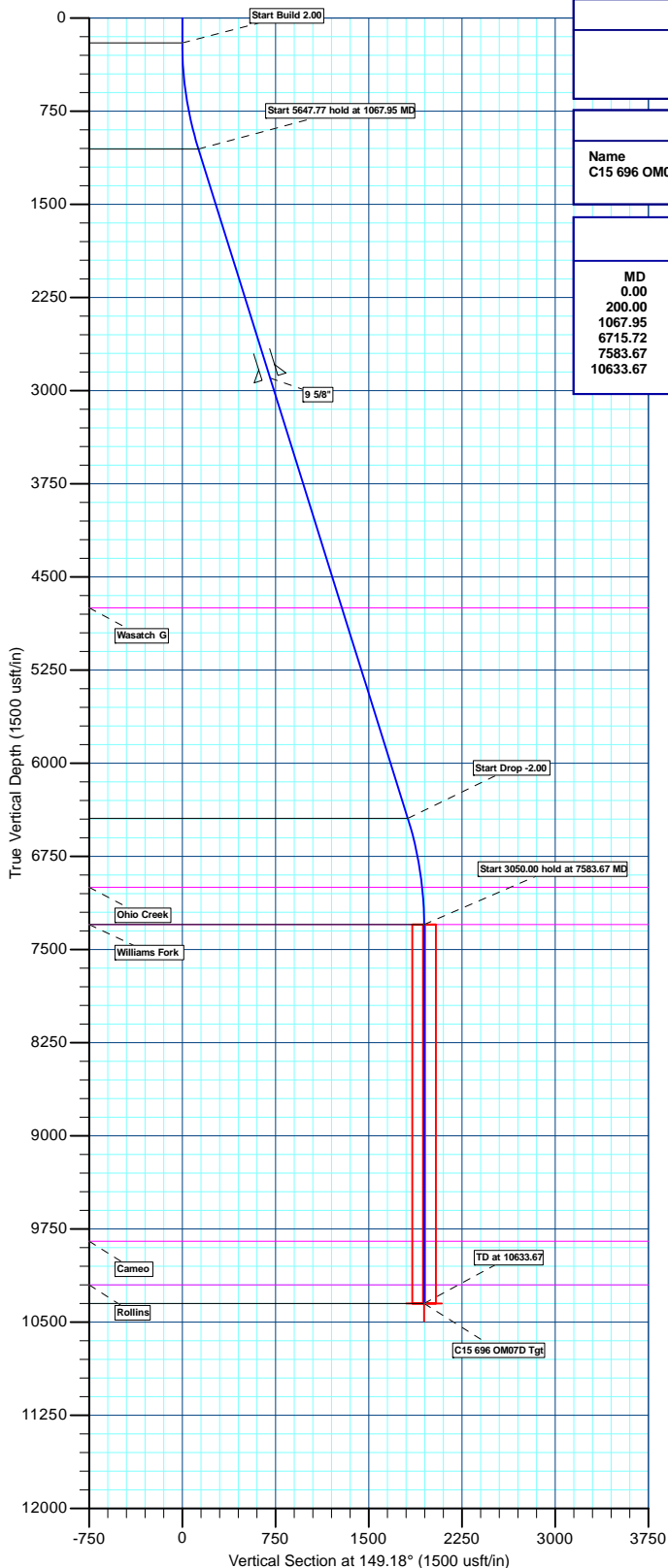
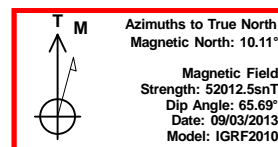
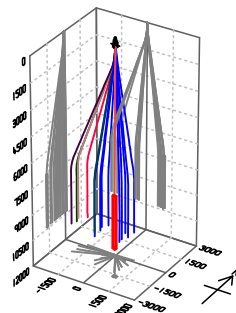
| Name              | TVD      | +N/-S    | +E/-W  | Latitude         | Longitude        | Shape                              |
|-------------------|----------|----------|--------|------------------|------------------|------------------------------------|
| C15 696 OM07D Tgt | 10350.00 | -1671.12 | 997.17 | 39° 31' 29.359 N | 108° 5' 31.621 W | Rectangle (Sides: L100.00 W200.00) |

## SECTION DETAILS

| MD       | Inc   | Azi    | TVD      | +N/-S    | +E/-W  | Dleg | TFace  | Vsect   | Annotation                       |
|----------|-------|--------|----------|----------|--------|------|--------|---------|----------------------------------|
| 0.00     | 0.00  | 0.00   | 0.00     | 0.00     | 0.00   | 0.00 | 0.00   | 0.00    | Start Build 2.00                 |
| 200.00   | 0.00  | 0.00   | 200.00   | 0.00     | 0.00   | 0.00 | 0.00   | 0.00    | Start 5647.77 hold at 1067.95 MD |
| 1067.95  | 17.36 | 149.18 | 1054.73  | -112.05  | 66.86  | 2.00 | 149.18 | 130.48  | Start Drop -2.00                 |
| 6715.72  | 17.36 | 149.18 | 6445.27  | -1559.07 | 930.31 | 0.00 | 0.00   | 1815.54 | Start 3050.00 hold at 7583.67 MD |
| 7583.67  | 0.00  | 0.00   | 7300.00  | -1671.12 | 997.17 | 2.00 | 180.00 | 1946.02 | TD at 10633.67                   |
| 10633.67 | 0.00  | 0.00   | 10350.00 | -1671.12 | 997.17 | 0.00 | 0.00   | 1946.02 |                                  |

## FORMATION TOP DETAILS

| TVDPath  | MDPath   | Formation     |
|----------|----------|---------------|
| 4750.00  | 4939.55  | Wasatch G     |
| 7000.00  | 7283.12  | Ohio Creek    |
| 7300.00  | 7583.67  | Williams Fork |
| 9850.00  | 10133.67 | Cameo         |
| 10200.00 | 10483.67 | Rollins       |



Created By: Bret Wolford Date: 10:00, October 18 2013



|                  |                                  |                                     |                        |
|------------------|----------------------------------|-------------------------------------|------------------------|
| <b>Database:</b> | EDM 5000.1 Single User Db        | <b>Local Co-ordinate Reference:</b> | Well SHP OM07D C15 696 |
| <b>Company:</b>  | Berry Petroleum Company          | <b>TVD Reference:</b>               | WELL @ 8375.00usft     |
| <b>Project:</b>  | Garfield Co., CO (CO83C)         | <b>MD Reference:</b>                | WELL @ 8375.00usft     |
| <b>Site:</b>     | OM C15-696 Pad (Sec.15-T6S-R96W) | <b>North Reference:</b>             | True                   |
| <b>Well:</b>     | SHP OM07D C15 696                | <b>Survey Calculation Method:</b>   | Minimum Curvature      |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                        |
| <b>Design:</b>   | Design #1                        |                                     |                        |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project</b>     | Garfield Co., CO (CO83C)  |                      |                |
| <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                  | OM C15-696 Pad (Sec.15-T6S-R96W) |              |                    |                   |                  |
| Site Position:        |                                  | Northing:    | 1,628,249.337 usft | Latitude:         | 39° 31' 46.614 N |
| From:                 | Lat/Long                         | Easting:     | 2,267,960.585 usft | Longitude:        | 108° 5' 44.279 W |
| Position Uncertainty: | 0.00 usft                        | Slot Radius: | 13-3/16"           | Grid Convergence: | -1.64 °          |

|                      |                   |             |                     |                    |               |                  |
|----------------------|-------------------|-------------|---------------------|--------------------|---------------|------------------|
| Well                 | SHP OM07D C15 696 |             |                     |                    |               |                  |
| Well Position        | +N/-S             | -74.68 usft | Northing:           | 1,628,174.842 usft | Latitude:     | 39° 31' 45.876 N |
|                      | +E/-W             | -5.36 usft  | Easting:            | 2,267,953.095 usft | Longitude:    | 108° 5' 44.347 W |
| Position Uncertainty |                   | 0.00 usft   | Wellhead Elevation: | usft               | Ground Level: | 8,355.00 usft    |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | Wellbore #1       |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2010          | 09/03/13           | 10.11                  | 65.69                | 52,012                     |

|                          |                                |                     |                      |                      |
|--------------------------|--------------------------------|---------------------|----------------------|----------------------|
| <b>Design</b>            | Design #1                      |                     |                      |                      |
| <b>Audit Notes:</b>      |                                |                     |                      |                      |
| <b>Version:</b>          | <b>Phase:</b>                  | PLAN                | <b>Tie On Depth:</b> | 0.00                 |
| <b>Vertical Section:</b> | <b>Depth From (TVD) (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b>  | <b>Direction (°)</b> |
|                          | 0.00                           | 0.00                | 0.00                 | 149.18               |

|                              |                        |                    |                              |                     |                     |                                |                               |                              |                |               |
|------------------------------|------------------------|--------------------|------------------------------|---------------------|---------------------|--------------------------------|-------------------------------|------------------------------|----------------|---------------|
| <b>Plan Sections</b>         |                        |                    |                              |                     |                     |                                |                               |                              |                |               |
| <b>Measured Depth (usft)</b> | <b>Inclination (°)</b> | <b>Azimuth (°)</b> | <b>Vertical Depth (usft)</b> | <b>+N/-S (usft)</b> | <b>+E/-W (usft)</b> | <b>Dogleg Rate (°/100usft)</b> | <b>Build Rate (°/100usft)</b> | <b>Turn Rate (°/100usft)</b> | <b>TFO (°)</b> | <b>Target</b> |
| 0.00                         | 0.00                   | 0.00               | 0.00                         | 0.00                | 0.00                | 0.00                           | 0.00                          | 0.00                         | 0.00           |               |
| 200.00                       | 0.00                   | 0.00               | 200.00                       | 0.00                | 0.00                | 0.00                           | 0.00                          | 0.00                         | 0.00           |               |
| 1,067.95                     | 17.36                  | 149.18             | 1,054.73                     | -112.05             | 66.86               | 2.00                           | 2.00                          | 0.00                         | 149.18         |               |
| 6,715.72                     | 17.36                  | 149.18             | 6,445.27                     | -1,559.07           | 930.31              | 0.00                           | 0.00                          | 0.00                         | 0.00           |               |
| 7,583.67                     | 0.00                   | 0.00               | 7,300.00                     | -1,671.12           | 997.17              | 2.00                           | -2.00                         | 0.00                         | 180.00         |               |
| 10,633.67                    | 0.00                   | 0.00               | 10,350.00                    | -1,671.12           | 997.17              | 0.00                           | 0.00                          | 0.00                         | 0.00           |               |



**Database:** EDM 5000.1 Single User Db  
**Company:** Berry Petroleum Company  
**Project:** Garfield Co., CO (CO83C)  
**Site:** OM C15-696 Pad (Sec.15-T6S-R96W)  
**Well:** SHP OM07D C15 696  
**Wellbore:** Wellbore #1  
**Design:** Design #1

**Local Co-ordinate Reference:** Well SHP OM07D C15 696  
**TVD Reference:** WELL @ 8375.00usft  
**MD Reference:** WELL @ 8375.00usft  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

## Planned Survey

| Measured Depth (usft)            | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
|----------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| 0.00                             | 0.00            | 0.00        | 0.00                  | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 100.00                           | 0.00            | 0.00        | 100.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| Start Build 2.00                 |                 |             |                       |              |              |                         |                         |                        |                       |
| 200.00                           | 0.00            | 0.00        | 200.00                | 0.00         | 0.00         | 0.00                    | 0.00                    | 0.00                   | 0.00                  |
| 300.00                           | 2.00            | 149.18      | 299.98                | -1.50        | 0.89         | 1.75                    | 2.00                    | 2.00                   | 0.00                  |
| 400.00                           | 4.00            | 149.18      | 399.84                | -5.99        | 3.58         | 6.98                    | 2.00                    | 2.00                   | 0.00                  |
| 500.00                           | 6.00            | 149.18      | 499.45                | -13.48       | 8.04         | 15.69                   | 2.00                    | 2.00                   | 0.00                  |
| 600.00                           | 8.00            | 149.18      | 598.70                | -23.94       | 14.29        | 27.88                   | 2.00                    | 2.00                   | 0.00                  |
| 700.00                           | 10.00           | 149.18      | 697.47                | -37.37       | 22.30        | 43.52                   | 2.00                    | 2.00                   | 0.00                  |
| 800.00                           | 12.00           | 149.18      | 795.62                | -53.76       | 32.08        | 62.60                   | 2.00                    | 2.00                   | 0.00                  |
| 900.00                           | 14.00           | 149.18      | 893.06                | -73.08       | 43.60        | 85.10                   | 2.00                    | 2.00                   | 0.00                  |
| 1,000.00                         | 16.00           | 149.18      | 989.64                | -95.30       | 56.87        | 110.98                  | 2.00                    | 2.00                   | 0.00                  |
| Start 5647.77 hold at 1067.95 MD |                 |             |                       |              |              |                         |                         |                        |                       |
| 1,067.95                         | 17.36           | 149.18      | 1,054.73              | -112.05      | 66.86        | 130.48                  | 2.00                    | 2.00                   | 0.00                  |
| 1,100.00                         | 17.36           | 149.18      | 1,085.32              | -120.26      | 71.76        | 140.04                  | 0.00                    | 0.00                   | 0.00                  |
| 1,200.00                         | 17.36           | 149.18      | 1,180.77              | -145.88      | 87.05        | 169.88                  | 0.00                    | 0.00                   | 0.00                  |
| 1,300.00                         | 17.36           | 149.18      | 1,276.21              | -171.50      | 102.34       | 199.71                  | 0.00                    | 0.00                   | 0.00                  |
| 1,400.00                         | 17.36           | 149.18      | 1,371.66              | -197.12      | 117.62       | 229.55                  | 0.00                    | 0.00                   | 0.00                  |
| 1,500.00                         | 17.36           | 149.18      | 1,467.10              | -222.74      | 132.91       | 259.39                  | 0.00                    | 0.00                   | 0.00                  |
| 1,600.00                         | 17.36           | 149.18      | 1,562.55              | -248.36      | 148.20       | 289.22                  | 0.00                    | 0.00                   | 0.00                  |
| 1,700.00                         | 17.36           | 149.18      | 1,657.99              | -273.99      | 163.49       | 319.06                  | 0.00                    | 0.00                   | 0.00                  |
| 1,800.00                         | 17.36           | 149.18      | 1,753.44              | -299.61      | 178.78       | 348.89                  | 0.00                    | 0.00                   | 0.00                  |
| 1,900.00                         | 17.36           | 149.18      | 1,848.89              | -325.23      | 194.07       | 378.73                  | 0.00                    | 0.00                   | 0.00                  |
| 2,000.00                         | 17.36           | 149.18      | 1,944.33              | -350.85      | 209.35       | 408.56                  | 0.00                    | 0.00                   | 0.00                  |
| 2,100.00                         | 17.36           | 149.18      | 2,039.78              | -376.47      | 224.64       | 438.40                  | 0.00                    | 0.00                   | 0.00                  |
| 2,200.00                         | 17.36           | 149.18      | 2,135.22              | -402.09      | 239.93       | 468.24                  | 0.00                    | 0.00                   | 0.00                  |
| 2,300.00                         | 17.36           | 149.18      | 2,230.67              | -427.71      | 255.22       | 498.07                  | 0.00                    | 0.00                   | 0.00                  |
| 2,400.00                         | 17.36           | 149.18      | 2,326.11              | -453.33      | 270.51       | 527.91                  | 0.00                    | 0.00                   | 0.00                  |
| 2,500.00                         | 17.36           | 149.18      | 2,421.56              | -478.96      | 285.80       | 557.74                  | 0.00                    | 0.00                   | 0.00                  |
| 2,600.00                         | 17.36           | 149.18      | 2,517.00              | -504.58      | 301.08       | 587.58                  | 0.00                    | 0.00                   | 0.00                  |
| 2,700.00                         | 17.36           | 149.18      | 2,612.45              | -530.20      | 316.37       | 617.42                  | 0.00                    | 0.00                   | 0.00                  |
| 2,800.00                         | 17.36           | 149.18      | 2,707.89              | -555.82      | 331.66       | 647.25                  | 0.00                    | 0.00                   | 0.00                  |
| 2,900.00                         | 17.36           | 149.18      | 2,803.34              | -581.44      | 346.95       | 677.09                  | 0.00                    | 0.00                   | 0.00                  |
| 9 5/8"                           |                 |             |                       |              |              |                         |                         |                        |                       |
| 3,000.00                         | 17.36           | 149.18      | 2,898.79              | -607.06      | 362.24       | 706.92                  | 0.00                    | 0.00                   | 0.00                  |
| 3,100.00                         | 17.36           | 149.18      | 2,994.23              | -632.68      | 377.53       | 736.76                  | 0.00                    | 0.00                   | 0.00                  |
| 3,200.00                         | 17.36           | 149.18      | 3,089.68              | -658.30      | 392.81       | 766.59                  | 0.00                    | 0.00                   | 0.00                  |
| 3,300.00                         | 17.36           | 149.18      | 3,185.12              | -683.92      | 408.10       | 796.43                  | 0.00                    | 0.00                   | 0.00                  |
| 3,400.00                         | 17.36           | 149.18      | 3,280.57              | -709.55      | 423.39       | 826.27                  | 0.00                    | 0.00                   | 0.00                  |
| 3,500.00                         | 17.36           | 149.18      | 3,376.01              | -735.17      | 438.68       | 856.10                  | 0.00                    | 0.00                   | 0.00                  |
| 3,600.00                         | 17.36           | 149.18      | 3,471.46              | -760.79      | 453.97       | 885.94                  | 0.00                    | 0.00                   | 0.00                  |
| 3,700.00                         | 17.36           | 149.18      | 3,566.90              | -786.41      | 469.26       | 915.77                  | 0.00                    | 0.00                   | 0.00                  |
| 3,800.00                         | 17.36           | 149.18      | 3,662.35              | -812.03      | 484.55       | 945.61                  | 0.00                    | 0.00                   | 0.00                  |
| 3,900.00                         | 17.36           | 149.18      | 3,757.79              | -837.65      | 499.83       | 975.45                  | 0.00                    | 0.00                   | 0.00                  |
| 4,000.00                         | 17.36           | 149.18      | 3,853.24              | -863.27      | 515.12       | 1,005.28                | 0.00                    | 0.00                   | 0.00                  |
| 4,100.00                         | 17.36           | 149.18      | 3,948.68              | -888.89      | 530.41       | 1,035.12                | 0.00                    | 0.00                   | 0.00                  |
| 4,200.00                         | 17.36           | 149.18      | 4,044.13              | -914.52      | 545.70       | 1,064.95                | 0.00                    | 0.00                   | 0.00                  |
| 4,300.00                         | 17.36           | 149.18      | 4,139.58              | -940.14      | 560.99       | 1,094.79                | 0.00                    | 0.00                   | 0.00                  |
| 4,400.00                         | 17.36           | 149.18      | 4,235.02              | -965.76      | 576.28       | 1,124.62                | 0.00                    | 0.00                   | 0.00                  |
| 4,500.00                         | 17.36           | 149.18      | 4,330.47              | -991.38      | 591.56       | 1,154.46                | 0.00                    | 0.00                   | 0.00                  |
| 4,600.00                         | 17.36           | 149.18      | 4,425.91              | -1,017.00    | 606.85       | 1,184.30                | 0.00                    | 0.00                   | 0.00                  |
| 4,700.00                         | 17.36           | 149.18      | 4,521.36              | -1,042.62    | 622.14       | 1,214.13                | 0.00                    | 0.00                   | 0.00                  |
| 4,800.00                         | 17.36           | 149.18      | 4,616.80              | -1,068.24    | 637.43       | 1,243.97                | 0.00                    | 0.00                   | 0.00                  |



|                  |                                  |                                     |                        |
|------------------|----------------------------------|-------------------------------------|------------------------|
| <b>Database:</b> | EDM 5000.1 Single User Db        | <b>Local Co-ordinate Reference:</b> | Well SHP OM07D C15 696 |
| <b>Company:</b>  | Berry Petroleum Company          | <b>TVD Reference:</b>               | WELL @ 8375.00usft     |
| <b>Project:</b>  | Garfield Co., CO (CO83C)         | <b>MD Reference:</b>                | WELL @ 8375.00usft     |
| <b>Site:</b>     | OM C15-696 Pad (Sec.15-T6S-R96W) | <b>North Reference:</b>             | True                   |
| <b>Well:</b>     | SHP OM07D C15 696                | <b>Survey Calculation Method:</b>   | Minimum Curvature      |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                        |
| <b>Design:</b>   | Design #1                        |                                     |                        |

| Planned Survey                                   |                 |             |                       |              |              |                         |                         |                        |                       |
|--|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft)                            | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 4,900.00   | 17.36           | 149.18      | 4,712.25              | -1,093.86    | 652.72       | 1,273.80                | 0.00                    | 0.00                   | 0.00                  |
| Wasatch G  |                 |             |                       |              |              |                         |                         |                        |                       |
| 4,939.55   | 17.36           | 149.18      | 4,750.00              | -1,104.00    | 658.76       | 1,285.61                | 0.00                    | 0.00                   | 0.00                  |
| 5,000.00   | 17.36           | 149.18      | 4,807.69              | -1,119.48    | 668.01       | 1,303.64                | 0.00                    | 0.00                   | 0.00                  |
| 5,100.00   | 17.36           | 149.18      | 4,903.14              | -1,145.11    | 683.29       | 1,333.48                | 0.00                    | 0.00                   | 0.00                  |
| 5,200.00   | 17.36           | 149.18      | 4,998.58              | -1,170.73    | 698.58       | 1,363.31                | 0.00                    | 0.00                   | 0.00                  |
| 5,300.00   | 17.36           | 149.18      | 5,094.03              | -1,196.35    | 713.87       | 1,393.15                | 0.00                    | 0.00                   | 0.00                  |
| 5,400.00   | 17.36           | 149.18      | 5,189.47              | -1,221.97    | 729.16       | 1,422.98                | 0.00                    | 0.00                   | 0.00                  |
| 5,500.00   | 17.36           | 149.18      | 5,284.92              | -1,247.59    | 744.45       | 1,452.82                | 0.00                    | 0.00                   | 0.00                  |
| 5,600.00   | 17.36           | 149.18      | 5,380.37              | -1,273.21    | 759.74       | 1,482.65                | 0.00                    | 0.00                   | 0.00                  |
| 5,700.00   | 17.36           | 149.18      | 5,475.81              | -1,298.83    | 775.02       | 1,512.49                | 0.00                    | 0.00                   | 0.00                  |
| 5,800.00   | 17.36           | 149.18      | 5,571.26              | -1,324.45    | 790.31       | 1,542.33                | 0.00                    | 0.00                   | 0.00                  |
| 5,900.00   | 17.36           | 149.18      | 5,666.70              | -1,350.07    | 805.60       | 1,572.16                | 0.00                    | 0.00                   | 0.00                  |
| 6,000.00   | 17.36           | 149.18      | 5,762.15              | -1,375.70    | 820.89       | 1,602.00                | 0.00                    | 0.00                   | 0.00                  |
| 6,100.00   | 17.36           | 149.18      | 5,857.59              | -1,401.32    | 836.18       | 1,631.83                | 0.00                    | 0.00                   | 0.00                  |
| 6,200.00   | 17.36           | 149.18      | 5,953.04              | -1,426.94    | 851.47       | 1,661.67                | 0.00                    | 0.00                   | 0.00                  |
| 6,300.00   | 17.36           | 149.18      | 6,048.48              | -1,452.56    | 866.75       | 1,691.51                | 0.00                    | 0.00                   | 0.00                  |
| 6,400.00   | 17.36           | 149.18      | 6,143.93              | -1,478.18    | 882.04       | 1,721.34                | 0.00                    | 0.00                   | 0.00                  |
| 6,500.00   | 17.36           | 149.18      | 6,239.37              | -1,503.80    | 897.33       | 1,751.18                | 0.00                    | 0.00                   | 0.00                  |
| 6,600.00   | 17.36           | 149.18      | 6,334.82              | -1,529.42    | 912.62       | 1,781.01                | 0.00                    | 0.00                   | 0.00                  |
| 6,700.00   | 17.36           | 149.18      | 6,430.26              | -1,555.04    | 927.91       | 1,810.85                | 0.00                    | 0.00                   | 0.00                  |
| Start Drop -2.00                                 |                 |             |                       |              |              |                         |                         |                        |                       |
| 6,715.72   | 17.36           | 149.18      | 6,445.27              | -1,559.07    | 930.31       | 1,815.54                | 0.00                    | 0.00                   | 0.00                  |
| 6,800.00   | 15.67           | 149.18      | 6,526.07              | -1,579.65    | 942.59       | 1,839.50                | 2.00                    | -2.00                  | 0.00                  |
| 6,900.00   | 13.67           | 149.18      | 6,622.80              | -1,601.40    | 955.57       | 1,864.83                | 2.00                    | -2.00                  | 0.00                  |
| 7,000.00   | 11.67           | 149.18      | 6,720.36              | -1,620.24    | 966.81       | 1,886.77                | 2.00                    | -2.00                  | 0.00                  |
| 7,100.00   | 9.67            | 149.18      | 6,818.63              | -1,636.14    | 976.30       | 1,905.29                | 2.00                    | -2.00                  | 0.00                  |
| 7,200.00   | 7.67            | 149.18      | 6,917.48              | -1,649.09    | 984.03       | 1,920.37                | 2.00                    | -2.00                  | 0.00                  |
| Ohio Creek                                       |                 |             |                       |              |              |                         |                         |                        |                       |
| 7,283.12   | 6.01            | 149.18      | 7,000.00              | -1,657.59    | 989.10       | 1,930.27                | 2.00                    | -2.00                  | 0.00                  |
| 7,300.00   | 5.67            | 149.18      | 7,016.79              | -1,659.07    | 989.98       | 1,931.99                | 2.00                    | -2.00                  | 0.00                  |
| 7,400.00   | 3.67            | 149.18      | 7,116.46              | -1,666.06    | 994.15       | 1,940.13                | 2.00                    | -2.00                  | 0.00                  |
| 7,500.00   | 1.67            | 149.18      | 7,216.34              | -1,670.07    | 996.54       | 1,944.80                | 2.00                    | -2.00                  | 0.00                  |
| Start 3050.00 hold at 7583.67 MD - Williams Fork |                 |             |                       |              |              |                         |                         |                        |                       |
| 7,583.67   | 0.00            | 0.00        | 7,300.00              | -1,671.12    | 997.17       | 1,946.02                | 2.00                    | -2.00                  | 0.00                  |
| 7,600.00   | 0.00            | 0.00        | 7,316.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 7,700.00   | 0.00            | 0.00        | 7,416.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 7,800.00   | 0.00            | 0.00        | 7,516.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 7,900.00   | 0.00            | 0.00        | 7,616.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 8,000.00   | 0.00            | 0.00        | 7,716.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 8,100.00   | 0.00            | 0.00        | 7,816.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 8,200.00   | 0.00            | 0.00        | 7,916.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 8,300.00   | 0.00            | 0.00        | 8,016.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 8,400.00   | 0.00            | 0.00        | 8,116.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 8,500.00   | 0.00            | 0.00        | 8,216.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 8,600.00   | 0.00            | 0.00        | 8,316.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 8,700.00   | 0.00            | 0.00        | 8,416.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 8,800.00   | 0.00            | 0.00        | 8,516.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 8,900.00   | 0.00            | 0.00        | 8,616.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 9,000.00   | 0.00            | 0.00        | 8,716.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 9,100.00   | 0.00            | 0.00        | 8,816.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 9,200.00   | 0.00            | 0.00        | 8,916.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 9,300.00   | 0.00            | 0.00        | 9,016.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 9,400.00   | 0.00            | 0.00        | 9,116.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |



|                  |                                  |                                     |                        |
|------------------|----------------------------------|-------------------------------------|------------------------|
| <b>Database:</b> | EDM 5000.1 Single User Db        | <b>Local Co-ordinate Reference:</b> | Well SHP OM07D C15 696 |
| <b>Company:</b>  | Berry Petroleum Company          | <b>TVD Reference:</b>               | WELL @ 8375.00usft     |
| <b>Project:</b>  | Garfield Co., CO (CO83C)         | <b>MD Reference:</b>                | WELL @ 8375.00usft     |
| <b>Site:</b>     | OM C15-696 Pad (Sec.15-T6S-R96W) | <b>North Reference:</b>             | True                   |
| <b>Well:</b>     | SHP OM07D C15 696                | <b>Survey Calculation Method:</b>   | Minimum Curvature      |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                        |
| <b>Design:</b>   | Design #1                        |                                     |                        |

| Planned Survey                     |                 |             |                       |              |              |                         |                         |                        |                       |
|------------------------------------|-----------------|-------------|-----------------------|--------------|--------------|-------------------------|-------------------------|------------------------|-----------------------|
| Measured Depth (usft)              | Inclination (°) | Azimuth (°) | Vertical Depth (usft) | +N/-S (usft) | +E/-W (usft) | Vertical Section (usft) | Dogleg Rate (°/100usft) | Build Rate (°/100usft) | Turn Rate (°/100usft) |
| 9,500.00                           | 0.00            | 0.00        | 9,216.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 9,600.00                           | 0.00            | 0.00        | 9,316.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 9,700.00                           | 0.00            | 0.00        | 9,416.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 9,800.00                           | 0.00            | 0.00        | 9,516.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 9,900.00                           | 0.00            | 0.00        | 9,616.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 10,000.00                          | 0.00            | 0.00        | 9,716.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 10,100.00                          | 0.00            | 0.00        | 9,816.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| Cameo                              |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,133.67                          | 0.00            | 0.00        | 9,850.00              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 10,200.00                          | 0.00            | 0.00        | 9,916.33              | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 10,300.00                          | 0.00            | 0.00        | 10,016.33             | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 10,400.00                          | 0.00            | 0.00        | 10,116.33             | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| Rollins                            |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,483.67                          | 0.00            | 0.00        | 10,200.00             | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 10,500.00                          | 0.00            | 0.00        | 10,216.33             | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| 10,600.00                          | 0.00            | 0.00        | 10,316.33             | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |
| TD at 10633.67 - C15 696 OM07D Tgt |                 |             |                       |              |              |                         |                         |                        |                       |
| 10,633.67                          | 0.00            | 0.00        | 10,350.00             | -1,671.12    | 997.17       | 1,946.02                | 0.00                    | 0.00                   | 0.00                  |

| Design Targets                            |               |              |            |              |              |                 |                |                  |                  |
|---|---------------|--------------|------------|--------------|--------------|-----------------|----------------|------------------|------------------|
| Target Name                               | Dip Angle (°) | Dip Dir. (°) | TVD (usft) | +N/-S (usft) | +E/-W (usft) | Northing (usft) | Easting (usft) | Latitude         | Longitude        |
| - hit/miss target                         |               |              |            |              |              |                 |                |                  |                  |
| - Shape                                   |               |              |            |              |              |                 |                |                  |                  |
| C15 696 OM07D Tgt                         | 0.00          | 0.00         | 10,350.00  | -1,671.12    | 997.17       | 1,626,475.918   | 2,268,902.117  | 39° 31' 29.359 N | 108° 5' 31.621 W |
| - plan hits target center                 |               |              |            |              |              |                 |                |                  |                  |
| - Rectangle (sides W100.00 H200.00 D0.00) |               |              |            |              |              |                 |                |                  |                  |

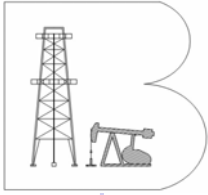
| Casing Points         |                       |        |                     |                   |
|-----------------------|-----------------------|--------|---------------------|-------------------|
| Measured Depth (usft) | Vertical Depth (usft) | Name   | Casing Diameter (") | Hole Diameter (") |
| 3,000.00              | 2,898.79              | 9 5/8" | 9-5/8               | 12-1/4            |

| Formations            |                       |               |           |         |                   |  |
|-----------------------|-----------------------|---------------|-----------|---------|-------------------|--|
| Measured Depth (usft) | Vertical Depth (usft) | Name          | Lithology | Dip (°) | Dip Direction (°) |  |
| 4,939.55              | 4,750.00              | Wasatch G     |           | 0.00    |                   |  |
| 7,283.12              | 7,000.00              | Ohio Creek    |           | 0.00    |                   |  |
| 7,583.67              | 7,300.00              | Williams Fork |           | 0.00    |                   |  |
| 10,133.67             | 9,850.00              | Cameo         |           | 0.00    |                   |  |
| 10,483.67             | 10,200.00             | Rollins       |           | 0.00    |                   |  |



|                  |                                  |                                     |                        |
|------------------|----------------------------------|-------------------------------------|------------------------|
| <b>Database:</b> | EDM 5000.1 Single User Db        | <b>Local Co-ordinate Reference:</b> | Well SHP OM07D C15 696 |
| <b>Company:</b>  | Berry Petroleum Company          | <b>TVD Reference:</b>               | WELL @ 8375.00usft     |
| <b>Project:</b>  | Garfield Co., CO (CO83C)         | <b>MD Reference:</b>                | WELL @ 8375.00usft     |
| <b>Site:</b>     | OM C15-696 Pad (Sec.15-T6S-R96W) | <b>North Reference:</b>             | True                   |
| <b>Well:</b>     | SHP OM07D C15 696                | <b>Survey Calculation Method:</b>   | Minimum Curvature      |
| <b>Wellbore:</b> | Wellbore #1                      |                                     |                        |
| <b>Design:</b>   | Design #1                        |                                     |                        |

| Plan Annotations            |                             |                   |                 |                                  |
|-----------------------------|-----------------------------|-------------------|-----------------|----------------------------------|
| Measured<br>Depth<br>(usft) | Vertical<br>Depth<br>(usft) | Local Coordinates |                 | Comment                          |
|                             |                             | +N/-S<br>(usft)   | +E/-W<br>(usft) |                                  |
| 200.00                      | 200.00                      | 0.00              | 0.00            | Start Build 2.00                 |
| 1,067.95                    | 1,054.73                    | -112.05           | 66.86           | Start 5647.77 hold at 1067.95 MD |
| 6,715.72                    | 6,445.27                    | -1,559.07         | 930.31          | Start Drop -2.00                 |
| 7,583.67                    | 7,300.00                    | -1,671.12         | 997.17          | Start 3050.00 hold at 7583.67 MD |
| 10,633.67                   | 10,350.00                   | -1,671.12         | 997.17          | TD at 10633.67                   |



# **Berry Petroleum Company**

**Garfield Co., CO (CO83C)**

**OM C15-696 Pad (Sec.15-T6S-R96W)**

**SHP OM07D C15 696**

**Wellbore #1**

**Design #1**

## **Anticollision Summary Report**

**18 October, 2013**

# **Archer**





Archer  
Anticollision Summary Report

# Archer

|                           |                                  |                                     |                           |
|---------------------------|----------------------------------|-------------------------------------|---------------------------|
| <b>Company:</b>           | Berry Petroleum Company          | <b>Local Co-ordinate Reference:</b> | Well SHP OM07D C15 696    |
| <b>Project:</b>           | Garfield Co., CO (CO83C)         | <b>TVD Reference:</b>               | WELL @ 8375.00usft        |
| <b>Reference Site:</b>    | OM C15-696 Pad (Sec.15-T6S-R96W) | <b>MD Reference:</b>                | WELL @ 8375.00usft        |
| <b>Site Error:</b>        | 0.00 usft                        | <b>North Reference:</b>             | True                      |
| <b>Reference Well:</b>    | SHP OM07D C15 696                | <b>Survey Calculation Method:</b>   | Minimum Curvature         |
| <b>Well Error:</b>        | 0.00 usft                        | <b>Output errors are at</b>         | 2.00 sigma                |
| <b>Reference Wellbore</b> | Wellbore #1                      | <b>Database:</b>                    | EDM 5000.1 Single User Db |
| <b>Reference Design:</b>  | Design #1                        | <b>Offset TVD Reference:</b>        | Reference Datum           |

|                                     |   |                       |                     |
|-------------------------------------|---|-----------------------|---------------------|
| <b>Reference</b>                    | Design #1   |                       |                     |
| <b>Filter type:</b>                 | NO GLOBAL FILTER: Using user defined selection & filtering criteria |                       |                     |
| <b>Interpolation Method:</b>        | Stations  | <b>Error Model:</b>   | ISCWSA              |
| <b>Depth Range:</b>                 | Unlimited   | <b>Scan Method:</b>   | Closest Approach 3D |
| <b>Results Limited by:</b>          | Maximum center-center distance of 9,999.98 usft                     | <b>Error Surface:</b> | Elliptical Conic    |
| <b>Warning Levels Evaluated at:</b> | 2.00 Sigma  | <b>Casing Method:</b> | Not applied         |

|                            |                  |                          |                  |                    |
|----------------------------|------------------|--------------------------|------------------|--------------------|
| <b>Survey Tool Program</b> | <b>Date</b>      | 10/18/13                 |                  |                    |
| <b>From (usft)</b>         | <b>To (usft)</b> | <b>Survey (Wellbore)</b> | <b>Tool Name</b> | <b>Description</b> |
| 0.00                       | 10,633.67        | Design #1 (Wellbore #1)  | MWD              | MWD - Standard     |

| Summary                                     |                                 |                              |                                 |                                  |                   |         |
|---|---------------------------------|------------------------------|---------------------------------|----------------------------------|-------------------|---------|
| Site Name                                   | Reference Measured Depth (usft) | Offset Measured Depth (usft) | Distance Between Centres (usft) | Distance Between Ellipses (usft) | Separation Factor | Warning |
| Offset Well - Wellbore - Design             |                                 |                              |                                 |                                  |                   |         |
| OM C15-696 Pad (Sec.15-T6S-R96W)            |                                 |                              |                                 |                                  |                   |         |
| SHP OM02A C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 74.86                           | 74.23                            | 118.945           | CC, ES  |
| SHP OM02A C15 696 - Wellbore #1 - Design #1 | 10,633.67                       | 10,428.16                    | 1,794.38                        | 1,733.16                         | 29.311            | SF      |
| SHP OM02B C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 59.89                           | 59.26                            | 95.155            | CC, ES  |
| SHP OM02B C15 696 - Wellbore #1 - Design #1 | 900.00                          | 897.71                       | 117.50                          | 113.27                           | 27.733            | SF      |
| SHP OM02C C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 29.93                           | 29.30                            | 47.562            | CC      |
| SHP OM02C C15 696 - Wellbore #1 - Design #1 | 300.00                          | 300.65                       | 30.29                           | 29.24                            | 29.013            | ES      |
| SHP OM02C C15 696 - Wellbore #1 - Design #1 | 900.00                          | 902.29                       | 53.64                           | 49.16                            | 11.963            | SF      |
| SHP OM02D C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 44.91                           | 44.28                            | 71.359            | CC, ES  |
| SHP OM02D C15 696 - Wellbore #1 - Design #1 | 900.00                          | 900.03                       | 90.27                           | 85.71                            | 19.768            | SF      |
| SHP OM03A C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 60.73                           | 60.10                            | 96.492            | CC, ES  |
| SHP OM03A C15 696 - Wellbore #1 - Design #1 | 600.00                          | 597.11                       | 92.05                           | 89.62                            | 37.887            | SF      |
| SHP OM03B C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 10.18                           | 9.55                             | 16.176            | CC, ES  |
| SHP OM03B C15 696 - Wellbore #1 - Design #1 | 300.00                          | 299.62                       | 12.72                           | 11.67                            | 12.138            | SF      |
| SHP OM03C C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 31.90                           | 31.27                            | 50.687            | CC, ES  |
| SHP OM03C C15 696 - Wellbore #1 - Design #1 | 600.00                          | 593.42                       | 50.86                           | 48.41                            | 20.729            | SF      |
| SHP OM03D C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 18.14                           | 17.51                            | 28.825            | CC, ES  |
| SHP OM03D C15 696 - Wellbore #1 - Design #1 | 400.00                          | 398.42                       | 23.59                           | 22.13                            | 16.167            | SF      |
| SHP OM04A C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 75.53                           | 74.90                            | 120.019           | CC, ES  |
| SHP OM04A C15 696 - Wellbore #1 - Design #1 | 700.00                          | 687.39                       | 133.65                          | 130.63                           | 44.297            | SF      |
| SHP OM04B C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 46.03                           | 45.40                            | 73.141            | CC, ES  |
| SHP OM04B C15 696 - Wellbore #1 - Design #1 | 500.00                          | 497.44                       | 64.98                           | 63.01                            | 32.919            | SF      |
| SHP OM04C C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 18.08                           | 17.45                            | 28.724            | CC, ES  |
| SHP OM04C C15 696 - Wellbore #1 - Design #1 | 400.00                          | 399.25                       | 27.02                           | 25.53                            | 18.133            | SF      |
| SHP OM04D C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 31.60                           | 30.97                            | 50.210            | CC, ES  |
| SHP OM04D C15 696 - Wellbore #1 - Design #1 | 500.00                          | 497.92                       | 50.75                           | 48.78                            | 25.751            | SF      |
| SHP OM06A C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 30.32                           | 29.69                            | 48.171            | CC      |
| SHP OM06A C15 696 - Wellbore #1 - Design #1 | 300.00                          | 298.97                       | 30.58                           | 29.55                            | 29.518            | ES      |
| SHP OM06A C15 696 - Wellbore #1 - Design #1 | 700.00                          | 692.23                       | 51.52                           | 48.48                            | 16.948            | SF      |
| SHP OM07A C15 696 - Wellbore #1 - Design #1 | 200.00                          | 200.00                       | 14.98                           | 14.35                            | 23.797            | CC      |
| SHP OM07A C15 696 - Wellbore #1 - Design #1 | 300.00                          | 300.37                       | 15.16                           | 14.12                            | 14.551            | ES      |
| SHP OM07A C15 696 - Wellbore #1 - Design #1 | 900.00                          | 901.91                       | 27.10                           | 22.50                            | 5.884             | SF      |
| SHP OM07B C15 696 - Wellbore #1 - Design #1 | 587.96                          | 587.21                       | 8.86                            | 6.49                             | 3.732             | CC      |
| SHP OM07B C15 696 - Wellbore #1 - Design #1 | 600.00                          | 599.23                       | 8.87                            | 6.43                             | 3.638             | ES      |
| SHP OM07B C15 696 - Wellbore #1 - Design #1 | 700.00                          | 699.23                       | 9.73                            | 6.72                             | 3.229             | SF      |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



|                           |                                  |                                     |                           |
|---------------------------|----------------------------------|-------------------------------------|---------------------------|
| <b>Company:</b>           | Berry Petroleum Company          | <b>Local Co-ordinate Reference:</b> | Well SHP OM07D C15 696    |
| <b>Project:</b>           | Garfield Co., CO (CO83C)         | <b>TVD Reference:</b>               | WELL @ 8375.00usft        |
| <b>Reference Site:</b>    | OM C15-696 Pad (Sec.15-T6S-R96W) | <b>MD Reference:</b>                | WELL @ 8375.00usft        |
| <b>Site Error:</b>        | 0.00 usft                        | <b>North Reference:</b>             | True                      |
| <b>Reference Well:</b>    | SHP OM07D C15 696                | <b>Survey Calculation Method:</b>   | Minimum Curvature         |
| <b>Well Error:</b>        | 0.00 usft                        | <b>Output errors are at</b>         | 2.00 sigma                |
| <b>Reference Wellbore</b> | Wellbore #1                      | <b>Database:</b>                    | EDM 5000.1 Single User Db |
| <b>Reference Design:</b>  | Design #1                        | <b>Offset TVD Reference:</b>        | Reference Datum           |

Reference Depths are relative to WELL @ 8375.00usft

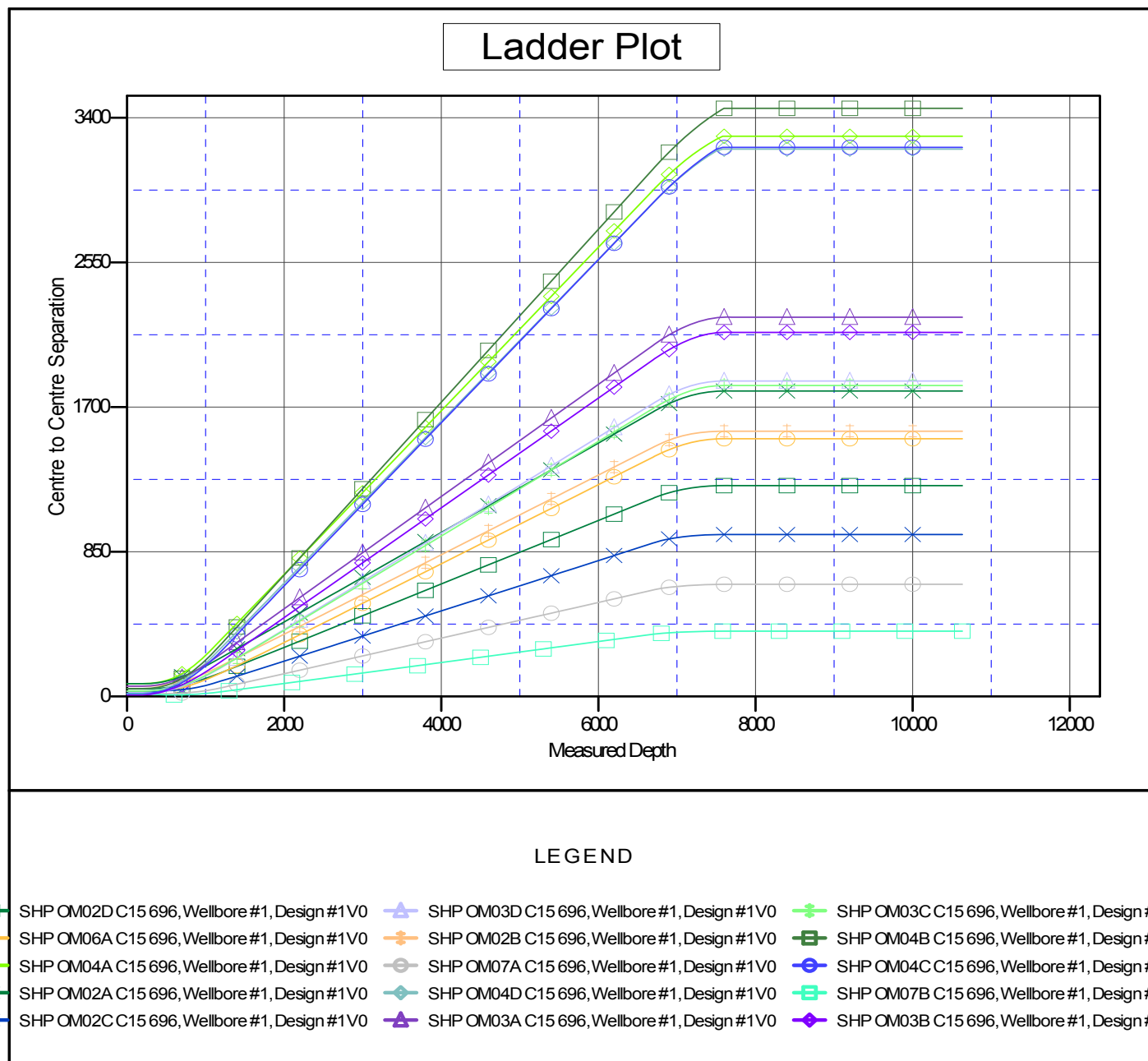
Offset Depths are relative to Offset Datum

Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: SHP OM07D C15 696

Coordinate System is US State Plane 1983, Colorado Central Zone

Grid Convergence at Surface is: -1.64°



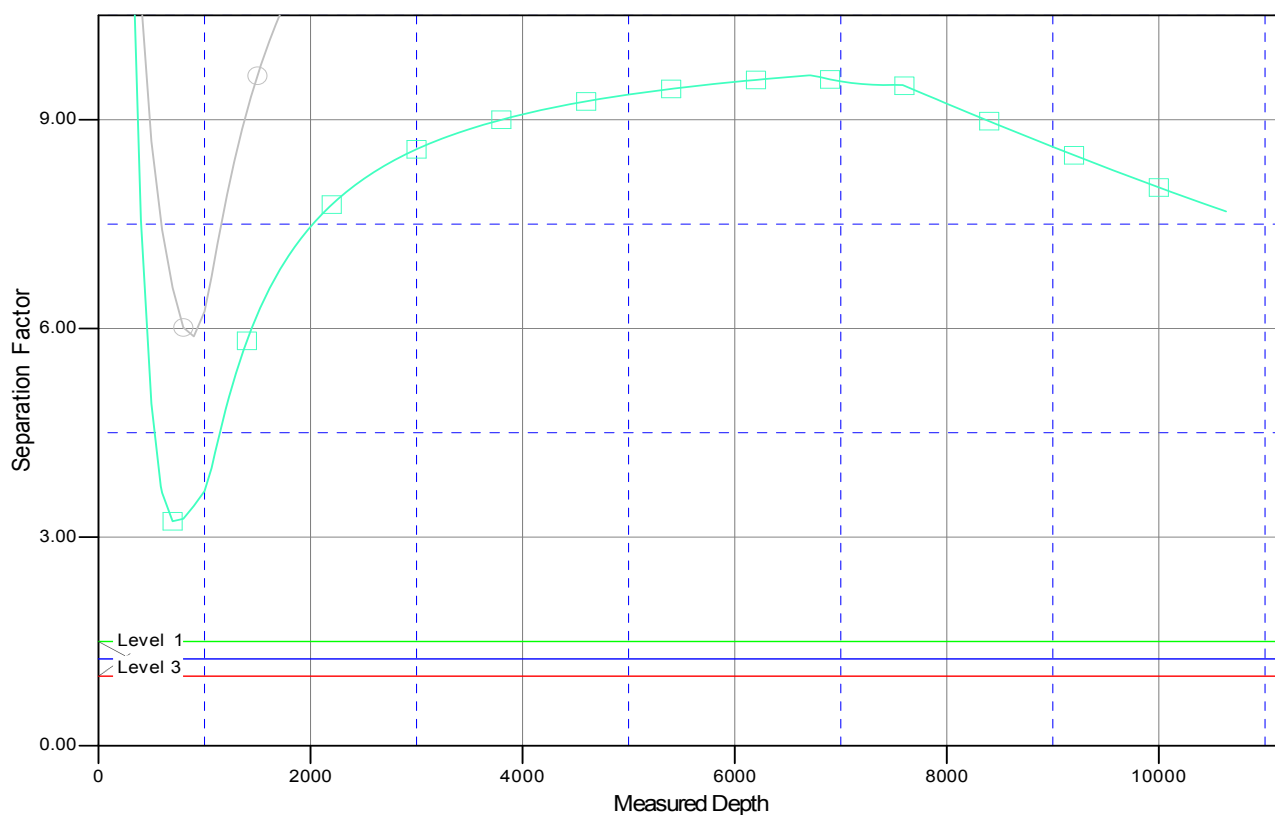


|                           |                                  |                                     |                           |
|---------------------------|----------------------------------|-------------------------------------|---------------------------|
| <b>Company:</b>           | Berry Petroleum Company          | <b>Local Co-ordinate Reference:</b> | Well SHP OM07D C15 696    |
| <b>Project:</b>           | Garfield Co., CO (CO83C)         | <b>TVD Reference:</b>               | WELL @ 8375.00usft        |
| <b>Reference Site:</b>    | OM C15-696 Pad (Sec.15-T6S-R96W) | <b>MD Reference:</b>                | WELL @ 8375.00usft        |
| <b>Site Error:</b>        | 0.00 usft                        | <b>North Reference:</b>             | True                      |
| <b>Reference Well:</b>    | SHP OM07D C15 696                | <b>Survey Calculation Method:</b>   | Minimum Curvature         |
| <b>Well Error:</b>        | 0.00 usft                        | <b>Output errors are at</b>         | 2.00 sigma                |
| <b>Reference Wellbore</b> | Wellbore #1                      | <b>Database:</b>                    | EDM 5000.1 Single User Db |
| <b>Reference Design:</b>  | Design #1                        | <b>Offset TVD Reference:</b>        | Reference Datum           |

Reference Depths are relative to WELL @ 8375.00usft  
Offset Depths are relative to Offset Datum  
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: SHP OM07D C15 696  
Coordinate System is US State Plane 1983, Colorado Central Zone  
Grid Convergence at Surface is: -1.64°

## Separation Factor Plot



## LEGEND

|   |   |   |
|---|---|---|
| SHP OM02D C15 696, Wellbore #1, Design #1V0 | SHP OM03D C15 696, Wellbore #1, Design #1V0 | SHP OM03C C15 696, Wellbore #1, Design #1V0 |
| SHP OM06A C15 696, Wellbore #1, Design #1V0 | SHP OM02B C15 696, Wellbore #1, Design #1V0 | SHP OM04B C15 696, Wellbore #1, Design #1V0 |
| SHP OM04A C15 696, Wellbore #1, Design #1V0 | SHP OM07A C15 696, Wellbore #1, Design #1V0 | SHP OM04C C15 696, Wellbore #1, Design #1V0 |
| SHP OM02A C15 696, Wellbore #1, Design #1V0 | SHP OM04D C15 696, Wellbore #1, Design #1V0 | SHP OM07B C15 696, Wellbore #1, Design #1V0 |
| SHP OM02C C15 696, Wellbore #1, Design #1V0 | SHP OM03A C15 696, Wellbore #1, Design #1V0 | SHP OM03B C15 696, Wellbore #1, Design #1V0 |