

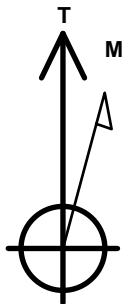
# PETROLEUM DEVELOPMENT CORP DJ Basin

Well Name: **Elbert 7N**

Surface Location: Elbert 1-12 Pad Sec.21-T5N-R65W  
 North American Datum 1983 , US State Plane 1983 Colorado Northern Zone  
 Ground Elevation: 4638.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1383512.31 3229754.99 40.383210 -104.675250  
 Original Well Elev WELL @ 4661.0ft (Original Well Elev)

## DESIGN TARGET DETAILS

| Name                          | TVD    | +N/-S | +E/-W  | Shape |
|-------------------------------|--------|-------|--------|-------|
| SHL 2119'FSL, 710'FWL, SEC.21 | 1.0    | 0.0   | 0.0    | Point |
| BHL 2290'FSL, 500'FEL, SEC.22 | 6870.0 | 213.3 | 9348.1 | Point |
| LPL 2333'FSL, 820'FWL, SEC.21 | 6950.0 | 218.6 | 108.6  | Point |



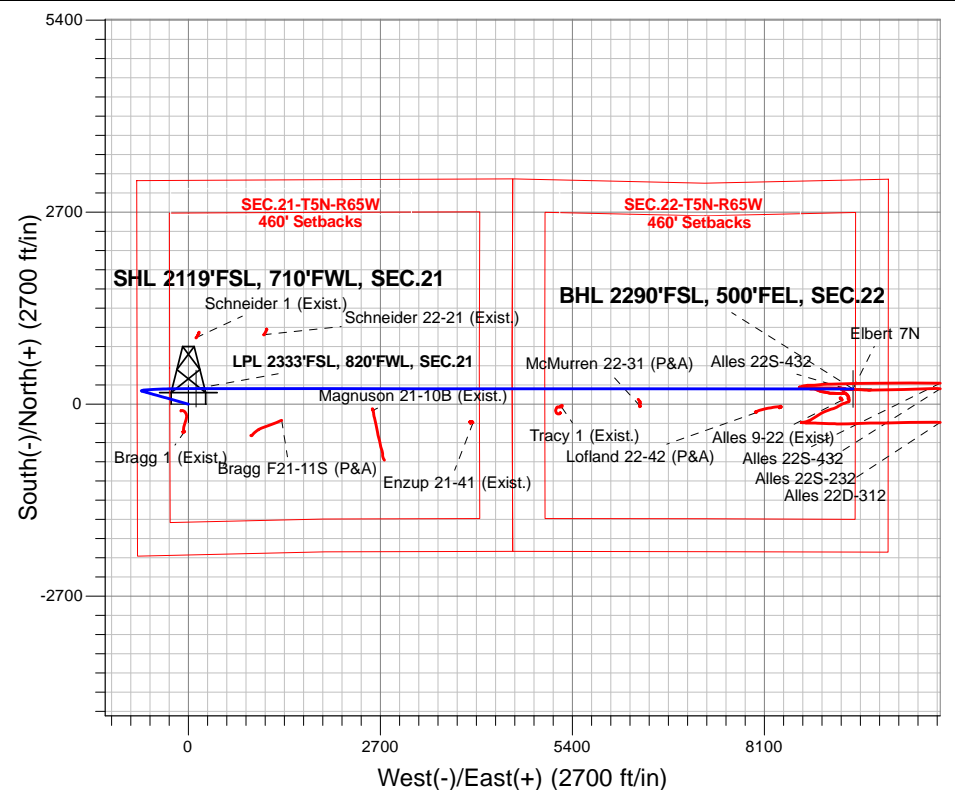
Azimuths to True North  
 Magnetic North: 8.06°

Magnetic Field  
 Strength: 52547.7snT  
 Dip Angle: 66.86°  
 Date: 1/5/2017  
 Model: IGRF2010

Elbert 1-12 Pad Sec.21-T5N-R65W  
 Elbert 7N  
 Plan #4 (1-12-17)  
 12:51, January 16 2017

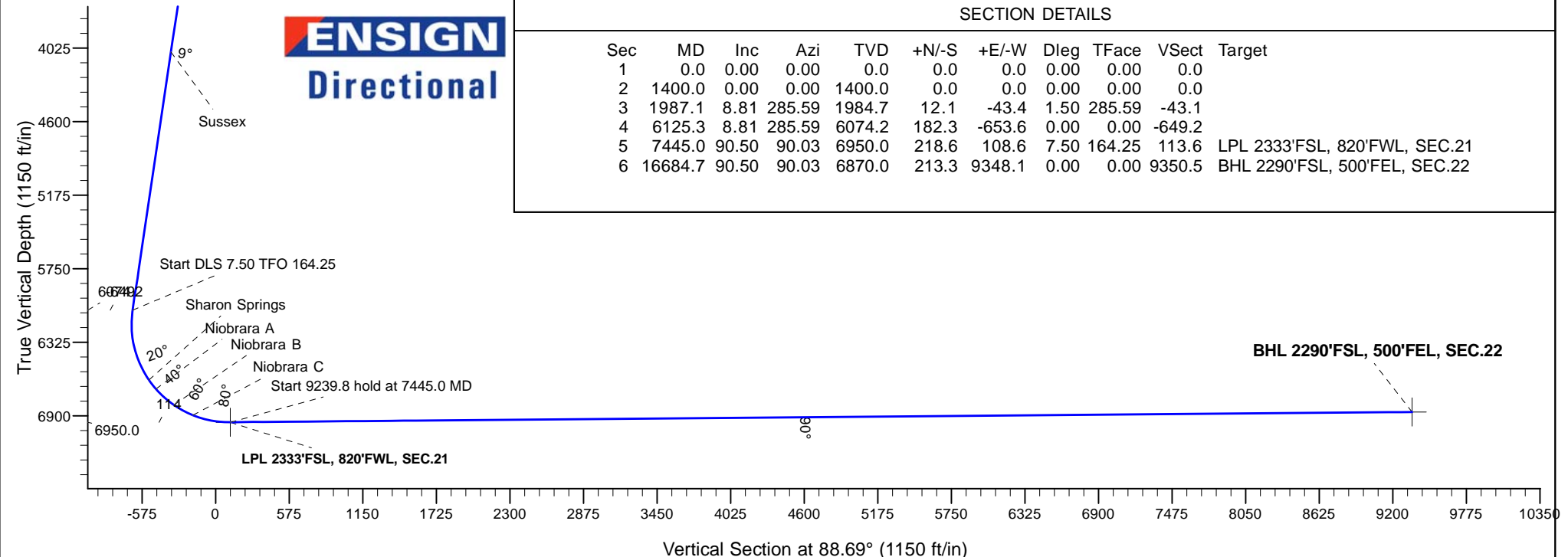
## ANNOTATIONS

| TVD    | MD      | Annotation                     |
|--------|---------|--------------------------------|
| 1400.0 | 1400.0  | KOP - Start Build 1.50         |
| 1984.7 | 1987.1  | Start 4138.2 hold at 1987.1 MD |
| 6074.2 | 6125.3  | Start DLS 7.50 TFO 164.25      |
| 6950.0 | 7445.0  | Start 9239.8 hold at 7445.0 MD |
| 6870.0 | 16684.7 | TD at 16684.7                  |



## 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   | 1400.0  | 0.00  | 0.00   | 1400.0 | 0.0   | 0.0    | 0.00 | 0.00   | 0.0    |                               |
| 3   | 1987.1  | 8.81  | 285.59 | 1984.7 | 12.1  | -43.4  | 1.50 | 285.59 | -43.1  |                               |
| 4   | 6125.3  | 8.81  | 285.59 | 6074.2 | 182.3 | -653.6 | 0.00 | 0.00   | -649.2 |                               |
| 5   | 7445.0  | 90.50 | 90.03  | 6950.0 | 218.6 | 108.6  | 7.50 | 164.25 | 113.6  | LPL 2333'FSL, 820'FWL, SEC.21 |
| 6   | 16684.7 | 90.50 | 90.03  | 6870.0 | 213.3 | 9348.1 | 0.00 | 0.00   | 9350.5 | BHL 2290'FSL, 500'FEL, SEC.22 |





# **PETROLEUM DEVELOPMENT CORP DJ Basin**

**SEC.21-T5N-R65W  
Elbert 1-12 Pad Sec.21-T5N-R65W  
Elbert 7N**

**Wellbore #1  
Plan #4 (1-12-17)**

## **Anticollision Report**

**16 January, 2017**



|                           |                                     |                                     |                                      |
|---------------------------|-------------------------------------|-------------------------------------|--------------------------------------|
| <b>Company:</b>           | PETROLEUM DEVELOPMENT CORP DJ Basin | <b>Local Co-ordinate Reference:</b> | Well Elbert 7N                       |
| <b>Project:</b>           | SEC.21-T5N-R65W                     | <b>TVD Reference:</b>               | WELL @ 4661.0ft (Original Well Elev) |
| <b>Reference Site:</b>    | Elbert 1-12 Pad Sec.21-T5N-R65W     | <b>MD Reference:</b>                | WELL @ 4661.0ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.0 ft                              | <b>North Reference:</b>             | True                                 |
| <b>Reference Well:</b>    | Elbert 7N                           | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Well Error:</b>        | 0.0 ft                              | <b>Output errors are at</b>         | 2.45 sigma                           |
| <b>Reference Wellbore</b> | Wellbore #1                         | <b>Database:</b>                    | US_EDM                               |
| <b>Reference Design:</b>  | Plan #4 (1-12-17)                   | <b>Offset TVD Reference:</b>        | Offset Datum                         |

|                                     |   |                       |                     |
|-------------------------------------|---|-----------------------|---------------------|
| <b>Reference</b>                    | Plan #4 (1-12-17)   |                       |                     |
| <b>Filter type:</b>                 | NO GLOBAL FILTER: Using user defined selection & filtering criteria |                       |                     |
| <b>Interpolation Method:</b>        | MD Interval 100.0ft   | <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 1,200.0 ft                        | <b>Error Surface:</b> | Elliptical Conic    |
| <b>Warning Levels Evaluated at:</b> | 2.45 Sigma  | <b>Casing Method:</b> | Not applied         |

|                            |                |                                 |                  |                    |
|----------------------------|----------------|---------------------------------|------------------|--------------------|
| <b>Survey Tool Program</b> | <b>Date</b>    | 1/16/2017                       |                  |                    |
| <b>From (ft)</b>           | <b>To (ft)</b> | <b>Survey (Wellbore)</b>        | <b>Tool Name</b> | <b>Description</b> |
| 0.0                        | 16,684.0       | Plan #4 (1-12-17) (Wellbore #1) | MWD              | MWD - Standard     |

| Summary  |                               |                            |                               |                                |                   |                     |
|--|-------------------------------|----------------------------|-------------------------------|--------------------------------|-------------------|---------------------|
| Site Name                                      | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning             |
| <b>Offset Well - Wellbore - Design</b>         |                               |                            |                               |                                |                   |                     |
| Alles 22S-HZ Pad Sec.22-T5N-R65W               |                               |                            |                               |                                |                   |                     |
| Alles 22D-312 - Wellbore #1 - Wellbore #1      | 16,684.7                      | 7,374.1                    | 489.8                         | 131.5                          | 1.367             | Level 3, CC, ES, SF |
| Alles 22S-232 - Wellbore #1 - Wellbore #1      | 16,684.7                      | 6,764.5                    | 282.8                         | 182.0                          | 2.805             | CC, ES, SF          |
| Alles 22S-432 - Wellbore #1 - Wellbore #1      | 16,344.0                      | 7,069.2                    | 12.3                          | -332.2                         | 0.036             | Level 1, CC, ES, SF |
| Alles 22S-432 - Wellbore #2 - Wellbore #2      | 16,381.0                      | 7,081.3                    | 67.9                          | -276.9                         | 0.197             | Level 1, CC, ES, SF |
| Elbert 1-12 Pad Sec.21-T5N-R65W                |                               |                            |                               |                                |                   |                     |
| Elbert 10N - Wellbore #1 - Plan #5 (1-12-17)   | 1,400.0                       | 1,400.0                    | 43.7                          | 36.3                           | 5.880             | CC, ES              |
| Elbert 10N - Wellbore #1 - Plan #5 (1-12-17)   | 16,684.7                      | 16,623.6                   | 764.6                         | 98.1                           | 1.147             | Level 2, SF         |
| Elbert 11N - Wellbore #1 - Plan #4 (1-12-17)   | 400.0                         | 400.0                      | 58.3                          | 56.4                           | 30.239            | CC, ES              |
| Elbert 11N - Wellbore #1 - Plan #4 (1-12-17)   | 16,684.7                      | 16,714.7                   | 1,016.4                       | 347.6                          | 1.520             | SF                  |
| Elbert 12N - Wellbore #1 - Plan #6 (1-13-17)   | 200.0                         | 200.0                      | 72.9                          | 72.0                           | 88.199            | CC, ES              |
| Elbert 12N - Wellbore #1 - Plan #6 (1-13-17)   | 6,200.0                       | 6,088.9                    | 1,069.0                       | 1,022.8                        | 23.148            | SF                  |
| Elbert 1N - Wellbore #1 - Plan #3 (1-12-17)    | 200.0                         | 200.0                      | 91.1                          | 90.3                           | 110.318           | CC, ES              |
| Elbert 1N - Wellbore #1 - Plan #3 (1-12-17)    | 5,900.0                       | 5,742.7                    | 1,192.6                       | 1,147.8                        | 26.614            | SF                  |
| Elbert 2N - Wellbore #1 - Plan #3 (1-12-17)    | 400.0                         | 400.0                      | 76.6                          | 74.6                           | 39.720            | CC, ES              |
| Elbert 2N - Wellbore #1 - Plan #3 (1-12-17)    | 1,000.0                       | 984.8                      | 119.5                         | 114.1                          | 22.303            | SF                  |
| Elbert 3N - Wellbore #1 - Plan #4 (1-12-17)    | 600.0                         | 600.0                      | 62.0                          | 59.0                           | 20.471            | CC, ES              |
| Elbert 3N - Wellbore #1 - Plan #4 (1-12-17)    | 16,684.7                      | 16,798.4                   | 1,012.5                       | 343.0                          | 1.512             | SF                  |
| Elbert 4N - Wellbore #1 - Plan #3 (1-12-17)    | 800.0                         | 800.0                      | 47.5                          | 43.3                           | 11.489            | CC, ES              |
| Elbert 4N - Wellbore #1 - Plan #3 (1-12-17)    | 16,684.7                      | 16,676.5                   | 758.6                         | 91.3                           | 1.137             | Level 2, SF         |
| Elbert 5N - Wellbore #1 - Plan #3 (1-12-17)    | 1,000.0                       | 1,000.0                    | 32.9                          | 27.7                           | 6.292             | CC                  |
| Elbert 5N - Wellbore #1 - Plan #3 (1-12-17)    | 16,684.7                      | 16,728.3                   | 501.6                         | -167.8                         | 0.749             | Level 1, ES, SF     |
| Elbert 6N - Wellbore #1 - Plan #3 (1-12-17)    | 1,200.0                       | 1,200.0                    | 14.8                          | 8.5                            | 2.343             | CC                  |
| Elbert 6N - Wellbore #1 - Plan #3 (1-12-17)    | 16,684.7                      | 16,617.9                   | 246.2                         | -400.9                         | 0.380             | Level 1, ES, SF     |
| Elbert 8N - Wellbore #1 - Plan #4 (1-12-17)    | 1,400.0                       | 1,400.0                    | 14.6                          | 7.1                            | 1.961             | CC                  |
| Elbert 8N - Wellbore #1 - Plan #4 (1-12-17)    | 16,684.7                      | 16,602.0                   | 257.2                         | -388.1                         | 0.399             | Level 1, ES, SF     |
| Elbert 9N - Wellbore #1 - Plan #4 (1-12-17)    | 1,400.0                       | 1,400.0                    | 29.1                          | 21.7                           | 3.920             | CC                  |
| Elbert 9N - Wellbore #1 - Plan #4 (1-12-17)    | 16,684.7                      | 16,688.7                   | 506.4                         | -161.8                         | 0.758             | Level 1, ES, SF     |
| <b>Existing Wells Sec.22-T5N-R65W</b>          |                               |                            |                               |                                |                   |                     |
| Alles 9-22 (Exist) - Wellbore #1 - Wellbore #1 | 16,529.0                      | 6,855.6                    | 154.8                         | -189.9                         | 0.449             | Level 1, CC, ES, SF |

|                           |                                     |                                     |                                      |
|---------------------------|-------------------------------------|-------------------------------------|--------------------------------------|
| <b>Company:</b>           | PETROLEUM DEVELOPMENT CORP DJ Basin | <b>Local Co-ordinate Reference:</b> | Well Elbert 7N                       |
| <b>Project:</b>           | SEC.21-T5N-R65W                     | <b>TVD Reference:</b>               | WELL @ 4661.0ft (Original Well Elev) |
| <b>Reference Site:</b>    | Elbert 1-12 Pad Sec.21-T5N-R65W     | <b>MD Reference:</b>                | WELL @ 4661.0ft (Original Well Elev) |
| <b>Site Error:</b>        | 0.0 ft                              | <b>North Reference:</b>             | True                                 |
| <b>Reference Well:</b>    | Elbert 7N                           | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Well Error:</b>        | 0.0 ft                              | <b>Output errors are at</b>         | 2.45 sigma                           |
| <b>Reference Wellbore</b> | Wellbore #1                         | <b>Database:</b>                    | US_EDM                               |
| <b>Reference Design:</b>  | Plan #4 (1-12-17)                   | <b>Offset TVD Reference:</b>        | Offset Datum                         |

| Summary  |                               |                            |                               |                                |                   |                     |
|--|-------------------------------|----------------------------|-------------------------------|--------------------------------|-------------------|---------------------|
| Site Name  | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning             |
| Existing Wells Sec.25-T5N-R65W                       |                               |                            |                               |                                |                   |                     |
| Bragg 1 (Exist.) - Wellbore #1 - Wellbore #1         | 1,549.4                       | 1,526.7                    | 115.9                         | 107.4                          | 13.623            | CC, ES              |
| Bragg 1 (Exist.) - Wellbore #1 - Wellbore #1         | 1,700.0                       | 1,672.4                    | 119.4                         | 110.1                          | 12.891            | SF                  |
| Bragg F21-11S (P&A) - Wellbore #1 - Wellbore #1      | 100.0                         | 68.4                       | 982.1                         | 981.9                          | 4,220.724         | CC                  |
| Bragg F21-11S (P&A) - Wellbore #1 - Wellbore #1      | 200.0                         | 166.1                      | 982.4                         | 981.8                          | 1,526.834         | ES                  |
| Bragg F21-11S (P&A) - Wellbore #1 - Wellbore #1      | 2,900.0                       | 2,806.0                    | 1,194.1                       | 1,179.9                        | 83.675            | SF                  |
| Schneider 1 (Exist.) - Wellbore #1 - Wellbore #1     | 7,441.9                       | 6,925.5                    | 713.3                         | 667.8                          | 15.681            | CC, ES              |
| Schneider 1 (Exist.) - Wellbore #1 - Wellbore #1     | 7,700.0                       | 6,922.7                    | 758.9                         | 707.6                          | 14.796            | SF                  |
| Schneider 22-21 (Exist.) - Wellbore #1 - Wellbore #1 | 8,393.7                       | 6,915.3                    | 757.6                         | 686.3                          | 10.635            | CC                  |
| Schneider 22-21 (Exist.) - Wellbore #1 - Wellbore #1 | 8,400.0                       | 6,915.3                    | 757.6                         | 686.2                          | 10.606            | ES                  |
| Schneider 22-21 (Exist.) - Wellbore #1 - Wellbore #1 | 8,700.0                       | 6,912.9                    | 817.2                         | 736.3                          | 10.100            | SF                  |
| Tracy 1 (Exist.) - Wellbore #1 - Wellbore #1         | 12,592.3                      | 6,874.7                    | 249.4                         | 38.7                           | 1.184             | Level 2, CC         |
| Tracy 1 (Exist.) - Wellbore #1 - Wellbore #1         | 12,600.0                      | 6,874.4                    | 249.5                         | 38.6                           | 1.183             | Level 2, ES, SF     |
| Lorenz F22-67-1HN Pad Sec.22-T5N-R65W                |                               |                            |                               |                                |                   |                     |
| Lofland 22-42 (P&A) - Wellbore #1 - Wellbore #1      | 15,320.3                      | 6,907.2                    | 330.9                         | 26.9                           | 1.088             | Level 2, CC, ES, SF |
| McMurren 22-31 (P&A) - Wellbore #1 - Wellbore #1     | 13,688.6                      | 6,864.7                    | 247.9                         | -3.2                           | 0.987             | Level 1, CC         |
| McMurren 22-31 (P&A) - Wellbore #1 - Wellbore #1     | 13,700.0                      | 6,864.8                    | 248.2                         | -3.4                           | 0.987             | Level 1, ES, SF     |
| Lorenz PC F22-33D Pad Sec.21-T5N-R65W                |                               |                            |                               |                                |                   |                     |
| Enzup 21-41 (Exist.) - Wellbore #1 - Wellbore #1     | 11,340.1                      | 6,901.6                    | 476.3                         | 308.4                          | 2.837             | CC, ES              |
| Enzup 21-41 (Exist.) - Wellbore #1 - Wellbore #1     | 11,400.0                      | 6,901.2                    | 480.1                         | 310.1                          | 2.825             | SF                  |
| Magnuson Pad Sec.21-T5N-R65W                         |                               |                            |                               |                                |                   |                     |
| Magnuson 21-10B (Exist.) - Magnuson 21-10B - Magnus  | 9,932.9                       | 7,048.5                    | 301.6                         | 180.7                          | 2.494             | CC, ES, SF          |

| <b>Offset Design</b>   |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                         |                   | Offset Site Error:  | 0.0 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|---------------------|--------|
| Alles 22S-HZ Pad Sec.22-T5N-R65W - Alles 22D-312 - Wellbore #1 - Wellbore #1 |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                         |                   | Offset Well Error:  | 0.0 ft |
| Survey Program: 60-MWD   |                     |                     |                     |                 |             |                       |                                   |            |                      |                       |                         |                   |                     |        |
| Reference  |                     | Offset              |                     | Semi Major Axis |             |                       | Distance                          |            |                      |                       |                         |                   |                     |        |
| 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) | Minimum Separation (ft) | Separation Factor | Warning             |        |
| 15,100.0   | 6,883.7             | 6,518.0             | 6,447.8             | 280.8           | 22.1        | 48.22                 | -264.1                            | 8,703.7    | 1,141.1              | 909.3                 | 231.75                  | 4.924             |                     |        |
| 15,200.0   | 6,882.9             | 6,534.1             | 6,462.2             | 284.2           | 22.1        | 49.21                 | -264.1                            | 8,710.7    | 1,059.6              | 822.1                 | 237.46                  | 4.462             |                     |        |
| 15,300.0   | 6,882.0             | 6,550.0             | 6,476.4             | 287.6           | 22.0        | 50.21                 | -264.1                            | 8,717.9    | 980.6                | 737.4                 | 243.22                  | 4.032             |                     |        |
| 15,400.0   | 6,881.1             | 6,581.0             | 6,503.8             | 291.1           | 22.0        | 52.24                 | -264.6                            | 8,732.4    | 904.5                | 652.4                 | 252.12                  | 3.588             |                     |        |
| 15,500.0   | 6,880.3             | 6,602.9             | 6,522.9             | 294.5           | 21.9        | 53.74                 | -265.2                            | 8,743.2    | 832.3                | 573.0                 | 259.34                  | 3.209             |                     |        |
| 15,600.0   | 6,879.4             | 6,637.1             | 6,552.0             | 297.9           | 21.8        | 56.12                 | -266.1                            | 8,761.0    | 764.6                | 495.6                 | 269.01                  | 2.842             |                     |        |
| 15,700.0   | 6,878.5             | 6,686.4             | 6,593.2             | 301.3           | 21.6        | 59.68                 | -266.2                            | 8,788.1    | 701.2                | 419.7                 | 281.49                  | 2.491             |                     |        |
| 15,800.0   | 6,877.7             | 6,721.8             | 6,622.2             | 304.8           | 21.5        | 62.34                 | -266.1                            | 8,808.5    | 643.5                | 352.4                 | 291.11                  | 2.211             |                     |        |
| 15,900.0   | 6,876.8             | 6,756.7             | 6,649.9             | 308.2           | 21.4        | 65.03                 | -266.5                            | 8,829.6    | 593.7                | 293.3                 | 300.39                  | 1.977             |                     |        |
| 16,000.0   | 6,875.9             | 6,792.3             | 6,676.8             | 311.6           | 21.4        | 67.78                 | -267.3                            | 8,853.0    | 553.7                | 244.3                 | 309.35                  | 1.790             |                     |        |
| 16,100.0   | 6,875.1             | 6,844.1             | 6,713.6             | 315.1           | 21.3        | 71.74                 | -269.5                            | 8,889.3    | 524.4                | 204.5                 | 319.91                  | 1.639             |                     |        |
| 16,200.0   | 6,874.2             | 6,898.0             | 6,749.0             | 318.5           | 21.2        | 75.70                 | -271.3                            | 8,929.9    | 505.0                | 175.7                 | 329.26                  | 1.534             |                     |        |
| 16,300.0   | 6,873.3             | 6,978.6             | 6,796.3             | 321.9           | 21.2        | 81.19                 | -275.2                            | 8,995.0    | 495.6                | 156.7                 | 338.90                  | 1.462             | Level 3             |        |
| 16,400.0   | 6,872.5             | 7,063.8             | 6,836.9             | 325.4           | 21.5        | 85.97                 | -276.6                            | 9,069.8    | 491.3                | 145.5                 | 345.80                  | 1.421             | Level 3             |        |
| 16,426.5   | 6,872.2             | 7,085.3             | 6,845.9             | 326.3           | 21.6        | 87.04                 | -277.0                            | 9,089.4    | 491.1                | 143.8                 | 347.25                  | 1.414             | Level 3             |        |
| 16,500.0   | 6,871.6             | 7,150.9             | 6,870.3             | 328.8           | 22.2        | 89.95                 | -278.7                            | 9,150.2    | 492.3                | 141.4                 | 350.88                  | 1.403             | Level 3             |        |
| 16,600.0   | 6,870.7             | 7,279.3             | 6,905.6             | 332.2           | 23.9        | 94.19                 | -277.6                            | 9,273.5    | 492.4                | 137.1                 | 355.27                  | 1.386             | Level 3             |        |
| 16,684.7   | 6,870.0             | 7,374.1             | 6,914.7             | 334.1           | 25.6        | 95.38                 | -274.0                            | 9,367.6    | 489.8                | 131.5                 | 358.30                  | 1.367             | Level 3, CC, ES, SF |        |

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