

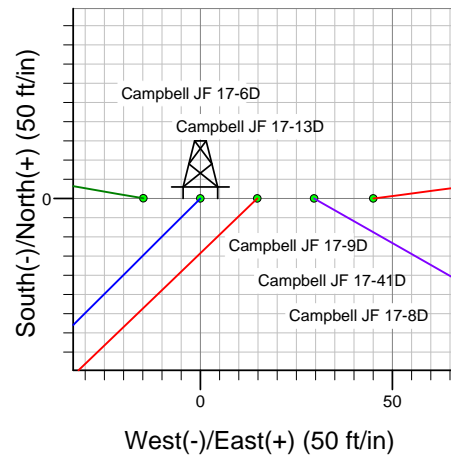
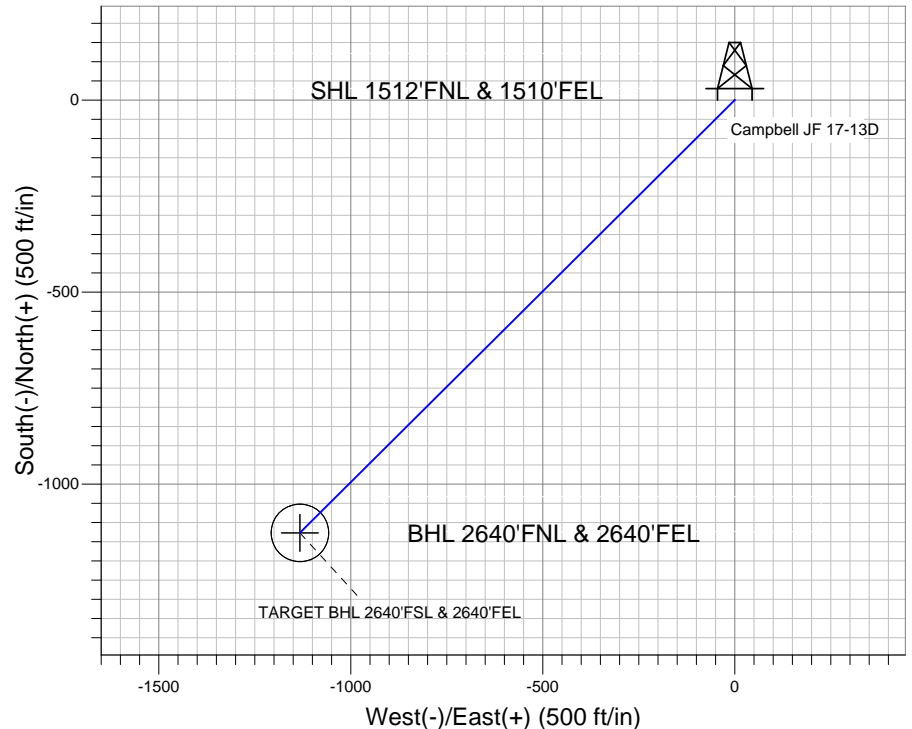
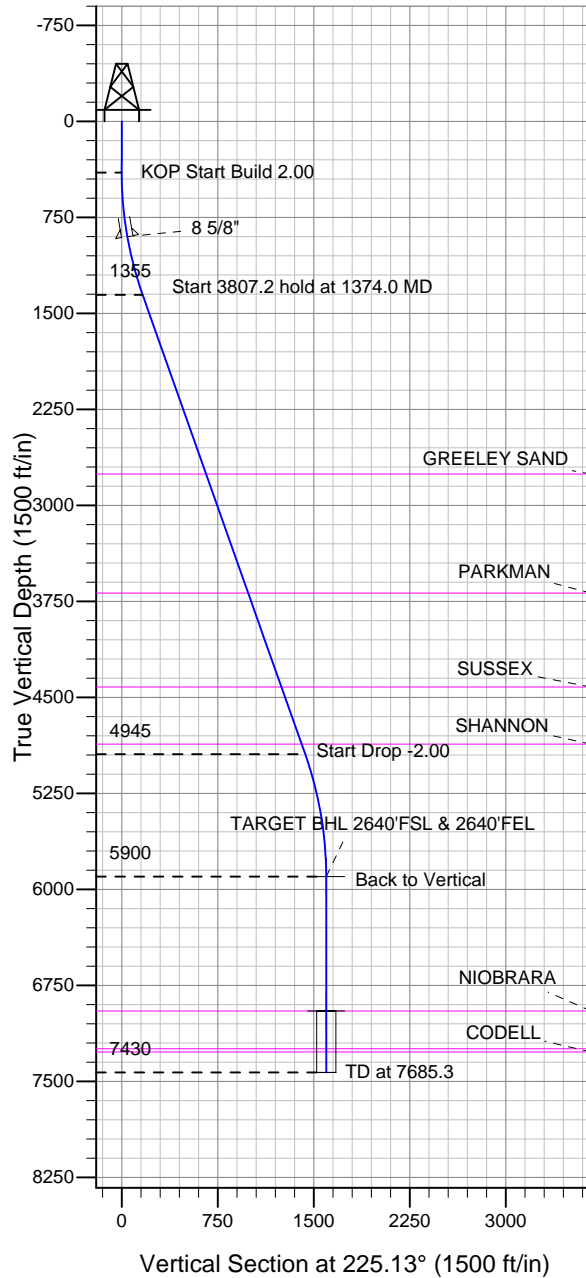
ENSIGN

Directional

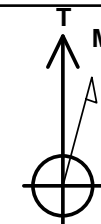
Well Name: Campbell JF 17-13D

Surface Location: Campbell JF 17-6D Pad Sec.17-T2N-R65W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4916.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1295554.31 3228182.66 40.141808 -104.683800
 Original Well Elev WELL @ 4930.0ft (Original Well Elev)

Great Western



Campbell JF 17-6D Pad Sec.17-T2N-R65W
 Campbell JF 17-13D
 Plan #1 (10-04-12)



Azimuths to True North
 Magnetic North: 8.62°

Magnetic Field
 Strength: 52865.8nT
 Dip Angle: 66.81°
 Date: 10/5/2012
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

| Name | TVD | +N/-S | +E/-W | Latitude | Longitude | Shape |
|-----------------------------------|--------|---------|---------|-----------|-------------|-----------------------|
| TARGET BHL 2640'FSL & 2640'FEL | 5900.0 | -1127.1 | -1132.4 | 40.138714 | -104.687850 | Point |
| TARGET CIRCLE 2640'FNL & 2640'FEL | 6950.0 | -1127.1 | -1132.4 | 40.138714 | -104.687850 | Circle (Radius: 75.0) |

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 | 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 3 | 1374.0 | 19.48 | 225.13 | 1355.4 | -115.7 | -116.2 | 2.00 | 225.13 | 164.0 | |
| 4 | 5181.2 | 19.48 | 225.13 | 4944.6 | -1011.4 | -1016.1 | 0.00 | 0.00 | 1433.7 | |
| 5 | 6155.3 | 0.00 | 0.00 | 5900.0 | -1127.1 | -1132.4 | 2.00 | 180.00 | 1597.7 | TARGET BHL 2640'FSL & 2640'FEL |
| 6 | 7685.3 | 0.00 | 0.00 | 7430.0 | -1127.1 | -1132.4 | 0.00 | 0.00 | 1597.7 | |



Directional

Great Western

SEC.17-T2N-R65W

Campbell JF 17-6D Pad Sec.17-T2N-R65W

Campbell JF 17-13D

Wellbore #1

Plan: Plan #1 (10-04-12)

Standard Planning Report

05 October, 2012

| Plan Sections | | | | | | | | | | |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-----------------------------|----------------------------|---------------------------|------------|-----------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,374.0 | 19.48 | 225.13 | 1,355.4 | -115.7 | -116.2 | 2.00 | 2.00 | 0.00 | 225.13 | |
| 5,181.2 | 19.48 | 225.13 | 4,944.6 | -1,011.4 | -1,016.1 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 6,155.3 | 0.00 | 0.00 | 5,900.0 | -1,127.1 | -1,132.4 | 2.00 | -2.00 | 0.00 | 180.00 | TARGET BHL 2640 |
| 7,685.3 | 0.00 | 0.00 | 7,430.0 | -1,127.1 | -1,132.4 | 0.00 | 0.00 | 0.00 | 0.00 | |

| | | | |
|------------------|---------------------------------------|-------------------------------------|--------------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Campbell JF 17-13D |
| Company: | Great Western | TVD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Project: | SEC.17-T2N-R65W | MD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Site: | Campbell JF 17-6D Pad Sec.17-T2N-R65W | North Reference: | True |
| Well: | Campbell JF 17-13D | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 (10-04-12) | | |

| Planned Survey | | | | | | | | | |
|---------------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 40.0 | 0.00 | 0.00 | 40.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 80.0 | 0.00 | 0.00 | 80.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 120.0 | 0.00 | 0.00 | 120.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 160.0 | 0.00 | 0.00 | 160.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 240.0 | 0.00 | 0.00 | 240.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 280.0 | 0.00 | 0.00 | 280.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 320.0 | 0.00 | 0.00 | 320.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 360.0 | 0.00 | 0.00 | 360.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 |
| KOP Start Build 2.00 | | | | | | | | | |
| 440.0 | 0.80 | 225.13 | 440.0 | -0.2 | -0.2 | 0.3 | 2.00 | 2.00 | 0.00 |
| 480.0 | 1.60 | 225.13 | 480.0 | -0.8 | -0.8 | 1.1 | 2.00 | 2.00 | 0.00 |
| 520.0 | 2.40 | 225.13 | 520.0 | -1.8 | -1.8 | 2.5 | 2.00 | 2.00 | 0.00 |
| 560.0 | 3.20 | 225.13 | 559.9 | -3.2 | -3.2 | 4.5 | 2.00 | 2.00 | 0.00 |
| 600.0 | 4.00 | 225.13 | 599.8 | -4.9 | -4.9 | 7.0 | 2.00 | 2.00 | 0.00 |
| 640.0 | 4.80 | 225.13 | 639.7 | -7.1 | -7.1 | 10.0 | 2.00 | 2.00 | 0.00 |
| 680.0 | 5.60 | 225.13 | 679.6 | -9.6 | -9.7 | 13.7 | 2.00 | 2.00 | 0.00 |
| 720.0 | 6.40 | 225.13 | 719.3 | -12.6 | -12.7 | 17.9 | 2.00 | 2.00 | 0.00 |
| 760.0 | 7.20 | 225.13 | 759.1 | -15.9 | -16.0 | 22.6 | 2.00 | 2.00 | 0.00 |
| 800.0 | 8.00 | 225.13 | 798.7 | -19.7 | -19.8 | 27.9 | 2.00 | 2.00 | 0.00 |
| 840.0 | 8.80 | 225.13 | 838.3 | -23.8 | -23.9 | 33.7 | 2.00 | 2.00 | 0.00 |
| 880.0 | 9.60 | 225.13 | 877.8 | -28.3 | -28.4 | 40.1 | 2.00 | 2.00 | 0.00 |
| 902.6 | 10.05 | 225.13 | 900.0 | -31.0 | -31.2 | 44.0 | 2.00 | 2.00 | 0.00 |
| 8 5/8" | | | | | | | | | |
| 920.0 | 10.40 | 225.13 | 917.1 | -33.2 | -33.4 | 47.1 | 2.00 | 2.00 | 0.00 |
| 960.0 | 11.20 | 225.13 | 956.4 | -38.5 | -38.7 | 54.6 | 2.00 | 2.00 | 0.00 |
| 1,000.0 | 12.00 | 225.13 | 995.6 | -44.2 | -44.4 | 62.6 | 2.00 | 2.00 | 0.00 |
| 1,040.0 | 12.80 | 225.13 | 1,034.7 | -50.2 | -50.5 | 71.2 | 2.00 | 2.00 | 0.00 |
| 1,080.0 | 13.60 | 225.13 | 1,073.6 | -56.7 | -56.9 | 80.3 | 2.00 | 2.00 | 0.00 |
| 1,120.0 | 14.40 | 225.13 | 1,112.4 | -63.5 | -63.8 | 90.0 | 2.00 | 2.00 | 0.00 |
| 1,160.0 | 15.20 | 225.13 | 1,151.1 | -70.7 | -71.0 | 100.2 | 2.00 | 2.00 | 0.00 |
| 1,200.0 | 16.00 | 225.13 | 1,189.6 | -78.3 | -78.7 | 111.0 | 2.00 | 2.00 | 0.00 |
| 1,240.0 | 16.80 | 225.13 | 1,228.0 | -86.3 | -86.7 | 122.3 | 2.00 | 2.00 | 0.00 |
| 1,280.0 | 17.60 | 225.13 | 1,266.2 | -94.6 | -95.0 | 134.1 | 2.00 | 2.00 | 0.00 |
| 1,320.0 | 18.40 | 225.13 | 1,304.3 | -103.3 | -103.8 | 146.5 | 2.00 | 2.00 | 0.00 |
| 1,360.0 | 19.20 | 225.13 | 1,342.1 | -112.4 | -112.9 | 159.3 | 2.00 | 2.00 | 0.00 |
| 1,374.0 | 19.48 | 225.13 | 1,355.4 | -115.7 | -116.2 | 164.0 | 2.00 | 2.00 | 0.00 |
| Start 3807.2 hold at 1374.0 MD | | | | | | | | | |
| 1,400.0 | 19.48 | 225.13 | 1,379.9 | -121.8 | -122.4 | 172.7 | 0.00 | 0.00 | 0.00 |
| 1,440.0 | 19.48 | 225.13 | 1,417.6 | -131.2 | -131.8 | 186.0 | 0.00 | 0.00 | 0.00 |
| 1,480.0 | 19.48 | 225.13 | 1,455.3 | -140.6 | -141.3 | 199.3 | 0.00 | 0.00 | 0.00 |
| 1,520.0 | 19.48 | 225.13 | 1,493.0 | -150.0 | -150.7 | 212.7 | 0.00 | 0.00 | 0.00 |
| 1,560.0 | 19.48 | 225.13 | 1,530.7 | -159.4 | -160.2 | 226.0 | 0.00 | 0.00 | 0.00 |
| 1,600.0 | 19.48 | 225.13 | 1,568.4 | -168.9 | -169.6 | 239.4 | 0.00 | 0.00 | 0.00 |
| 1,640.0 | 19.48 | 225.13 | 1,606.1 | -178.3 | -179.1 | 252.7 | 0.00 | 0.00 | 0.00 |
| 1,680.0 | 19.48 | 225.13 | 1,643.8 | -187.7 | -188.6 | 266.0 | 0.00 | 0.00 | 0.00 |
| 1,720.0 | 19.48 | 225.13 | 1,681.5 | -197.1 | -198.0 | 279.4 | 0.00 | 0.00 | 0.00 |
| 1,760.0 | 19.48 | 225.13 | 1,719.2 | -206.5 | -207.5 | 292.7 | 0.00 | 0.00 | 0.00 |
| 1,800.0 | 19.48 | 225.13 | 1,757.0 | -215.9 | -216.9 | 306.1 | 0.00 | 0.00 | 0.00 |
| 1,840.0 | 19.48 | 225.13 | 1,794.7 | -225.3 | -226.4 | 319.4 | 0.00 | 0.00 | 0.00 |
| 1,880.0 | 19.48 | 225.13 | 1,832.4 | -234.7 | -235.8 | 332.7 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|---------------------------------------|-------------------------------------|--------------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Campbell JF 17-13D |
| Company: | Great Western | TVD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Project: | SEC.17-T2N-R65W | MD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Site: | Campbell JF 17-6D Pad Sec.17-T2N-R65W | North Reference: | True |
| Well: | Campbell JF 17-13D | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 (10-04-12) | | |

| Planned Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 1,920.0 | 19.48 | 225.13 | 1,870.1 | -244.1 | -245.3 | 346.1 | 0.00 | 0.00 | 0.00 |
| 1,960.0 | 19.48 | 225.13 | 1,907.8 | -253.5 | -254.7 | 359.4 | 0.00 | 0.00 | 0.00 |
| 2,000.0 | 19.48 | 225.13 | 1,945.5 | -263.0 | -264.2 | 372.8 | 0.00 | 0.00 | 0.00 |
| 2,040.0 | 19.48 | 225.13 | 1,983.2 | -272.4 | -273.6 | 386.1 | 0.00 | 0.00 | 0.00 |
| 2,080.0 | 19.48 | 225.13 | 2,020.9 | -281.8 | -283.1 | 399.4 | 0.00 | 0.00 | 0.00 |
| 2,120.0 | 19.48 | 225.13 | 2,058.6 | -291.2 | -292.6 | 412.8 | 0.00 | 0.00 | 0.00 |
| 2,160.0 | 19.48 | 225.13 | 2,096.3 | -300.6 | -302.0 | 426.1 | 0.00 | 0.00 | 0.00 |
| 2,200.0 | 19.48 | 225.13 | 2,134.1 | -310.0 | -311.5 | 439.5 | 0.00 | 0.00 | 0.00 |
| 2,240.0 | 19.48 | 225.13 | 2,171.8 | -319.4 | -320.9 | 452.8 | 0.00 | 0.00 | 0.00 |
| 2,280.0 | 19.48 | 225.13 | 2,209.5 | -328.8 | -330.4 | 466.1 | 0.00 | 0.00 | 0.00 |
| 2,320.0 | 19.48 | 225.13 | 2,247.2 | -338.2 | -339.8 | 479.5 | 0.00 | 0.00 | 0.00 |
| 2,360.0 | 19.48 | 225.13 | 2,284.9 | -347.7 | -349.3 | 492.8 | 0.00 | 0.00 | 0.00 |
| 2,400.0 | 19.48 | 225.13 | 2,322.6 | -357.1 | -358.7 | 506.1 | 0.00 | 0.00 | 0.00 |
| 2,440.0 | 19.48 | 225.13 | 2,360.3 | -366.5 | -368.2 | 519.5 | 0.00 | 0.00 | 0.00 |
| 2,480.0 | 19.48 | 225.13 | 2,398.0 | -375.9 | -377.6 | 532.8 | 0.00 | 0.00 | 0.00 |
| 2,520.0 | 19.48 | 225.13 | 2,435.7 | -385.3 | -387.1 | 546.2 | 0.00 | 0.00 | 0.00 |
| 2,560.0 | 19.48 | 225.13 | 2,473.4 | -394.7 | -396.6 | 559.5 | 0.00 | 0.00 | 0.00 |
| 2,600.0 | 19.48 | 225.13 | 2,511.2 | -404.1 | -406.0 | 572.8 | 0.00 | 0.00 | 0.00 |
| 2,640.0 | 19.48 | 225.13 | 2,548.9 | -413.5 | -415.5 | 586.2 | 0.00 | 0.00 | 0.00 |
| 2,680.0 | 19.48 | 225.13 | 2,586.6 | -422.9 | -424.9 | 599.5 | 0.00 | 0.00 | 0.00 |
| 2,720.0 | 19.48 | 225.13 | 2,624.3 | -432.3 | -434.4 | 612.9 | 0.00 | 0.00 | 0.00 |
| 2,760.0 | 19.48 | 225.13 | 2,662.0 | -441.8 | -443.8 | 626.2 | 0.00 | 0.00 | 0.00 |
| 2,800.0 | 19.48 | 225.13 | 2,699.7 | -451.2 | -453.3 | 639.5 | 0.00 | 0.00 | 0.00 |
| 2,840.0 | 19.48 | 225.13 | 2,737.4 | -460.6 | -462.7 | 652.9 | 0.00 | 0.00 | 0.00 |
| 2,858.6 | 19.48 | 225.13 | 2,755.0 | -465.0 | -467.1 | 659.1 | 0.00 | 0.00 | 0.00 |
| GREELEY SAND | | | | | | | | | |
| 2,880.0 | 19.48 | 225.13 | 2,775.1 | -470.0 | -472.2 | 666.2 | 0.00 | 0.00 | 0.00 |
| 2,920.0 | 19.48 | 225.13 | 2,812.8 | -479.4 | -481.6 | 679.6 | 0.00 | 0.00 | 0.00 |
| 2,960.0 | 19.48 | 225.13 | 2,850.5 | -488.8 | -491.1 | 692.9 | 0.00 | 0.00 | 0.00 |
| 3,000.0 | 19.48 | 225.13 | 2,888.3 | -498.2 | -500.6 | 706.2 | 0.00 | 0.00 | 0.00 |
| 3,040.0 | 19.48 | 225.13 | 2,926.0 | -507.6 | -510.0 | 719.6 | 0.00 | 0.00 | 0.00 |
| 3,080.0 | 19.48 | 225.13 | 2,963.7 | -517.0 | -519.5 | 732.9 | 0.00 | 0.00 | 0.00 |
| 3,120.0 | 19.48 | 225.13 | 3,001.4 | -526.5 | -528.9 | 746.3 | 0.00 | 0.00 | 0.00 |
| 3,160.0 | 19.48 | 225.13 | 3,039.1 | -535.9 | -538.4 | 759.6 | 0.00 | 0.00 | 0.00 |
| 3,200.0 | 19.48 | 225.13 | 3,076.8 | -545.3 | -547.8 | 772.9 | 0.00 | 0.00 | 0.00 |
| 3,240.0 | 19.48 | 225.13 | 3,114.5 | -554.7 | -557.3 | 786.3 | 0.00 | 0.00 | 0.00 |
| 3,280.0 | 19.48 | 225.13 | 3,152.2 | -564.1 | -566.7 | 799.6 | 0.00 | 0.00 | 0.00 |
| 3,320.0 | 19.48 | 225.13 | 3,189.9 | -573.5 | -576.2 | 813.0 | 0.00 | 0.00 | 0.00 |
| 3,360.0 | 19.48 | 225.13 | 3,227.7 | -582.9 | -585.7 | 826.3 | 0.00 | 0.00 | 0.00 |
| 3,400.0 | 19.48 | 225.13 | 3,265.4 | -592.3 | -595.1 | 839.6 | 0.00 | 0.00 | 0.00 |
| 3,440.0 | 19.48 | 225.13 | 3,303.1 | -601.7 | -604.6 | 853.0 | 0.00 | 0.00 | 0.00 |
| 3,480.0 | 19.48 | 225.13 | 3,340.8 | -611.1 | -614.0 | 866.3 | 0.00 | 0.00 | 0.00 |
| 3,520.0 | 19.48 | 225.13 | 3,378.5 | -620.6 | -623.5 | 879.7 | 0.00 | 0.00 | 0.00 |
| 3,560.0 | 19.48 | 225.13 | 3,416.2 | -630.0 | -632.9 | 893.0 | 0.00 | 0.00 | 0.00 |
| 3,600.0 | 19.48 | 225.13 | 3,453.9 | -639.4 | -642.4 | 906.3 | 0.00 | 0.00 | 0.00 |
| 3,640.0 | 19.48 | 225.13 | 3,491.6 | -648.8 | -651.8 | 919.7 | 0.00 | 0.00 | 0.00 |
| 3,680.0 | 19.48 | 225.13 | 3,529.3 | -658.2 | -661.3 | 933.0 | 0.00 | 0.00 | 0.00 |
| 3,720.0 | 19.48 | 225.13 | 3,567.0 | -667.6 | -670.7 | 946.4 | 0.00 | 0.00 | 0.00 |
| 3,760.0 | 19.48 | 225.13 | 3,604.8 | -677.0 | -680.2 | 959.7 | 0.00 | 0.00 | 0.00 |
| 3,800.0 | 19.48 | 225.13 | 3,642.5 | -686.4 | -689.7 | 973.0 | 0.00 | 0.00 | 0.00 |
| 3,840.0 | 19.48 | 225.13 | 3,680.2 | -695.8 | -699.1 | 986.4 | 0.00 | 0.00 | 0.00 |
| 3,846.2 | 19.48 | 225.13 | 3,686.0 | -697.3 | -700.6 | 988.4 | 0.00 | 0.00 | 0.00 |
| PARKMAN | | | | | | | | | |
| 3,880.0 | 19.48 | 225.13 | 3,717.9 | -705.3 | -708.6 | 999.7 | 0.00 | 0.00 | 0.00 |

| | | | |
|------------------|---------------------------------------|-------------------------------------|--------------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Campbell JF 17-13D |
| Company: | Great Western | TVD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Project: | SEC.17-T2N-R65W | MD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Site: | Campbell JF 17-6D Pad Sec.17-T2N-R65W | North Reference: | True |
| Well: | Campbell JF 17-13D | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 (10-04-12) | | |

| Planned Survey | | | | | | | | | |
|-------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 3,920.0 | 19.48 | 225.13 | 3,755.6 | -714.7 | -718.0 | 1,013.1 | 0.00 | 0.00 | 0.00 |
| 3,960.0 | 19.48 | 225.13 | 3,793.3 | -724.1 | -727.5 | 1,026.4 | 0.00 | 0.00 | 0.00 |
| 4,000.0 | 19.48 | 225.13 | 3,831.0 | -733.5 | -736.9 | 1,039.7 | 0.00 | 0.00 | 0.00 |
| 4,040.0 | 19.48 | 225.13 | 3,868.7 | -742.9 | -746.4 | 1,053.1 | 0.00 | 0.00 | 0.00 |
| 4,080.0 | 19.48 | 225.13 | 3,906.4 | -752.3 | -755.8 | 1,066.4 | 0.00 | 0.00 | 0.00 |
| 4,120.0 | 19.48 | 225.13 | 3,944.1 | -761.7 | -765.3 | 1,079.8 | 0.00 | 0.00 | 0.00 |
| 4,160.0 | 19.48 | 225.13 | 3,981.9 | -771.1 | -774.7 | 1,093.1 | 0.00 | 0.00 | 0.00 |
| 4,200.0 | 19.48 | 225.13 | 4,019.6 | -780.5 | -784.2 | 1,106.4 | 0.00 | 0.00 | 0.00 |
| 4,240.0 | 19.48 | 225.13 | 4,057.3 | -789.9 | -793.7 | 1,119.8 | 0.00 | 0.00 | 0.00 |
| 4,280.0 | 19.48 | 225.13 | 4,095.0 | -799.4 | -803.1 | 1,133.1 | 0.00 | 0.00 | 0.00 |
| 4,320.0 | 19.48 | 225.13 | 4,132.7 | -808.8 | -812.6 | 1,146.5 | 0.00 | 0.00 | 0.00 |
| 4,360.0 | 19.48 | 225.13 | 4,170.4 | -818.2 | -822.0 | 1,159.8 | 0.00 | 0.00 | 0.00 |
| 4,400.0 | 19.48 | 225.13 | 4,208.1 | -827.6 | -831.5 | 1,173.1 | 0.00 | 0.00 | 0.00 |
| 4,440.0 | 19.48 | 225.13 | 4,245.8 | -837.0 | -840.9 | 1,186.5 | 0.00 | 0.00 | 0.00 |
| 4,480.0 | 19.48 | 225.13 | 4,283.5 | -846.4 | -850.4 | 1,199.8 | 0.00 | 0.00 | 0.00 |
| 4,520.0 | 19.48 | 225.13 | 4,321.2 | -855.8 | -859.8 | 1,213.2 | 0.00 | 0.00 | 0.00 |
| 4,560.0 | 19.48 | 225.13 | 4,359.0 | -865.2 | -869.3 | 1,226.5 | 0.00 | 0.00 | 0.00 |
| 4,600.0 | 19.48 | 225.13 | 4,396.7 | -874.6 | -878.7 | 1,239.8 | 0.00 | 0.00 | 0.00 |
| 4,623.7 | 19.48 | 225.13 | 4,419.0 | -880.2 | -884.3 | 1,247.7 | 0.00 | 0.00 | 0.00 |
| SUSSEX | | | | | | | | | |
| 4,640.0 | 19.48 | 225.13 | 4,434.4 | -884.1 | -888.2 | 1,253.2 | 0.00 | 0.00 | 0.00 |
| 4,680.0 | 19.48 | 225.13 | 4,472.1 | -893.5 | -897.7 | 1,266.5 | 0.00 | 0.00 | 0.00 |
| 4,720.0 | 19.48 | 225.13 | 4,509.8 | -902.9 | -907.1 | 1,279.9 | 0.00 | 0.00 | 0.00 |
| 4,760.0 | 19.48 | 225.13 | 4,547.5 | -912.3 | -916.6 | 1,293.2 | 0.00 | 0.00 | 0.00 |
| 4,800.0 | 19.48 | 225.13 | 4,585.2 | -921.7 | -926.0 | 1,306.5 | 0.00 | 0.00 | 0.00 |
| 4,840.0 | 19.48 | 225.13 | 4,622.9 | -931.1 | -935.5 | 1,319.9 | 0.00 | 0.00 | 0.00 |
| 4,880.0 | 19.48 | 225.13 | 4,660.6 | -940.5 | -944.9 | 1,333.2 | 0.00 | 0.00 | 0.00 |
| 4,920.0 | 19.48 | 225.13 | 4,698.3 | -949.9 | -954.4 | 1,346.6 | 0.00 | 0.00 | 0.00 |
| 4,960.0 | 19.48 | 225.13 | 4,736.1 | -959.3 | -963.8 | 1,359.9 | 0.00 | 0.00 | 0.00 |
| 5,000.0 | 19.48 | 225.13 | 4,773.8 | -968.7 | -973.3 | 1,373.2 | 0.00 | 0.00 | 0.00 |
| 5,040.0 | 19.48 | 225.13 | 4,811.5 | -978.2 | -982.7 | 1,386.6 | 0.00 | 0.00 | 0.00 |
| 5,080.0 | 19.48 | 225.13 | 4,849.2 | -987.6 | -992.2 | 1,399.9 | 0.00 | 0.00 | 0.00 |
| 5,096.8 | 19.48 | 225.13 | 4,865.0 | -991.5 | -996.2 | 1,405.5 | 0.00 | 0.00 | 0.00 |
| SHANNON | | | | | | | | | |
| 5,120.0 | 19.48 | 225.13 | 4,886.9 | -997.0 | -1,001.7 | 1,413.3 | 0.00 | 0.00 | 0.00 |
| 5,160.0 | 19.48 | 225.13 | 4,924.6 | -1,006.4 | -1,011.1 | 1,426.6 | 0.00 | 0.00 | 0.00 |
| 5,181.2 | 19.48 | 225.13 | 4,944.6 | -1,011.4 | -1,016.1 | 1,433.7 | 0.00 | 0.00 | 0.00 |
| Start Drop -2.00 | | | | | | | | | |
| 5,200.0 | 19.11 | 225.13 | 4,962.3 | -1,015.8 | -1,020.5 | 1,439.9 | 2.00 | -2.00 | 0.00 |
| 5,240.0 | 18.31 | 225.13 | 5,000.2 | -1,024.8 | -1,029.6 | 1,452.7 | 2.00 | -2.00 | 0.00 |
| 5,280.0 | 17.51 | 225.13 | 5,038.3 | -1,033.5 | -1,038.3 | 1,465.0 | 2.00 | -2.00 | 0.00 |
| 5,320.0 | 16.71 | 225.13 | 5,076.5 | -1,041.8 | -1,046.7 | 1,476.8 | 2.00 | -2.00 | 0.00 |
| 5,360.0 | 15.91 | 225.13 | 5,114.9 | -1,049.7 | -1,054.6 | 1,488.0 | 2.00 | -2.00 | 0.00 |
| 5,400.0 | 15.11 | 225.13 | 5,153.4 | -1,057.2 | -1,062.2 | 1,498.7 | 2.00 | -2.00 | 0.00 |
| 5,440.0 | 14.31 | 225.13 | 5,192.1 | -1,064.4 | -1,069.4 | 1,508.8 | 2.00 | -2.00 | 0.00 |
| 5,480.0 | 13.51 | 225.13 | 5,231.0 | -1,071.2 | -1,076.2 | 1,518.5 | 2.00 | -2.00 | 0.00 |
| 5,520.0 | 12.71 | 225.13 | 5,269.9 | -1,077.6 | -1,082.6 | 1,527.5 | 2.00 | -2.00 | 0.00 |
| 5,560.0 | 11.91 | 225.13 | 5,309.0 | -1,083.6 | -1,088.7 | 1,536.0 | 2.00 | -2.00 | 0.00 |
| 5,600.0 | 11.11 | 225.13 | 5,348.2 | -1,089.2 | -1,094.3 | 1,544.0 | 2.00 | -2.00 | 0.00 |
| 5,640.0 | 10.31 | 225.13 | 5,387.5 | -1,094.5 | -1,099.6 | 1,551.5 | 2.00 | -2.00 | 0.00 |
| 5,680.0 | 9.51 | 225.13 | 5,426.9 | -1,099.3 | -1,104.5 | 1,558.3 | 2.00 | -2.00 | 0.00 |
| 5,720.0 | 8.71 | 225.13 | 5,466.4 | -1,103.8 | -1,109.0 | 1,564.7 | 2.00 | -2.00 | 0.00 |
| 5,760.0 | 7.91 | 225.13 | 5,506.0 | -1,107.9 | -1,113.1 | 1,570.4 | 2.00 | -2.00 | 0.00 |

| | | | |
|------------------|---------------------------------------|-------------------------------------|--------------------------------------|
| Database: | Landmark | Local Co-ordinate Reference: | Well Campbell JF 17-13D |
| Company: | Great Western | TVD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Project: | SEC.17-T2N-R65W | MD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Site: | Campbell JF 17-6D Pad Sec.17-T2N-R65W | North Reference: | True |
| Well: | Campbell JF 17-13D | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | Wellbore #1 | | |
| Design: | Plan #1 (10-04-12) | | |

| Planned Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
| 5,800.0 | 7.11 | 225.13 | 5,545.6 | -1,111.6 | -1,116.8 | 1,575.7 | 2.00 | -2.00 | 0.00 |
| 5,840.0 | 6.31 | 225.13 | 5,585.4 | -1,114.9 | -1,120.1 | 1,580.3 | 2.00 | -2.00 | 0.00 |
| 5,880.0 | 5.51 | 225.13 | 5,625.2 | -1,117.8 | -1,123.0 | 1,584.5 | 2.00 | -2.00 | 0.00 |
| 5,920.0 | 4.71 | 225.13 | 5,665.0 | -1,120.3 | -1,125.5 | 1,588.0 | 2.00 | -2.00 | 0.00 |
| 5,960.0 | 3.91 | 225.13 | 5,704.9 | -1,122.4 | -1,127.6 | 1,591.0 | 2.00 | -2.00 | 0.00 |
| 6,000.0 | 3.11 | 225.13 | 5,744.8 | -1,124.1 | -1,129.4 | 1,593.5 | 2.00 | -2.00 | 0.00 |
| 6,040.0 | 2.31 | 225.13 | 5,784.8 | -1,125.4 | -1,130.7 | 1,595.4 | 2.00 | -2.00 | 0.00 |
| 6,080.0 | 1.51 | 225.13 | 5,824.7 | -1,126.4 | -1,131.7 | 1,596.7 | 2.00 | -2.00 | 0.00 |
| 6,120.0 | 0.71 | 225.13 | 5,864.7 | -1,126.9 | -1,132.2 | 1,597.5 | 2.00 | -2.00 | 0.00 |
| 6,155.3 | 0.00 | 0.00 | 5,900.0 | -1,127.1 | -1,132.4 | 1,597.7 | 2.00 | -2.00 | 0.00 |
| Back to Vertical | | | | | | | | | |
| 6,160.0 | 0.00 | 0.00 | 5,904.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,200.0 | 0.00 | 0.00 | 5,944.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,240.0 | 0.00 | 0.00 | 5,984.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,280.0 | 0.00 | 0.00 | 6,024.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,320.0 | 0.00 | 0.00 | 6,064.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,360.0 | 0.00 | 0.00 | 6,104.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,400.0 | 0.00 | 0.00 | 6,144.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,440.0 | 0.00 | 0.00 | 6,184.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,480.0 | 0.00 | 0.00 | 6,224.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,520.0 | 0.00 | 0.00 | 6,264.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,560.0 | 0.00 | 0.00 | 6,304.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,600.0 | 0.00 | 0.00 | 6,344.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,640.0 | 0.00 | 0.00 | 6,384.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,680.0 | 0.00 | 0.00 | 6,424.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,720.0 | 0.00 | 0.00 | 6,464.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,760.0 | 0.00 | 0.00 | 6,504.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,800.0 | 0.00 | 0.00 | 6,544.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,840.0 | 0.00 | 0.00 | 6,584.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,880.0 | 0.00 | 0.00 | 6,624.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,920.0 | 0.00 | 0.00 | 6,664.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 6,960.0 | 0.00 | 0.00 | 6,704.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,000.0 | 0.00 | 0.00 | 6,744.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,040.0 | 0.00 | 0.00 | 6,784.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,080.0 | 0.00 | 0.00 | 6,824.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,120.0 | 0.00 | 0.00 | 6,864.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,160.0 | 0.00 | 0.00 | 6,904.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,200.0 | 0.00 | 0.00 | 6,944.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,205.3 | 0.00 | 0.00 | 6,950.0 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| NIOBRARA | | | | | | | | | |
| 7,240.0 | 0.00 | 0.00 | 6,984.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,280.0 | 0.00 | 0.00 | 7,024.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,320.0 | 0.00 | 0.00 | 7,064.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,360.0 | 0.00 | 0.00 | 7,104.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,400.0 | 0.00 | 0.00 | 7,144.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,440.0 | 0.00 | 0.00 | 7,184.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,480.0 | 0.00 | 0.00 | 7,224.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,500.3 | 0.00 | 0.00 | 7,245.0 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| FORT HAYS | | | | | | | | | |
| 7,520.0 | 0.00 | 0.00 | 7,264.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,525.3 | 0.00 | 0.00 | 7,270.0 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| CODELL | | | | | | | | | |
| 7,560.0 | 0.00 | 0.00 | 7,304.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |

Database: Landmark
Company: Great Western
Project: SEC.17-T2N-R65W
Site: Campbell JF 17-6D Pad Sec.17-T2N-R65W
Well: Campbell JF 17-13D
Wellbore: Wellbore #1
Design: Plan #1 (10-04-12)

Local Co-ordinate Reference: Well Campbell JF 17-13D
TVD Reference: WELL @ 4930.0ft (Original Well Elev)
MD Reference: WELL @ 4930.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 7,600.0 | 0.00 | 0.00 | 7,344.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,640.0 | 0.00 | 0.00 | 7,384.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,680.0 | 0.00 | 0.00 | 7,424.7 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| 7,685.3 | 0.00 | 0.00 | 7,430.0 | -1,127.1 | -1,132.4 | 1,597.7 | 0.00 | 0.00 | 0.00 |
| TD at 7685.3 | | | | | | | | | |

Casing Points

| Measured Depth (ft) | Vertical Depth (ft) | Name | Casing Diameter (") | Hole Diameter (") |
|---------------------|---------------------|--------|---------------------|-------------------|
| 902.6 | 900.0 | 8 5/8" | 8-5/8 | 12-1/4 |

Formations

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---------------------|---------------------|--------------|-----------|---------|-------------------|
| 2,858.6 | 2,755.0 | GREELEY SAND | | 0.00 | |
| 3,846.2 | 3,686.0 | PARKMAN | | 0.00 | |
| 4,623.7 | 4,419.0 | SUSSEX | | 0.00 | |
| 5,096.8 | 4,865.0 | SHANNON | | 0.00 | |
| 7,205.3 | 6,950.0 | NIOBRARA | | 0.00 | |
| 7,500.3 | 7,245.0 | FORT HAYS | | 0.00 | |
| 7,525.3 | 7,270.0 | CODELL | | 0.00 | |

Plan Annotations

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment |
|---------------------|---------------------|-------------------|------------|--------------------------------|
| | | +N/-S (ft) | +E/-W (ft) | |
| 400.0 | 400.0 | 0.0 | 0.0 | KOP Start Build 2.00 |
| 1,374.0 | 1,355.4 | -115.7 | -116.2 | Start 3807.2 hold at 1374.0 MD |
| 5,181.2 | 4,944.6 | -1,011.4 | -1,016.1 | Start Drop -2.00 |
| 6,155.3 | 5,900.0 | -1,127.1 | -1,132.4 | Back to Vertical |
| 7,685.3 | 7,430.0 | -1,127.1 | -1,132.4 | TD at 7685.3 |



Directional

Great Western

SEC.17-T2N-R65W

Campbell JF 17-6D Pad Sec.17-T2N-R65W

Campbell JF 17-13D

Wellbore #1

Plan #1 (10-04-12)

Anticollision Report

05 October, 2012

| | | | |
|---------------------------|---------------------------------------|-------------------------------------|--------------------------------------|
| Company: | Great Western | Local Co-ordinate Reference: | Well Campbell JF 17-13D |
| Project: | SEC.17-T2N-R65W | TVD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Reference Site: | Campbell JF 17-6D Pad Sec.17-T2N-R65W | MD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Campbell JF 17-13D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (10-04-12) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning |
| Measured Depth (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 | |
| 2,200.0 | 2,134.1 | 2,143.6 | 2,104.0 | 9.8 | 8.5 | 121.94 | 62.6 | -377.5 | 379.6 | 362.8 | 16.76 | 22.652 | |
| 2,300.0 | 2,228.3 | 2,239.8 | 2,197.7 | 10.5 | 9.0 | 122.96 | 66.3 | -399.1 | 406.1 | 388.3 | 17.76 | 22.865 | |
| 2,400.0 | 2,322.6 | 2,336.0 | 2,291.4 | 11.2 | 9.5 | 123.84 | 70.0 | -420.6 | 432.7 | 413.9 | 18.76 | 23.063 | |
| 2,500.0 | 2,416.9 | 2,432.2 | 2,385.0 | 11.8 | 10.0 | 124.63 | 73.7 | -442.2 | 459.4 | 439.6 | 19.76 | 23.248 | |
| 2,600.0 | 2,511.2 | 2,528.3 | 2,478.7 | 12.5 | 10.4 | 125.33 | 77.5 | -463.8 | 486.1 | 465.4 | 20.76 | 23.421 | |
| 2,700.0 | 2,605.4 | 2,624.5 | 2,572.4 | 13.2 | 10.9 | 125.96 | 81.2 | -485.4 | 512.9 | 491.2 | 21.75 | 23.582 | |
| 2,800.0 | 2,699.7 | 2,720.7 | 2,666.0 | 13.9 | 11.4 | 126.52 | 84.9 | -507.0 | 539.8 | 517.1 | 22.75 | 23.732 | |
| 2,900.0 | 2,794.0 | 2,816.9 | 2,759.7 | 14.6 | 11.9 | 127.03 | 88.6 | -528.6 | 566.7 | 543.0 | 23.74 | 23.872 | |
| 3,000.0 | 2,888.3 | 2,913.1 | 2,853.3 | 15.3 | 12.4 | 127.50 | 92.4 | -550.2 | 593.7 | 569.0 | 24.73 | 24.004 | |
| 3,100.0 | 2,982.5 | 3,009.3 | 2,947.0 | 16.0 | 12.8 | 127.92 | 96.1 | -571.8 | 620.7 | 595.0 | 25.73 | 24.127 | |
| 3,200.0 | 3,076.8 | 3,105.5 | 3,040.7 | 16.7 | 13.3 | 128.31 | 99.8 | -593.3 | 647.7 | 621.0 | 26.72 | 24.243 | |
| 3,300.0 | 3,171.1 | 3,201.7 | 3,134.3 | 17.4 | 13.8 | 128.67 | 103.5 | -614.9 | 674.7 | 647.0 | 27.71 | 24.351 | |
| 3,400.0 | 3,265.4 | 3,297.9 | 3,228.0 | 18.1 | 14.3 | 129.00 | 107.3 | -636.5 | 701.8 | 673.1 | 28.70 | 24.454 | |
| 3,500.0 | 3,359.6 | 3,394.1 | 3,321.7 | 18.7 | 14.7 | 129.30 | 111.0 | -658.1 | 728.9 | 699.2 | 29.69 | 24.550 | |
| 3,600.0 | 3,453.9 | 3,490.3 | 3,415.3 | 19.4 | 15.2 | 129.59 | 114.7 | -679.7 | 756.0 | 725.3 | 30.68 | 24.641 | |
| 3,700.0 | 3,548.2 | 3,586.5 | 3,509.0 | 20.1 | 15.7 | 129.85 | 118.4 | -701.3 | 783.1 | 751.4 | 31.67 | 24.728 | |
| 3,800.0 | 3,642.5 | 3,682.7 | 3,602.7 | 20.8 | 16.2 | 130.10 | 122.2 | -722.9 | 810.2 | 777.6 | 32.66 | 24.809 | |
| 3,900.0 | 3,736.7 | 3,778.8 | 3,696.3 | 21.5 | 16.7 | 130.33 | 125.9 | -744.5 | 837.4 | 803.7 | 33.65 | 24.886 | |
| 4,000.0 | 3,831.0 | 3,875.0 | 3,790.0 | 22.2 | 17.1 | 130.55 | 129.6 | -766.0 | 864.6 | 829.9 | 34.64 | 24.960 | |
| 4,100.0 | 3,925.3 | 3,971.2 | 3,883.7 | 22.9 | 17.6 | 130.75 | 133.3 | -787.6 | 891.7 | 856.1 | 35.63 | 25.030 | |
| 4,200.0 | 4,019.6 | 4,067.4 | 3,977.3 | 23.6 | 18.1 | 130.94 | 137.1 | -809.2 | 918.9 | 882.3 | 36.62 | 25.096 | |
| 4,300.0 | 4,113.8 | 4,163.6 | 4,071.0 | 24.3 | 18.6 | 131.12 | 140.8 | -830.8 | 946.1 | 908.5 | 37.60 | 25.159 | |
| 4,400.0 | 4,208.1 | 4,259.8 | 4,164.6 | 25.0 | 19.0 | 131.29 | 144.5 | -852.4 | 973.3 | 934.7 | 38.59 | 25.219 | |
| 4,500.0 | 4,302.4 | 4,356.0 | 4,258.3 | 25.7 | 19.5 | 131.45 | 148.2 | -874.0 | 1,000.5 | 960.9 | 39.58 | 25.277 | |
| 4,600.0 | 4,396.7 | 4,452.2 | 4,352.0 | 26.4 | 20.0 | 131.60 | 151.9 | -895.6 | 1,027.7 | 987.1 | 40.57 | 25.331 | |
| 4,700.0 | 4,490.9 | 4,548.4 | 4,445.6 | 27.1 | 20.5 | 131.75 | 155.7 | -917.1 | 1,054.9 | 1,013.4 | 41.56 | 25.384 | |
| 4,800.0 | 4,585.2 | 4,644.6 | 4,539.3 | 27.8 | 21.0 | 131.88 | 159.4 | -938.7 | 1,082.1 | 1,039.6 | 42.55 | 25.434 | |
| 4,900.0 | 4,679.5 | 4,740.8 | 4,633.0 | 28.5 | 21.4 | 132.02 | 163.1 | -960.3 | 1,109.4 | 1,065.8 | 43.54 | 25.482 | |
| 5,000.0 | 4,773.8 | 4,837.0 | 4,726.6 | 29.1 | 21.9 | 132.14 | 166.8 | -981.9 | 1,136.6 | 1,092.1 | 44.52 | 25.528 | |
| 5,100.0 | 4,868.0 | 4,933.1 | 4,820.3 | 29.8 | 22.4 | 132.26 | 170.6 | -1,003.5 | 1,163.8 | 1,118.3 | 45.51 | 25.572 | |
| 5,181.2 | 4,944.6 | 5,011.3 | 4,896.4 | 30.4 | 22.8 | 132.35 | 173.6 | -1,021.0 | 1,186.0 | 1,139.7 | 46.31 | 25.607 | |
| 5,200.0 | 4,962.3 | 5,029.3 | 4,914.0 | 30.5 | 22.9 | 132.45 | 174.3 | -1,025.1 | 1,191.0 | 1,144.5 | 46.50 | 25.615 | |
| 5,300.0 | 5,057.4 | 5,126.0 | 5,008.1 | 31.0 | 23.4 | 132.86 | 178.0 | -1,046.8 | 1,216.7 | 1,169.3 | 47.41 | 25.663 | |
| 5,400.0 | 5,153.4 | 5,228.0 | 5,107.5 | 31.4 | 23.8 | 133.13 | 181.9 | -1,069.0 | 1,240.0 | 1,191.7 | 48.26 | 25.692 | |
| 5,500.0 | 5,250.4 | 5,334.2 | 5,211.8 | 31.8 | 24.1 | 133.39 | 185.3 | -1,088.8 | 1,260.3 | 1,211.4 | 48.98 | 25.733 | |
| 5,600.0 | 5,348.2 | 5,441.2 | 5,317.6 | 32.2 | 24.4 | 133.66 | 188.0 | -1,104.8 | 1,277.7 | 1,228.1 | 49.59 | 25.765 | |
| 5,700.0 | 5,446.6 | 5,548.8 | 5,424.5 | 32.5 | 24.7 | 133.94 | 190.1 | -1,117.0 | 1,292.0 | 1,241.9 | 50.10 | 25.789 | |
| 5,800.0 | 5,545.6 | 5,656.8 | 5,532.2 | 32.7 | 24.9 | 134.22 | 191.6 | -1,125.2 | 1,303.2 | 1,252.7 | 50.50 | 25.805 | |
| 5,900.0 | 5,645.1 | 5,765.1 | 5,640.3 | 32.9 | 25.0 | 134.51 | 192.3 | -1,129.5 | 1,311.4 | 1,260.6 | 50.80 | 25.815 | |
| 6,000.0 | 5,744.8 | 5,869.6 | 5,744.8 | 33.1 | 25.1 | 134.79 | 192.4 | -1,130.1 | 1,316.5 | 1,265.5 | 51.01 | 25.811 | |
| 6,100.0 | 5,844.7 | 5,969.5 | 5,844.7 | 33.2 | 25.2 | 134.94 | 192.4 | -1,130.1 | 1,319.1 | 1,267.9 | 51.18 | 25.772 | |
| 6,155.3 | 5,900.0 | 6,024.8 | 5,900.0 | 33.2 | 25.3 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,268.2 | 51.28 | 25.732 | |
| 6,200.0 | 5,944.7 | 6,069.5 | 5,944.7 | 33.3 | 25.4 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,268.1 | 51.37 | 25.685 | |
| 6,300.0 | 6,044.7 | 6,169.5 | 6,044.7 | 33.3 | 25.5 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,267.9 | 51.58 | 25.582 | |
| 6,400.0 | 6,144.7 | 6,269.5 | 6,144.7 | 33.4 | 25.6 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,267.7 | 51.79 | 25.478 | |
| 6,500.0 | 6,244.7 | 6,369.5 | 6,244.7 | 33.5 | 25.7 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,267.5 | 52.00 | 25.373 | |
| 6,600.0 | 6,344.7 | 6,469.5 | 6,344.7 | 33.6 | 25.8 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,267.3 | 52.22 | 25.268 | |
| 6,700.0 | 6,444.7 | 6,569.5 | 6,444.7 | 33.6 | 25.9 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,267.0 | 52.44 | 25.162 | |
| 6,800.0 | 6,544.7 | 6,669.5 | 6,544.7 | 33.7 | 26.0 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,266.8 | 52.66 | 25.056 | |
| 6,900.0 | 6,644.7 | 6,769.5 | 6,644.7 | 33.8 | 26.2 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,266.6 | 52.89 | 24.949 | |
| 7,000.0 | 6,744.7 | 6,869.5 | 6,744.7 | 33.9 | 26.3 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,266.4 | 53.11 | 24.842 | |
| 7,100.0 | 6,844.7 | 6,969.5 | 6,844.7 | 34.0 | 26.4 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,266.1 | 53.35 | 24.735 | |

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

| | | | |
|---------------------------|---------------------------------------|-------------------------------------|--------------------------------------|
| Company: | Great Western | Local Co-ordinate Reference: | Well Campbell JF 17-13D |
| Project: | SEC.17-T2N-R65W | TVD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Reference Site: | Campbell JF 17-6D Pad Sec.17-T2N-R65W | MD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Campbell JF 17-13D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (10-04-12) | Offset TVD Reference: | Offset Datum |

| Offset Design Campbell JF 17-6D Pad Sec.17-T2N-R65W - Campbell JF 17-6D - Wellbore #1 - Plan #1 (10-04-12) | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---|---------------------|---------------------|---------------------|----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| 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 |
| 7,200.0 | 6,944.7 | 7,069.5 | 6,944.7 | 34.1 | 26.5 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,265.9 | 53.58 | 24.627 | |
| 7,300.0 | 7,044.7 | 7,169.5 | 7,044.7 | 34.1 | 26.7 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,265.7 | 53.82 | 24.519 | |
| 7,400.0 | 7,144.7 | 7,269.5 | 7,144.7 | 34.2 | 26.8 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,265.4 | 54.05 | 24.410 | |
| 7,500.0 | 7,244.7 | 7,369.5 | 7,244.7 | 34.3 | 26.9 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,265.2 | 54.30 | 24.302 | |
| 7,600.0 | 7,344.7 | 7,469.5 | 7,344.7 | 34.4 | 27.0 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,264.9 | 54.54 | 24.193 | |
| 7,656.5 | 7,401.2 | 7,526.0 | 7,401.2 | 34.5 | 27.1 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,264.8 | 54.68 | 24.131 | |
| 7,685.3 | 7,430.0 | 7,553.8 | 7,429.0 | 34.5 | 27.1 | 0.10 | 192.4 | -1,130.1 | 1,319.5 | 1,264.7 | 54.75 | 24.100 | |

| | | | |
|---------------------------|---------------------------------------|-------------------------------------|--------------------------------------|
| Company: | Great Western | Local Co-ordinate Reference: | Well Campbell JF 17-13D |
| Project: | SEC.17-T2N-R65W | TVD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Reference Site: | Campbell JF 17-6D Pad Sec.17-T2N-R65W | MD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Campbell JF 17-13D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (10-04-12) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|-------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (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 | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 90.05 | 0.0 | 14.8 | 14.8 | 14.8 | 0.00 | N/A | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.1 | 0.1 | 90.05 | 0.0 | 14.8 | 14.8 | 14.6 | 0.22 | 65.926 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 90.05 | 0.0 | 14.8 | 14.8 | 14.1 | 0.67 | 21.975 | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.6 | 0.6 | 90.05 | 0.0 | 14.8 | 14.8 | 13.7 | 1.12 | 13.185 | | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.8 | 0.8 | 90.05 | 0.0 | 14.8 | 14.8 | 13.2 | 1.57 | 9.418 CC, ES | | |
| 500.0 | 500.0 | 500.0 | 500.0 | 1.0 | 1.0 | -139.46 | 0.0 | 14.8 | 16.1 | 14.1 | 2.00 | 8.042 SF | | |
| 600.0 | 599.8 | 599.8 | 599.8 | 1.2 | 1.2 | -149.03 | 0.0 | 14.8 | 20.4 | 17.9 | 2.42 | 8.401 | | |
| 700.0 | 699.5 | 699.5 | 699.5 | 1.4 | 1.5 | -158.11 | 0.0 | 14.8 | 28.2 | 25.3 | 2.86 | 9.865 | | |
| 800.0 | 798.7 | 798.7 | 798.7 | 1.7 | 1.7 | -164.61 | 0.0 | 14.8 | 39.8 | 36.5 | 3.30 | 12.059 | | |
| 900.0 | 897.5 | 897.5 | 897.5 | 2.0 | 1.9 | -168.87 | 0.0 | 14.8 | 55.0 | 51.3 | 3.74 | 14.707 | | |
| 1,000.0 | 995.6 | 995.6 | 995.6 | 2.4 | 2.1 | -171.68 | 0.0 | 14.8 | 73.8 | 69.7 | 4.19 | 17.640 | | |
| 1,100.0 | 1,093.1 | 1,093.1 | 1,093.1 | 2.8 | 2.3 | -173.56 | 0.0 | 14.8 | 96.2 | 91.5 | 4.63 | 20.755 | | |
| 1,200.0 | 1,189.6 | 1,189.6 | 1,189.6 | 3.3 | 2.6 | -174.88 | 0.0 | 14.8 | 121.9 | 116.8 | 5.08 | 23.989 | | |
| 1,300.0 | 1,285.3 | 1,285.3 | 1,285.3 | 3.8 | 2.8 | -175.83 | 0.0 | 14.8 | 151.1 | 145.5 | 5.53 | 27.300 | | |
| 1,374.0 | 1,355.4 | 1,355.4 | 1,355.4 | 4.3 | 2.9 | -176.36 | 0.0 | 14.8 | 174.8 | 168.9 | 5.87 | 29.784 | | |
| 1,400.0 | 1,379.9 | 1,379.9 | 1,379.9 | 4.4 | 3.0 | -176.53 | 0.0 | 14.8 | 183.4 | 177.5 | 5.99 | 30.601 | | |
| 1,500.0 | 1,474.1 | 1,474.1 | 1,474.1 | 5.1 | 3.2 | -177.07 | 0.0 | 14.8 | 216.8 | 210.3 | 6.48 | 33.431 | | |
| 1,600.0 | 1,568.4 | 1,574.9 | 1,574.9 | 5.7 | 3.4 | -177.47 | -0.7 | 14.1 | 249.2 | 242.2 | 6.97 | 35.743 | | |
| 1,700.0 | 1,662.7 | 1,680.3 | 1,680.2 | 6.4 | 3.6 | -177.78 | -3.9 | 10.7 | 278.3 | 270.8 | 7.44 | 37.382 | | |
| 1,800.0 | 1,757.0 | 1,787.9 | 1,787.4 | 7.1 | 3.8 | -178.02 | -10.0 | 4.4 | 303.8 | 295.9 | 7.93 | 38.322 | | |
| 1,900.0 | 1,851.2 | 1,897.5 | 1,896.3 | 7.7 | 4.0 | -178.21 | -19.1 | -5.0 | 325.6 | 317.2 | 8.43 | 38.638 | | |
| 2,000.0 | 1,945.5 | 2,008.9 | 2,006.2 | 8.4 | 4.3 | -178.37 | -31.3 | -17.7 | 343.7 | 334.8 | 8.95 | 38.420 | | |
| 2,100.0 | 2,039.8 | 2,111.0 | 2,106.6 | 9.1 | 4.6 | -178.49 | -44.3 | -31.3 | 359.0 | 349.6 | 9.46 | 37.944 | | |
| 2,200.0 | 2,134.1 | 2,209.8 | 2,203.7 | 9.8 | 4.9 | -178.60 | -57.1 | -44.5 | 374.3 | 364.3 | 9.98 | 37.486 | | |
| 2,300.0 | 2,228.3 | 2,308.7 | 2,300.8 | 10.5 | 5.2 | -178.70 | -69.8 | -57.8 | 389.5 | 379.0 | 10.51 | 37.058 | | |
| 2,400.0 | 2,322.6 | 2,407.5 | 2,397.9 | 11.2 | 5.5 | -178.80 | -82.5 | -71.0 | 404.7 | 393.7 | 11.04 | 36.652 | | |
| 2,500.0 | 2,416.9 | 2,506.3 | 2,495.0 | 11.8 | 5.9 | -178.89 | -95.3 | -84.3 | 419.9 | 408.4 | 11.58 | 36.267 | | |
| 2,600.0 | 2,511.2 | 2,605.2 | 2,592.1 | 12.5 | 6.2 | -178.97 | -108.0 | -97.5 | 435.2 | 423.0 | 12.12 | 35.904 | | |
| 2,700.0 | 2,605.4 | 2,704.0 | 2,689.2 | 13.2 | 6.6 | -179.04 | -120.8 | -110.8 | 450.4 | 437.7 | 12.66 | 35.563 | | |
| 2,800.0 | 2,699.7 | 2,802.8 | 2,786.3 | 13.9 | 6.9 | -179.12 | -133.5 | -124.1 | 465.6 | 452.4 | 13.21 | 35.242 | | |
| 2,900.0 | 2,794.0 | 2,901.7 | 2,883.4 | 14.6 | 7.3 | -179.18 | -146.2 | -137.3 | 480.9 | 467.1 | 13.76 | 34.939 | | |
| 3,000.0 | 2,888.3 | 3,000.5 | 2,980.5 | 15.3 | 7.7 | -179.24 | -159.0 | -150.6 | 496.1 | 481.8 | 14.32 | 34.653 | | |
| 3,100.0 | 2,982.5 | 3,099.3 | 3,077.6 | 16.0 | 8.0 | -179.30 | -171.7 | -163.8 | 511.3 | 496.4 | 14.87 | 34.384 | | |
| 3,200.0 | 3,076.8 | 3,198.1 | 3,174.7 | 16.7 | 8.4 | -179.36 | -184.5 | -177.1 | 526.5 | 511.1 | 15.43 | 34.130 | | |
| 3,300.0 | 3,171.1 | 3,297.0 | 3,271.9 | 17.4 | 8.8 | -179.41 | -197.2 | -190.3 | 541.8 | 525.8 | 15.99 | 33.890 | | |
| 3,400.0 | 3,265.4 | 3,395.8 | 3,369.0 | 18.1 | 9.2 | -179.46 | -209.9 | -203.6 | 557.0 | 540.5 | 16.55 | 33.662 | | |
| 3,500.0 | 3,359.6 | 3,494.6 | 3,466.1 | 18.7 | 9.6 | -179.51 | -222.7 | -216.8 | 572.2 | 555.1 | 17.11 | 33.447 | | |
| 3,600.0 | 3,453.9 | 3,593.5 | 3,563.2 | 19.4 | 10.0 | -179.55 | -235.4 | -230.1 | 587.5 | 569.8 | 17.67 | 33.243 | | |
| 3,700.0 | 3,548.2 | 3,692.3 | 3,660.3 | 20.1 | 10.4 | -179.59 | -248.2 | -243.3 | 602.7 | 584.5 | 18.24 | 33.050 | | |
| 3,800.0 | 3,642.5 | 3,791.1 | 3,757.4 | 20.8 | 10.8 | -179.63 | -260.9 | -256.6 | 617.9 | 599.1 | 18.80 | 32.866 | | |
| 3,900.0 | 3,736.7 | 3,890.0 | 3,854.5 | 21.5 | 11.2 | -179.67 | -273.6 | -269.8 | 633.2 | 613.8 | 19.37 | 32.692 | | |
| 4,000.0 | 3,831.0 | 3,988.8 | 3,951.6 | 22.2 | 11.6 | -179.71 | -286.4 | -283.1 | 648.4 | 628.5 | 19.93 | 32.526 | | |
| 4,100.0 | 3,925.3 | 4,087.6 | 4,048.7 | 22.9 | 12.0 | -179.74 | -299.1 | -296.3 | 663.6 | 643.1 | 20.50 | 32.367 | | |
| 4,200.0 | 4,019.6 | 4,186.5 | 4,145.8 | 23.6 | 12.4 | -179.78 | -311.8 | -309.6 | 678.9 | 657.8 | 21.07 | 32.217 | | |
| 4,300.0 | 4,113.8 | 4,285.3 | 4,242.9 | 24.3 | 12.8 | -179.81 | -324.6 | -322.9 | 694.1 | 672.5 | 21.64 | 32.073 | | |
| 4,400.0 | 4,208.1 | 4,384.1 | 4,340.0 | 25.0 | 13.2 | -179.84 | -337.3 | -336.1 | 709.3 | 687.1 | 22.21 | 31.935 | | |
| 4,500.0 | 4,302.4 | 4,483.0 | 4,437.1 | 25.7 | 13.6 | -179.87 | -350.1 | -349.4 | 724.6 | 701.8 | 22.78 | 31.803 | | |
| 4,600.0 | 4,396.7 | 4,581.8 | 4,534.3 | 26.4 | 14.0 | -179.90 | -362.8 | -362.6 | 739.8 | 716.4 | 23.35 | 31.678 | | |
| 4,700.0 | 4,490.9 | 4,680.6 | 4,631.4 | 27.1 | 14.4 | -179.92 | -375.5 | -375.9 | 755.0 | 731.1 | 23.93 | 31.557 | | |
| 4,800.0 | 4,585.2 | 4,779.5 | 4,728.5 | 27.8 | 14.8 | -179.95 | -388.3 | -389.1 | 770.3 | 745.8 | 24.50 | 31.441 | | |
| 4,900.0 | 4,679.5 | 4,878.3 | 4,825.6 | 28.5 | 15.3 | -179.97 | -401.0 | -402.4 | 785.5 | 760.4 | 25.07 | 31.331 | | |
| 5,000.0 | 4,773.8 | 4,977.1 | 4,922.7 | 29.1 | 15.7 | -180.00 | -413.8 | -415.6 | 800.7 | 775.1 | 25.64 | 31.224 | | |

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

| | | | |
|---------------------------|---------------------------------------|-------------------------------------|--------------------------------------|
| Company: | Great Western | Local Co-ordinate Reference: | Well Campbell JF 17-13D |
| Project: | SEC.17-T2N-R65W | TVD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Reference Site: | Campbell JF 17-6D Pad Sec.17-T2N-R65W | MD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Campbell JF 17-13D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (10-04-12) | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|--|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|-------------------------|--------------------|---------|
| Campbell JF 17-6D Pad Sec.17-T2N-R65W - Campbell JF 17-9D - Wellbore #1 - Plan #1 (10-04-12) | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Survey Program: 0-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 |
| 5,100.0 | 4,868.0 | 5,076.0 | 5,019.8 | 29.8 | 16.1 | 179.98 | -426.5 | -428.9 | 816.0 | 789.7 | 26.22 | 31.122 | |
| 5,181.2 | 4,944.6 | 5,149.0 | 5,091.6 | 30.4 | 16.4 | 179.96 | -435.8 | -438.6 | 828.5 | 801.8 | 26.66 | 31.073 | |
| 5,200.0 | 4,962.3 | 5,163.4 | 5,105.8 | 30.5 | 16.4 | 179.96 | -437.6 | -440.4 | 831.5 | 804.7 | 26.77 | 31.061 | |
| 5,300.0 | 5,057.4 | 5,239.8 | 5,181.2 | 31.0 | 16.7 | 179.95 | -446.0 | -449.2 | 847.0 | 819.7 | 27.29 | 31.039 | |
| 5,400.0 | 5,153.4 | 5,316.0 | 5,256.7 | 31.4 | 16.9 | 179.94 | -453.1 | -456.5 | 861.7 | 834.0 | 27.76 | 31.047 | |
| 5,500.0 | 5,250.4 | 5,400.0 | 5,340.2 | 31.8 | 17.1 | 179.93 | -459.2 | -462.9 | 875.7 | 847.5 | 28.19 | 31.065 | |
| 5,600.0 | 5,348.2 | 5,467.8 | 5,407.8 | 32.2 | 17.2 | 179.92 | -462.9 | -466.7 | 888.7 | 860.1 | 28.54 | 31.142 | |
| 5,700.0 | 5,446.6 | 5,543.4 | 5,483.3 | 32.5 | 17.3 | 179.92 | -465.7 | -469.7 | 900.9 | 872.0 | 28.85 | 31.226 | |
| 5,800.0 | 5,545.6 | 5,618.9 | 5,558.8 | 32.7 | 17.4 | 179.92 | -467.2 | -471.2 | 912.3 | 883.1 | 29.11 | 31.333 | |
| 5,900.0 | 5,645.1 | 5,705.2 | 5,645.1 | 32.9 | 17.6 | 179.92 | -467.4 | -471.4 | 922.5 | 893.2 | 29.35 | 31.428 | |
| 6,000.0 | 5,744.8 | 5,804.9 | 5,744.8 | 33.1 | 17.7 | 179.92 | -467.4 | -471.4 | 929.7 | 900.1 | 29.57 | 31.442 | |
| 6,100.0 | 5,844.7 | 5,904.9 | 5,844.7 | 33.2 | 17.8 | 179.92 | -467.4 | -471.4 | 933.3 | 903.6 | 29.74 | 31.385 | |
| 6,155.3 | 5,900.0 | 5,960.1 | 5,900.0 | 33.2 | 17.9 | 45.05 | -467.4 | -471.4 | 933.9 | 904.1 | 29.82 | 31.317 | |
| 6,200.0 | 5,944.7 | 6,004.9 | 5,944.7 | 33.3 | 18.0 | 45.05 | -467.4 | -471.4 | 933.9 | 903.9 | 29.97 | 31.159 | |
| 6,300.0 | 6,044.7 | 6,104.9 | 6,044.7 | 33.3 | 18.1 | 45.05 | -467.4 | -471.4 | 933.9 | 903.6 | 30.30 | 30.816 | |
| 6,400.0 | 6,144.7 | 6,204.9 | 6,144.7 | 33.4 | 18.3 | 45.05 | -467.4 | -471.4 | 933.9 | 903.2 | 30.64 | 30.479 | |
| 6,500.0 | 6,244.7 | 6,304.9 | 6,244.7 | 33.5 | 18.4 | 45.05 | -467.4 | -471.4 | 933.9 | 902.9 | 30.98 | 30.146 | |
| 6,600.0 | 6,344.7 | 6,404.9 | 6,344.7 | 33.6 | 18.6 | 45.05 | -467.4 | -471.4 | 933.9 | 902.6 | 31.32 | 29.817 | |
| 6,700.0 | 6,444.7 | 6,504.9 | 6,444.7 | 33.6 | 18.7 | 45.05 | -467.4 | -471.4 | 933.9 | 902.2 | 31.66 | 29.494 | |
| 6,800.0 | 6,544.7 | 6,604.9 | 6,544.7 | 33.7 | 18.9 | 45.05 | -467.4 | -471.4 | 933.9 | 901.9 | 32.01 | 29.175 | |
| 6,900.0 | 6,644.7 | 6,704.9 | 6,644.7 | 33.8 | 19.0 | 45.05 | -467.4 | -471.4 | 933.9 | 901.5 | 32.36 | 28.861 | |
| 7,000.0 | 6,744.7 | 6,804.9 | 6,744.7 | 33.9 | 19.2 | 45.05 | -467.4 | -471.4 | 933.9 | 901.2 | 32.71 | 28.551 | |
| 7,100.0 | 6,844.7 | 6,904.9 | 6,844.7 | 34.0 | 19.3 | 45.05 | -467.4 | -471.4 | 933.9 | 900.8 | 33.06 | 28.246 | |
| 7,200.0 | 6,944.7 | 7,004.9 | 6,944.7 | 34.1 | 19.5 | 45.05 | -467.4 | -471.4 | 933.9 | 900.5 | 33.42 | 27.946 | |
| 7,300.0 | 7,044.7 | 7,104.9 | 7,044.7 | 34.1 | 19.6 | 45.05 | -467.4 | -471.4 | 933.9 | 900.1 | 33.78 | 27.650 | |
| 7,400.0 | 7,144.7 | 7,204.9 | 7,144.7 | 34.2 | 19.8 | 45.05 | -467.4 | -471.4 | 933.9 | 899.7 | 34.13 | 27.359 | |
| 7,500.0 | 7,244.7 | 7,304.9 | 7,244.7 | 34.3 | 20.0 | 45.05 | -467.4 | -471.4 | 933.9 | 899.4 | 34.50 | 27.072 | |
| 7,600.0 | 7,344.7 | 7,404.9 | 7,344.7 | 34.4 | 20.1 | 45.05 | -467.4 | -471.4 | 933.9 | 899.0 | 34.86 | 26.789 | |
| 7,685.3 | 7,430.0 | 7,490.1 | 7,430.0 | 34.5 | 20.3 | 45.05 | -467.4 | -471.4 | 933.9 | 898.7 | 35.17 | 26.552 | |

Company: Great Western
Project: SEC.17-T2N-R65W
Reference Site: Campbell JF 17-6D Pad Sec.17-T2N-R65W
Site Error: 0.0ft
Reference Well: Campbell JF 17-13D
Well Error: 0.0ft
Reference Wellbore: Wellbore #1
Reference Design: Plan #1 (10-04-12)

Local Co-ordinate Reference: Well Campbell JF 17-13D
TVD Reference: WELL @ 4930.0ft (Original Well Elev)
MD Reference: WELL @ 4930.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: Landmark
Offset TVD Reference: Offset Datum

Reference Depths are relative to WELL @ 4930.0ft (Original Well Elev) Coordinates are relative to: Campbell JF 17-13D
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.53°



| | | | |
|---------------------------|---------------------------------------|-------------------------------------|--------------------------------------|
| Company: | Great Western | Local Co-ordinate Reference: | Well Campbell JF 17-13D |
| Project: | SEC.17-T2N-R65W | TVD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Reference Site: | Campbell JF 17-6D Pad Sec.17-T2N-R65W | MD Reference: | WELL @ 4930.0ft (Original Well Elev) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Campbell JF 17-13D | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | Wellbore #1 | Database: | Landmark |
| Reference Design: | Plan #1 (10-04-12) | Offset TVD Reference: | Offset Datum |

Reference Depths are relative to WELL @ 4930.0ft (Original Well Elev) Coordinates are relative to: Campbell JF 17-13D
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.53°

