

## DIRECTIONAL SURVEY

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|                                         |  |            |  |                      |  |                             |  |                            |  |                                         |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
|-----------------------------------------|--|------------|--|----------------------|--|-----------------------------|--|----------------------------|--|-----------------------------------------|--|---------------|--|-----------------|--|------------|--|--------|--|-----|--|-----------|--|----|--|-----|--|------|--|
| Service Ticket No.: 903556483           |  |            |  |                      |  | API No.: 15-109-21479-00-00 |  |                            |  | PGM Version: WL INSITE R5.0.5 (Build 8) |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE |  |            |  |                      |  |                             |  | RESISTIVITY SCALE CHANGES  |  |                                         |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Date                                    |  | Sample No. |  |                      |  |                             |  | Type Log                   |  | Depth                                   |  | Scale Up Hole |  | Scale Down Hole |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Depth-Driller                           |  |            |  |                      |  |                             |  |                            |  |                                         |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Type Fluid in Hole                      |  |            |  |                      |  |                             |  |                            |  |                                         |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Density                                 |  | Viscosity  |  |                      |  |                             |  |                            |  |                                         |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Ph                                      |  | Fluid Loss |  |                      |  |                             |  |                            |  |                                         |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Source of Sample                        |  |            |  |                      |  |                             |  | RESISTIVITY EQUIPMENT DATA |  |                                         |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Rm @ Meas. Temp                         |  |            |  | @                    |  | @                           |  | Run No.                    |  | Tool Type & No.                         |  | Pad Type      |  | Tool Pos.       |  | Other      |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Rmf @ Meas. Temp.                       |  |            |  | @                    |  | @                           |  | ONE                        |  | ACRT                                    |  | NONE          |  | 1.19 in S.O.    |  | N/A        |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Rmc @ Meas. Temp.                       |  |            |  | @                    |  | @                           |  |                            |  | I-11026095                              |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Source Rmf                              |  | Rmc        |  | CALC                 |  | CALC                        |  |                            |  | S-11005908                              |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Rm @ BHT                                |  |            |  | 0.23 ohmm @ 122 degF |  |                             |  | @                          |  |                                         |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Rmf @ BHT                               |  |            |  | 0.19 ohmm @ 122 degF |  |                             |  | @                          |  |                                         |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Rmc @ BHT                               |  |            |  | 0.26 ohmm @ 122 degF |  |                             |  | @                          |  |                                         |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| EQUIPMENT DATA                          |  |            |  |                      |  |                             |  |                            |  |                                         |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| GAMMA                                   |  |            |  | ACOUSTIC             |  |                             |  | DENSITY                    |  |                                         |  | NEUTRON       |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Run No.                                 |  | ONE        |  | Run No.              |  | ONE                         |  | Run No.                    |  | ONE                                     |  | Run No.       |  | ONE             |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Serial No.                              |  | 11048627   |  | Serial No.           |  | 10939064                    |  | Serial No.                 |  | 10950489                                |  | Serial No.    |  | 1101643         |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Model No.                               |  | GTET       |  | Model No.            |  | BSAT                        |  | Model No.                  |  | SDLT                                    |  | Model No.     |  | DSNT            |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Diameter                                |  | 3.625"     |  | No. of Cent.         |  | 2                           |  | Diameter                   |  | 4.5"                                    |  | Diameter      |  | 3.625"          |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Detector Model No.                      |  | GTET       |  | Spacing              |  | 0.5'                        |  | Log Type                   |  | GAM-GAM                                 |  | Log Type      |  | NEU-NEU         |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Type                                    |  | SCINT      |  |                      |  |                             |  | Source Type                |  | Cs-137                                  |  | Source Type   |  | Am241Be         |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Length                                  |  | 8"         |  | LSA [Y/N]            |  |                             |  | Serial No.                 |  | 5168GW                                  |  | Serial No.    |  | DSN-424         |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Distance to Source                      |  | N/A        |  | FWDA [Y/N ]          |  |                             |  | Strength                   |  | 1.5 Ci                                  |  | Strength      |  | 15Ci            |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| LOGGING DATA                            |  |            |  |                      |  |                             |  |                            |  |                                         |  |               |  |                 |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| GENERAL                                 |  |            |  | GAMMA                |  | ACOUSTIC                    |  |                            |  | DENSITY                                 |  |               |  | NEUTRON         |  |            |  |        |  |     |  |           |  |    |  |     |  |      |  |
| Run                                     |  | Depth      |  | Speed                |  | Scale                       |  | Scale                      |  | Matrix                                  |  | Scale         |  | Matrix          |  | Scale      |  | Matrix |  |     |  |           |  |    |  |     |  |      |  |
| No.                                     |  | From To    |  | ft/min               |  | L R                         |  | L R                        |  |                                         |  | L R           |  | Matrix          |  | L R        |  | Matrix |  |     |  |           |  |    |  |     |  |      |  |
| ONE                                     |  | TD         |  | CSG                  |  | PEC                         |  | 0                          |  | 150                                     |  | 30            |  | -10             |  | 47.6 us/ft |  | 30     |  | -10 |  | 2.71 g/cc |  | 30 |  | -10 |  | TIME |  |

|                                   |                   |             |                |      |     |
|-----------------------------------|-------------------|-------------|----------------|------|-----|
| Hole Position Calculation Method: | Minimum Curvature | Tie in Data | Depth:         | 0.00 | ft  |
| Magnetic Declination:             | 6.116 deg         |             | TVD:           | 0.0  | ft  |
|                                   |                   |             | Inclination:   | 0.00 | deg |
|                                   |                   |             | Azimuth:       | 0.00 | deg |
|                                   |                   |             | N/S Departure: | 0.00 | ft  |
|                                   |                   |             | E/W Departure: | 0.00 | ft  |

|         |      |        |        |       |       |      |
|---------|------|--------|--------|-------|-------|------|
| 1080.00 | 0.16 | 1080.0 | 203.49 | 1.30  | 1.21  | 0.37 |
| 1110.00 | 0.12 | 1110.0 | 308.85 | 1.28  | 1.17  | 0.74 |
| 1140.00 | 0.29 | 1140.0 | 253.32 | 1.28  | 1.07  | 0.80 |
| 1170.00 | 0.50 | 1170.0 | 345.83 | 1.39  | 0.97  | 1.97 |
| 1200.00 | 0.44 | 1200.0 | 104.68 | 1.49  | 1.05  | 2.70 |
| 1230.00 | 0.43 | 1230.0 | 121.51 | 1.40  | 1.25  | 0.42 |
| 1260.00 | 0.36 | 1260.0 | 132.27 | 1.28  | 1.42  | 0.35 |
| 1290.00 | 0.43 | 1290.0 | 159.53 | 1.11  | 1.53  | 0.66 |
| 1320.00 | 0.36 | 1320.0 | 148.44 | 0.93  | 1.61  | 0.34 |
| 1350.00 | 0.57 | 1350.0 | 136.82 | 0.73  | 1.77  | 0.77 |
| 1380.00 | 0.58 | 1380.0 | 126.92 | 0.53  | 1.99  | 0.33 |
| 1410.00 | 0.80 | 1410.0 | 175.15 | 0.24  | 2.13  | 1.99 |
| 1440.00 | 0.96 | 1439.9 | 181.66 | -0.22 | 2.14  | 0.64 |
| 1470.00 | 0.82 | 1469.9 | 217.18 | -0.65 | 2.00  | 1.87 |
| 1500.00 | 0.21 | 1499.9 | 194.35 | -0.87 | 1.86  | 2.12 |
| 1530.00 | 0.45 | 1529.9 | 140.74 | -1.01 | 1.92  | 1.23 |
| 1560.00 | 0.50 | 1559.9 | 135.35 | -1.20 | 2.09  | 0.22 |
| 1590.00 | 0.43 | 1589.9 | 143.91 | -1.38 | 2.24  | 0.33 |
| 1620.00 | 0.29 | 1619.9 | 152.67 | -1.54 | 2.35  | 0.51 |
| 1650.00 | 0.33 | 1649.9 | 149.19 | -1.68 | 2.42  | 0.17 |
| 1680.00 | 0.26 | 1679.9 | 147.02 | -1.81 | 2.51  | 0.24 |
| 1710.00 | 0.26 | 1709.9 | 165.98 | -1.94 | 2.56  | 0.29 |
| 1740.00 | 0.37 | 1739.9 | 207.29 | -2.09 | 2.53  | 0.81 |
| 1770.00 | 0.28 | 1769.9 | 199.59 | -2.25 | 2.46  | 0.32 |
| 1800.00 | 0.12 | 1799.9 | 170.78 | -2.35 | 2.44  | 0.62 |
| 1830.00 | 0.21 | 1829.9 | 184.14 | -2.43 | 2.45  | 0.33 |
| 1860.00 | 0.46 | 1859.9 | 265.80 | -2.50 | 2.32  | 1.60 |
| 1890.00 | 0.22 | 1889.9 | 207.50 | -2.56 | 2.17  | 1.31 |
| 1920.00 | 0.07 | 1919.9 | 153.98 | -2.62 | 2.16  | 0.63 |
| 1950.00 | 0.11 | 1949.9 | 71.87  | -2.63 | 2.19  | 0.42 |
| 1980.00 | 0.15 | 1979.9 | 275.72 | -2.62 | 2.18  | 0.87 |
| 2010.00 | 0.10 | 2009.9 | 299.68 | -2.60 | 2.12  | 0.24 |
| 2040.00 | 0.51 | 2039.9 | 202.56 | -2.71 | 2.04  | 1.79 |
| 2070.00 | 0.43 | 2069.9 | 186.66 | -2.95 | 1.98  | 0.52 |
| 2100.00 | 0.13 | 2099.9 | 233.97 | -3.08 | 1.94  | 1.16 |
| 2130.00 | 0.18 | 2129.9 | 335.58 | -3.05 | 1.89  | 0.83 |
| 2160.00 | 0.15 | 2159.9 | 72.66  | -3.00 | 1.91  | 0.83 |
| 2190.00 | 0.23 | 2189.9 | 97.56  | -3.00 | 2.00  | 0.39 |
| 2220.00 | 0.41 | 2219.9 | 122.00 | -3.06 | 2.15  | 0.73 |
| 2250.00 | 0.38 | 2249.9 | 118.78 | -3.17 | 2.33  | 0.12 |
| 2280.00 | 0.52 | 2279.9 | 128.05 | -3.30 | 2.52  | 0.52 |
| 2310.00 | 0.57 | 2309.9 | 129.95 | -3.48 | 2.75  | 0.19 |
| 2340.00 | 0.56 | 2339.9 | 127.12 | -3.66 | 2.98  | 0.11 |
| 2370.00 | 0.57 | 2369.9 | 124.28 | -3.83 | 3.22  | 0.10 |
| 2400.00 | 0.56 | 2399.9 | 116.04 | -3.98 | 3.47  | 0.27 |
| 2430.00 | 0.71 | 2429.9 | 133.21 | -4.17 | 3.74  | 0.79 |
| 2460.00 | 0.73 | 2459.9 | 121.59 | -4.40 | 4.04  | 0.49 |
| 2490.00 | 0.96 | 2489.9 | 121.76 | -4.63 | 4.41  | 0.75 |
| 2520.00 | 1.15 | 2519.9 | 118.43 | -4.91 | 4.89  | 0.66 |
| 2550.00 | 1.10 | 2549.9 | 118.10 | -5.19 | 5.41  | 0.17 |
| 2580.00 | 0.86 | 2579.9 | 85.33  | -5.30 | 5.89  | 1.99 |
| 2610.00 | 0.86 | 2609.9 | 89.18  | -5.28 | 6.34  | 0.19 |
| 2640.00 | 1.01 | 2639.9 | 101.47 | -5.33 | 6.83  | 0.83 |
| 2670.00 | 1.02 | 2669.9 | 100.05 | -5.43 | 7.35  | 0.09 |
| 2700.00 | 1.15 | 2699.9 | 115.08 | -5.60 | 7.89  | 1.04 |
| 2730.00 | 1.23 | 2729.9 | 113.97 | -5.86 | 8.45  | 0.27 |
| 2760.00 | 1.14 | 2759.9 | 115.01 | -6.12 | 9.02  | 0.32 |
| 2790.00 | 0.93 | 2789.9 | 106.47 | -6.31 | 9.52  | 0.85 |
| 2820.00 | 0.96 | 2819.9 | 109.51 | -6.47 | 9.99  | 0.20 |
| 2850.00 | 1.06 | 2849.9 | 113.00 | -6.66 | 10.48 | 0.38 |
| 2880.00 | 1.06 | 2879.9 | 109.76 | -6.86 | 11.00 | 0.20 |
| 2910.00 | 0.79 | 2909.9 | 95.25  | -6.98 | 11.47 | 1.19 |
| 2940.00 | 0.65 | 2939.9 | 79.45  | -6.96 | 11.84 | 0.81 |
| 2970.00 | 0.46 | 2969.8 | 64.38  | -6.88 | 12.12 | 0.79 |
| 3000.00 | 0.23 | 2999.8 | 130.86 | -6.87 | 12.27 | 1.41 |
| 3030.00 | 0.36 | 3029.8 | 94.51  | -6.91 | 12.41 | 0.73 |
| 3060.00 | 0.34 | 3059.8 | 83.49  | -6.91 | 12.59 | 0.23 |
| 3090.00 | 0.30 | 3089.8 | 109.12 | -6.93 | 12.75 | 0.49 |
| 3120.00 | 0.23 | 3119.8 | 138.81 | -7.00 | 12.87 | 0.51 |

|                                                                                       |      |        |        |        |                          |      |
|---------------------------------------------------------------------------------------|------|--------|--------|--------|--------------------------|------|
| 3120.00                                                                               | 0.19 | 3129.8 | 209.84 | -7.00  | 12.94                    | 0.21 |
| 3150.00                                                                               | 0.30 | 3149.8 | 132.23 | -7.10  | 12.96                    | 0.25 |
| 3180.00                                                                               | 0.20 | 3179.8 | 146.74 | -7.19  | 13.05                    | 0.39 |
| 3210.00                                                                               | 0.40 | 3209.8 | 95.93  | -7.25  | 13.19                    | 1.05 |
| 3240.00                                                                               | 0.45 | 3239.8 | 108.18 | -7.30  | 13.40                    | 0.35 |
| 3270.00                                                                               | 0.13 | 3269.8 | 74.83  | -7.32  | 13.55                    | 1.18 |
| 3300.00                                                                               | 0.25 | 3299.8 | 148.25 | -7.37  | 13.62                    | 0.83 |
| 3330.00                                                                               | 0.07 | 3329.8 | 49.22  | -7.42  | 13.66                    | 0.90 |
| 3360.00                                                                               | 0.14 | 3359.8 | 90.50  | -7.40  | 13.72                    | 0.34 |
| 3390.00                                                                               | 0.20 | 3389.8 | 197.27 | -7.46  | 13.74                    | 0.93 |
| 3420.00                                                                               | 0.14 | 3419.8 | 187.38 | -7.54  | 13.72                    | 0.23 |
| 3450.00                                                                               | 0.10 | 3449.8 | 248.51 | -7.59  | 13.69                    | 0.42 |
| 3480.00                                                                               | 0.07 | 3479.8 | 257.11 | -7.60  | 13.65                    | 0.10 |
| 3510.00                                                                               | 0.21 | 3509.8 | 306.69 | -7.57  | 13.58                    | 0.59 |
| 3540.00                                                                               | 0.57 | 3539.8 | 258.31 | -7.57  | 13.39                    | 1.53 |
| 3570.00                                                                               | 0.75 | 3569.8 | 244.51 | -7.68  | 13.07                    | 0.78 |
| 3600.00                                                                               | 1.08 | 3599.8 | 241.64 | -7.90  | 12.64                    | 1.12 |
| 3630.00                                                                               | 1.02 | 3629.8 | 237.04 | -8.18  | 12.17                    | 0.35 |
| 3660.00                                                                               | 1.10 | 3659.8 | 231.40 | -8.51  | 11.72                    | 0.44 |
| 3690.00                                                                               | 0.81 | 3689.8 | 211.03 | -8.87  | 11.38                    | 1.48 |
| 3720.00                                                                               | 0.86 | 3719.8 | 209.02 | -9.25  | 11.17                    | 0.19 |
| 3750.00                                                                               | 0.57 | 3749.8 | 201.75 | -9.58  | 11.00                    | 0.99 |
| 3780.00                                                                               | 0.39 | 3779.8 | 205.62 | -9.81  | 10.90                    | 0.61 |
| 3810.00                                                                               | 0.27 | 3809.8 | 210.65 | -9.97  | 10.82                    | 0.42 |
| 3840.00                                                                               | 0.22 | 3839.8 | 233.62 | -10.06 | 10.74                    | 0.36 |
| 3870.00                                                                               | 0.39 | 3869.8 | 268.05 | -10.10 | 10.59                    | 0.81 |
| 3900.00                                                                               | 0.40 | 3899.8 | 248.74 | -10.14 | 10.39                    | 0.44 |
| 3930.00                                                                               | 0.41 | 3929.8 | 233.88 | -10.24 | 10.21                    | 0.35 |
| 3960.00                                                                               | 0.50 | 3959.8 | 229.81 | -10.39 | 10.02                    | 0.33 |
| 3990.00                                                                               | 0.54 | 3989.8 | 233.11 | -10.56 | 9.81                     | 0.17 |
| 4020.00                                                                               | 0.46 | 4019.8 | 241.80 | -10.70 | 9.59                     | 0.38 |
| 4050.00                                                                               | 0.38 | 4049.8 | 264.38 | -10.77 | 9.38                     | 0.60 |
| 4080.00                                                                               | 0.49 | 4079.8 | 255.91 | -10.81 | 9.16                     | 0.41 |
| 4110.00                                                                               | 0.55 | 4109.8 | 272.31 | -10.84 | 8.89                     | 0.54 |
| 4140.00                                                                               | 0.46 | 4139.8 | 277.43 | -10.81 | 8.62                     | 0.34 |
| 4170.00                                                                               | 0.48 | 4169.8 | 295.69 | -10.74 | 8.39                     | 0.50 |
| 4200.00                                                                               | 0.45 | 4199.8 | 284.70 | -10.66 | 8.16                     | 0.32 |
| 4230.00                                                                               | 0.43 | 4229.8 | 281.66 | -10.61 | 7.94                     | 0.10 |
| 4260.00                                                                               | 0.37 | 4259.8 | 266.81 | -10.59 | 7.74                     | 0.39 |
| 4290.00                                                                               | 0.33 | 4289.8 | 307.89 | -10.54 | 7.57                     | 0.82 |
| 4320.00                                                                               | 0.46 | 4319.8 | 318.26 | -10.40 | 7.42                     | 0.49 |
| 4350.00                                                                               | 0.64 | 4349.8 | 304.02 | -10.22 | 7.21                     | 0.76 |
| 4380.00                                                                               | 0.92 | 4379.8 | 305.61 | -9.98  | 6.87                     | 0.95 |
| 4410.00                                                                               | 1.17 | 4409.8 | 282.61 | -9.78  | 6.38                     | 1.60 |
| 4440.00                                                                               | 1.17 | 4439.8 | 279.74 | -9.66  | 5.78                     | 0.20 |
| 4470.00                                                                               | 1.21 | 4469.8 | 272.40 | -9.59  | 5.16                     | 0.53 |
| 4500.00                                                                               | 1.22 | 4499.8 | 269.17 | -9.58  | 4.52                     | 0.23 |
| 4530.00                                                                               | 1.30 | 4529.8 | 260.91 | -9.64  | 3.87                     | 0.66 |
| 4560.00                                                                               | 1.21 | 4559.8 | 253.02 | -9.79  | 3.23                     | 0.64 |
| 4590.00                                                                               | 1.15 | 4589.8 | 247.04 | -10.00 | 2.65                     | 0.46 |
| 4620.00                                                                               | 1.05 | 4619.7 | 246.79 | -10.22 | 2.12                     | 0.33 |
| 4650.00                                                                               | 0.97 | 4649.7 | 254.34 | -10.40 | 1.63                     | 0.51 |
| 4680.00                                                                               | 0.98 | 4679.7 | 257.50 | -10.52 | 1.13                     | 0.18 |
| 4710.00                                                                               | 0.86 | 4709.7 | 249.28 | -10.66 | 0.67                     | 0.57 |
| Horizontal displacement is relative to the well head.                                 |      |        |        |        |                          |      |
| Horizontal displacement (closure) at 4,710.00 ft is 10.68 ft along 176.40 deg (Grid). |      |        |        |        |                          |      |
| Data: CULB_BAKER 2-21                                                                 |      |        |        |        | Date: 25-Sep-16 02:52:08 |      |

|                    |                                  |                    |        |
|--------------------|----------------------------------|--------------------|--------|
| COMPANY            | CULBREATH OIL & GAS COMPANY, LLC |                    |        |
| WELL               | KS BAKER 2-21                    |                    |        |
| FIELD              | UNNAMED                          |                    |        |
| COUNTY             | LOGAN                            | STATE              | KANSAS |
| <b>HALLIBURTON</b> |                                  | DIRECTIONAL SURVEY |        |