



Weatherford®

SURVEY REPORT

Report Date: **6/28/2013**
 Customer: **Anadarko**
 Job Name: **4029183**
 Well Name: **Cannon 14C-10HZ**

Field: **Wattenberg**
 Rig: **Xtreme 23**
 Rig Loc: **Cannon 14C-10HZ**

| Survey Calculation Method: Minimum Curvature | | | | | | |
|---|-------------------|----------------------|--------------------|----------------------|------------------|------------------|
| Magnetic Reference | Target Direction | Total Magnetic Field | Magnetic Dip Angle | Magnetic Declination | Grid Convergence | Total Correction |
| True North | 179.66 deg | 52724 nT | 66.78 deg | 8.60 deg | 0.00 deg | 8.60 deg |
| Survey Tie-On | Depth | INC | AZ | TVD | NS | EW |
| | 895.00 ft | 0.27 deg | 324.33 deg | 895.00 ft | 0.89 ft | -1.43 ft |

| Depth (ft) | Inc (deg) | Azm (deg) | TVD (ft) | Well Head | | | |
|---------------|--------------|--------------|-------------|------------|------------|---------------|-----------------------|
| | | | | NS (ft) | EW (ft) | Vsect (ft) | Dogleg (deg/100ft) |
| 1070.00 | 0.31 | 329.50 | 1070.00 | 1.63 | -1.91 | -1.64 | 0.03 |
| 1163.00 | 2.60 | 70.00 | 1162.97 | 2.57 | -0.06 | -2.57 | 2.88 |
| 1255.00 | 3.68 | 66.28 | 1254.83 | 4.47 | 4.61 | -4.45 | 1.19 |
| 1349.00 | 5.95 | 64.54 | 1348.49 | 7.78 | 11.77 | -7.71 | 2.42 |
| 1441.00 | 7.22 | 70.22 | 1439.88 | 11.79 | 21.52 | -11.66 | 1.55 |
| 1534.00 | 8.66 | 76.27 | 1531.99 | 15.43 | 33.82 | -15.23 | 1.79 |
| 1627.00 | 10.30 | 82.61 | 1623.72 | 18.16 | 48.87 | -17.87 | 2.09 |
| 1719.00 | 10.82 | 71.62 | 1714.17 | 21.94 | 65.22 | -21.55 | 2.26 |
| 1812.00 | 11.56 | 67.19 | 1805.40 | 28.31 | 82.09 | -27.82 | 1.22 |
| 1904.00 | 12.87 | 59.38 | 1895.32 | 37.10 | 99.41 | -36.51 | 2.29 |
| 1999.00 | 14.15 | 58.04 | 1987.69 | 48.63 | 118.37 | -47.93 | 1.39 |
| 2089.00 | 14.46 | 58.06 | 2074.90 | 60.40 | 137.24 | -59.59 | 0.34 |
| 2180.00 | 14.94 | 58.52 | 2162.92 | 72.54 | 156.88 | -71.61 | 0.54 |
| 2271.00 | 15.76 | 58.99 | 2250.68 | 85.03 | 177.48 | -83.98 | 0.91 |
| 2362.00 | 16.76 | 58.94 | 2338.04 | 98.17 | 199.31 | -96.98 | 1.10 |
| 2452.00 | 16.30 | 56.00 | 2424.32 | 111.93 | 220.90 | -110.61 | 1.06 |
| 2543.00 | 16.54 | 60.29 | 2511.61 | 125.49 | 242.73 | -124.04 | 1.36 |
| 2634.00 | 17.00 | 63.97 | 2598.74 | 137.74 | 265.94 | -136.16 | 1.27 |
| 2725.00 | 17.49 | 68.16 | 2685.65 | 148.67 | 290.59 | -146.94 | 1.47 |
| 2816.00 | 16.87 | 65.96 | 2772.59 | 159.14 | 315.34 | -157.26 | 0.99 |
| 2906.00 | 17.29 | 70.49 | 2858.63 | 168.92 | 339.87 | -166.90 | 1.55 |
| 2997.00 | 19.25 | 74.43 | 2945.04 | 177.47 | 367.07 | -175.29 | 2.54 |
| 3058.00 | 19.81 | 73.64 | 3002.53 | 183.08 | 386.68 | -180.78 | 1.01 |
| 3149.00 | 22.54 | 70.54 | 3087.38 | 193.23 | 417.93 | -190.75 | 3.24 |
| 3268.00 | 21.98 | 69.67 | 3197.51 | 208.57 | 460.31 | -205.83 | 0.55 |
| 3354.00 | 20.77 | 70.38 | 3277.59 | 219.28 | 489.77 | -216.37 | 1.44 |
| 3439.00 | 22.59 | 69.05 | 3356.58 | 230.18 | 519.22 | -227.10 | 2.22 |
| 3525.00 | 22.39 | 63.90 | 3436.05 | 243.29 | 549.35 | -240.03 | 2.30 |
| 3610.00 | 20.48 | 60.55 | 3515.17 | 257.73 | 576.84 | -254.30 | 2.67 |
| 3695.00 | 20.08 | 60.65 | 3594.90 | 272.19 | 602.51 | -268.61 | 0.47 |
| 3781.00 | 20.25 | 58.64 | 3675.63 | 287.17 | 628.09 | -283.44 | 0.83 |
| 3866.00 | 18.88 | 56.38 | 3755.72 | 302.44 | 652.10 | -298.57 | 1.84 |
| 3952.00 | 17.30 | 54.73 | 3837.47 | 317.53 | 674.13 | -313.53 | 1.93 |
| 4037.00 | 16.89 | 57.86 | 3918.71 | 331.40 | 694.91 | -327.27 | 1.18 |
| 4122.00 | 15.73 | 59.31 | 4000.29 | 343.85 | 715.27 | -339.60 | 1.45 |

| Depth (ft) | Inc (deg) | Azm (deg) | TVD (ft) | Well Head | | VSect (ft) | Dogleg (deg/100ft) |
|---------------|--------------|--------------|-------------|------------|------------|---------------|-----------------------|
| | | | | NS (ft) | EW (ft) | | |
| 4208.00 | 14.81 | 57.94 | 4083.25 | 355.63 | 734.61 | -351.27 | 1.15 |
| 4293.00 | 14.36 | 58.36 | 4165.51 | 366.93 | 752.79 | -362.46 | 0.54 |
| 4379.00 | 13.23 | 60.64 | 4249.03 | 377.35 | 770.45 | -372.77 | 1.46 |
| 4464.00 | 10.07 | 59.75 | 4332.27 | 385.87 | 785.35 | -381.20 | 3.72 |
| 4550.00 | 7.58 | 54.91 | 4417.25 | 392.91 | 796.49 | -388.18 | 3.02 |
| 4635.00 | 6.53 | 51.97 | 4501.60 | 399.12 | 804.88 | -394.33 | 1.31 |
| 4720.00 | 5.79 | 57.77 | 4586.11 | 404.38 | 812.32 | -399.55 | 1.14 |
| 4806.00 | 5.50 | 58.47 | 4671.69 | 408.85 | 819.50 | -403.98 | 0.35 |
| 4891.00 | 4.35 | 62.44 | 4756.38 | 412.47 | 825.83 | -407.56 | 1.41 |
| 4977.00 | 2.26 | 69.62 | 4842.23 | 414.57 | 830.31 | -409.64 | 2.47 |
| 5062.00 | 1.55 | 99.98 | 4927.19 | 414.95 | 833.01 | -410.00 | 1.42 |
| 5148.00 | 1.01 | 183.04 | 5013.17 | 414.00 | 834.12 | -409.04 | 2.03 |
| 5233.00 | 0.66 | 178.64 | 5098.16 | 412.76 | 834.09 | -407.80 | 0.42 |
| 5318.00 | 0.84 | 167.34 | 5183.15 | 411.66 | 834.24 | -406.70 | 0.27 |
| 5403.00 | 0.70 | 153.76 | 5268.15 | 410.59 | 834.60 | -405.63 | 0.27 |
| 5489.00 | 0.49 | 166.35 | 5354.14 | 409.76 | 834.92 | -404.80 | 0.29 |
| 5574.00 | 0.49 | 217.89 | 5439.14 | 409.12 | 834.79 | -404.16 | 0.50 |
| 5659.00 | 1.05 | 244.77 | 5524.13 | 408.50 | 833.86 | -403.54 | 0.77 |
| 5829.00 | 1.41 | 238.53 | 5694.09 | 406.74 | 830.67 | -401.81 | 0.23 |
| 5999.00 | 0.30 | 266.87 | 5864.07 | 405.63 | 828.44 | -400.70 | 0.68 |
| 6170.00 | 0.99 | 278.63 | 6035.06 | 405.83 | 826.53 | -400.91 | 0.41 |
| 6341.00 | 0.97 | 281.33 | 6206.03 | 406.33 | 823.65 | -401.44 | 0.03 |
| 6512.00 | 0.98 | 304.14 | 6377.01 | 407.44 | 821.02 | -402.56 | 0.23 |
| 6683.00 | 1.19 | 307.92 | 6547.98 | 409.35 | 818.41 | -404.48 | 0.13 |
| 6853.00 | 1.16 | 326.86 | 6717.94 | 411.87 | 816.08 | -407.02 | 0.23 |
| 6939.00 | 1.14 | 324.55 | 6803.93 | 413.30 | 815.10 | -408.46 | 0.06 |
| 7024.00 | 8.14 | 208.25 | 6888.65 | 408.68 | 811.76 | -403.85 | 10.24 |
| 7110.00 | 16.32 | 189.96 | 6972.66 | 391.38 | 806.78 | -386.59 | 10.41 |
| 7195.00 | 26.49 | 185.57 | 7051.70 | 360.67 | 802.86 | -355.90 | 12.10 |
| 7281.00 | 34.19 | 183.91 | 7125.86 | 317.40 | 799.35 | -312.66 | 9.01 |
| 7366.00 | 40.61 | 179.05 | 7193.37 | 265.85 | 798.17 | -261.11 | 8.31 |
| 7452.00 | 48.49 | 177.94 | 7254.61 | 205.59 | 799.80 | -200.84 | 9.21 |
| 7537.00 | 57.22 | 179.00 | 7305.89 | 137.93 | 801.57 | -133.17 | 10.32 |
| 7623.00 | 65.02 | 178.42 | 7347.39 | 62.70 | 803.28 | -57.93 | 9.09 |
| 7708.00 | 70.32 | 178.74 | 7379.67 | -15.87 | 805.22 | 20.65 | 6.25 |
| 7794.00 | 78.01 | 178.23 | 7403.12 | -98.52 | 807.41 | 103.31 | 8.96 |
| 7825.00 | 82.07 | 178.44 | 7408.48 | -129.03 | 808.30 | 133.82 | 13.11 |
| 7949.00 | 88.70 | 178.88 | 7418.45 | -252.53 | 811.19 | 257.33 | 5.36 |
| 8035.00 | 89.26 | 178.09 | 7419.99 | -338.48 | 813.46 | 343.30 | 1.13 |
| 8120.00 | 91.29 | 178.67 | 7419.58 | -423.44 | 815.86 | 428.27 | 2.48 |
| 8206.00 | 92.47 | 179.31 | 7416.76 | -509.38 | 817.38 | 514.22 | 1.56 |
| 8291.00 | 89.69 | 178.59 | 7415.15 | -594.34 | 818.94 | 599.19 | 3.38 |
| 8377.00 | 90.55 | 177.50 | 7414.97 | -680.29 | 821.87 | 685.15 | 1.61 |
| 8462.00 | 90.49 | 177.45 | 7414.20 | -765.20 | 825.61 | 770.09 | 0.09 |
| 8548.00 | 90.12 | 176.72 | 7413.74 | -851.09 | 829.99 | 856.00 | 0.95 |
| 8633.00 | 89.94 | 179.38 | 7413.70 | -936.03 | 832.88 | 940.96 | 3.14 |
| 8719.00 | 90.25 | 180.15 | 7413.56 | -1022.03 | 833.23 | 1026.96 | 0.97 |
| 8804.00 | 90.12 | 179.85 | 7413.28 | -1107.03 | 833.23 | 1111.96 | 0.38 |
| 8889.00 | 90.06 | 179.94 | 7413.15 | -1192.03 | 833.39 | 1196.95 | 0.13 |
| 8975.00 | 90.18 | 180.07 | 7412.97 | -1278.03 | 833.38 | 1282.95 | 0.21 |

| Depth (ft) | Inc (deg) | Azm (deg) | TVD (ft) | Well Head | | VSect (ft) | Dogleg (deg/100ft) |
|---------------------------|--------------|--------------|-------------|------------|------------|---------------|-----------------------|
| | | | | NS (ft) | EW (ft) | | |
| 9060.00 | 89.94 | 179.56 | 7412.88 | -1363.03 | 833.66 | 1367.95 | 0.66 |
| 9146.00 | 89.82 | 179.25 | 7413.06 | -1449.02 | 834.55 | 1453.95 | 0.39 |
| 9231.00 | 89.51 | 179.68 | 7413.56 | -1534.02 | 835.34 | 1538.95 | 0.62 |
| 9317.00 | 88.58 | 179.41 | 7414.99 | -1620.00 | 836.02 | 1624.94 | 1.13 |
| 9402.00 | 89.75 | 179.49 | 7416.23 | -1704.99 | 836.84 | 1709.92 | 1.38 |
| 9488.00 | 90.49 | 181.20 | 7416.05 | -1790.98 | 836.32 | 1795.91 | 2.17 |
| 9573.00 | 89.82 | 181.06 | 7415.82 | -1875.97 | 834.65 | 1880.89 | 0.81 |
| 9658.00 | 89.38 | 181.90 | 7416.41 | -1960.93 | 832.45 | 1965.84 | 1.12 |
| 9744.00 | 89.82 | 180.74 | 7417.01 | -2046.91 | 830.47 | 2051.80 | 1.44 |
| 9829.00 | 91.11 | 180.19 | 7416.32 | -2131.90 | 829.78 | 2136.79 | 1.65 |
| 9915.00 | 89.32 | 178.85 | 7416.00 | -2217.89 | 830.50 | 2222.78 | 2.60 |
| 10000.00 | 89.45 | 177.78 | 7416.91 | -2302.85 | 833.00 | 2307.75 | 1.27 |
| 10086.00 | 90.49 | 177.41 | 7416.96 | -2388.77 | 836.61 | 2393.69 | 1.28 |
| 10171.00 | 89.57 | 179.45 | 7416.91 | -2473.73 | 838.94 | 2478.67 | 2.63 |
| 10257.00 | 89.63 | 181.02 | 7417.51 | -2559.73 | 838.58 | 2564.66 | 1.83 |
| 10342.00 | 89.20 | 180.72 | 7418.38 | -2644.71 | 837.29 | 2649.64 | 0.62 |
| 10427.00 | 88.83 | 181.43 | 7419.84 | -2729.68 | 835.70 | 2734.60 | 0.94 |
| 10513.00 | 89.38 | 180.31 | 7421.19 | -2815.66 | 834.39 | 2820.56 | 1.45 |
| 10598.00 | 91.11 | 180.59 | 7420.82 | -2900.66 | 833.73 | 2905.55 | 2.06 |
| 10684.00 | 90.62 | 180.64 | 7419.52 | -2986.64 | 832.80 | 2991.53 | 0.57 |
| 10769.00 | 90.55 | 182.40 | 7418.66 | -3071.60 | 830.55 | 3076.48 | 2.07 |
| 10854.00 | 90.18 | 181.02 | 7418.12 | -3156.56 | 828.01 | 3161.42 | 1.68 |
| 10940.00 | 89.44 | 180.94 | 7418.40 | -3242.55 | 826.54 | 3247.40 | 0.87 |
| 11025.00 | 90.31 | 179.50 | 7418.59 | -3327.54 | 826.22 | 3332.39 | 1.98 |
| 11111.00 | 89.45 | 180.26 | 7418.77 | -3413.54 | 826.40 | 3418.39 | 1.33 |
| 11196.00 | 89.88 | 178.29 | 7419.26 | -3498.53 | 827.47 | 3503.38 | 2.37 |
| 11281.00 | 89.32 | 177.71 | 7419.86 | -3583.48 | 830.44 | 3588.34 | 0.95 |
| 11367.00 | 89.63 | 178.66 | 7420.64 | -3669.43 | 833.16 | 3674.31 | 1.16 |
| 11452.00 | 91.97 | 178.21 | 7419.46 | -3754.38 | 835.48 | 3759.27 | 2.80 |
| 11538.00 | 90.99 | 177.97 | 7417.24 | -3840.30 | 838.35 | 3845.21 | 1.17 |
| 11623.00 | 89.57 | 177.56 | 7416.82 | -3925.24 | 841.66 | 3930.16 | 1.74 |
| 11708.00 | 89.57 | 178.58 | 7417.46 | -4010.18 | 844.53 | 4015.12 | 1.20 |
| 11794.00 | 90.86 | 179.06 | 7417.14 | -4096.16 | 846.30 | 4101.11 | 1.60 |
| 11879.00 | 91.59 | 178.20 | 7415.32 | -4181.12 | 848.33 | 4186.08 | 1.33 |
| 11977.00 | 90.88 | 178.20 | 7413.21 | -4279.05 | 851.41 | 4284.02 | 0.72 |
| Projected to Total Depth: | | | | | | | |
| 12035.00 | 90.88 | 178.20 | 7412.32 | -4337.01 | 853.23 | 4342.00 | 0.00 |

Weatherford surveys from 1070 ft MD to 11977 ft MD.

TD at 12035 ft MD.

The total correction is 8.60 deg relative to True North.