

Well Name: **Cottonwood 33-33**

Surface Location: Cottonwood 12-33 Pad Sec. 33-T2N-R66W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4949.0

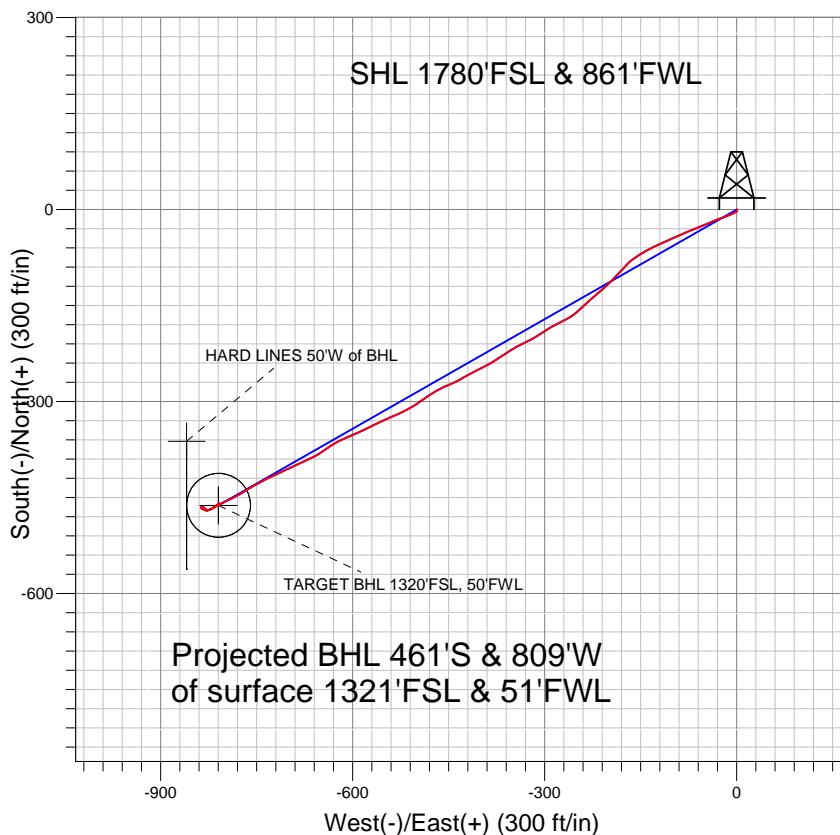
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1277249.42	3199049.96	40° 5' 32.096 N	104° 47' 18.697 W

Original Well Elev WELL @ 4964.0ft (Original Well Elev)

Slot



Anadarko, Weld County CO



LEGEND

- Cottonwood 33-33, Wellbore #1, Plan #1 (11-08-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
7767'MD & 7653'TVD @ 931' VS
0.6 deg Inc 136.5 deg AZ

Project: SEC.33-T2N-R66W
Site: Cottonwood 12-33 Pad Sec. 33-T2N-R66W
Well: Cottonwood 33-33
Plan: Wellbore #1



Directional

Anadarko, Weld County CO

SEC.33-T2N-R66W

Cottonwood 12-33 Pad Sec. 33-T2N-R66W

Cottonwood 33-33

Wellbore #1

Survey: Survey #1

Standard Survey Report

14 January, 2011

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Cottonwood 33-33
Project:	SEC.33-T2N-R66W	TVD Reference:	WELL @ 4964.0ft (Original Well Elev)
Site:	Cottonwood 12-33 Pad Sec. 33-T2N-R66W	MD Reference:	WELL @ 4964.0ft (Original Well Elev)
Well:	Cottonwood 33-33	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
1,211.0	14.60	243.10	1,196.3	-65.6	-143.1	156.5	1.90	1.89	-0.53
1,306.0	13.00	231.60	1,288.6	-77.7	-162.2	179.0	3.33	-1.68	-12.11
1,401.0	14.00	221.40	1,381.0	-93.0	-178.2	200.6	2.71	1.05	-10.74
1,496.0	14.60	225.20	1,473.0	-110.0	-194.3	223.2	1.17	0.63	4.00
1,592.0	15.00	229.50	1,565.9	-126.6	-212.3	247.2	1.22	0.42	4.48
1,686.0	15.40	227.30	1,656.6	-143.0	-230.7	271.4	0.75	0.43	-2.34
1,782.0	12.70	227.70	1,749.7	-158.7	-247.9	294.2	2.81	-2.81	0.42
1,877.0	11.30	241.90	1,842.6	-170.1	-263.8	313.8	3.43	-1.47	14.95
1,972.0	10.80	243.10	1,935.9	-178.5	-280.0	332.0	0.58	-0.53	1.26
2,070.0	10.70	237.70	2,032.1	-187.6	-295.9	350.2	1.03	-0.10	-5.51
2,165.0	10.60	237.90	2,125.5	-196.9	-310.7	367.8	0.11	-0.11	0.21
2,260.0	9.80	243.70	2,219.0	-205.1	-325.4	384.6	1.37	-0.84	6.11
2,355.0	10.10	242.90	2,312.6	-212.5	-340.0	400.9	0.35	0.32	-0.84
2,451.0	13.20	237.20	2,406.6	-222.3	-356.7	420.3	3.44	3.23	-5.94
2,546.0	11.90	236.50	2,499.3	-233.6	-374.0	440.9	1.38	-1.37	-0.74
2,641.0	11.60	242.40	2,592.3	-243.4	-390.7	460.2	1.30	-0.32	6.21
2,736.0	14.50	243.10	2,684.9	-253.2	-409.7	481.6	3.06	3.05	0.74
2,831.0	13.10	239.00	2,777.1	-264.1	-429.6	504.3	1.80	-1.47	-4.32
2,926.0	14.80	248.60	2,869.3	-274.1	-450.1	527.0	3.02	1.79	10.11
3,022.0	15.10	238.30	2,962.1	-285.2	-472.2	551.6	2.78	0.31	-10.73
3,117.0	16.00	234.60	3,053.6	-299.3	-493.4	577.0	1.41	0.95	-3.89
3,212.0	17.10	241.90	3,144.7	-313.4	-516.4	604.0	2.47	1.16	7.68
3,307.0	16.90	248.40	3,235.6	-325.1	-541.5	631.6	2.01	-0.21	6.84
3,402.0	17.40	242.70	3,326.3	-336.7	-567.0	659.4	1.85	0.53	-6.00
3,497.0	16.40	246.30	3,417.2	-348.6	-591.9	686.9	1.52	-1.05	3.79
3,592.0	17.10	245.30	3,508.2	-359.8	-616.9	714.0	0.80	0.74	-1.05
3,688.0	15.00	234.10	3,600.5	-373.0	-639.7	740.5	3.89	-2.19	-11.67
3,783.0	15.80	241.70	3,692.1	-386.3	-661.1	765.6	2.28	0.84	8.00
3,878.0	16.70	246.90	3,783.3	-397.8	-685.0	792.1	1.80	0.95	5.47
3,973.0	17.30	244.90	3,874.1	-409.2	-710.4	819.6	0.88	0.63	-2.11
4,068.0	15.90	243.10	3,965.2	-421.1	-734.8	846.6	1.57	-1.47	-1.89
4,163.0	13.80	238.30	4,057.0	-432.9	-756.0	871.0	2.56	-2.21	-5.05
4,259.0	13.50	241.00	4,150.3	-444.3	-775.6	893.6	0.73	-0.31	2.81
4,354.0	10.80	244.80	4,243.2	-453.5	-793.3	913.5	2.96	-2.84	4.00
4,449.0	8.00	242.30	4,336.9	-460.4	-807.2	929.0	2.98	-2.95	-2.63
4,544.0	7.30	242.00	4,431.0	-466.3	-818.4	941.6	0.74	-0.74	-0.32
4,639.0	2.80	248.90	4,525.6	-470.0	-825.9	949.9	4.77	-4.74	7.26
4,734.0	0.80	352.50	4,620.6	-470.1	-828.2	952.0	3.25	-2.11	109.05
4,830.0	1.40	319.90	4,716.6	-468.6	-829.0	951.9	0.88	0.63	-33.96
4,924.0	1.30	300.00	4,810.6	-467.2	-830.7	952.6	0.51	-0.11	-21.17
5,019.0	0.70	321.50	4,905.5	-466.2	-832.0	953.2	0.73	-0.63	22.63
5,113.4	0.40	318.83	4,999.9	-465.5	-832.5	953.3	0.32	-0.32	-2.83
TARGET BHL 1320'FSL, 50'FWL									
5,114.0	0.40	318.80	5,000.5	-465.5	-832.6	953.3	0.32	-0.31	-4.95
5,209.0	1.80	279.90	5,095.5	-465.0	-834.2	954.5	1.59	1.47	-40.95
5,305.0	0.80	269.20	5,191.5	-464.7	-836.4	956.2	1.07	-1.04	-11.15
5,400.0	0.50	163.70	5,286.5	-465.1	-836.9	956.9	1.11	-0.32	-111.05
5,495.0	0.50	186.30	5,381.5	-465.9	-836.9	957.2	0.21	0.00	23.79
5,590.0	0.70	138.20	5,476.5	-466.8	-836.5	957.4	0.55	0.21	-50.63
5,685.0	1.70	123.10	5,571.5	-468.0	-835.0	956.7	1.10	1.05	-15.89
5,780.0	1.80	111.20	5,666.4	-469.3	-832.4	955.1	0.40	0.11	-12.53
5,875.0	1.80	98.00	5,761.4	-470.0	-829.5	953.1	0.44	0.00	-13.89
5,971.0	1.80	77.30	5,857.3	-469.9	-826.6	950.5	0.67	0.00	-21.56
6,066.0	1.80	81.00	5,952.3	-469.3	-823.6	947.7	0.12	0.00	3.89

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
6,161.0	2.10	57.40	6,047.2	-468.2	-820.7	944.5	0.89	0.32	-24.84
6,256.0	1.10	52.60	6,142.2	-466.7	-818.5	941.9	1.06	-1.05	-5.05
6,351.0	0.70	49.10	6,237.2	-465.7	-817.3	940.4	0.42	-0.42	-3.68
6,446.0	1.20	48.00	6,332.2	-464.7	-816.2	938.9	0.53	0.53	-1.16
6,542.0	0.50	80.70	6,428.1	-464.0	-815.0	937.5	0.86	-0.73	34.06
6,637.0	0.90	41.50	6,523.1	-463.3	-814.1	936.4	0.63	0.42	-41.26
6,732.0	0.70	42.60	6,618.1	-462.4	-813.2	935.1	0.21	-0.21	1.16
6,827.0	0.80	61.40	6,713.1	-461.6	-812.2	933.9	0.28	0.11	19.79
6,922.0	0.70	65.00	6,808.1	-461.0	-811.1	932.7	0.12	-0.11	3.79
7,018.0	0.70	40.60	6,904.1	-460.3	-810.2	931.5	0.31	0.00	-25.42
7,113.0	0.50	18.30	6,999.1	-459.5	-809.7	930.7	0.32	-0.21	-23.47
7,208.0	0.30	60.30	7,094.1	-459.0	-809.4	930.1	0.36	-0.21	44.21
7,269.9	0.16	72.68	7,156.0	-458.9	-809.1	929.9	0.23	-0.22	20.00
TARGET CIRCLE 1320'FSL & 50'FWL									
7,303.0	0.10	92.80	7,189.1	-458.9	-809.1	929.8	0.23	-0.19	60.78
7,398.0	0.10	176.20	7,284.1	-459.0	-809.0	929.8	0.14	0.00	87.79
7,493.0	0.40	230.90	7,379.1	-459.3	-809.2	930.1	0.37	0.32	57.58
7,589.0	0.40	181.10	7,475.1	-459.8	-809.5	930.6	0.35	0.00	-51.88
7,716.0	0.60	136.50	7,602.1	-460.7	-809.0	930.7	0.33	0.16	-35.12
7,767.0	0.60	136.50	7,653.1	-461.1	-808.7	930.6	0.00	0.00	0.00
HARD LINES 50'W of BHL									

Checked By: _____ Approved By: _____ Date: _____