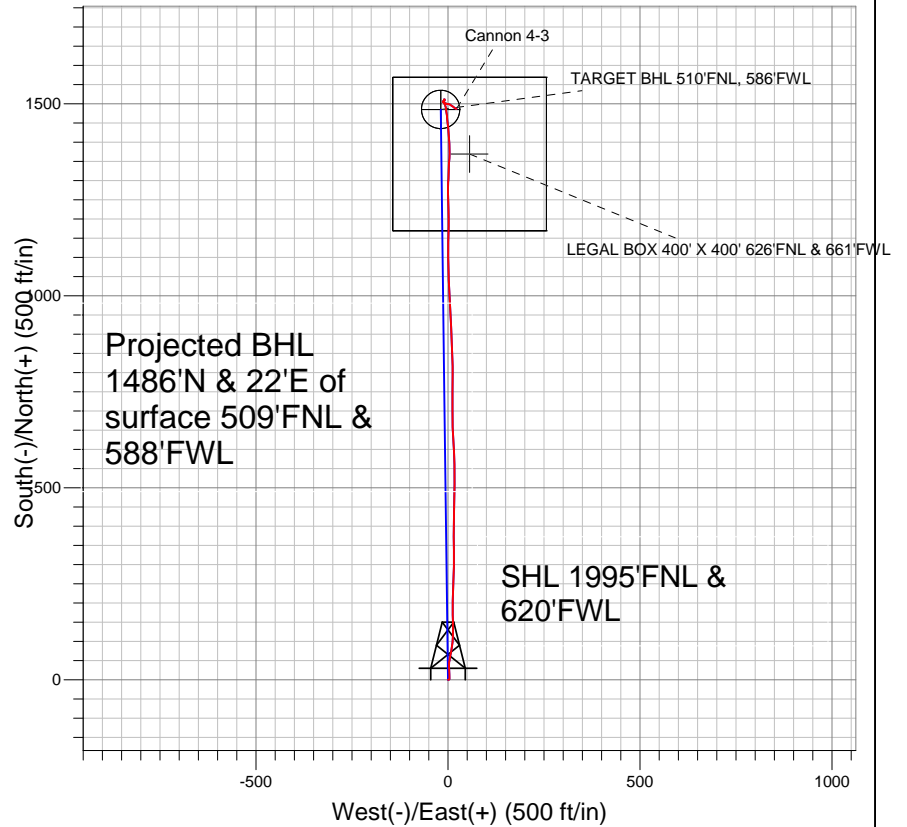


## Anadarko, Weld County CO



### LEGEND

- Cannon 4-3, Wellbore #1, Plan #2 (6-24-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
 8115'MD & 7799'TVD @ 1486'VS  
 1.9 deg Inc 114.8 deg AZ

Project: SEC.3-T2N-R65W  
 Site: Cannon 5-3 Pad Sec.3-T2N-R65W  
 Well: Cannon 4-3  
 Plan: Wellbore #1



## **Directional**

### **Anadarko, Weld County CO**

**SEC.3-T2N-R65W**

**Cannon 5-3 Pad Sec.3-T2N-R65W**

**Cannon 4-3**

**Wellbore #1**

**Survey: Survey #1**

### **Standard Survey Report**

**18 July, 2011**

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Cannon 4-3
<b>Project:</b>	SEC.3-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4862.0ft (Original Well Elev)
<b>Site:</b>	Cannon 5-3 Pad Sec.3-T2N-R65W	<b>MD Reference:</b>	WELL @ 4862.0ft (Original Well Elev)
<b>Well:</b>	Cannon 4-3	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.3-T2N-R65W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site	Cannon 5-3 Pad Sec.3-T2N-R65W				
Site Position:		Northing:	1,305,581.72 ft	Latitude:	40.169143
From:	Lat/Long	Easting:	3,235,593.03 ft	Longitude:	-104.656954
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.54 °

Well	Cannon 4-3					
Well Position	+N/-S	0.0 ft	Northing:	1,305,592.89 ft	Latitude:	40.169174
	+E/-W	0.0 ft	Easting:	3,235,581.75 ft	Longitude:	-104.656994
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,847.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/28/2011	8.78	66.88	53,018

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	4,400.0	0.0	0.0	359.26	

<b>Survey Program</b>	<b>Date</b>	7/18/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
144.0	8,115.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
144.0	1.20	94.20	144.0	-0.1	1.5	-0.1	0.83	0.83	0.00	
233.0	1.10	34.20	233.0	0.5	2.9	0.5	1.30	-0.11	-67.42	
324.0	1.80	359.80	323.9	2.7	3.4	2.6	1.19	0.77	-37.80	
415.0	2.90	358.30	414.9	6.4	3.3	6.4	1.21	1.21	-1.65	
507.0	4.00	1.80	506.7	11.9	3.4	11.9	1.22	1.20	3.80	
599.0	5.20	356.10	598.4	19.3	3.2	19.3	1.39	1.30	-6.20	
709.0	7.00	0.10	707.8	31.0	2.8	30.9	1.68	1.64	3.64	
790.0	6.40	0.60	788.2	40.4	2.9	40.4	0.74	-0.74	0.62	
881.0	7.40	8.90	878.6	51.3	3.9	51.2	1.55	1.10	9.12	
976.0	8.90	10.90	972.6	64.6	6.2	64.5	1.61	1.58	2.11	
1,071.0	10.80	10.50	1,066.2	80.5	9.2	80.4	2.00	2.00	-0.42	
1,166.0	12.60	5.80	1,159.2	99.6	11.9	99.4	2.14	1.89	-4.95	

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Cannon 4-3
<b>Project:</b>	SEC.3-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4862.0ft (Original Well Elev)
<b>Site:</b>	Cannon 5-3 Pad Sec.3-T2N-R65W	<b>MD Reference:</b>	WELL @ 4862.0ft (Original Well Elev)
<b>Well:</b>	Cannon 4-3	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)
1,261.0	15.50	0.60	1,251.4	122.6	13.1	122.4	3.33	3.05	-5.47
1,356.0	18.50	358.80	1,342.2	150.4	12.9	150.2	3.21	3.16	-1.89
1,451.0	20.60	359.00	1,431.7	182.2	12.3	182.0	2.21	2.21	0.21
1,547.0	22.50	1.40	1,521.0	217.4	12.4	217.2	2.18	1.98	2.50
1,642.0	24.00	2.90	1,608.3	254.9	13.8	254.7	1.70	1.58	1.58
1,737.0	26.40	1.40	1,694.3	295.3	15.3	295.1	2.61	2.53	-1.58
1,832.0	27.40	358.50	1,779.0	338.3	15.3	338.0	1.74	1.05	-3.05
1,927.0	28.90	0.30	1,862.7	383.1	14.8	382.8	1.81	1.58	1.89
2,022.0	29.20	1.50	1,945.8	429.2	15.6	429.0	0.69	0.32	1.26
2,118.0	28.40	1.30	2,029.9	475.4	16.7	475.2	0.84	-0.83	-0.21
2,213.0	28.10	359.90	2,113.6	520.4	17.2	520.1	0.77	-0.32	-1.47
2,309.0	29.00	358.30	2,197.9	566.3	16.4	566.0	1.23	0.94	-1.67
2,405.0	28.70	356.30	2,282.0	612.5	14.3	612.3	1.05	-0.31	-2.08
2,500.0	28.30	358.10	2,365.5	657.8	12.0	657.6	1.00	-0.42	1.89
2,596.0	28.00	0.00	2,450.1	703.1	11.3	702.9	0.98	-0.31	1.98
2,691.0	28.60	0.60	2,533.8	748.1	11.5	747.9	0.70	0.63	0.63
2,786.0	28.90	0.30	2,617.1	793.8	11.9	793.6	0.35	0.32	-0.32
2,881.0	29.10	357.40	2,700.2	839.8	11.0	839.6	1.49	0.21	-3.05
2,977.0	31.00	357.90	2,783.3	887.9	9.0	887.7	2.00	1.98	0.52
3,072.0	29.70	357.60	2,865.2	935.8	7.1	935.7	1.38	-1.37	-0.32
3,167.0	30.10	356.80	2,947.6	983.1	4.8	983.0	0.59	0.42	-0.84
3,262.0	29.10	357.80	3,030.2	1,030.0	2.6	1,029.9	1.17	-1.05	1.05
3,357.0	27.50	358.50	3,113.8	1,075.0	1.1	1,074.9	1.72	-1.68	0.74
3,453.0	26.40	359.60	3,199.4	1,118.5	0.4	1,118.4	1.26	-1.15	1.15
3,548.0	25.80	1.80	3,284.7	1,160.3	0.9	1,160.2	1.20	-0.63	2.32
3,643.0	24.80	359.90	3,370.6	1,200.9	1.5	1,200.8	1.36	-1.05	-2.00
3,738.0	21.80	357.40	3,457.9	1,238.4	0.7	1,238.3	3.32	-3.16	-2.63
3,833.0	20.60	0.80	3,546.4	1,272.8	0.1	1,272.7	1.81	-1.26	3.58
3,928.0	17.60	2.50	3,636.2	1,303.8	1.0	1,303.7	3.21	-3.16	1.79
4,023.0	16.60	2.00	3,727.0	1,331.8	2.1	1,331.6	1.06	-1.05	-0.53
4,118.0	15.40	4.10	3,818.3	1,357.9	3.4	1,357.7	1.40	-1.26	2.21
4,213.0	15.60	357.50	3,909.9	1,383.2	3.8	1,383.1	1.87	0.21	-6.95
4,309.0	15.30	357.40	4,002.4	1,408.8	2.6	1,408.6	0.31	-0.31	-0.10
4,404.0	13.20	353.40	4,094.5	1,432.1	0.8	1,432.0	2.44	-2.21	-4.21
4,499.0	11.90	355.20	4,187.2	1,452.6	-1.2	1,452.5	1.43	-1.37	1.89
4,594.0	10.00	351.80	4,280.5	1,470.6	-3.2	1,470.5	2.11	-2.00	-3.58
4,689.0	7.80	353.70	4,374.3	1,485.1	-5.1	1,485.1	2.34	-2.32	2.00
4,714.9	7.07	350.23	4,400.0	1,488.4	-5.6	1,488.4	3.32	-2.83	-13.40
<b>TARGET BHL 510'FNL, 586'FWL</b>									
4,784.0	5.30	336.50	4,468.7	1,495.6	-7.6	1,495.5	3.32	-2.56	-19.87
4,880.0	2.90	332.90	4,564.5	1,501.8	-10.5	1,501.8	2.51	-2.50	-3.75
4,975.0	1.90	285.50	4,659.4	1,504.3	-13.1	1,504.4	2.25	-1.05	-49.89
5,070.0	0.50	90.00	4,754.4	1,504.8	-14.2	1,504.8	2.51	-1.47	173.16
5,165.0	0.70	50.40	4,849.4	1,505.1	-13.3	1,505.2	0.47	0.21	-41.68
5,259.0	0.50	7.90	4,943.4	1,505.9	-12.8	1,505.9	0.50	-0.21	-45.21
5,355.0	0.40	349.70	5,039.3	1,506.7	-12.8	1,506.7	0.18	-0.10	-18.96
5,450.0	0.60	44.60	5,134.3	1,507.3	-12.5	1,507.4	0.52	0.21	57.79
5,545.0	1.20	56.50	5,229.3	1,508.2	-11.3	1,508.3	0.66	0.63	12.53
5,640.0	1.80	67.00	5,324.3	1,509.4	-9.1	1,509.4	0.69	0.63	11.05
5,735.0	1.80	311.00	5,419.3	1,510.9	-8.9	1,510.9	3.21	0.00	-122.11
5,831.0	0.90	220.00	5,515.3	1,511.3	-10.5	1,511.4	2.11	-0.94	-94.79
5,926.0	0.80	135.30	5,610.3	1,510.3	-10.5	1,510.3	1.21	-0.11	-89.16
6,021.0	0.50	181.00	5,705.2	1,509.4	-10.1	1,509.4	0.61	-0.32	48.11
6,116.0	0.60	185.80	5,800.2	1,508.5	-10.1	1,508.5	0.12	0.11	5.05

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Cannon 4-3
<b>Project:</b>	SEC.3-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4862.0ft (Original Well Elev)
<b>Site:</b>	Cannon 5-3 Pad Sec.3-T2N-R65W	<b>MD Reference:</b>	WELL @ 4862.0ft (Original Well Elev)
<b>Well:</b>	Cannon 4-3	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	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)	
6,211.0	0.80	185.60	5,895.2	1,507.4	-10.2	1,507.4	0.21	0.21	-0.21	
6,306.0	0.70	170.70	5,990.2	1,506.1	-10.2	1,506.1	0.23	-0.11	-15.68	
6,402.0	0.80	178.10	6,086.2	1,504.9	-10.1	1,504.9	0.14	0.10	7.71	
6,497.0	0.70	158.10	6,181.2	1,503.7	-9.9	1,503.7	0.29	-0.11	-21.05	
6,592.0	0.60	142.50	6,276.2	1,502.7	-9.3	1,502.7	0.21	-0.11	-16.42	
6,687.0	0.70	127.90	6,371.2	1,502.0	-8.6	1,502.0	0.20	0.11	-15.37	
6,782.0	0.80	116.40	6,466.2	1,501.3	-7.5	1,501.3	0.19	0.11	-12.11	
6,878.0	0.70	113.20	6,562.2	1,500.8	-6.4	1,500.8	0.11	-0.10	-3.33	
6,973.0	0.80	107.70	6,657.2	1,500.4	-5.2	1,500.3	0.13	0.11	-5.79	
7,068.0	0.80	112.80	6,752.2	1,499.9	-4.0	1,499.8	0.07	0.00	5.37	
7,163.0	1.00	101.30	6,847.2	1,499.5	-2.6	1,499.4	0.28	0.21	-12.11	
7,169.6	1.01	100.40	6,853.7	1,499.5	-2.4	1,499.4	0.25	0.08	-13.72	
<b>TARGET CIRCLE 510'FNL &amp; 586'FWL</b>										
7,171.1	1.01	100.19	6,855.3	1,499.5	-2.4	1,499.4	0.25	0.08	-13.63	
<b>LEGAL BOX 400' X 400' 626'FNL &amp; 661'FWL</b>										
7,258.0	1.10	89.30	6,942.1	1,499.3	-0.8	1,499.2	0.25	0.11	-12.53	
7,353.0	0.50	54.30	7,037.1	1,499.6	0.4	1,499.5	0.79	-0.63	-36.84	
7,449.0	1.30	118.40	7,133.1	1,499.3	1.7	1,499.2	1.22	0.83	66.77	
7,544.0	1.10	114.10	7,228.1	1,498.4	3.5	1,498.3	0.23	-0.21	-4.53	
7,639.0	2.60	123.30	7,323.0	1,496.9	6.1	1,496.7	1.60	1.58	9.68	
7,734.0	2.70	125.90	7,417.9	1,494.4	9.7	1,494.1	0.16	0.11	2.74	
7,829.0	2.50	125.90	7,512.8	1,491.9	13.2	1,491.6	0.21	-0.21	0.00	
7,924.0	2.00	129.00	7,607.8	1,489.6	16.2	1,489.3	0.54	-0.53	3.26	
8,065.0	1.90	114.80	7,748.7	1,487.1	20.2	1,486.7	0.35	-0.07	-10.07	
8,115.0	1.90	114.80	7,798.7	1,486.4	21.7	1,486.0	0.00	0.00	0.00	

Checked By: _____	Approved By: _____	Date: _____
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