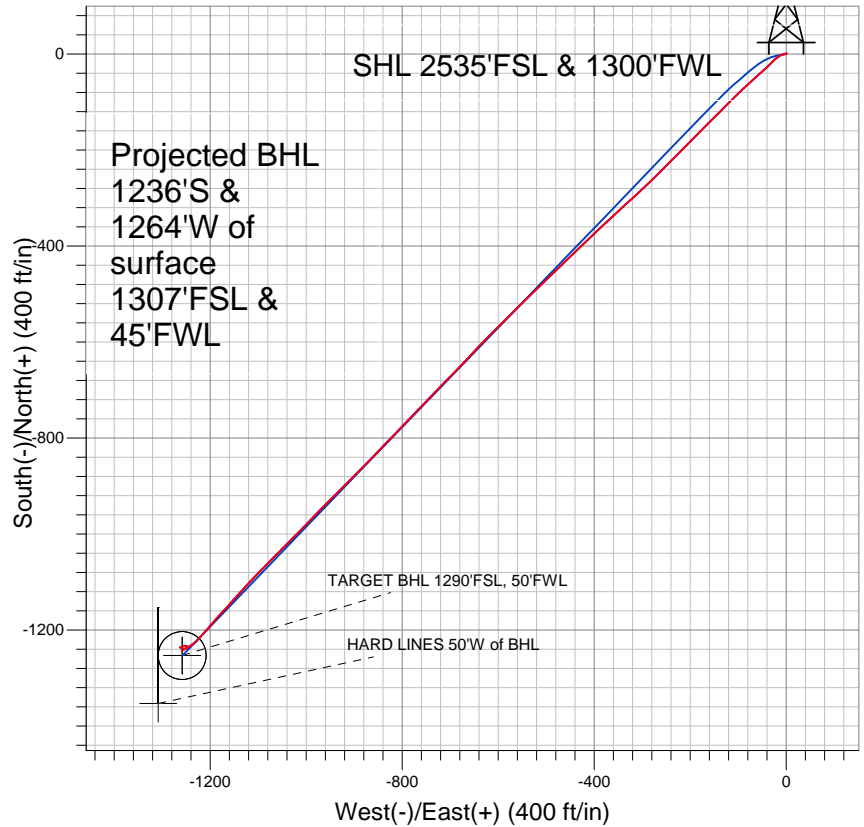


## Anadarko, Weld County CO



### LEGEND

- △ Rural 33-31, Wellbore #1, Plan #2 (1-12-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
 7781'MD & 7461'TVD @ 1768' VS  
 0.4 deg Inc 242.2 deg AZ

Project: SEC.31-T4N-R65W  
 Site: Rural 22-31 Pad Sec.31-T4N-R65W  
 Well: Rural 33-31  
 Plan: Wellbore #1



## **Directional**

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

**SEC.31-T4N-R65W**

**Rural 22-31 Pad Sec.31-T4N-R65W**

**Rural 33-31**

**Wellbore #1**

**Survey: Survey #1**

### **Standard Survey Report**

**03 February, 2011**

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Rural 33-31
<b>Project:</b>	SEC.31-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4894.0ft (Original Well Elev)
<b>Site:</b>	Rural 22-31 Pad Sec.31-T4N-R65W	<b>MD Reference:</b>	WELL @ 4894.0ft (Original Well Elev)
<b>Well:</b>	Rural 33-31	<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.31-T4N-R65W		
<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

<b>Site</b>	Rural 22-31 Pad Sec.31-T4N-R65W		
<b>Site Position:</b>		<b>Northing:</b>	1,341,693.95 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,220,187.02 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40° 16' 7.176 N
		<b>Longitude:</b>	104° 42' 39.348 W
		<b>Grid Convergence:</b>	0.51 °

<b>Well</b>	Rural 33-31		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<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	1/11/2011	8.88	66.97	53,113

<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>	
	0.0	0.0	0.0	225.13	

<b>Survey Program</b>	<b>Date</b>	2/3/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
144.0	7,781.0	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	0.80	40.50	144.0	0.8	0.7	-1.0	0.56	0.56	0.00	
237.0	0.80	271.10	237.0	1.3	0.4	-1.2	1.56	0.00	-139.14	
330.0	3.20	252.10	329.9	0.5	-2.7	1.6	2.64	2.58	-20.43	
407.0	4.30	252.50	406.8	-1.0	-7.5	6.0	1.43	1.43	0.52	
496.0	5.80	241.80	495.4	-4.2	-14.6	13.3	1.98	1.69	-12.02	
585.0	7.20	225.40	583.8	-10.2	-22.6	23.2	2.60	1.57	-18.43	
658.0	7.60	225.40	656.2	-16.8	-29.3	32.6	0.55	0.55	0.00	
749.0	8.50	226.50	746.3	-25.7	-38.4	45.3	1.00	0.99	1.21	
854.0	11.70	228.90	849.7	-38.0	-52.1	63.7	3.07	3.05	2.29	
942.0	13.60	227.80	935.6	-50.8	-66.5	83.0	2.18	2.16	-1.25	
1,031.0	15.00	227.10	1,021.8	-65.7	-82.7	104.9	1.58	1.57	-0.79	
1,120.0	16.30	225.40	1,107.5	-82.3	-100.0	128.9	1.55	1.46	-1.91	

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Rural 33-31
<b>Project:</b>	SEC.31-T4N-R65W	<b>TVD Reference:</b>	WELL @ 4894.0ft (Original Well Elev)
<b>Site:</b>	Rural 22-31 Pad Sec.31-T4N-R65W	<b>MD Reference:</b>	WELL @ 4894.0ft (Original Well Elev)
<b>Well:</b>	Rural 33-31	<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)
1,208.0	18.50	225.30	1,191.5	-100.8	-118.7	155.3	2.50	2.50	-0.11
1,297.0	20.30	225.10	1,275.4	-121.6	-139.7	184.8	2.02	2.02	-0.22
1,385.0	21.70	224.70	1,357.6	-144.0	-161.9	216.3	1.60	1.59	-0.45
1,474.0	22.60	225.40	1,440.0	-167.7	-185.7	249.9	1.05	1.01	0.79
1,563.0	23.70	224.90	1,521.8	-192.4	-210.5	284.9	1.26	1.24	-0.56
1,651.0	23.60	224.50	1,602.4	-217.4	-235.3	320.2	0.21	-0.11	-0.45
1,740.0	22.70	223.80	1,684.3	-242.6	-259.7	355.2	1.06	-1.01	-0.79
1,829.0	22.90	227.20	1,766.3	-266.7	-284.3	389.6	1.50	0.22	3.82
1,917.0	23.10	228.30	1,847.3	-289.8	-309.7	424.0	0.54	0.23	1.25
2,006.0	22.90	225.60	1,929.3	-313.6	-335.2	458.7	1.21	-0.22	-3.03
2,095.0	22.70	228.00	2,011.3	-337.2	-360.3	493.2	1.07	-0.22	2.70
2,183.0	22.50	227.00	2,092.5	-360.0	-385.2	527.0	0.49	-0.23	-1.14
2,272.0	22.90	225.90	2,174.7	-383.7	-410.1	561.3	0.66	0.45	-1.24
2,360.0	23.30	226.40	2,255.6	-407.6	-435.0	595.9	0.51	0.45	0.57
2,449.0	23.20	225.90	2,337.4	-431.9	-460.3	631.0	0.25	-0.11	-0.56
2,538.0	22.90	226.30	2,419.3	-456.1	-485.5	665.8	0.38	-0.34	0.45
2,626.0	23.40	226.00	2,500.2	-480.1	-510.4	700.4	0.58	0.57	-0.34
2,715.0	23.10	225.30	2,581.9	-504.6	-535.5	735.5	0.46	-0.34	-0.79
2,804.0	24.60	225.40	2,663.3	-529.9	-561.1	771.5	1.69	1.69	0.11
2,892.0	25.40	225.80	2,743.1	-555.9	-587.7	808.7	0.93	0.91	0.45
2,981.0	25.90	224.40	2,823.3	-583.1	-615.0	847.2	0.88	0.56	-1.57
3,070.0	26.00	223.40	2,903.4	-611.2	-642.0	886.2	0.50	0.11	-1.12
3,158.0	24.50	223.70	2,982.9	-638.4	-667.9	923.7	1.71	-1.70	0.34
3,247.0	22.40	223.60	3,064.6	-664.0	-692.3	959.1	2.36	-2.36	-0.11
3,336.0	22.50	224.50	3,146.8	-688.4	-715.9	993.1	0.40	0.11	1.01
3,424.0	21.40	224.60	3,228.5	-711.9	-739.0	1,026.0	1.25	-1.25	0.11
3,513.0	20.40	223.70	3,311.6	-734.7	-761.1	1,057.7	1.18	-1.12	-1.01
3,601.0	20.30	222.70	3,394.1	-757.0	-782.1	1,088.3	0.41	-0.11	-1.14
3,690.0	21.00	223.80	3,477.4	-779.8	-803.6	1,119.7	0.90	0.79	1.24
3,779.0	21.40	224.20	3,560.4	-803.0	-825.9	1,151.8	0.48	0.45	0.45
3,867.0	20.50	225.00	3,642.6	-825.4	-848.0	1,183.3	1.07	-1.02	0.91
3,956.0	21.00	223.50	3,725.8	-848.0	-870.0	1,214.8	0.82	0.56	-1.69
4,046.0	21.50	224.60	3,809.7	-871.4	-892.7	1,247.4	0.71	0.56	1.22
4,133.0	22.10	225.60	3,890.4	-894.2	-915.6	1,279.8	0.81	0.69	1.15
4,222.0	22.20	224.80	3,972.9	-917.9	-939.4	1,313.3	0.36	0.11	-0.90
4,311.0	22.10	225.20	4,055.3	-941.6	-963.1	1,346.9	0.20	-0.11	0.45
4,399.0	21.00	223.30	4,137.2	-964.7	-985.7	1,379.2	1.48	-1.25	-2.16
4,488.0	20.10	224.00	4,220.5	-987.3	-1,007.3	1,410.4	1.05	-1.01	0.79
4,576.0	19.60	225.22	4,303.3	-1,008.6	-1,028.2	1,440.3	0.74	-0.57	1.39
4,665.0	20.30	224.40	4,386.9	-1,030.2	-1,049.6	1,470.7	0.85	0.79	-0.92
4,754.0	20.00	225.50	4,470.5	-1,051.9	-1,071.3	1,501.3	0.54	-0.34	1.24
4,842.0	20.50	224.60	4,553.0	-1,073.4	-1,092.8	1,531.8	0.67	0.57	-1.02
4,931.0	20.60	222.00	4,636.4	-1,096.1	-1,114.3	1,563.0	1.03	0.11	-2.92
5,020.0	20.40	222.40	4,719.7	-1,119.2	-1,135.2	1,594.1	0.27	-0.22	0.45
5,108.0	18.40	221.60	4,802.7	-1,140.9	-1,154.8	1,623.3	2.29	-2.27	-0.91
5,197.0	16.10	223.20	4,887.7	-1,160.4	-1,172.5	1,649.7	2.64	-2.58	1.80
5,286.0	13.90	222.30	4,973.7	-1,177.3	-1,188.2	1,672.7	2.49	-2.47	-1.01
5,374.0	12.70	219.60	5,059.3	-1,192.6	-1,201.5	1,692.9	1.54	-1.36	-3.07
5,463.0	10.50	222.50	5,146.5	-1,206.1	-1,213.2	1,710.7	2.56	-2.47	3.26
5,552.0	8.70	223.70	5,234.3	-1,217.0	-1,223.3	1,725.5	2.03	-2.02	1.35
5,640.0	6.80	227.00	5,321.5	-1,225.3	-1,231.7	1,737.4	2.22	-2.16	3.75
5,729.0	5.00	235.60	5,410.0	-1,231.1	-1,238.8	1,746.5	2.25	-2.02	9.66
5,817.0	4.10	241.70	5,497.7	-1,234.8	-1,244.7	1,753.3	1.16	-1.02	6.93
5,906.0	3.40	241.90	5,586.5	-1,237.5	-1,249.8	1,758.8	0.79	-0.79	0.22

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<b>Well:</b>	Rural 33-31	<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)
5,995.0	3.10	246.30	5,675.4	-1,239.7	-1,254.4	1,763.6	0.44	-0.34	4.94
6,128.0	1.10	250.70	5,808.3	-1,241.6	-1,258.9	1,768.1	1.51	-1.50	3.31
6,261.0	0.20	126.50	5,941.3	-1,242.2	-1,259.9	1,769.2	0.92	-0.68	-93.38
6,319.8	0.27	101.56	6,000.0	-1,242.2	-1,259.7	1,769.1	0.21	0.12	-42.46
<b>TARGET BHL 1290'FSL, 50'FWL</b>									
6,394.0	0.40	86.10	6,074.3	-1,242.3	-1,259.2	1,768.8	0.21	0.17	-20.82
6,527.0	1.30	58.00	6,207.2	-1,241.4	-1,257.5	1,767.0	0.73	0.68	-21.13
6,660.0	4.40	62.60	6,340.1	-1,238.3	-1,251.7	1,760.7	2.34	2.33	3.46
6,792.0	0.40	29.60	6,471.9	-1,235.5	-1,247.0	1,755.4	3.08	-3.03	-25.00
6,925.0	1.00	308.90	6,604.9	-1,234.4	-1,247.6	1,755.1	0.76	0.45	-60.68
7,058.0	1.30	283.60	6,737.9	-1,233.3	-1,250.0	1,756.0	0.44	0.23	-19.02
7,191.0	1.80	262.40	6,870.8	-1,233.3	-1,253.5	1,758.5	0.57	0.38	-15.94
7,324.0	1.40	246.10	7,003.8	-1,234.2	-1,257.1	1,761.6	0.45	-0.30	-12.26
7,331.4	1.38	245.70	7,011.2	-1,234.3	-1,257.3	1,761.8	0.27	-0.24	-5.42
<b>TARGET CIRCLE 1290'FSL &amp; 50'FWL</b>									
7,457.0	1.10	237.00	7,136.8	-1,235.5	-1,259.6	1,764.4	0.27	-0.22	-6.93
7,590.0	0.80	270.60	7,269.7	-1,236.2	-1,261.6	1,766.3	0.47	-0.23	25.26
7,723.0	0.70	278.90	7,402.7	-1,236.1	-1,263.4	1,767.4	0.11	-0.08	6.24
7,735.0	0.40	242.20	7,414.7	-1,236.1	-1,263.5	1,767.5	3.74	-2.50	-305.83
7,781.0	0.40	242.20	7,460.7	-1,236.2	-1,263.8	1,767.8	0.00	0.00	0.00
<b>HARD LINES 50'W of BHL</b>									

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_