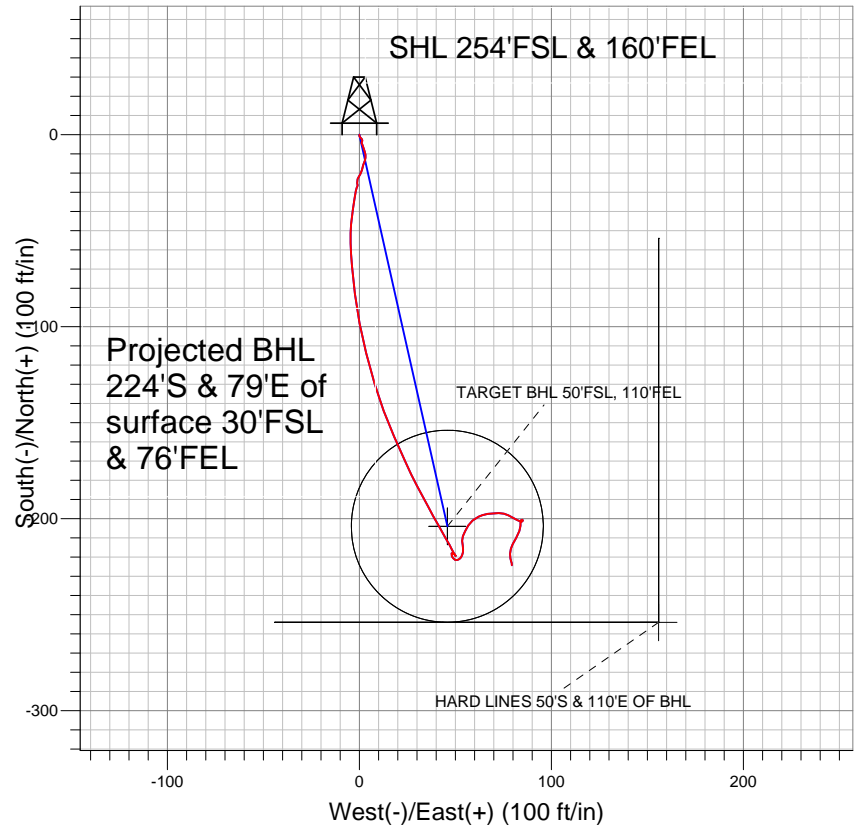
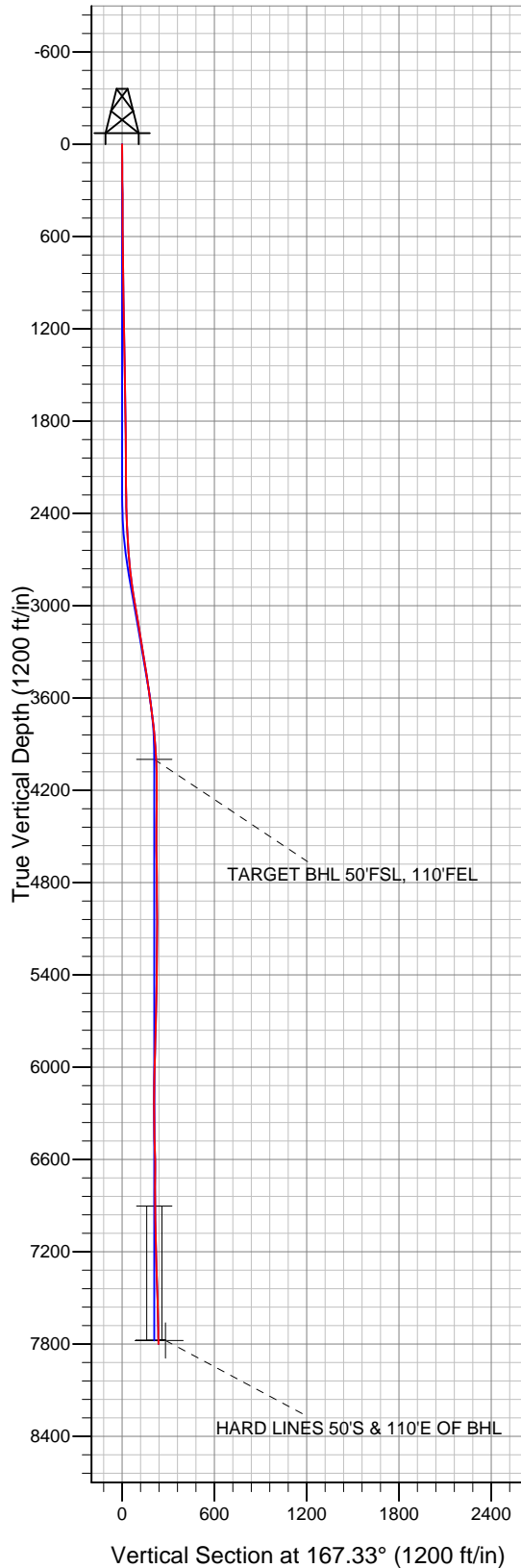


## Anadarko, Weld County CO



### LEGEND

- Thomason 38-9, Wellbore #1, Plan #1 (3-18-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
 7815'MD & 7800'TVD @ 236'VS  
 1.3 deg Inc 173.0 deg AZ

Project: SEC.9-T2N-R65W  
 Site: Thomason 16-9 Pad Sec.9-T2N-R65W  
 Well: Thomason 38-9  
 Plan: Wellbore #1



## **Anadarko, Weld County CO**

**SEC.9-T2N-R65W**

**Thomason 16-9 Pad Sec.9-T2N-R65W**

**Thomason 38-9**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**02 May, 2011**



<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Thomason 38-9
<b>Project:</b>	SEC.9-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4882.0ft (Original Well Elev)
<b>Site:</b>	Thomason 16-9 Pad Sec.9-T2N-R65W	<b>MD Reference:</b>	WELL @ 4882.0ft (Original Well Elev)
<b>Well:</b>	Thomason 38-9	<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.9-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	Thomason 16-9 Pad Sec.9-T2N-R65W				
Site Position:		Northing:	1,297,390.53ft	Latitude:	40.146681
From:	Lat/Long	Easting:	3,234,713.40ft	Longitude:	-104.660379
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.54 °

Well	Thomason 38-9					
Well Position	+N/-S	0.0 ft	Northing:	1,297,390.94 ft	Latitude:	40.146681
	+E/-W	0.0 ft	Easting:	3,234,761.48 ft	Longitude:	-104.660207
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,867.0 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	3/18/2011	8.82	66.87	53,035

<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	167.33	

<b>Survey Program</b>	<b>Date</b>	5/2/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
144.0	7,815.0	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	0.40	173.70	144.0	-0.5	0.1	0.5	0.28	0.28	0.00	
233.0	0.50	149.90	233.0	-1.1	0.3	1.2	0.24	0.11	-26.74	
324.0	0.40	132.00	324.0	-1.7	0.7	1.8	0.19	-0.11	-19.67	
415.0	0.50	138.90	415.0	-2.2	1.2	2.4	0.12	0.11	7.58	
507.0	0.50	176.00	507.0	-2.9	1.5	3.2	0.35	0.00	40.33	
599.0	0.30	200.20	599.0	-3.5	1.5	3.8	0.28	-0.22	26.30	
691.0	0.40	200.50	691.0	-4.1	1.3	4.2	0.11	0.11	0.33	
730.0	0.60	160.90	730.0	-4.4	1.3	4.6	0.99	0.51	-101.54	
789.0	0.80	157.40	789.0	-5.1	1.5	5.3	0.35	0.34	-5.93	
881.0	0.90	162.50	881.0	-6.3	2.0	6.6	0.14	0.11	5.54	
976.0	0.90	165.80	976.0	-7.8	2.4	8.1	0.05	0.00	3.47	
1,071.0	0.80	156.80	1,070.9	-9.1	2.9	9.5	0.18	-0.11	-9.47	

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Thomason 38-9
<b>Project:</b>	SEC.9-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4882.0ft (Original Well Elev)
<b>Site:</b>	Thomason 16-9 Pad Sec.9-T2N-R65W	<b>MD Reference:</b>	WELL @ 4882.0ft (Original Well Elev)
<b>Well:</b>	Thomason 38-9	<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)
1,166.0	1.00	169.70	1,165.9	-10.5	3.3	11.0	0.30	0.21	13.58
1,261.0	0.80	190.90	1,260.9	-12.0	3.3	12.4	0.41	-0.21	22.32
1,356.0	1.20	199.80	1,355.9	-13.6	2.8	13.9	0.45	0.42	9.37
1,451.0	1.60	197.40	1,450.9	-15.8	2.1	15.9	0.43	0.42	-2.53
1,547.0	1.60	192.70	1,546.8	-18.4	1.4	18.2	0.14	0.00	-4.90
1,642.0	1.20	211.30	1,641.8	-20.5	0.6	20.2	0.63	-0.42	19.58
1,737.0	1.30	210.30	1,736.8	-22.3	-0.5	21.7	0.11	0.11	-1.05
1,832.0	0.40	174.30	1,831.8	-23.6	-1.0	22.8	1.06	-0.95	-37.89
1,927.0	0.60	185.70	1,926.8	-24.4	-1.0	23.6	0.23	0.21	12.00
2,023.0	0.40	192.60	2,022.8	-25.2	-1.1	24.4	0.22	-0.21	7.19
2,118.0	0.40	150.10	2,117.8	-25.8	-1.0	25.0	0.31	0.00	-44.74
2,213.0	0.20	182.90	2,212.8	-26.3	-0.9	25.4	0.27	-0.21	34.53
2,309.0	0.60	203.70	2,308.8	-26.9	-1.1	26.0	0.44	0.42	21.67
2,405.0	2.30	193.00	2,404.7	-29.2	-1.7	28.2	1.79	1.77	-11.15
2,501.0	3.00	188.20	2,500.6	-33.6	-2.5	32.2	0.76	0.73	-5.00
2,596.0	3.80	188.20	2,595.5	-39.2	-3.3	37.5	0.84	0.84	0.00
2,691.0	5.30	185.90	2,690.2	-46.7	-4.2	44.6	1.59	1.58	-2.42
2,786.0	6.60	178.50	2,784.6	-56.5	-4.5	54.1	1.59	1.37	-7.79
2,882.0	8.00	174.40	2,879.9	-68.7	-3.7	66.2	1.56	1.46	-4.27
2,977.0	9.40	173.80	2,973.8	-82.9	-2.2	80.4	1.48	1.47	-0.63
3,072.0	9.50	168.70	3,067.5	-98.3	0.1	96.0	0.89	0.11	-5.37
3,167.0	9.60	166.10	3,161.2	-113.7	3.6	111.7	0.47	0.11	-2.74
3,262.0	10.10	163.10	3,254.8	-129.4	7.9	128.0	0.75	0.53	-3.16
3,357.0	8.40	159.60	3,348.5	-143.9	12.7	143.1	1.88	-1.79	-3.68
3,453.0	9.00	156.50	3,443.4	-157.3	18.2	157.5	0.79	0.63	-3.23
3,548.0	8.70	155.60	3,537.3	-170.7	24.1	171.8	0.35	-0.32	-0.95
3,643.0	7.80	152.30	3,631.3	-182.9	30.1	185.1	1.07	-0.95	-3.47
3,738.0	7.10	152.00	3,725.5	-193.8	35.8	197.0	0.74	-0.74	-0.32
3,833.0	5.60	149.70	3,819.9	-203.0	40.9	207.0	1.60	-1.58	-2.42
3,928.0	4.80	150.80	3,914.5	-210.5	45.2	215.3	0.85	-0.84	1.16
4,012.9	3.10	151.72	3,999.2	-215.6	48.0	220.9	2.00	-2.00	1.08
<b>TARGET BHL 50'FSL, 110'FEL</b>									
4,023.0	2.90	151.90	4,009.3	-216.1	48.3	221.4	2.00	-2.00	1.79
4,118.0	1.20	148.90	4,104.2	-219.0	49.9	224.6	1.79	-1.79	-3.16
4,213.0	0.80	328.60	4,199.2	-219.3	50.1	225.0	2.11	-0.42	189.16
4,309.0	0.50	308.40	4,295.2	-218.5	49.4	224.0	0.39	-0.31	-21.04
4,404.0	0.50	293.20	4,390.2	-218.1	48.7	223.4	0.14	0.00	-16.00
4,499.0	0.10	247.30	4,485.2	-217.9	48.2	223.2	0.46	-0.42	-48.32
4,594.0	0.20	208.90	4,580.2	-218.1	48.1	223.3	0.14	0.11	-40.42
4,689.0	0.60	167.20	4,675.2	-218.7	48.1	224.0	0.49	0.42	-43.89
4,785.0	0.40	167.40	4,771.2	-219.6	48.3	224.8	0.21	-0.21	0.21
4,880.0	1.00	146.60	4,866.2	-220.6	48.8	225.9	0.68	0.63	-21.89
4,975.0	0.80	105.90	4,961.2	-221.5	49.9	227.0	0.69	-0.21	-42.84
5,070.0	0.70	74.20	5,056.2	-221.5	51.1	227.3	0.44	-0.11	-33.37
5,165.0	0.70	53.40	5,151.2	-221.0	52.1	227.0	0.27	0.00	-21.89
5,260.0	0.70	35.20	5,246.2	-220.2	52.9	226.4	0.23	0.00	-19.16
5,355.0	0.90	24.10	5,341.2	-219.0	53.6	225.4	0.27	0.21	-11.68
5,450.0	0.90	8.00	5,436.2	-217.6	54.0	224.1	0.27	0.00	-16.95
5,545.0	1.10	357.20	5,531.2	-215.9	54.0	222.5	0.29	0.21	-11.37
5,640.0	1.30	352.60	5,626.1	-213.9	53.9	220.6	0.23	0.21	-4.84
5,735.0	1.50	353.90	5,721.1	-211.6	53.6	218.2	0.21	0.21	1.37
5,831.0	1.60	20.90	5,817.1	-209.1	53.9	215.9	0.76	0.10	28.13
5,926.0	1.90	27.40	5,912.0	-206.5	55.1	213.6	0.38	0.32	6.84
6,021.0	2.10	32.20	6,007.0	-203.6	56.8	211.1	0.27	0.21	5.05

<b>Company:</b>	Anadarko, Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Thomason 38-9
<b>Project:</b>	SEC.9-T2N-R65W	<b>TVD Reference:</b>	WELL @ 4882.0ft (Original Well Elev)
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<b>Well:</b>	Thomason 38-9	<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)	
6,116.0	2.10	47.40	6,101.9	-201.0	59.0	209.0	0.58	0.00	16.00	
6,211.0	2.40	65.60	6,196.8	-199.0	62.1	207.8	0.81	0.32	19.16	
6,306.0	3.60	78.00	6,291.7	-197.5	66.8	207.4	1.43	1.26	13.05	
6,402.0	3.50	92.80	6,387.5	-197.1	72.7	208.2	0.96	-0.10	15.42	
6,497.0	2.80	118.70	6,482.4	-198.3	77.6	210.5	1.65	-0.74	27.26	
6,592.0	3.10	117.10	6,577.3	-200.6	81.9	213.7	0.33	0.32	-1.68	
6,687.0	0.70	59.40	6,672.2	-201.5	84.7	215.1	2.94	-2.53	-60.74	
6,782.0	0.20	4.40	6,767.2	-201.0	85.2	214.8	0.64	-0.53	-57.89	
6,877.0	0.50	311.80	6,862.2	-200.6	84.9	214.3	0.43	0.32	-55.37	
6,918.1	0.40	263.74	6,903.3	-200.5	84.7	214.2	0.92	-0.24	-116.97	
TARGET CIRCLE 50'FSL & 110'FEL										
6,973.0	0.70	218.50	6,958.2	-200.7	84.3	214.3	0.92	0.54	-82.39	
7,068.0	1.20	179.30	7,053.2	-202.2	83.9	215.7	0.83	0.53	-41.26	
7,163.0	2.00	185.30	7,148.1	-204.8	83.8	218.2	0.86	0.84	6.32	
7,258.0	2.70	210.90	7,243.1	-208.4	82.5	221.4	1.31	0.74	26.95	
7,353.0	2.50	205.00	7,338.0	-212.2	80.5	224.7	0.35	-0.21	-6.21	
7,448.0	1.90	200.50	7,432.9	-215.6	79.0	227.6	0.66	-0.63	-4.74	
7,543.0	1.50	180.60	7,527.9	-218.3	78.5	230.2	0.74	-0.42	-20.95	
7,639.0	1.20	161.00	7,623.8	-220.5	78.8	232.4	0.57	-0.31	-20.42	
7,734.0	1.30	173.00	7,718.8	-222.5	79.2	234.5	0.29	0.11	12.63	
7,766.0	1.30	173.00	7,750.8	-223.2	79.3	235.2	0.00	0.00	0.00	
7,793.1	1.30	173.00	7,777.9	-223.8	79.4	235.8	0.00	0.00	0.00	
HARD LINES 50'S & 110'E OF BHL										
7,815.0	1.30	173.00	7,799.8	-224.3	79.5	236.3	0.00	0.00	0.00	

Checked By: _____	Approved By: _____	Date: _____
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