ENSIGN Directional

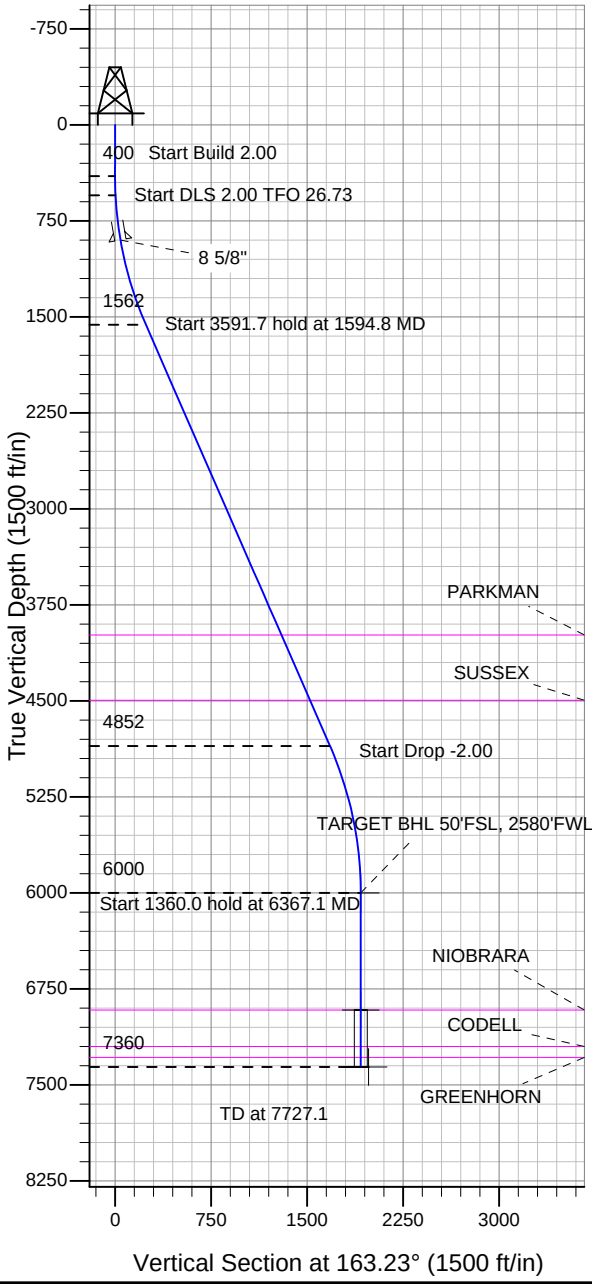
Well Name: Thomason 36-16

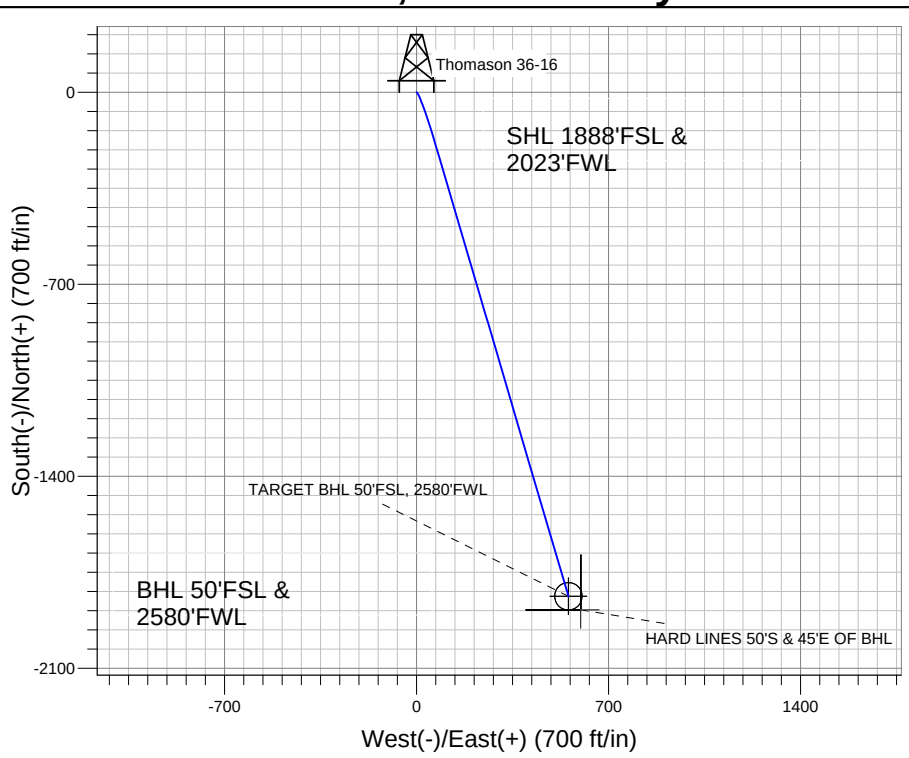
Surface Location: Thomason 11-16 Pad Sec.16-T2N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4885.0

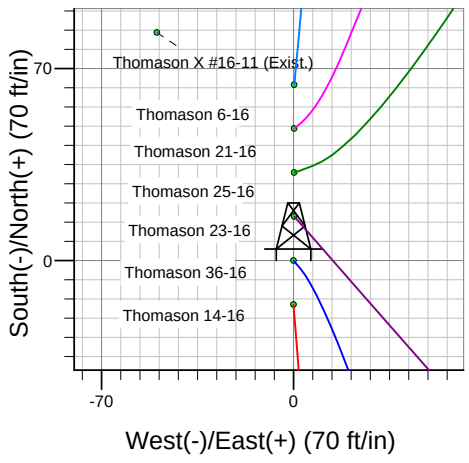
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1293707.46	3231729.39	40.136648	-104.671176	

Original Well Elev WELL @ 4899.0ft (Original Well Elev)

Anadarko, Weld County CO

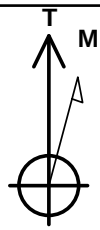






FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3985.0	4239.7	PARKMAN
4495.0	4796.3	SUSSEX
6915.0	7282.1	NIOBRARA
7200.0	7567.1	CODELL
7285.0	7652.1	GREENHORN



Azimuths to True North
Magnetic North: 8.83°

Magnetic Field
Strength: 53033.2snT
Dip Angle: 66.86°
Date: 3/1/2011
Model: IGRF2010

Well Name: Thomason 36-16 Lat/Long: 40.136648 -104.671176

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 50'FSL, 2580'FWL	6000.0	-1837.5	553.7	40.131604	-104.669196	Point
Target Circle 50'FSL & 2580'FWL	6915.0	-1837.5	553.7	40.131604	-104.669196	Circle (Radius: 50.0)
HARD LINES 50'S & 45'E OF BHL	7360.0	-1887.5	598.7	40.131467	-104.669035	Polygon

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	550.0	3.00	140.00	549.9	-3.0	2.5	2.00	140.00	3.6	
4	1594.8	23.61	163.61	1561.5	-227.2	80.0	2.00	26.73	240.6	
5	5186.5	23.61	163.61	4852.5	-1607.4	486.0	0.00	0.00	1679.2	
6	6367.1	0.00	0.00	6000.0	-1837.5	553.7	2.00	180.00	1919.1	TARGET BHL 50'FSL, 2580'FWL
7	7727.1	0.00	0.00	7360.0	-1837.5	553.7	0.00	0.00	1919.1	

CASING DETAILS

TVD	MD	Name	Size
900.0	902.5	8 5/8"	8-5/8

Thomason 11-16 Pad Sec.16-T2N-R65W
Thomason 36-16
Plan #1 (3-01-11)
17:25, March 10 2011

ENSIGN Directional

Anadarko, Weld County CO

SEC.16-T2N-R65W
Thomason 11-16 Pad Sec.16-T2N-R65W
Thomason 36-16

Wellbore #1

Plan: Plan #1 (3-01-11)

Standard Planning Report

10 March, 2011

Anadarko Petroleum Corporation

Database:	Landmark	**Local Co-ordinate Reference:**	Well Thomason 36-16
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Project:	SEC.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**North Reference:**	True
Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-01-11)		

Project SEC.16-T2N-R65W, Weld County, Colorado

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Thomason 11-16 Pad Sec.16-T2N-R65W

Site Position:		**Northing:**	1,293,771.59 ft	**Latitude:**	40.136824
From:	Lat/Long	**Easting:**	3,231,729.07 ft	**Longitude:**	-104.671175
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.54 °

Well Thomason 36-16

Well Position	**+N/-S**	-64.1 ft	**Northing:**	1,293,707.46 ft	**Latitude:**	40.136648
	+E/-W	-0.3 ft	**Easting:**	3,231,729.39 ft	**Longitude:**	-104.671176
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,885.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/1/2011	8.83	66.86	53,033

Design Plan #1 (3-01-11)

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	163.23

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
550.0	3.00	140.00	549.9	-3.0	2.5	2.00	2.00	0.00	140.00	
1,594.8	23.61	163.61	1,561.5	-227.2	80.0	2.00	1.97	2.26	26.73	
5,186.5	23.61	163.61	4,852.5	-1,607.4	486.0	0.00	0.00	0.00	0.00	
6,367.1	0.00	0.00	6,000.0	-1,837.5	553.7	2.00	-2.00	0.00	180.00	TARGET BHL 50'F
7,727.1	0.00	0.00	7,360.0	-1,837.5	553.7	0.00	0.00	0.00	0.00	

Database:	Landmark	**Local Co-ordinate Reference:**	Well Thomason 36-16
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Project:	SEC.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**North Reference:**	True
Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-01-11)		

Planned 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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.80	140.00	440.0	-0.2	0.2	0.3	2.00	2.00	0.00
480.0	1.60	140.00	480.0	-0.9	0.7	1.0	2.00	2.00	0.00
520.0	2.40	140.00	520.0	-1.9	1.6	2.3	2.00	2.00	0.00
550.0	3.00	140.00	549.9	-3.0	2.5	3.6	2.00	2.00	0.00
560.0	3.18	141.62	559.9	-3.4	2.9	4.1	2.00	1.80	16.22
600.0	3.92	146.59	599.8	-5.4	4.3	6.4	2.00	1.85	12.43
640.0	4.68	149.97	639.7	-8.0	5.9	9.3	2.00	1.90	8.45
680.0	5.45	152.41	679.6	-11.1	7.6	12.8	2.00	1.93	6.08
720.0	6.23	154.24	719.4	-14.7	9.4	16.8	2.00	1.95	4.57
760.0	7.01	155.66	759.1	-18.9	11.3	21.4	2.00	1.96	3.56
800.0	7.80	156.80	798.8	-23.6	13.4	26.5	2.00	1.97	2.84
840.0	8.59	157.73	838.4	-28.9	15.6	32.2	2.00	1.97	2.32
880.0	9.38	158.50	877.9	-34.7	17.9	38.4	2.00	1.98	1.94
902.5	9.82	158.88	900.0	-38.2	19.3	42.1	2.00	1.98	1.69
8 5/8"									
920.0	10.17	159.15	917.3	-41.0	20.4	45.1	2.00	1.98	1.56
960.0	10.96	159.71	956.6	-47.9	23.0	52.5	2.00	1.98	1.40
1,000.0	11.76	160.20	995.8	-55.3	25.7	60.3	2.00	1.99	1.22
1,040.0	12.55	160.63	1,034.9	-63.2	28.5	68.7	2.00	1.99	1.06
1,080.0	13.35	161.00	1,073.9	-71.7	31.4	77.7	2.00	1.99	0.94
1,120.0	14.14	161.34	1,112.8	-80.7	34.5	87.2	2.00	1.99	0.83
1,160.0	14.94	161.63	1,151.5	-90.2	37.7	97.2	2.00	1.99	0.75
1,200.0	15.74	161.90	1,190.1	-100.2	41.0	107.8	2.00	1.99	0.67
1,240.0	16.53	162.15	1,228.5	-110.8	44.4	118.9	2.00	1.99	0.61
1,280.0	17.33	162.37	1,266.7	-121.9	48.0	130.6	2.00	1.99	0.56
1,320.0	18.13	162.57	1,304.8	-133.5	51.6	142.7	2.00	1.99	0.51
1,360.0	18.93	162.76	1,342.8	-145.7	55.4	155.5	2.00	1.99	0.47
1,400.0	19.72	162.93	1,380.5	-158.3	59.3	168.7	2.00	1.99	0.43
1,440.0	20.52	163.09	1,418.1	-171.5	63.4	182.5	2.00	2.00	0.40
1,480.0	21.32	163.24	1,455.4	-185.1	67.5	196.7	2.00	2.00	0.37
1,520.0	22.12	163.38	1,492.6	-199.3	71.7	211.5	2.00	2.00	0.34
1,560.0	22.92	163.50	1,529.5	-214.0	76.1	226.9	2.00	2.00	0.32
1,594.8	23.61	163.61	1,561.5	-227.2	80.0	240.6	2.00	2.00	0.30
1,600.0	23.61	163.61	1,566.3	-229.2	80.6	242.7	0.00	0.00	0.00
1,640.0	23.61	163.61	1,602.9	-244.6	85.1	258.7	0.00	0.00	0.00
1,680.0	23.61	163.61	1,639.6	-259.9	89.6	274.7	0.00	0.00	0.00
1,720.0	23.61	163.61	1,676.2	-275.3	94.2	290.8	0.00	0.00	0.00
1,760.0	23.61	163.61	1,712.9	-290.7	98.7	306.8	0.00	0.00	0.00
1,800.0	23.61	163.61	1,749.5	-306.0	103.2	322.8	0.00	0.00	0.00
1,840.0	23.61	163.61	1,786.2	-321.4	107.7	338.8	0.00	0.00	0.00
1,880.0	23.61	163.61	1,822.8	-336.8	112.2	354.8	0.00	0.00	0.00
1,920.0	23.61	163.61	1,859.5	-352.1	116.8	370.9	0.00	0.00	0.00
1,960.0	23.61	163.61	1,896.1	-367.5	121.3	386.9	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Thomason 36-16
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Project:	SEC.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**North Reference:**	True
Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-01-11)		

Planned 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)
2,000.0	23.61	163.61	1,932.8	-382.9	125.8	402.9	0.00	0.00	0.00
2,040.0	23.61	163.61	1,969.4	-398.3	130.3	418.9	0.00	0.00	0.00
2,080.0	23.61	163.61	2,006.1	-413.6	134.8	434.9	0.00	0.00	0.00
2,120.0	23.61	163.61	2,042.7	-429.0	139.4	451.0	0.00	0.00	0.00
2,160.0	23.61	163.61	2,079.4	-444.4	143.9	467.0	0.00	0.00	0.00
2,200.0	23.61	163.61	2,116.0	-459.7	148.4	483.0	0.00	0.00	0.00
2,240.0	23.61	163.61	2,152.7	-475.1	152.9	499.0	0.00	0.00	0.00
2,280.0	23.61	163.61	2,189.3	-490.5	157.5	515.1	0.00	0.00	0.00
2,320.0	23.61	163.61	2,226.0	-505.9	162.0	531.1	0.00	0.00	0.00
2,360.0	23.61	163.61	2,262.6	-521.2	166.5	547.1	0.00	0.00	0.00
2,400.0	23.61	163.61	2,299.3	-536.6	171.0	563.1	0.00	0.00	0.00
2,440.0	23.61	163.61	2,336.0	-552.0	175.5	579.1	0.00	0.00	0.00
2,480.0	23.61	163.61	2,372.6	-567.3	180.1	595.2	0.00	0.00	0.00
2,520.0	23.61	163.61	2,409.3	-582.7	184.6	611.2	0.00	0.00	0.00
2,560.0	23.61	163.61	2,445.9	-598.1	189.1	627.2	0.00	0.00	0.00
2,600.0	23.61	163.61	2,482.6	-613.5	193.6	643.2	0.00	0.00	0.00
2,640.0	23.61	163.61	2,519.2	-628.8	198.1	659.3	0.00	0.00	0.00
2,680.0	23.61	163.61	2,555.9	-644.2	202.7	675.3	0.00	0.00	0.00
2,720.0	23.61	163.61	2,592.5	-659.6	207.2	691.3	0.00	0.00	0.00
2,760.0	23.61	163.61	2,629.2	-674.9	211.7	707.3	0.00	0.00	0.00
2,800.0	23.61	163.61	2,665.8	-690.3	216.2	723.3	0.00	0.00	0.00
2,840.0	23.61	163.61	2,702.5	-705.7	220.7	739.4	0.00	0.00	0.00
2,880.0	23.61	163.61	2,739.1	-721.0	225.3	755.4	0.00	0.00	0.00
2,920.0	23.61	163.61	2,775.8	-736.4	229.8	771.4	0.00	0.00	0.00
2,960.0	23.61	163.61	2,812.4	-751.8	234.3	787.4	0.00	0.00	0.00
3,000.0	23.61	163.61	2,849.1	-767.2	238.8	803.4	0.00	0.00	0.00
3,040.0	23.61	163.61	2,885.7	-782.5	243.4	819.5	0.00	0.00	0.00
3,080.0	23.61	163.61	2,922.4	-797.9	247.9	835.5	0.00	0.00	0.00
3,120.0	23.61	163.61	2,959.0	-813.3	252.4	851.5	0.00	0.00	0.00
3,160.0	23.61	163.61	2,995.7	-828.6	256.9	867.5	0.00	0.00	0.00
3,200.0	23.61	163.61	3,032.3	-844.0	261.4	883.6	0.00	0.00	0.00
3,240.0	23.61	163.61	3,069.0	-859.4	266.0	899.6	0.00	0.00	0.00
3,280.0	23.61	163.61	3,105.6	-874.8	270.5	915.6	0.00	0.00	0.00
3,320.0	23.61	163.61	3,142.3	-890.1	275.0	931.6	0.00	0.00	0.00
3,360.0	23.61	163.61	3,178.9	-905.5	279.5	947.6	0.00	0.00	0.00
3,400.0	23.61	163.61	3,215.6	-920.9	284.0	963.7	0.00	0.00	0.00
3,440.0	23.61	163.61	3,252.2	-936.2	288.6	979.7	0.00	0.00	0.00
3,480.0	23.61	163.61	3,288.9	-951.6	293.1	995.7	0.00	0.00	0.00
3,520.0	23.61	163.61	3,325.5	-967.0	297.6	1,011.7	0.00	0.00	0.00
3,560.0	23.61	163.61	3,362.2	-982.4	302.1	1,027.7	0.00	0.00	0.00
3,600.0	23.61	163.61	3,398.8	-997.7	306.7	1,043.8	0.00	0.00	0.00
3,640.0	23.61	163.61	3,435.5	-1,013.1	311.2	1,059.8	0.00	0.00	0.00
3,680.0	23.61	163.61	3,472.1	-1,028.5	315.7	1,075.8	0.00	0.00	0.00
3,720.0	23.61	163.61	3,508.8	-1,043.8	320.2	1,091.8	0.00	0.00	0.00
3,760.0	23.61	163.61	3,545.4	-1,059.2	324.7	1,107.9	0.00	0.00	0.00
3,800.0	23.61	163.61	3,582.1	-1,074.6	329.3	1,123.9	0.00	0.00	0.00
3,840.0	23.61	163.61	3,618.7	-1,090.0	333.8	1,139.9	0.00	0.00	0.00
3,880.0	23.61	163.61	3,655.4	-1,105.3	338.3	1,155.9	0.00	0.00	0.00
3,920.0	23.61	163.61	3,692.0	-1,120.7	342.8	1,171.9	0.00	0.00	0.00
3,960.0	23.61	163.61	3,728.7	-1,136.1	347.3	1,188.0	0.00	0.00	0.00
4,000.0	23.61	163.61	3,765.3	-1,151.4	351.9	1,204.0	0.00	0.00	0.00
4,040.0	23.61	163.61	3,802.0	-1,166.8	356.4	1,220.0	0.00	0.00	0.00
4,080.0	23.61	163.61	3,838.6	-1,182.2	360.9	1,236.0	0.00	0.00	0.00
4,120.0	23.61	163.61	3,875.3	-1,197.5	365.4	1,252.1	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Thomason 36-16
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Project:	SEC.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**North Reference:**	True
Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-01-11)		

Planned 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)
4,160.0	23.61	163.61	3,911.9	-1,212.9	369.9	1,268.1	0.00	0.00	0.00
4,200.0	23.61	163.61	3,948.6	-1,228.3	374.5	1,284.1	0.00	0.00	0.00
4,239.7	23.61	163.61	3,985.0	-1,243.6	379.0	1,300.0	0.00	0.00	0.00
PARKMAN									
4,240.0	23.61	163.61	3,985.2	-1,243.7	379.0	1,300.1	0.00	0.00	0.00
4,280.0	23.61	163.61	4,021.9	-1,259.0	383.5	1,316.1	0.00	0.00	0.00
4,320.0	23.61	163.61	4,058.5	-1,274.4	388.0	1,332.2	0.00	0.00	0.00
4,360.0	23.61	163.61	4,095.2	-1,289.8	392.6	1,348.2	0.00	0.00	0.00
4,400.0	23.61	163.61	4,131.8	-1,305.1	397.1	1,364.2	0.00	0.00	0.00
4,440.0	23.61	163.61	4,168.5	-1,320.5	401.6	1,380.2	0.00	0.00	0.00
4,480.0	23.61	163.61	4,205.2	-1,335.9	406.1	1,396.2	0.00	0.00	0.00
4,520.0	23.61	163.61	4,241.8	-1,351.3	410.6	1,412.3	0.00	0.00	0.00
4,560.0	23.61	163.61	4,278.5	-1,366.6	415.2	1,428.3	0.00	0.00	0.00
4,600.0	23.61	163.61	4,315.1	-1,382.0	419.7	1,444.3	0.00	0.00	0.00
4,640.0	23.61	163.61	4,351.8	-1,397.4	424.2	1,460.3	0.00	0.00	0.00
4,680.0	23.61	163.61	4,388.4	-1,412.7	428.7	1,476.4	0.00	0.00	0.00
4,720.0	23.61	163.61	4,425.1	-1,428.1	433.2	1,492.4	0.00	0.00	0.00
4,760.0	23.61	163.61	4,461.7	-1,443.5	437.8	1,508.4	0.00	0.00	0.00
4,796.3	23.61	163.61	4,495.0	-1,457.4	441.9	1,523.0	0.00	0.00	0.00
SUSSEX									
4,800.0	23.61	163.61	4,498.4	-1,458.9	442.3	1,524.4	0.00	0.00	0.00
4,840.0	23.61	163.61	4,535.0	-1,474.2	446.8	1,540.4	0.00	0.00	0.00
4,880.0	23.61	163.61	4,571.7	-1,489.6	451.3	1,556.5	0.00	0.00	0.00
4,920.0	23.61	163.61	4,608.3	-1,505.0	455.9	1,572.5	0.00	0.00	0.00
4,960.0	23.61	163.61	4,645.0	-1,520.3	460.4	1,588.5	0.00	0.00	0.00
5,000.0	23.61	163.61	4,681.6	-1,535.7	464.9	1,604.5	0.00	0.00	0.00
5,040.0	23.61	163.61	4,718.3	-1,551.1	469.4	1,620.6	0.00	0.00	0.00
5,080.0	23.61	163.61	4,754.9	-1,566.4	473.9	1,636.6	0.00	0.00	0.00
5,120.0	23.61	163.61	4,791.6	-1,581.8	478.5	1,652.6	0.00	0.00	0.00
5,160.0	23.61	163.61	4,828.2	-1,597.2	483.0	1,668.6	0.00	0.00	0.00
5,186.5	23.61	163.61	4,852.5	-1,607.4	486.0	1,679.2	0.00	0.00	0.00
5,200.0	23.34	163.61	4,864.9	-1,612.5	487.5	1,684.6	2.00	-2.00	0.00
5,240.0	22.54	163.61	4,901.7	-1,627.5	491.9	1,700.2	2.00	-2.00	0.00
5,280.0	21.74	163.61	4,938.8	-1,642.0	496.1	1,715.3	2.00	-2.00	0.00
5,320.0	20.94	163.61	4,976.0	-1,655.9	500.3	1,729.8	2.00	-2.00	0.00
5,360.0	20.14	163.61	5,013.5	-1,669.4	504.2	1,743.9	2.00	-2.00	0.00
5,400.0	19.34	163.61	5,051.1	-1,682.3	508.0	1,757.4	2.00	-2.00	0.00
5,440.0	18.54	163.61	5,089.0	-1,694.8	511.7	1,770.4	2.00	-2.00	0.00
5,480.0	17.74	163.61	5,127.0	-1,706.8	515.2	1,782.8	2.00	-2.00	0.00
5,520.0	16.94	163.61	5,165.2	-1,718.2	518.6	1,794.7	2.00	-2.00	0.00
5,560.0	16.14	163.61	5,203.5	-1,729.1	521.8	1,806.1	2.00	-2.00	0.00
5,600.0	15.34	163.61	5,242.0	-1,739.5	524.8	1,817.0	2.00	-2.00	0.00
5,640.0	14.54	163.61	5,280.6	-1,749.4	527.8	1,827.3	2.00	-2.00	0.00
5,680.0	13.74	163.61	5,319.4	-1,758.8	530.5	1,837.1	2.00	-2.00	0.00
5,720.0	12.94	163.61	5,358.4	-1,767.7	533.1	1,846.3	2.00	-2.00	0.00
5,760.0	12.14	163.61	5,397.4	-1,776.0	535.6	1,855.0	2.00	-2.00	0.00
5,800.0	11.34	163.61	5,436.6	-1,783.8	537.9	1,863.1	2.00	-2.00	0.00
5,840.0	10.54	163.61	5,475.8	-1,791.1	540.0	1,870.7	2.00	-2.00	0.00
5,880.0	9.74	163.61	5,515.2	-1,797.8	542.0	1,877.8	2.00	-2.00	0.00
5,920.0	8.94	163.61	5,554.7	-1,804.1	543.8	1,884.3	2.00	-2.00	0.00
5,960.0	8.14	163.61	5,594.2	-1,809.8	545.5	1,890.2	2.00	-2.00	0.00
6,000.0	7.34	163.61	5,633.9	-1,814.9	547.0	1,895.6	2.00	-2.00	0.00
6,040.0	6.54	163.61	5,673.6	-1,819.6	548.4	1,900.4	2.00	-2.00	0.00
6,080.0	5.74	163.61	5,713.3	-1,823.7	549.6	1,904.7	2.00	-2.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Thomason 36-16
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Project:	SEC.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**North Reference:**	True
Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-01-11)		

Planned 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)
6,120.0	4.94	163.61	5,753.2	-1,827.3	550.7	1,908.4	2.00	-2.00	0.00
6,160.0	4.14	163.61	5,793.0	-1,830.3	551.5	1,911.6	2.00	-2.00	0.00
6,200.0	3.34	163.61	5,833.0	-1,832.8	552.3	1,914.2	2.00	-2.00	0.00
6,240.0	2.54	163.61	5,872.9	-1,834.8	552.9	1,916.3	2.00	-2.00	0.00
6,280.0	1.74	163.61	5,912.9	-1,836.2	553.3	1,917.8	2.00	-2.00	0.00
6,320.0	0.94	163.61	5,952.9	-1,837.1	553.5	1,918.7	2.00	-2.00	0.00
6,360.0	0.14	163.61	5,992.9	-1,837.5	553.7	1,919.1	2.00	-2.00	0.00
6,367.1	0.00	0.00	6,000.0	-1,837.5	553.7	1,919.1	2.00	-2.00	0.00
TARGET BHL 50'FSL, 2580'FWL									
6,400.0	0.00	0.00	6,032.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,440.0	0.00	0.00	6,072.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,480.0	0.00	0.00	6,112.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,520.0	0.00	0.00	6,152.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,560.0	0.00	0.00	6,192.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,232.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,640.0	0.00	0.00	6,272.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,680.0	0.00	0.00	6,312.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,720.0	0.00	0.00	6,352.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,760.0	0.00	0.00	6,392.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,432.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,840.0	0.00	0.00	6,472.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,880.0	0.00	0.00	6,512.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,920.0	0.00	0.00	6,552.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
6,960.0	0.00	0.00	6,592.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,000.0	0.00	0.00	6,632.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,040.0	0.00	0.00	6,672.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,080.0	0.00	0.00	6,712.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,120.0	0.00	0.00	6,752.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,160.0	0.00	0.00	6,792.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,200.0	0.00	0.00	6,832.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,240.0	0.00	0.00	6,872.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,280.0	0.00	0.00	6,912.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,282.1	0.00	0.00	6,915.0	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
NIOBRARA - Target Circle 50'FSL & 2580'FWL									
7,320.0	0.00	0.00	6,952.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,360.0	0.00	0.00	6,992.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,400.0	0.00	0.00	7,032.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,440.0	0.00	0.00	7,072.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,480.0	0.00	0.00	7,112.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,520.0	0.00	0.00	7,152.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,560.0	0.00	0.00	7,192.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,567.1	0.00	0.00	7,200.0	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
CODELL									
7,600.0	0.00	0.00	7,232.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,640.0	0.00	0.00	7,272.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,652.1	0.00	0.00	7,285.0	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
GREENHORN									
7,680.0	0.00	0.00	7,312.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,720.0	0.00	0.00	7,352.9	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
7,727.1	0.00	0.00	7,360.0	-1,837.5	553.7	1,919.1	0.00	0.00	0.00
HARD LINES 50'S & 45'E OF BHL									

Database:	Landmark	**Local Co-ordinate Reference:**	Well Thomason 36-16
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Project:	SEC.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**North Reference:**	True
Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-01-11)		

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
HARD LINES 50'S &	0.00	0.00	7,360.0	-1,887.5	598.7	1,291,825.72	3,232,345.67	40.131467	-104.669035
- plan misses target center by 67.3ft at 7727.1ft MD (7360.0 TVD, -1837.5 N, 553.7 E)									
- Polygon									
Point 1			7,360.0	0.0	0.0	1,291,825.72	3,232,345.67		
Point 2			7,360.0	200.0	0.0	1,292,025.70	3,232,343.81		
Point 3			7,360.0	0.0	0.0	1,291,825.72	3,232,345.67		
Point 4			7,360.0	0.0	-200.0	1,291,823.85	3,232,145.69		
Target Circle 50'FSL	0.00	0.00	6,915.0	-1,837.5	553.7	1,291,875.31	3,232,300.17	40.131604	-104.669196
- plan hits target center									
- Circle (radius 50.0)									
TARGET BHL 50'FSL	0.00	0.00	6,000.0	-1,837.5	553.7	1,291,875.31	3,232,300.17	40.131604	-104.669196
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
902.5	900.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,239.7	3,985.0	PARKMAN		0.00	
4,796.3	4,495.0	SUSSEX		0.00	
7,282.1	6,915.0	NIOBRARA		0.00	
7,567.1	7,200.0	CODELL		0.00	
7,652.1	7,285.0	GREENHORN		0.00	

ENSIGN Directional

Anadarko, Weld County CO

SEC.16-T2N-R65W
Thomason 11-16 Pad Sec.16-T2N-R65W
Thomason 36-16

Wellbore #1
Plan #1 (3-01-11)

Anticollision Report

10 March, 2011

Anadarko Petroleum Corporation

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 36-16
Project:	SEC.16-T2N-R65W	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Reference Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-01-11)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (3-01-11)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 3/10/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	7,727.1	Plan #1 (3-01-11) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Thomason 11-16 Pad Sec.16-T2N-R65W						
Thomason 14-16 - Wellbore #1 - Plan #1 (3-01-11)	200.0	200.0	16.0	15.4	23.765	CC, ES
Thomason 14-16 - Wellbore #1 - Plan #1 (3-01-11)	2,000.0	1,979.5	97.4	80.3	5.695	SF
Thomason 23-16 - Wellbore #1 - Plan #1 (3-01-11)	400.0	400.0	16.0	14.5	10.189	CC, ES
Thomason 23-16 - Wellbore #1 - Plan #1 (3-01-11)	550.0	549.9	19.2	17.0	8.669	SF
Thomason X #16-11 (Exist.) - Wellbore #1 - Design #1	400.0	397.0	96.8	95.3	61.812	CC, ES
Thomason X #16-11 (Exist.) - Wellbore #1 - Design #1	900.0	894.6	139.1	135.4	37.479	SF

Offset Design Thomason 11-16 Pad Sec.16-T2N-R65W - Thomason 14-16 - Wellbore #1 - Plan #1 (3-01-11)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-16.0	0.0	16.0	16.0	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-16.0	0.0	16.0	15.8	0.22	71.296	
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-16.0	0.0	16.0	15.4	0.67	23.765	CC, ES
300.0	300.0	299.4	299.4	0.6	0.5	179.57	-17.7	0.1	17.8	16.7	1.10	16.137	
400.0	400.0	398.6	398.4	0.8	0.7	178.68	-22.9	0.5	22.9	21.4	1.53	14.979	
500.0	500.0	497.4	496.9	1.0	1.0	39.77	-31.4	1.2	30.2	28.3	1.95	15.501	
550.0	549.9	546.7	545.8	1.1	1.1	41.35	-36.9	1.6	34.2	32.0	2.16	15.842	
600.0	599.8	595.9	594.6	1.2	1.3	36.50	-43.3	2.1	38.2	35.9	2.37	16.168	
700.0	699.5	694.1	691.6	1.4	1.6	32.74	-58.4	3.3	46.5	43.7	2.80	16.588	
800.0	798.8	792.0	787.8	1.7	2.0	31.95	-76.8	4.7	55.0	51.7	3.28	16.773	
900.0	897.6	889.6	883.0	2.0	2.4	32.26	-98.4	6.3	63.7	59.9	3.80	16.773	
1,000.0	995.8	987.0	977.1	2.3	2.9	33.06	-123.1	8.2	72.5	68.2	4.36	16.617	
1,100.0	1,093.3	1,086.5	1,072.8	2.7	3.4	34.52	-150.3	10.3	80.2	75.2	5.00	16.028	
1,200.0	1,190.1	1,186.2	1,168.8	3.2	4.0	37.01	-177.5	12.4	85.1	79.3	5.74	14.819	
1,300.0	1,285.8	1,286.0	1,264.7	3.7	4.5	40.64	-204.7	14.5	87.3	80.7	6.61	13.204	
1,400.0	1,380.5	1,385.7	1,360.6	4.3	5.1	45.63	-231.9	16.6	87.4	79.7	7.68	11.375	
1,500.0	1,474.0	1,485.1	1,456.2	5.0	5.6	52.34	-259.0	18.7	85.9	76.9	9.02	9.526	
1,594.8	1,561.5	1,579.0	1,546.5	5.7	6.1	60.65	-284.6	20.6	84.0	73.4	10.57	7.942	
1,600.0	1,566.3	1,584.1	1,551.5	5.7	6.2	61.18	-286.0	20.7	83.9	73.2	10.67	7.864	
1,665.6	1,626.4	1,649.0	1,613.9	6.2	6.5	67.89	-303.7	22.1	83.3	71.4	11.85	7.025	
1,700.0	1,657.9	1,683.0	1,646.5	6.5	6.7	71.42	-313.0	22.8	83.4	71.0	12.48	6.688	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 36-16
Project:	SEC.16-T2N-R65W	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Reference Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-01-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Thomason 11-16 Pad Sec.16-T2N-R65W - Thomason 14-16 - Wellbore #1 - Plan #1 (3-01-11)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,800.0	1,749.5	1,781.8	1,741.6	7.3	7.3	81.45	-340.0	24.9	85.7	71.5	14.22	6.029	
1,900.0	1,841.2	1,880.7	1,836.7	8.0	7.8	90.70	-366.9	26.9	90.5	74.7	15.77	5.738	
2,000.0	1,932.8	1,979.5	1,931.8	8.8	8.4	98.85	-393.9	29.0	97.4	80.3	17.10	5.695	SF
2,100.0	2,024.4	2,078.4	2,026.9	9.6	9.0	105.82	-420.9	31.1	106.0	87.8	18.24	5.813	
2,200.0	2,116.0	2,177.2	2,121.9	10.4	9.5	111.68	-447.8	33.2	116.0	96.8	19.23	6.032	
2,300.0	2,207.7	2,276.1	2,217.0	11.2	10.1	116.59	-474.8	35.2	127.0	106.9	20.12	6.311	
2,400.0	2,299.3	2,374.9	2,312.1	12.0	10.6	120.69	-501.8	37.3	138.8	117.8	20.96	6.622	
2,500.0	2,390.9	2,473.8	2,407.2	12.8	11.2	124.15	-528.7	39.4	151.1	129.4	21.75	6.948	
2,600.0	2,482.6	2,572.6	2,502.2	13.6	11.8	127.07	-555.7	41.4	164.0	141.4	22.52	7.279	
2,700.0	2,574.2	2,671.5	2,597.3	14.4	12.3	129.57	-582.7	43.5	177.1	153.8	23.29	7.606	
2,800.0	2,665.8	2,770.3	2,692.4	15.2	12.9	131.72	-609.6	45.6	190.6	166.6	24.05	7.925	
2,900.0	2,757.4	2,869.2	2,787.5	16.0	13.4	133.59	-636.6	47.7	204.3	179.5	24.81	8.234	
3,000.0	2,849.1	2,968.0	2,882.6	16.8	14.0	135.22	-663.6	49.7	218.2	192.6	25.58	8.531	
3,100.0	2,940.7	3,066.9	2,977.6	17.6	14.6	136.66	-690.5	51.8	232.2	205.9	26.34	8.816	
3,200.0	3,032.3	3,165.7	3,072.7	18.5	15.1	137.93	-717.5	53.9	246.4	219.3	27.12	9.087	
3,300.0	3,123.9	3,264.6	3,167.8	19.3	15.7	139.06	-744.5	55.9	260.7	232.8	27.89	9.346	
3,400.0	3,215.6	3,363.4	3,262.9	20.1	16.3	140.08	-771.4	58.0	275.1	246.4	28.67	9.593	
3,500.0	3,307.2	3,462.3	3,358.0	20.9	16.8	140.99	-798.4	60.1	289.5	260.0	29.46	9.827	
3,600.0	3,398.8	3,561.1	3,453.0	21.7	17.4	141.82	-825.4	62.2	304.0	273.8	30.25	10.050	
3,700.0	3,490.5	3,660.0	3,548.1	22.5	17.9	142.57	-852.4	64.2	318.6	287.5	31.04	10.263	
3,800.0	3,582.1	3,758.8	3,643.2	23.3	18.5	143.26	-879.3	66.3	333.2	301.3	31.84	10.465	
3,900.0	3,673.7	3,857.7	3,738.3	24.1	19.1	143.88	-906.3	68.4	347.8	315.2	32.64	10.658	
4,000.0	3,765.3	3,956.5	3,833.4	24.9	19.6	144.46	-933.3	70.4	362.5	329.1	33.44	10.841	
4,100.0	3,857.0	4,055.4	3,928.4	25.7	20.2	145.00	-960.2	72.5	377.3	343.0	34.25	11.016	
4,200.0	3,948.6	4,154.2	4,023.5	26.5	20.8	145.49	-987.2	74.6	392.0	357.0	35.05	11.183	
4,300.0	4,040.2	4,253.1	4,118.6	27.3	21.3	145.95	-1,014.2	76.7	406.8	370.9	35.86	11.342	
4,400.0	4,131.8	4,351.9	4,213.7	28.2	21.9	146.37	-1,041.1	78.7	421.6	384.9	36.68	11.495	
4,500.0	4,223.5	4,450.8	4,308.7	29.0	22.4	146.77	-1,068.1	80.8	436.4	398.9	37.49	11.640	
4,600.0	4,315.1	4,549.6	4,403.8	29.8	23.0	147.14	-1,095.1	82.9	451.3	413.0	38.31	11.780	
4,700.0	4,406.7	4,648.5	4,498.9	30.6	23.6	147.48	-1,122.0	84.9	466.1	427.0	39.13	11.913	
4,800.0	4,498.4	4,747.3	4,594.0	31.4	24.1	147.81	-1,149.0	87.0	481.0	441.1	39.95	12.041	
4,900.0	4,590.0	4,846.2	4,689.1	32.2	24.7	148.11	-1,176.0	89.1	495.9	455.1	40.77	12.163	
5,000.0	4,681.6	4,945.0	4,784.1	33.0	25.3	148.40	-1,202.9	91.2	510.8	469.2	41.59	12.281	
5,100.0	4,773.2	5,043.9	4,879.2	33.8	25.8	148.67	-1,229.9	93.2	525.7	483.3	42.42	12.394	
5,186.5	4,852.5	5,129.4	4,961.5	34.5	26.3	148.90	-1,253.2	95.0	538.6	495.5	43.13	12.488	
5,200.0	4,864.9	5,142.8	4,974.3	34.6	26.4	148.95	-1,256.9	95.3	540.6	497.4	43.24	12.504	
5,300.0	4,957.4	5,234.9	5,063.1	35.2	26.8	149.24	-1,281.6	97.2	554.0	510.1	43.91	12.617	
5,400.0	5,051.1	5,321.5	5,147.1	35.7	27.1	149.50	-1,302.6	98.8	566.5	522.0	44.46	12.742	
5,500.0	5,146.0	5,408.0	5,231.5	36.2	27.4	149.77	-1,321.0	100.2	578.2	533.2	44.93	12.867	
5,600.0	5,242.0	5,500.0	5,322.0	36.6	27.7	150.05	-1,337.7	101.5	589.1	543.8	45.34	12.993	
5,700.0	5,338.9	5,580.3	5,401.4	37.0	27.9	150.32	-1,350.0	102.4	599.3	553.6	45.66	13.125	
5,800.0	5,436.6	5,666.3	5,486.7	37.4	28.1	150.61	-1,360.6	103.3	608.7	562.8	45.91	13.259	
5,900.0	5,534.9	5,752.0	5,572.0	37.7	28.3	150.90	-1,368.7	103.9	617.3	571.2	46.08	13.397	
6,000.0	5,633.9	5,837.6	5,657.4	37.9	28.4	151.20	-1,374.2	104.3	625.1	579.0	46.17	13.541	
6,100.0	5,733.2	5,923.1	5,742.8	38.1	28.5	151.50	-1,377.2	104.5	632.2	586.0	46.19	13.688	
6,200.0	5,833.0	6,013.2	5,833.0	38.3	28.6	151.82	-1,377.7	104.6	638.4	592.2	46.14	13.836	
6,300.0	5,932.9	6,113.1	5,932.9	38.4	28.7	152.02	-1,377.7	104.6	642.0	595.9	46.09	13.928	
6,367.1	6,000.0	6,180.2	6,000.0	38.5	28.7	-44.33	-1,377.7	104.6	642.7	596.6	46.10	13.942	
6,400.0	6,032.9	6,213.1	6,032.9	38.5	28.7	-44.33	-1,377.7	104.6	642.7	596.5	46.16	13.921	
6,500.0	6,132.9	6,313.1	6,132.9	38.5	28.8	-44.33	-1,377.7	104.6	642.7	596.3	46.36	13.862	
6,600.0	6,232.9	6,413.1	6,232.9	38.6	28.9	-44.33	-1,377.7	104.6	642.7	596.1	46.56	13.803	
6,700.0	6,332.9	6,513.1	6,332.9	38.7	29.0	-44.33	-1,377.7	104.6	642.7	595.9	46.76	13.743	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 36-16
Project:	SEC.16-T2N-R65W	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Reference Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-01-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Thomason 11-16 Pad Sec.16-T2N-R65W - Thomason 14-16 - Wellbore #1 - Plan #1 (3-01-11)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,800.0	6,432.9	6,613.1	6,432.9	38.7	29.0	-44.33	-1,377.7	104.6	642.7	595.7	46.97	13.682	
6,900.0	6,532.9	6,713.1	6,532.9	38.8	29.1	-44.33	-1,377.7	104.6	642.7	595.5	47.18	13.621	
7,000.0	6,632.9	6,813.1	6,632.9	38.9	29.2	-44.33	-1,377.7	104.6	642.7	595.3	47.39	13.560	
7,100.0	6,732.9	6,913.1	6,732.9	38.9	29.3	-44.33	-1,377.7	104.6	642.7	595.1	47.61	13.498	
7,200.0	6,832.9	7,013.1	6,832.9	39.0	29.4	-44.33	-1,377.7	104.6	642.7	594.8	47.83	13.436	
7,300.0	6,932.9	7,113.1	6,932.9	39.1	29.5	-44.33	-1,377.7	104.6	642.7	594.6	48.06	13.374	
7,400.0	7,032.9	7,213.1	7,032.9	39.1	29.6	-44.33	-1,377.7	104.6	642.7	594.4	48.28	13.311	
7,500.0	7,132.9	7,313.1	7,132.9	39.2	29.7	-44.33	-1,377.7	104.6	642.7	594.2	48.51	13.248	
7,600.0	7,232.9	7,413.1	7,232.9	39.3	29.8	-44.33	-1,377.7	104.6	642.7	593.9	48.74	13.185	
7,700.0	7,332.9	7,513.1	7,332.9	39.3	29.9	-44.33	-1,377.7	104.6	642.7	593.7	48.98	13.121	
7,727.1	7,360.0	7,540.2	7,360.0	39.4	29.9	-44.33	-1,377.7	104.6	642.7	593.6	49.04	13.104	
7,727.5	7,360.4	7,540.2	7,360.0	39.4	29.9	-44.33	-1,377.7	104.6	642.7	593.6	49.04	13.104	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 36-16
Project:	SEC.16-T2N-R65W	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Reference Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-01-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Thomason 11-16 Pad Sec.16-T2N-R65W - Thomason 23-16 - Wellbore #1 - Plan #1 (3-01-11)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	1.00	16.0	0.3	16.0	16.0	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	1.00	16.0	0.3	16.0	15.8	0.22	71.325	
200.0	200.0	200.0	200.0	0.3	0.3	1.00	16.0	0.3	16.0	15.4	0.67	23.775	
300.0	300.0	300.0	300.0	0.6	0.6	1.00	16.0	0.3	16.0	14.9	1.12	14.265	
400.0	400.0	400.0	400.0	0.8	0.8	1.00	16.0	0.3	16.0	14.5	1.57	10.189	CC, ES
500.0	500.0	500.0	500.0	1.0	1.0	-142.76	16.0	0.3	17.4	15.4	2.00	8.683	
550.0	549.9	549.9	549.9	1.1	1.1	-146.69	16.0	0.3	19.2	17.0	2.21	8.669	SF
600.0	599.8	599.8	599.8	1.2	1.2	-157.17	16.0	0.3	21.8	19.4	2.42	9.016	
700.0	699.5	699.5	699.5	1.4	1.5	-169.16	16.0	0.3	30.0	27.2	2.85	10.529	
800.0	798.8	798.8	798.8	1.7	1.7	-175.08	16.0	0.3	41.8	38.5	3.28	12.721	
900.0	897.6	897.6	897.6	2.0	1.9	-178.15	16.0	0.3	57.0	53.3	3.72	15.322	
1,000.0	995.8	995.8	995.8	2.3	2.1	-179.80	16.0	0.3	75.7	71.5	4.16	18.185	
1,100.0	1,093.3	1,093.3	1,093.3	2.7	2.3	179.28	16.0	0.3	97.8	93.1	4.61	21.224	
1,200.0	1,190.1	1,190.1	1,190.1	3.2	2.6	178.75	16.0	0.3	123.2	118.1	5.05	24.383	
1,300.0	1,285.8	1,290.2	1,290.2	3.7	2.8	178.66	15.0	1.2	150.7	145.2	5.48	27.483	
1,400.0	1,380.5	1,391.6	1,391.5	4.3	3.0	179.11	11.2	4.5	178.5	172.6	5.90	30.263	
1,500.0	1,474.0	1,493.8	1,493.3	5.0	3.2	179.90	4.7	10.2	206.5	200.2	6.33	32.640	
1,594.8	1,561.5	1,591.4	1,590.2	5.7	3.4	-179.14	-4.0	17.9	233.4	226.6	6.76	34.550	
1,600.0	1,566.3	1,596.8	1,595.5	5.7	3.4	-179.06	-4.6	18.4	234.9	228.1	6.78	34.633	
1,700.0	1,657.9	1,701.1	1,698.5	6.5	3.6	-177.62	-16.8	29.1	261.7	254.4	7.32	35.773	
1,800.0	1,749.5	1,807.0	1,802.4	7.3	3.9	-176.07	-32.1	42.5	285.5	277.6	7.89	36.181	
1,900.0	1,841.2	1,908.3	1,901.2	8.0	4.3	-174.54	-49.0	57.3	306.8	298.3	8.50	36.102	
2,000.0	1,932.8	2,005.7	1,996.1	8.8	4.7	-173.24	-65.5	71.8	328.1	319.0	9.13	35.917	
2,100.0	2,024.4	2,103.2	2,091.1	9.6	5.0	-172.09	-82.0	86.3	349.5	339.7	9.79	35.685	
2,200.0	2,116.0	2,200.6	2,186.1	10.4	5.4	-171.08	-98.5	100.7	371.0	360.5	10.48	35.418	
2,300.0	2,207.7	2,298.1	2,281.0	11.2	5.8	-170.17	-115.0	115.2	392.6	381.5	11.18	35.132	
2,400.0	2,299.3	2,395.5	2,376.0	12.0	6.3	-169.36	-131.5	129.7	414.3	402.5	11.89	34.838	
2,500.0	2,390.9	2,493.0	2,470.9	12.8	6.7	-168.63	-148.0	144.1	436.1	423.5	12.63	34.544	
2,600.0	2,482.6	2,590.5	2,565.9	13.6	7.1	-167.98	-164.5	158.6	458.0	444.6	13.37	34.255	
2,700.0	2,574.2	2,687.9	2,660.8	14.4	7.6	-167.38	-181.0	173.1	479.8	465.7	14.12	33.973	
2,800.0	2,665.8	2,785.4	2,755.8	15.2	8.0	-166.83	-197.5	187.5	501.8	486.9	14.89	33.700	
2,900.0	2,757.4	2,882.8	2,850.7	16.0	8.5	-166.33	-214.0	202.0	523.8	508.1	15.66	33.439	
3,000.0	2,849.1	2,980.3	2,945.7	16.8	8.9	-165.87	-230.5	216.5	545.8	529.3	16.44	33.189	
3,100.0	2,940.7	3,077.7	3,040.7	17.6	9.4	-165.44	-247.0	230.9	567.8	550.6	17.23	32.951	
3,200.0	3,032.3	3,175.2	3,135.6	18.5	9.8	-165.05	-263.5	245.4	589.9	571.9	18.03	32.724	
3,300.0	3,123.9	3,272.7	3,230.6	19.3	10.3	-164.68	-280.0	259.9	612.0	593.1	18.82	32.509	
3,400.0	3,215.6	3,370.1	3,325.5	20.1	10.8	-164.34	-296.5	274.3	634.1	614.5	19.63	32.304	
3,500.0	3,307.2	3,467.6	3,420.5	20.9	11.2	-164.03	-313.0	288.8	656.2	635.8	20.44	32.110	
3,600.0	3,398.8	3,565.0	3,515.4	21.7	11.7	-163.73	-329.5	303.3	678.4	657.1	21.25	31.926	
3,700.0	3,490.5	3,662.5	3,610.4	22.5	12.2	-163.45	-346.0	317.7	700.5	678.5	22.06	31.750	
3,800.0	3,582.1	3,759.9	3,705.3	23.3	12.6	-163.19	-362.4	332.2	722.7	699.8	22.88	31.584	
3,900.0	3,673.7	3,857.4	3,800.3	24.1	13.1	-162.95	-378.9	346.7	744.9	721.2	23.70	31.426	
4,000.0	3,765.3	3,954.9	3,895.3	24.9	13.6	-162.72	-395.4	361.1	767.1	742.6	24.53	31.276	
4,100.0	3,857.0	4,052.3	3,990.2	25.7	14.0	-162.50	-411.9	375.6	789.4	764.0	25.35	31.133	
4,200.0	3,948.6	4,149.8	4,085.2	26.5	14.5	-162.29	-428.4	390.1	811.6	785.4	26.18	30.997	
4,300.0	4,040.2	4,247.2	4,180.1	27.3	15.0	-162.10	-444.9	404.5	833.8	806.8	27.01	30.867	
4,400.0	4,131.8	4,344.7	4,275.1	28.2	15.5	-161.91	-461.4	419.0	856.1	828.2	27.85	30.743	
4,500.0	4,223.5	4,442.1	4,370.0	29.0	15.9	-161.74	-477.9	433.5	878.3	849.7	28.68	30.625	
4,600.0	4,315.1	4,539.6	4,465.0	29.8	16.4	-161.57	-494.4	447.9	900.6	871.1	29.52	30.512	
4,700.0	4,406.7	4,637.1	4,559.9	30.6	16.9	-161.41	-510.9	462.4	922.9	892.5	30.35	30.405	
4,800.0	4,498.4	4,734.5	4,654.9	31.4	17.4	-161.26	-527.4	476.9	945.1	914.0	31.19	30.301	
4,900.0	4,590.0	4,832.0	4,749.9	32.2	17.8	-161.11	-543.9	491.3	967.4	935.4	32.03	30.203	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 36-16
Project:	SEC.16-T2N-R65W	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Reference Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-01-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Thomason 11-16 Pad Sec.16-T2N-R65W - Thomason 23-16 - Wellbore #1 - Plan #1 (3-01-11)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,681.6	4,929.4	4,844.8	33.0	18.3	-160.98	-560.4	505.8	989.7	956.8	32.87	30.108	
5,100.0	4,773.2	5,000.0	4,913.7	33.8	18.6	-160.91	-571.9	515.9	1,012.8	979.3	33.56	30.175	
5,186.5	4,852.5	5,075.5	4,987.8	34.5	18.9	-160.91	-582.8	525.4	1,034.3	1,000.1	34.14	30.292	
5,200.0	4,864.9	5,085.8	4,997.9	34.6	18.9	-160.94	-584.1	526.6	1,037.7	1,003.5	34.23	30.314	
5,300.0	4,957.4	5,162.1	5,073.3	35.2	19.1	-161.16	-593.4	534.8	1,062.5	1,027.7	34.82	30.516	
5,400.0	5,051.1	5,238.4	5,148.8	35.7	19.3	-161.40	-601.2	541.6	1,086.1	1,050.7	35.34	30.732	
5,500.0	5,146.0	5,314.4	5,224.4	36.2	19.5	-161.64	-607.5	547.1	1,108.3	1,072.5	35.79	30.962	
5,600.0	5,242.0	5,400.0	5,309.7	36.6	19.7	-161.92	-612.7	551.7	1,129.2	1,093.0	36.19	31.201	
5,700.0	5,338.9	5,466.1	5,375.7	37.0	19.8	-162.18	-615.4	554.1	1,148.7	1,112.2	36.49	31.479	
5,800.0	5,436.6	5,541.7	5,451.3	37.4	19.9	-162.46	-617.2	555.6	1,166.9	1,130.1	36.74	31.765	
5,900.0	5,534.9	5,625.4	5,534.9	37.7	20.0	-162.77	-617.5	555.9	1,183.6	1,146.7	36.92	32.058	
6,000.0	5,633.9	5,724.3	5,633.9	37.9	20.1	-163.06	-617.5	555.9	1,197.5	1,160.4	37.08	32.295	
6,100.0	5,733.2	5,823.7	5,733.2	38.1	20.2	-163.27	-617.5	555.9	1,208.1	1,170.9	37.22	32.459	
6,200.0	5,833.0	5,923.4	5,833.0	38.3	20.4	-163.41	-617.5	555.9	1,215.4	1,178.0	37.34	32.552	
6,300.0	5,932.9	6,023.3	5,932.9	38.4	20.5	-163.49	-617.5	555.9	1,219.3	1,181.8	37.43	32.576	
6,367.1	6,000.0	6,090.5	6,000.0	38.5	20.6	0.10	-617.5	555.9	1,220.0	1,182.5	37.48	32.548	
6,400.0	6,032.9	6,123.3	6,032.9	38.5	20.6	0.10	-617.5	555.9	1,220.0	1,182.4	37.57	32.470	
6,500.0	6,132.9	6,223.3	6,132.9	38.5	20.7	0.10	-617.5	555.9	1,220.0	1,182.2	37.84	32.239	
6,600.0	6,232.9	6,323.3	6,232.9	38.6	20.9	0.10	-617.5	555.9	1,220.0	1,181.9	38.12	32.009	
6,700.0	6,332.9	6,423.3	6,332.9	38.7	21.0	0.10	-617.5	555.9	1,220.0	1,181.6	38.39	31.779	
6,800.0	6,432.9	6,523.3	6,432.9	38.7	21.1	0.10	-617.5	555.9	1,220.0	1,181.4	38.67	31.549	
6,900.0	6,532.9	6,623.3	6,532.9	38.8	21.2	0.10	-617.5	555.9	1,220.0	1,181.1	38.95	31.321	
7,000.0	6,632.9	6,723.3	6,632.9	38.9	21.4	0.10	-617.5	555.9	1,220.0	1,180.8	39.24	31.093	
7,100.0	6,732.9	6,823.3	6,732.9	38.9	21.5	0.10	-617.5	555.9	1,220.0	1,180.5	39.53	30.866	
7,200.0	6,832.9	6,923.3	6,832.9	39.0	21.7	0.10	-617.5	555.9	1,220.0	1,180.2	39.82	30.640	
7,300.0	6,932.9	7,023.3	6,932.9	39.1	21.8	0.10	-617.5	555.9	1,220.0	1,179.9	40.11	30.416	
7,400.0	7,032.9	7,123.3	7,032.9	39.1	21.9	0.10	-617.5	555.9	1,220.0	1,179.6	40.41	30.192	
7,500.0	7,132.9	7,223.3	7,132.9	39.2	22.1	0.10	-617.5	555.9	1,220.0	1,179.3	40.71	29.970	
7,600.0	7,232.9	7,323.3	7,232.9	39.3	22.2	0.10	-617.5	555.9	1,220.0	1,179.0	41.01	29.749	
7,700.0	7,332.9	7,423.3	7,332.9	39.3	22.4	0.10	-617.5	555.9	1,220.0	1,178.7	41.32	29.529	
7,727.1	7,360.0	7,450.5	7,360.0	39.4	22.4	0.10	-617.5	555.9	1,220.0	1,178.6	41.40	29.470	
7,727.5	7,360.4	7,450.5	7,360.0	39.4	22.4	0.10	-617.5	555.9	1,220.0	1,178.6	41.40	29.470	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 36-16
Project:	SEC.16-T2N-R65W	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Reference Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-01-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Thomason 11-16 Pad Sec.16-T2N-R65W - Thomason X #16-11 (Exist.) - Wellbore #1 - Design #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-30.93	83.1	-49.8	96.9				
100.0	100.0	97.0	97.0	0.1	0.1	-30.93	83.1	-49.8	96.8	96.6	0.22	437.380	
200.0	200.0	197.0	197.0	0.3	0.3	-30.93	83.1	-49.8	96.8	96.2	0.67	145.061	
300.0	300.0	297.0	297.0	0.6	0.6	-30.93	83.1	-49.8	96.8	95.7	1.12	86.686	
400.0	400.0	397.0	397.0	0.8	0.8	-30.93	83.1	-49.8	96.8	95.3	1.57	61.812	CC, ES
500.0	500.0	497.0	497.0	1.0	1.0	-171.08	83.1	-49.8	98.6	96.6	2.00	49.368	
550.0	549.9	546.9	546.9	1.1	1.1	-171.27	83.1	-49.8	100.7	98.5	2.20	45.676	
600.0	599.8	596.8	596.8	1.2	1.2	-178.01	83.1	-49.8	103.7	101.3	2.41	42.948	
700.0	699.5	696.5	696.5	1.4	1.5	175.33	83.1	-49.8	112.2	109.4	2.84	39.505	
800.0	798.8	795.8	795.8	1.7	1.7	172.50	83.1	-49.8	124.0	120.7	3.27	37.881	
900.0	897.6	894.6	894.6	2.0	1.9	171.34	83.1	-49.8	139.1	135.4	3.71	37.479	SF
1,000.0	995.8	992.8	992.8	2.3	2.1	171.01	83.1	-49.8	157.6	153.4	4.15	37.926	
1,100.0	1,093.3	1,090.3	1,090.3	2.7	2.3	171.11	83.1	-49.8	179.4	174.8	4.60	38.984	
1,200.0	1,190.1	1,187.1	1,187.1	3.2	2.6	171.44	83.1	-49.8	204.5	199.5	5.05	40.493	
1,300.0	1,285.8	1,282.8	1,282.8	3.7	2.8	171.85	83.1	-49.8	233.1	227.6	5.50	42.341	
1,400.0	1,380.5	1,377.5	1,377.5	4.3	3.0	172.30	83.1	-49.8	264.9	258.9	5.96	44.446	
1,500.0	1,474.0	1,471.0	1,471.0	5.0	3.2	172.73	83.1	-49.8	300.0	293.6	6.42	46.747	
1,594.8	1,561.5	1,558.5	1,558.5	5.7	3.4	173.12	83.1	-49.8	336.3	329.5	6.85	49.071	
1,600.0	1,566.3	1,563.3	1,563.3	5.7	3.4	173.16	83.1	-49.8	338.4	331.5	6.88	49.184	
1,700.0	1,657.9	1,654.9	1,654.9	6.5	3.6	173.88	83.1	-49.8	378.2	370.8	7.39	51.182	
1,800.0	1,749.5	1,746.5	1,746.5	7.3	3.8	174.47	83.1	-49.8	418.1	410.2	7.91	52.885	
1,900.0	1,841.2	1,838.2	1,838.2	8.0	4.0	174.95	83.1	-49.8	458.0	449.6	8.43	54.351	
2,000.0	1,932.8	1,929.8	1,929.8	8.8	4.2	175.36	83.1	-49.8	497.9	489.0	8.95	55.622	
2,100.0	2,024.4	2,021.4	2,021.4	9.6	4.4	175.70	83.1	-49.8	537.9	528.4	9.48	56.735	
2,200.0	2,116.0	2,113.0	2,113.0	10.4	4.6	176.00	83.1	-49.8	577.9	567.8	10.01	57.715	
2,300.0	2,207.7	2,204.7	2,204.7	11.2	4.8	176.26	83.1	-49.8	617.8	607.3	10.55	58.584	
2,400.0	2,299.3	2,296.3	2,296.3	12.0	5.0	176.49	83.1	-49.8	657.8	646.7	11.08	59.359	
2,500.0	2,390.9	2,387.9	2,387.9	12.8	5.3	176.69	83.1	-49.8	697.8	686.2	11.62	60.055	
2,600.0	2,482.6	2,479.6	2,479.6	13.6	5.5	176.87	83.1	-49.8	737.8	725.7	12.16	60.682	
2,700.0	2,574.2	2,571.2	2,571.2	14.4	5.7	177.03	83.1	-49.8	777.8	765.1	12.70	61.249	
2,800.0	2,665.8	2,662.8	2,662.8	15.2	5.9	177.17	83.1	-49.8	817.8	804.6	13.24	61.765	
2,900.0	2,757.4	2,754.4	2,754.4	16.0	6.1	177.31	83.1	-49.8	857.9	844.1	13.78	62.237	
3,000.0	2,849.1	2,846.1	2,846.1	16.8	6.3	177.43	83.1	-49.8	897.9	883.5	14.33	62.668	
3,100.0	2,940.7	2,937.7	2,937.7	17.6	6.5	177.54	83.1	-49.8	937.9	923.0	14.87	63.065	
3,200.0	3,032.3	3,029.3	3,029.3	18.5	6.7	177.64	83.1	-49.8	977.9	962.5	15.42	63.431	
3,300.0	3,123.9	3,120.9	3,120.9	19.3	6.9	177.73	83.1	-49.8	1,018.0	1,002.0	15.96	63.769	
3,400.0	3,215.6	3,212.6	3,212.6	20.1	7.1	177.82	83.1	-49.8	1,058.0	1,041.5	16.51	64.082	
3,500.0	3,307.2	3,304.2	3,304.2	20.9	7.3	177.90	83.1	-49.8	1,098.0	1,081.0	17.06	64.373	
3,600.0	3,398.8	3,395.8	3,395.8	21.7	7.5	177.97	83.1	-49.8	1,138.0	1,120.4	17.60	64.644	
3,700.0	3,490.5	3,487.5	3,487.5	22.5	7.7	178.04	83.1	-49.8	1,178.1	1,159.9	18.15	64.897	
3,800.0	3,582.1	3,579.1	3,579.1	23.3	7.9	178.10	83.1	-49.8	1,218.1	1,199.4	18.70	65.134	
3,900.0	3,673.7	3,670.7	3,670.7	24.1	8.1	178.16	83.1	-49.8	1,258.2	1,238.9	19.25	65.355	
4,000.0	3,765.3	3,762.3	3,762.3	24.9	8.3	178.22	83.1	-49.8	1,298.2	1,278.4	19.80	65.563	
4,100.0	3,857.0	3,854.0	3,854.0	25.7	8.6	178.27	83.1	-49.8	1,338.2	1,317.9	20.35	65.758	
4,200.0	3,948.6	3,945.6	3,945.6	26.5	8.8	178.32	83.1	-49.8	1,378.3	1,357.4	20.90	65.942	
4,300.0	4,040.2	4,037.2	4,037.2	27.3	9.0	178.37	83.1	-49.8	1,418.3	1,396.9	21.45	66.116	
4,400.0	4,131.8	4,128.8	4,128.8	28.2	9.2	178.42	83.1	-49.8	1,458.4	1,436.4	22.00	66.279	
4,500.0	4,223.5	4,220.5	4,220.5	29.0	9.4	178.46	83.1	-49.8	1,498.4	1,475.8	22.55	66.434	
4,600.0	4,315.1	4,312.1	4,312.1	29.8	9.6	178.50	83.1	-49.8	1,538.4	1,515.3	23.11	66.580	
4,700.0	4,406.7	4,403.7	4,403.7	30.6	9.8	178.54	83.1	-49.8	1,578.5	1,554.8	23.66	66.719	
4,800.0	4,498.4	4,495.4	4,495.4	31.4	10.0	178.57	83.1	-49.8	1,618.5	1,594.3	24.21	66.851	
4,900.0	4,590.0	4,587.0	4,587.0	32.2	10.2	178.61	83.1	-49.8	1,658.6	1,633.8	24.76	66.975	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 36-16
Project:	SEC.16-T2N-R65W	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Reference Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-01-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Thomason 11-16 Pad Sec.16-T2N-R65W - Thomason X #16-11 (Exist.) - Wellbore #1 - Design #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

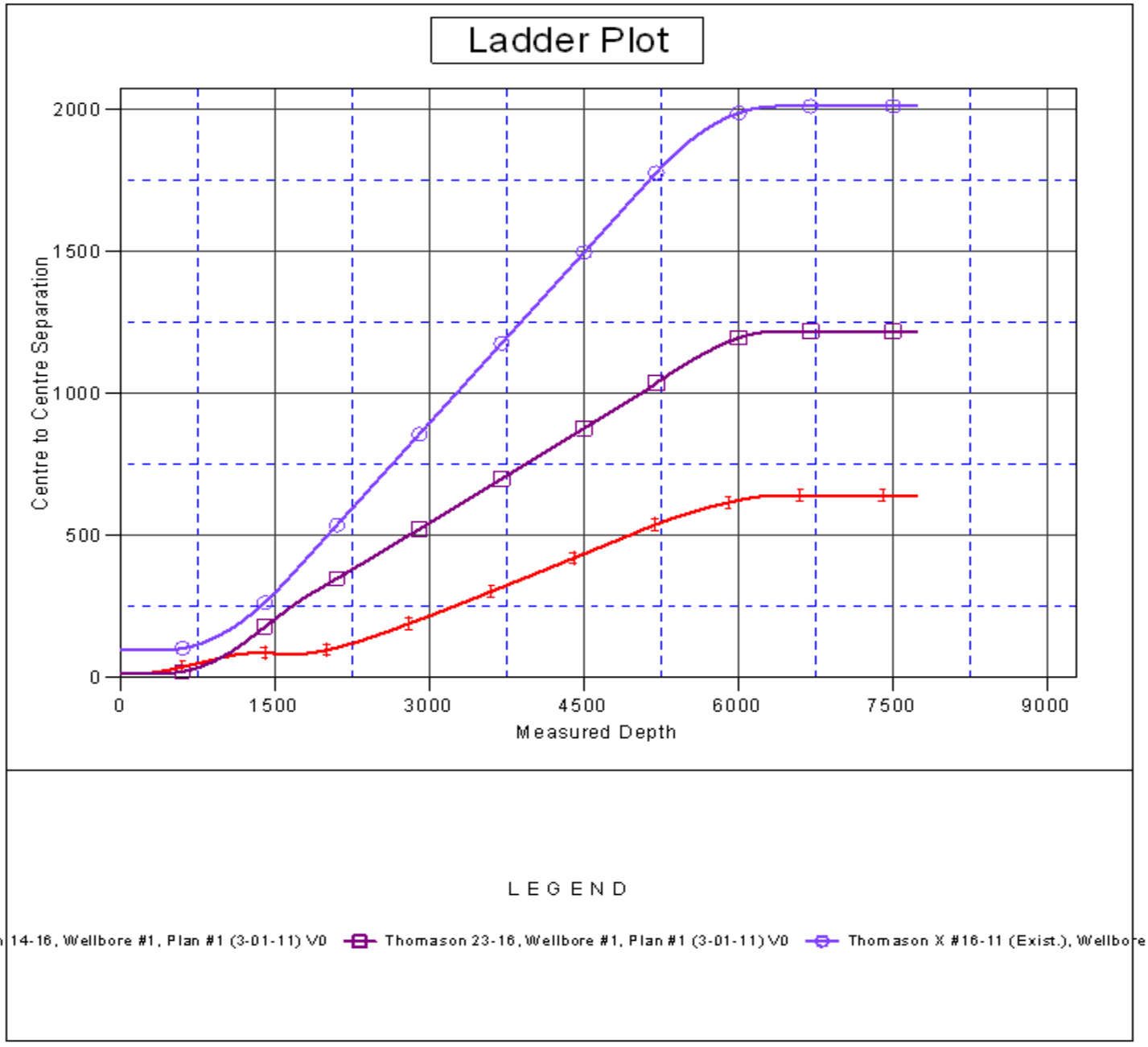
Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,681.6	4,678.6	4,678.6	33.0	10.4	178.64	83.1	-49.8	1,698.6	1,673.3	25.32	67.094	
5,100.0	4,773.2	4,770.2	4,770.2	33.8	10.6	178.67	83.1	-49.8	1,738.7	1,712.8	25.87	67.207	
5,186.5	4,852.5	4,849.5	4,849.5	34.5	10.8	178.70	83.1	-49.8	1,773.3	1,747.0	26.35	67.300	
5,200.0	4,864.9	4,861.9	4,861.9	34.6	10.8	178.70	83.1	-49.8	1,778.7	1,752.2	26.44	67.270	
5,300.0	4,957.4	4,954.4	4,954.4	35.2	11.0	178.75	83.1	-49.8	1,816.7	1,789.6	27.08	67.074	
5,400.0	5,051.1	5,048.1	5,048.1	35.7	11.2	178.79	83.1	-49.8	1,851.4	1,823.7	27.69	66.860	
5,500.0	5,146.0	5,143.0	5,143.0	36.2	11.4	178.82	83.1	-49.8	1,882.9	1,854.6	28.26	66.633	
5,600.0	5,242.0	5,239.0	5,239.0	36.6	11.7	178.85	83.1	-49.8	1,911.0	1,882.3	28.78	66.394	
5,700.0	5,338.9	5,335.9	5,335.9	37.0	11.9	178.88	83.1	-49.8	1,935.8	1,906.5	29.27	66.145	
5,800.0	5,436.6	5,433.6	5,433.6	37.4	12.1	178.90	83.1	-49.8	1,957.2	1,927.5	29.70	65.887	
5,900.0	5,534.9	5,531.9	5,531.9	37.7	12.3	178.91	83.1	-49.8	1,975.1	1,945.0	30.10	65.622	
6,000.0	5,633.9	5,630.9	5,630.9	37.9	12.5	178.93	83.1	-49.8	1,989.6	1,959.2	30.45	65.350	
6,100.0	5,733.2	5,730.2	5,730.2	38.1	12.8	178.94	83.1	-49.8	2,000.7	1,969.9	30.75	65.070	
6,200.0	5,833.0	5,830.0	5,830.0	38.3	13.0	178.94	83.1	-49.8	2,008.2	1,977.2	31.00	64.784	
6,300.0	5,932.9	5,929.9	5,929.9	38.4	13.2	178.95	83.1	-49.8	2,012.3	1,981.1	31.20	64.491	
6,367.1	6,000.0	5,997.0	5,997.0	38.5	13.4	-17.44	83.1	-49.8	2,013.1	1,981.8	31.32	64.276	
6,400.0	6,032.9	6,029.9	6,029.9	38.5	13.4	-17.44	83.1	-49.8	2,013.1	1,981.7	31.44	64.033	
6,500.0	6,132.9	6,129.9	6,129.9	38.5	13.7	-17.44	83.1	-49.8	2,013.1	1,981.3	31.79	63.320	
6,600.0	6,232.9	6,229.9	6,229.9	38.6	13.9	-17.44	83.1	-49.8	2,013.1	1,981.0	32.15	62.620	
6,700.0	6,332.9	6,329.9	6,329.9	38.7	14.1	-17.44	83.1	-49.8	2,013.1	1,980.6	32.51	61.931	
6,800.0	6,432.9	6,429.9	6,429.9	38.7	14.3	-17.44	83.1	-49.8	2,013.1	1,980.3	32.87	61.254	
6,900.0	6,532.9	6,529.9	6,529.9	38.8	14.6	-17.44	83.1	-49.8	2,013.1	1,979.9	33.23	60.588	
7,000.0	6,632.9	6,629.9	6,629.9	38.9	14.8	-17.44	83.1	-49.8	2,013.1	1,979.5	33.59	59.934	
7,100.0	6,732.9	6,729.9	6,729.9	38.9	15.0	-17.44	83.1	-49.8	2,013.1	1,979.2	33.95	59.291	
7,200.0	6,832.9	6,829.9	6,829.9	39.0	15.2	-17.44	83.1	-49.8	2,013.1	1,978.8	34.32	58.658	
7,300.0	6,932.9	6,929.9	6,929.9	39.1	15.5	-17.44	83.1	-49.8	2,013.1	1,978.4	34.69	58.037	
7,400.0	7,032.9	7,029.9	7,029.9	39.1	15.7	-17.44	83.1	-49.8	2,013.1	1,978.1	35.06	57.426	
7,500.0	7,132.9	7,129.9	7,129.9	39.2	15.9	-17.44	83.1	-49.8	2,013.1	1,977.7	35.43	56.825	
7,600.0	7,232.9	7,229.9	7,229.9	39.3	16.1	-17.44	83.1	-49.8	2,013.1	1,977.3	35.80	56.234	
7,700.0	7,332.9	7,329.9	7,329.9	39.3	16.4	-17.44	83.1	-49.8	2,013.1	1,976.9	36.17	55.653	
7,727.1	7,360.0	7,357.0	7,357.0	39.4	16.4	-17.44	83.1	-49.8	2,013.1	1,976.8	36.27	55.497	
7,727.5	7,360.4	7,357.4	7,357.4	39.4	16.4	-17.44	83.1	-49.8	2,013.1	1,976.8	36.28	55.496	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 36-16
Project:	SEC.16-T2N-R65W	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Reference Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-01-11)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4899.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Thomason 36-16
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.54°



Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 36-16
Project:	SEC.16-T2N-R65W	**TVD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Reference Site:	Thomason 11-16 Pad Sec.16-T2N-R65W	**MD Reference:**	WELL @ 4899.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Thomason 36-16	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (3-01-11)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4899.0ft (Original Well Elev) Coordinates are relative to: Thomason 36-16
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.54°