ENSIGN Directional

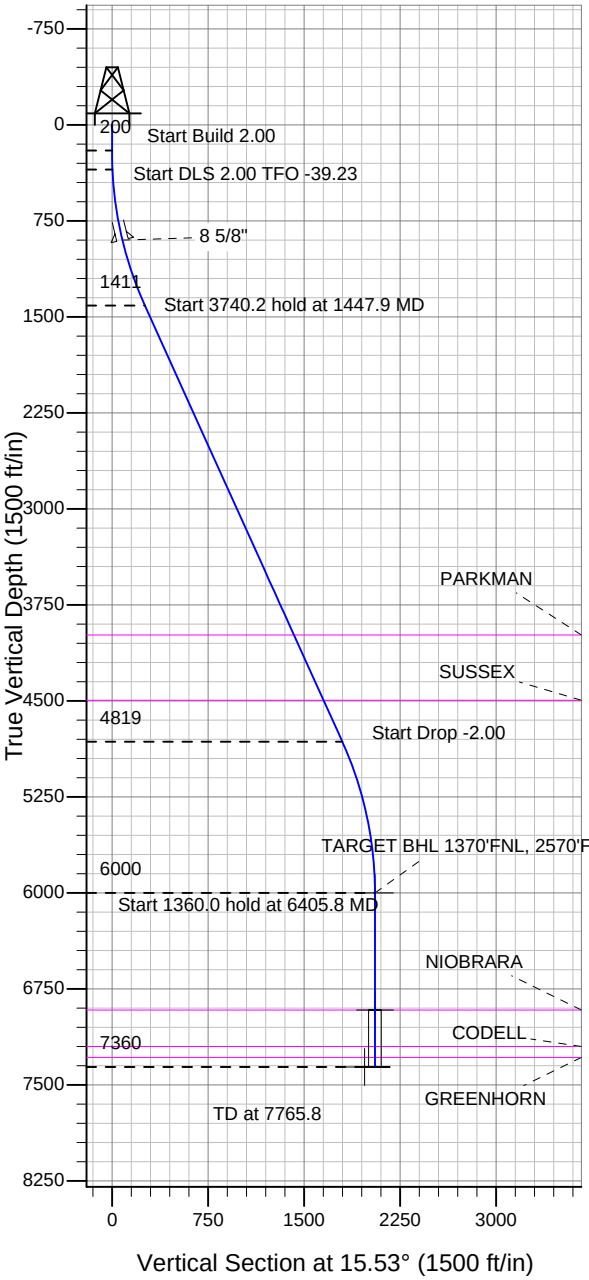
Well Name: Thomason 21-16

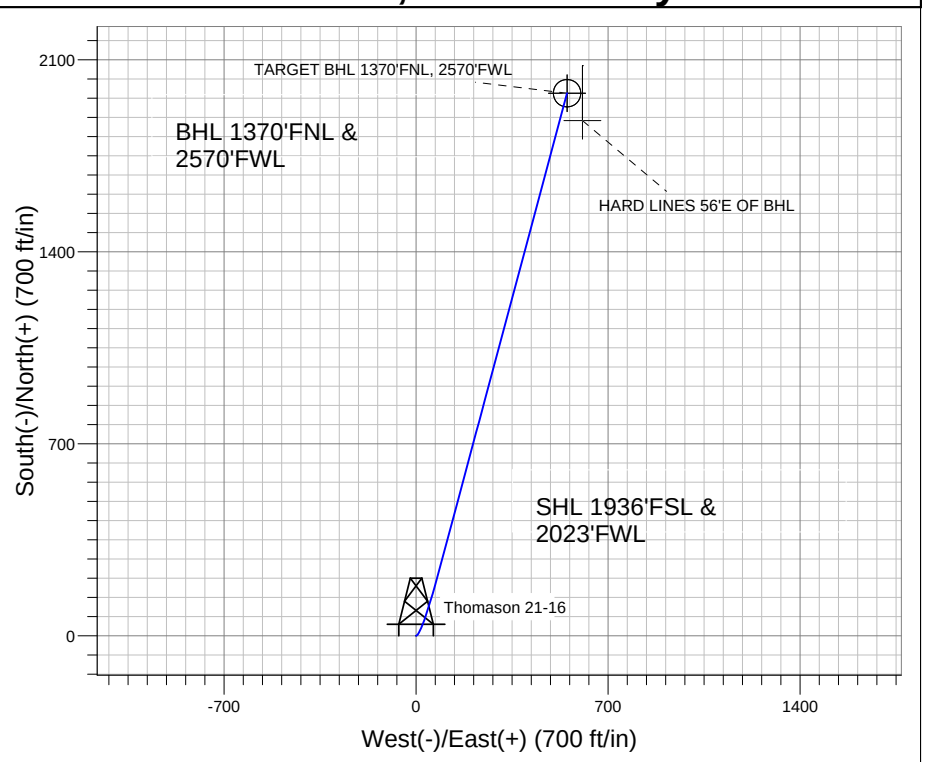
Surface Location: Thomason 11-16 Pad Sec.16-T2N-R65W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4885.0

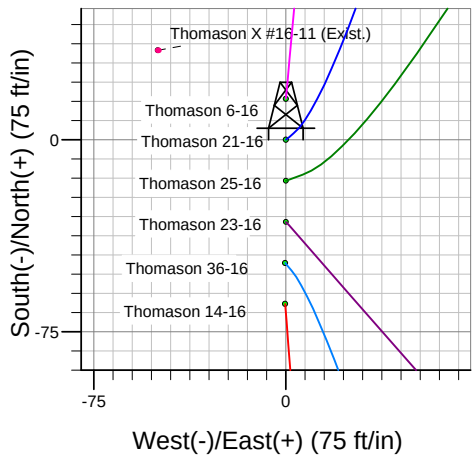
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1293755.55	3231729.22	40.136780	-104.671175	

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

Anadarko, Weld County CO

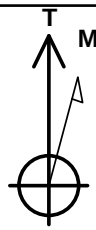






FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3985.0	4273.0	PARKMAN
4495.0	4832.8	SUSSEX
6915.0	7320.8	NIOBRARA
7200.0	7605.8	CODELL
7285.0	7690.8	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 21-16 Lat/Long: 40.136780 -104.671175

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1370'FNL, 2570'FWL	6000.0	1978.5	549.9	40.142211	-104.669208	Point
TARGET CIRCLE 1370'FNL, 2570'FWL	6915.0	1978.5	549.9	40.142211	-104.669208	Circle (Radius: 50.0)
HARD LINES 56'E OF BHL	7360.0	1878.5	605.9	40.141936	-104.669008	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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	350.0	3.00	50.00	349.9	2.5	3.0	2.00	50.00	3.2	
4	1447.9	24.35	15.01	1411.3	242.6	84.6	2.00	-39.23	256.4	
5	5188.1	24.35	15.01	4818.7	1732.3	483.9	0.00	0.00	1798.6	
6	6405.8	0.00	0.00	6000.0	1978.5	549.9	2.00	180.00	2053.5	TARGET BHL 1370'FNL, 2570'FWL
7	7765.8	0.00	0.00	7360.0	1978.5	549.9	0.00	0.00	2053.5	

CASING DETAILS

TVD	MD	Name	Size
900.0	906.5	8 5/8"	8-5/8

Thomason 11-16 Pad Sec.16-T2N-R65W
Thomason 21-16
Plan #1 (3-01-11)
14:18, March 10 2011

ENSIGN Directional

Anadarko, Weld County CO

SEC.16-T2N-R65W
Thomason 11-16 Pad Sec.16-T2N-R65W
Thomason 21-16

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 21-16
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 21-16	**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 21-16

Well Position	**+N/-S**	-16.0 ft	**Northing:**	1,293,755.55 ft	**Latitude:**	40.136780
	+E/-W	0.0 ft	**Easting:**	3,231,729.22 ft	**Longitude:**	-104.671175
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	15.53

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
350.0	3.00	50.00	349.9	2.5	3.0	2.00	2.00	0.00	50.00	
1,447.9	24.35	15.01	1,411.3	242.6	84.6	2.00	1.94	-3.19	-39.23	
5,188.1	24.35	15.01	4,818.7	1,732.3	483.9	0.00	0.00	0.00	0.00	
6,405.8	0.00	0.00	6,000.0	1,978.5	549.9	2.00	-2.00	0.00	180.00	TARGET BHL 137C
7,765.8	0.00	0.00	7,360.0	1,978.5	549.9	0.00	0.00	0.00	0.00	

Database:	Landmark	**Local Co-ordinate Reference:**	Well Thomason 21-16
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 21-16	**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	0.80	50.00	240.0	0.2	0.2	0.2	2.00	2.00	0.00
280.0	1.60	50.00	280.0	0.7	0.9	0.9	2.00	2.00	0.00
320.0	2.40	50.00	320.0	1.6	1.9	2.1	2.00	2.00	0.00
350.0	3.00	50.00	349.9	2.5	3.0	3.2	2.00	2.00	0.00
360.0	3.16	47.70	359.9	2.9	3.4	3.7	2.00	1.57	-22.97
400.0	3.83	40.48	399.8	4.6	5.1	5.8	2.00	1.67	-18.05
440.0	4.54	35.46	439.7	6.9	6.9	8.5	2.00	1.78	-12.55
480.0	5.28	31.82	479.6	9.8	8.8	11.8	2.00	1.84	-9.10
520.0	6.03	29.08	519.4	13.2	10.8	15.6	2.00	1.88	-6.85
560.0	6.79	26.95	559.1	17.1	12.9	20.0	2.00	1.91	-5.33
600.0	7.57	25.25	598.8	21.6	15.0	24.9	2.00	1.93	-4.25
640.0	8.34	23.86	638.4	26.7	17.3	30.3	2.00	1.94	-3.47
680.0	9.12	22.71	678.0	32.2	19.7	36.3	2.00	1.95	-2.88
720.0	9.91	21.74	717.4	38.4	22.2	42.9	2.00	1.96	-2.43
760.0	10.69	20.91	756.8	45.0	24.8	50.0	2.00	1.97	-2.07
800.0	11.48	20.19	796.0	52.2	27.5	57.7	2.00	1.97	-1.79
840.0	12.27	19.57	835.2	60.0	30.3	65.9	2.00	1.97	-1.56
880.0	13.06	19.02	874.2	68.2	33.2	74.7	2.00	1.98	-1.38
906.5	13.59	18.69	900.0	74.0	35.2	80.7	2.00	1.98	-1.25
8 5/8"									
920.0	13.85	18.53	913.1	77.1	36.2	83.9	2.00	1.98	-1.18
960.0	14.65	18.09	951.9	86.4	39.3	93.8	2.00	1.98	-1.09
1,000.0	15.44	17.70	990.5	96.3	42.5	104.1	2.00	1.98	-0.98
1,040.0	16.23	17.34	1,029.0	106.7	45.8	115.1	2.00	1.99	-0.89
1,080.0	17.03	17.02	1,067.3	117.6	49.2	126.5	2.00	1.99	-0.81
1,120.0	17.82	16.72	1,105.5	129.1	52.6	138.5	2.00	1.99	-0.74
1,160.0	18.62	16.45	1,143.5	141.1	56.2	151.0	2.00	1.99	-0.68
1,200.0	19.41	16.20	1,181.3	153.6	59.9	164.0	2.00	1.99	-0.62
1,240.0	20.21	15.97	1,218.9	166.6	63.6	177.6	2.00	1.99	-0.58
1,280.0	21.01	15.76	1,256.4	180.2	67.5	191.6	2.00	1.99	-0.53
1,320.0	21.80	15.56	1,293.6	194.2	71.4	206.2	2.00	1.99	-0.50
1,360.0	22.60	15.37	1,330.6	208.8	75.5	221.4	2.00	1.99	-0.46
1,400.0	23.40	15.20	1,367.5	223.9	79.6	237.0	2.00	1.99	-0.43
1,440.0	24.19	15.04	1,404.1	239.4	83.8	253.1	2.00	1.99	-0.41
1,447.9	24.35	15.01	1,411.3	242.6	84.6	256.4	2.00	1.99	-0.39
1,480.0	24.35	15.01	1,440.5	255.4	88.1	269.6	0.00	0.00	0.00
1,520.0	24.35	15.01	1,476.9	271.3	92.3	286.1	0.00	0.00	0.00
1,560.0	24.35	15.01	1,513.4	287.2	96.6	302.6	0.00	0.00	0.00
1,600.0	24.35	15.01	1,549.8	303.2	100.9	319.1	0.00	0.00	0.00
1,640.0	24.35	15.01	1,586.3	319.1	105.1	335.6	0.00	0.00	0.00
1,680.0	24.35	15.01	1,622.7	335.0	109.4	352.1	0.00	0.00	0.00
1,720.0	24.35	15.01	1,659.1	351.0	113.7	368.6	0.00	0.00	0.00
1,760.0	24.35	15.01	1,695.6	366.9	117.9	385.1	0.00	0.00	0.00
1,800.0	24.35	15.01	1,732.0	382.8	122.2	401.6	0.00	0.00	0.00
1,840.0	24.35	15.01	1,768.5	398.7	126.5	418.1	0.00	0.00	0.00
1,880.0	24.35	15.01	1,804.9	414.7	130.8	434.5	0.00	0.00	0.00
1,920.0	24.35	15.01	1,841.4	430.6	135.0	451.0	0.00	0.00	0.00
1,960.0	24.35	15.01	1,877.8	446.5	139.3	467.5	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Thomason 21-16
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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 21-16	**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	24.35	15.01	1,914.2	462.5	143.6	484.0	0.00	0.00	0.00
2,040.0	24.35	15.01	1,950.7	478.4	147.8	500.5	0.00	0.00	0.00
2,080.0	24.35	15.01	1,987.1	494.3	152.1	517.0	0.00	0.00	0.00
2,120.0	24.35	15.01	2,023.6	510.3	156.4	533.5	0.00	0.00	0.00
2,160.0	24.35	15.01	2,060.0	526.2	160.6	550.0	0.00	0.00	0.00
2,200.0	24.35	15.01	2,096.4	542.1	164.9	566.5	0.00	0.00	0.00
2,240.0	24.35	15.01	2,132.9	558.1	169.2	583.0	0.00	0.00	0.00
2,280.0	24.35	15.01	2,169.3	574.0	173.5	599.5	0.00	0.00	0.00
2,320.0	24.35	15.01	2,205.8	589.9	177.7	616.0	0.00	0.00	0.00
2,360.0	24.35	15.01	2,242.2	605.9	182.0	632.5	0.00	0.00	0.00
2,400.0	24.35	15.01	2,278.6	621.8	186.3	649.0	0.00	0.00	0.00
2,440.0	24.35	15.01	2,315.1	637.7	190.5	665.5	0.00	0.00	0.00
2,480.0	24.35	15.01	2,351.5	653.7	194.8	682.0	0.00	0.00	0.00
2,520.0	24.35	15.01	2,388.0	669.6	199.1	698.4	0.00	0.00	0.00
2,560.0	24.35	15.01	2,424.4	685.5	203.4	714.9	0.00	0.00	0.00
2,600.0	24.35	15.01	2,460.8	701.5	207.6	731.4	0.00	0.00	0.00
2,640.0	24.35	15.01	2,497.3	717.4	211.9	747.9	0.00	0.00	0.00
2,680.0	24.35	15.01	2,533.7	733.3	216.2	764.4	0.00	0.00	0.00
2,720.0	24.35	15.01	2,570.2	749.2	220.4	780.9	0.00	0.00	0.00
2,760.0	24.35	15.01	2,606.6	765.2	224.7	797.4	0.00	0.00	0.00
2,800.0	24.35	15.01	2,643.1	781.1	229.0	813.9	0.00	0.00	0.00
2,840.0	24.35	15.01	2,679.5	797.0	233.2	830.4	0.00	0.00	0.00
2,880.0	24.35	15.01	2,715.9	813.0	237.5	846.9	0.00	0.00	0.00
2,920.0	24.35	15.01	2,752.4	828.9	241.8	863.4	0.00	0.00	0.00
2,960.0	24.35	15.01	2,788.8	844.8	246.1	879.9	0.00	0.00	0.00
3,000.0	24.35	15.01	2,825.3	860.8	250.3	896.4	0.00	0.00	0.00
3,040.0	24.35	15.01	2,861.7	876.7	254.6	912.9	0.00	0.00	0.00
3,080.0	24.35	15.01	2,898.1	892.6	258.9	929.4	0.00	0.00	0.00
3,120.0	24.35	15.01	2,934.6	908.6	263.1	945.9	0.00	0.00	0.00
3,160.0	24.35	15.01	2,971.0	924.5	267.4	962.3	0.00	0.00	0.00
3,200.0	24.35	15.01	3,007.5	940.4	271.7	978.8	0.00	0.00	0.00
3,240.0	24.35	15.01	3,043.9	956.4	276.0	995.3	0.00	0.00	0.00
3,280.0	24.35	15.01	3,080.3	972.3	280.2	1,011.8	0.00	0.00	0.00
3,320.0	24.35	15.01	3,116.8	988.2	284.5	1,028.3	0.00	0.00	0.00
3,360.0	24.35	15.01	3,153.2	1,004.2	288.8	1,044.8	0.00	0.00	0.00
3,400.0	24.35	15.01	3,189.7	1,020.1	293.0	1,061.3	0.00	0.00	0.00
3,440.0	24.35	15.01	3,226.1	1,036.0	297.3	1,077.8	0.00	0.00	0.00
3,480.0	24.35	15.01	3,262.5	1,052.0	301.6	1,094.3	0.00	0.00	0.00
3,520.0	24.35	15.01	3,299.0	1,067.9	305.8	1,110.8	0.00	0.00	0.00
3,560.0	24.35	15.01	3,335.4	1,083.8	310.1	1,127.3	0.00	0.00	0.00
3,600.0	24.35	15.01	3,371.9	1,099.8	314.4	1,143.8	0.00	0.00	0.00
3,640.0	24.35	15.01	3,408.3	1,115.7	318.7	1,160.3	0.00	0.00	0.00
3,680.0	24.35	15.01	3,444.8	1,131.6	322.9	1,176.8	0.00	0.00	0.00
3,720.0	24.35	15.01	3,481.2	1,147.5	327.2	1,193.3	0.00	0.00	0.00
3,760.0	24.35	15.01	3,517.6	1,163.5	331.5	1,209.8	0.00	0.00	0.00
3,800.0	24.35	15.01	3,554.1	1,179.4	335.7	1,226.2	0.00	0.00	0.00
3,840.0	24.35	15.01	3,590.5	1,195.3	340.0	1,242.7	0.00	0.00	0.00
3,880.0	24.35	15.01	3,627.0	1,211.3	344.3	1,259.2	0.00	0.00	0.00
3,920.0	24.35	15.01	3,663.4	1,227.2	348.6	1,275.7	0.00	0.00	0.00
3,960.0	24.35	15.01	3,699.8	1,243.1	352.8	1,292.2	0.00	0.00	0.00
4,000.0	24.35	15.01	3,736.3	1,259.1	357.1	1,308.7	0.00	0.00	0.00
4,040.0	24.35	15.01	3,772.7	1,275.0	361.4	1,325.2	0.00	0.00	0.00
4,080.0	24.35	15.01	3,809.2	1,290.9	365.6	1,341.7	0.00	0.00	0.00
4,120.0	24.35	15.01	3,845.6	1,306.9	369.9	1,358.2	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Thomason 21-16
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 21-16	**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	24.35	15.01	3,882.0	1,322.8	374.2	1,374.7	0.00	0.00	0.00
4,200.0	24.35	15.01	3,918.5	1,338.7	378.4	1,391.2	0.00	0.00	0.00
4,240.0	24.35	15.01	3,954.9	1,354.7	382.7	1,407.7	0.00	0.00	0.00
4,273.0	24.35	15.01	3,985.0	1,367.8	386.2	1,421.3	0.00	0.00	0.00
PARKMAN									
4,280.0	24.35	15.01	3,991.4	1,370.6	387.0	1,424.2	0.00	0.00	0.00
4,320.0	24.35	15.01	4,027.8	1,386.5	391.3	1,440.7	0.00	0.00	0.00
4,360.0	24.35	15.01	4,064.2	1,402.5	395.5	1,457.2	0.00	0.00	0.00
4,400.0	24.35	15.01	4,100.7	1,418.4	399.8	1,473.6	0.00	0.00	0.00
4,440.0	24.35	15.01	4,137.1	1,434.3	404.1	1,490.1	0.00	0.00	0.00
4,480.0	24.35	15.01	4,173.6	1,450.3	408.3	1,506.6	0.00	0.00	0.00
4,520.0	24.35	15.01	4,210.0	1,466.2	412.6	1,523.1	0.00	0.00	0.00
4,560.0	24.35	15.01	4,246.5	1,482.1	416.9	1,539.6	0.00	0.00	0.00
4,600.0	24.35	15.01	4,282.9	1,498.0	421.2	1,556.1	0.00	0.00	0.00
4,640.0	24.35	15.01	4,319.3	1,514.0	425.4	1,572.6	0.00	0.00	0.00
4,680.0	24.35	15.01	4,355.8	1,529.9	429.7	1,589.1	0.00	0.00	0.00
4,720.0	24.35	15.01	4,392.2	1,545.8	434.0	1,605.6	0.00	0.00	0.00
4,760.0	24.35	15.01	4,428.7	1,561.8	438.2	1,622.1	0.00	0.00	0.00
4,800.0	24.35	15.01	4,465.1	1,577.7	442.5	1,638.6	0.00	0.00	0.00
4,832.8	24.35	15.01	4,495.0	1,590.8	446.0	1,652.1	0.00	0.00	0.00
SUSSEX									
4,840.0	24.35	15.01	4,501.5	1,593.6	446.8	1,655.1	0.00	0.00	0.00
4,880.0	24.35	15.01	4,538.0	1,609.6	451.0	1,671.6	0.00	0.00	0.00
4,920.0	24.35	15.01	4,574.4	1,625.5	455.3	1,688.1	0.00	0.00	0.00
4,960.0	24.35	15.01	4,610.9	1,641.4	459.6	1,704.6	0.00	0.00	0.00
5,000.0	24.35	15.01	4,647.3	1,657.4	463.9	1,721.1	0.00	0.00	0.00
5,040.0	24.35	15.01	4,683.7	1,673.3	468.1	1,737.5	0.00	0.00	0.00
5,080.0	24.35	15.01	4,720.2	1,689.2	472.4	1,754.0	0.00	0.00	0.00
5,120.0	24.35	15.01	4,756.6	1,705.2	476.7	1,770.5	0.00	0.00	0.00
5,160.0	24.35	15.01	4,793.1	1,721.1	480.9	1,787.0	0.00	0.00	0.00
5,188.1	24.35	15.01	4,818.7	1,732.3	483.9	1,798.6	0.00	0.00	0.00
5,200.0	24.12	15.01	4,829.5	1,737.0	485.2	1,803.5	2.00	-2.00	0.00
5,240.0	23.32	15.01	4,866.1	1,752.5	489.4	1,819.6	2.00	-2.00	0.00
5,280.0	22.52	15.01	4,903.0	1,767.6	493.4	1,835.2	2.00	-2.00	0.00
5,320.0	21.72	15.01	4,940.0	1,782.1	497.3	1,850.2	2.00	-2.00	0.00
5,360.0	20.92	15.01	4,977.3	1,796.2	501.1	1,864.8	2.00	-2.00	0.00
5,400.0	20.12	15.01	5,014.8	1,809.7	504.7	1,878.8	2.00	-2.00	0.00
5,440.0	19.32	15.01	5,052.4	1,822.8	508.2	1,892.3	2.00	-2.00	0.00
5,480.0	18.52	15.01	5,090.3	1,835.3	511.5	1,905.2	2.00	-2.00	0.00
5,520.0	17.72	15.01	5,128.3	1,847.3	514.8	1,917.7	2.00	-2.00	0.00
5,560.0	16.92	15.01	5,166.5	1,858.8	517.8	1,929.6	2.00	-2.00	0.00
5,600.0	16.12	15.01	5,204.8	1,869.8	520.8	1,940.9	2.00	-2.00	0.00
5,640.0	15.32	15.01	5,243.3	1,880.2	523.6	1,951.8	2.00	-2.00	0.00
5,680.0	14.52	15.01	5,282.0	1,890.2	526.3	1,962.1	2.00	-2.00	0.00
5,720.0	13.72	15.01	5,320.8	1,899.6	528.8	1,971.8	2.00	-2.00	0.00
5,760.0	12.92	15.01	5,359.7	1,908.5	531.2	1,981.0	2.00	-2.00	0.00
5,800.0	12.12	15.01	5,398.7	1,916.9	533.4	1,989.7	2.00	-2.00	0.00
5,840.0	11.32	15.01	5,437.9	1,924.7	535.5	1,997.8	2.00	-2.00	0.00
5,880.0	10.52	15.01	5,477.2	1,932.0	537.5	2,005.4	2.00	-2.00	0.00
5,920.0	9.72	15.01	5,516.6	1,938.8	539.3	2,012.4	2.00	-2.00	0.00
5,960.0	8.92	15.01	5,556.0	1,945.1	541.0	2,018.9	2.00	-2.00	0.00
6,000.0	8.12	15.01	5,595.6	1,950.8	542.5	2,024.8	2.00	-2.00	0.00
6,040.0	7.32	15.01	5,635.2	1,956.0	543.9	2,030.2	2.00	-2.00	0.00
6,080.0	6.52	15.01	5,674.9	1,960.6	545.1	2,035.0	2.00	-2.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Thomason 21-16
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 21-16	**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	5.72	15.01	5,714.7	1,964.8	546.2	2,039.3	2.00	-2.00	0.00
6,160.0	4.92	15.01	5,754.5	1,968.3	547.2	2,043.0	2.00	-2.00	0.00
6,200.0	4.12	15.01	5,794.4	1,971.4	548.0	2,046.1	2.00	-2.00	0.00
6,240.0	3.32	15.01	5,834.3	1,973.9	548.7	2,048.7	2.00	-2.00	0.00
6,280.0	2.52	15.01	5,874.3	1,975.8	549.2	2,050.8	2.00	-2.00	0.00
6,320.0	1.72	15.01	5,914.2	1,977.3	549.6	2,052.2	2.00	-2.00	0.00
6,360.0	0.92	15.01	5,954.2	1,978.2	549.8	2,053.1	2.00	-2.00	0.00
6,400.0	0.12	15.01	5,994.2	1,978.5	549.9	2,053.5	2.00	-2.00	0.00
6,405.8	0.00	0.00	6,000.0	1,978.5	549.9	2,053.5	2.00	-2.00	0.00
TARGET BHL 1370'FNL, 2570'FWL									
6,440.0	0.00	0.00	6,034.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,480.0	0.00	0.00	6,074.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,520.0	0.00	0.00	6,114.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,560.0	0.00	0.00	6,154.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,600.0	0.00	0.00	6,194.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,234.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,274.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,720.0	0.00	0.00	6,314.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,354.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,394.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,840.0	0.00	0.00	6,434.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,474.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,920.0	0.00	0.00	6,514.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
6,960.0	0.00	0.00	6,554.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,594.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,040.0	0.00	0.00	6,634.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,080.0	0.00	0.00	6,674.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,120.0	0.00	0.00	6,714.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,160.0	0.00	0.00	6,754.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,200.0	0.00	0.00	6,794.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,240.0	0.00	0.00	6,834.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,280.0	0.00	0.00	6,874.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,320.0	0.00	0.00	6,914.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,320.8	0.00	0.00	6,915.0	1,978.5	549.9	2,053.5	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1370'FNL, 2570'FWL									
7,360.0	0.00	0.00	6,954.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,400.0	0.00	0.00	6,994.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,440.0	0.00	0.00	7,034.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,480.0	0.00	0.00	7,074.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,520.0	0.00	0.00	7,114.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,560.0	0.00	0.00	7,154.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,600.0	0.00	0.00	7,194.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,605.8	0.00	0.00	7,200.0	1,978.5	549.9	2,053.5	0.00	0.00	0.00
CODELL									
7,640.0	0.00	0.00	7,234.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,680.0	0.00	0.00	7,274.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,690.8	0.00	0.00	7,285.0	1,978.5	549.9	2,053.5	0.00	0.00	0.00
GREENHORN									
7,720.0	0.00	0.00	7,314.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,760.0	0.00	0.00	7,354.2	1,978.5	549.9	2,053.5	0.00	0.00	0.00
7,765.8	0.00	0.00	7,360.0	1,978.5	549.9	2,053.5	0.00	0.00	0.00
HARD LINES 56'E OF BHL									

Database:	Landmark	**Local Co-ordinate Reference:**	Well Thomason 21-16
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 21-16	**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
TARGET BHL 1370'F	0.00	0.00	6,000.0	1,978.5	549.9	1,295,739.02	3,232,260.61	40.142211	-104.669208
- plan hits target center - Point									
HARD LINES 56'E OF	0.00	0.00	7,360.0	1,878.5	605.9	1,295,639.55	3,232,317.51	40.141936	-104.669008
- plan misses target center by 114.6ft at 7765.8ft MD (7360.0 TVD, 1978.5 N, 549.9 E) - Polygon									
Point 1			7,360.0	0.0	0.0	1,295,639.55	3,232,317.51		
Point 2			7,360.0	200.0	0.0	1,295,839.53	3,232,315.64		
TARGET CIRCLE 137	0.00	0.00	6,915.0	1,978.5	549.9	1,295,739.02	3,232,260.61	40.142211	-104.669208
- plan hits target center - Circle (radius 50.0)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
906.5	900.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,273.0	3,985.0	PARKMAN		0.00	
4,832.8	4,495.0	SUSSEX		0.00	
7,320.8	6,915.0	NIOBRARA		0.00	
7,605.8	7,200.0	CODELL		0.00	
7,690.8	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 21-16

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 21-16
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 21-16	**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	7,765.8	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 25-16 - Wellbore #1 - Plan #1 (3-01-11)	200.0	200.0	16.0	15.4	23.771	CC, ES
Thomason 25-16 - Wellbore #1 - Plan #1 (3-01-11)	1,000.0	1,003.1	45.8	40.4	8.433	SF
Thomason 6-16 - Wellbore #1 - Plan #1 (3-01-11)	200.0	200.0	16.0	15.4	23.765	CC, ES
Thomason 6-16 - Wellbore #1 - Plan #1 (3-01-11)	1,400.0	1,391.6	60.6	50.4	5.949	SF
Thomason X #16-11 (Exist.) - Wellbore #1 - Design #1	200.0	197.0	61.1	60.4	91.467	CC, ES
Thomason X #16-11 (Exist.) - Wellbore #1 - Design #1	800.0	793.0	79.5	75.9	22.389	SF

Offset Design Thomason 11-16 Pad Sec.16-T2N-R65W - Thomason 25-16 - 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	71.314	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-16.0	0.0	16.0	15.4	0.67	23.771	CC, ES
300.0	300.0	300.2	300.2	0.6	0.6	128.93	-15.4	1.6	16.6	15.4	1.12	14.820	
350.0	349.9	350.3	350.2	0.7	0.7	127.69	-14.7	3.7	17.2	15.9	1.34	12.819	
400.0	399.8	400.3	400.2	0.8	0.8	134.85	-13.6	6.6	18.3	16.8	1.57	11.649	
500.0	499.5	500.9	500.4	1.0	1.0	138.73	-9.6	13.8	21.4	19.3	2.06	10.369	
600.0	598.8	601.5	600.3	1.3	1.3	137.95	-2.2	22.3	25.0	22.4	2.59	9.628	
700.0	697.7	702.1	699.9	1.6	1.6	135.59	8.4	32.0	29.1	25.9	3.18	9.142	
800.0	796.0	802.7	798.9	2.0	2.0	132.75	22.3	42.9	33.8	29.9	3.85	8.778	
900.0	893.7	903.4	897.4	2.4	2.4	129.85	39.5	55.1	39.0	34.4	4.61	8.473	
1,000.0	990.5	1,003.1	994.6	2.8	2.8	128.74	58.3	67.8	45.8	40.4	5.44	8.433	SF
1,100.0	1,086.4	1,102.7	1,091.5	3.4	3.2	130.49	77.0	80.5	55.2	48.9	6.27	8.793	
1,200.0	1,181.3	1,201.9	1,188.1	3.9	3.7	133.75	95.7	93.1	67.1	60.0	7.09	9.463	
1,300.0	1,275.0	1,300.7	1,284.4	4.6	4.2	137.55	114.3	105.7	81.9	74.0	7.87	10.401	
1,400.0	1,367.5	1,399.0	1,380.0	5.3	4.6	141.33	132.8	118.2	99.7	91.1	8.62	11.575	
1,447.9	1,411.3	1,445.8	1,425.7	5.6	4.8	143.05	141.6	124.1	109.4	100.5	8.96	12.213	
1,500.0	1,458.7	1,496.6	1,475.1	6.0	5.1	144.64	151.1	130.6	120.4	111.0	9.34	12.886	
1,600.0	1,549.8	1,594.2	1,570.1	6.8	5.5	147.01	169.5	143.0	141.6	131.5	10.08	14.046	
1,700.0	1,640.9	1,691.8	1,665.2	7.6	6.0	148.76	187.9	155.4	163.0	152.2	10.83	15.051	
1,800.0	1,732.0	1,789.4	1,760.2	8.4	6.4	150.11	206.2	167.9	184.5	173.0	11.59	15.926	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 21-16
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 21-16	**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 25-16 - 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
1,900.0	1,823.1	1,886.9	1,855.2	9.2	6.9	151.17	224.6	180.3	206.1	193.8	12.35	16.693	
2,000.0	1,914.2	1,984.5	1,950.2	9.9	7.4	152.03	243.0	192.7	227.8	214.7	13.12	17.369	
2,100.0	2,005.3	2,082.1	2,045.3	10.7	7.8	152.74	261.3	205.1	249.5	235.6	13.88	17.969	
2,200.0	2,096.4	2,179.7	2,140.3	11.5	8.3	153.34	279.7	217.6	271.2	256.6	14.66	18.505	
2,300.0	2,187.5	2,277.2	2,235.3	12.3	8.8	153.85	298.1	230.0	293.0	277.5	15.43	18.986	
2,400.0	2,278.6	2,374.8	2,330.3	13.1	9.2	154.29	316.4	242.4	314.7	298.5	16.21	19.419	
2,500.0	2,369.7	2,472.4	2,425.3	13.9	9.7	154.67	334.8	254.8	336.5	319.5	16.99	19.812	
2,600.0	2,460.8	2,570.0	2,520.4	14.7	10.1	155.01	353.2	267.2	358.3	340.6	17.77	20.169	
2,700.0	2,552.0	2,667.5	2,615.4	15.5	10.6	155.30	371.5	279.7	380.1	361.6	18.55	20.495	
2,800.0	2,643.1	2,765.1	2,710.4	16.3	11.1	155.57	389.9	292.1	402.0	382.6	19.33	20.794	
2,900.0	2,734.2	2,862.7	2,805.4	17.1	11.5	155.81	408.3	304.5	423.8	403.7	20.11	21.070	
3,000.0	2,825.3	2,960.3	2,900.5	17.9	12.0	156.02	426.6	316.9	445.6	424.7	20.90	21.324	
3,100.0	2,916.4	3,057.8	2,995.5	18.7	12.5	156.21	445.0	329.4	467.5	445.8	21.68	21.559	
3,200.0	3,007.5	3,155.4	3,090.5	19.5	12.9	156.39	463.4	341.8	489.3	466.8	22.47	21.777	
3,300.0	3,098.6	3,253.0	3,185.5	20.3	13.4	156.55	481.7	354.2	511.1	487.9	23.25	21.981	
3,400.0	3,189.7	3,350.6	3,280.6	21.1	13.9	156.70	500.1	366.6	533.0	508.9	24.04	22.170	
3,500.0	3,280.8	3,448.1	3,375.6	21.8	14.3	156.84	518.5	379.0	554.8	530.0	24.83	22.348	
3,600.0	3,371.9	3,545.7	3,470.6	22.6	14.8	156.97	536.8	391.5	576.7	551.1	25.62	22.514	
3,700.0	3,463.0	3,643.3	3,565.6	23.4	15.3	157.08	555.2	403.9	598.6	572.1	26.40	22.670	
3,800.0	3,554.1	3,740.9	3,660.6	24.2	15.7	157.19	573.6	416.3	620.4	593.2	27.19	22.816	
3,900.0	3,645.2	3,838.4	3,755.7	25.0	16.2	157.29	591.9	428.7	642.3	614.3	27.98	22.955	
4,000.0	3,736.3	3,936.0	3,850.7	25.8	16.7	157.39	610.3	441.2	664.1	635.4	28.77	23.085	
4,100.0	3,827.4	4,033.6	3,945.7	26.6	17.1	157.48	628.7	453.6	686.0	656.4	29.56	23.208	
4,200.0	3,918.5	4,131.2	4,040.7	27.4	17.6	157.56	647.0	466.0	707.9	677.5	30.35	23.325	
4,300.0	4,009.6	4,228.7	4,135.8	28.2	18.1	157.64	665.4	478.4	729.7	698.6	31.14	23.436	
4,400.0	4,100.7	4,326.3	4,230.8	29.0	18.5	157.71	683.8	490.8	751.6	719.7	31.93	23.541	
4,500.0	4,191.8	4,423.9	4,325.8	29.8	19.0	157.78	702.1	503.3	773.5	740.8	32.72	23.641	
4,600.0	4,282.9	4,500.0	4,400.0	30.6	19.3	157.86	716.1	512.7	796.0	762.6	33.40	23.831	
4,700.0	4,374.0	4,588.3	4,486.6	31.4	19.6	158.05	730.3	522.3	820.4	786.4	34.01	24.121	
4,800.0	4,465.1	4,667.0	4,564.2	32.2	19.9	158.32	741.1	529.6	847.0	812.4	34.55	24.514	
4,900.0	4,556.2	4,744.6	4,641.1	33.0	20.1	158.66	750.0	535.6	875.6	840.6	35.04	24.990	
5,000.0	4,647.3	4,821.0	4,717.1	33.8	20.3	159.07	757.1	540.4	906.2	870.8	35.48	25.544	
5,100.0	4,738.4	4,900.0	4,795.7	34.6	20.4	159.56	762.6	544.2	938.9	903.0	35.87	26.175	
5,188.1	4,818.7	4,961.3	4,857.0	35.3	20.5	159.97	765.7	546.3	969.3	933.2	36.19	26.788	
5,200.0	4,829.5	4,970.0	4,865.7	35.4	20.5	160.06	766.1	546.5	973.5	937.3	36.23	26.874	
5,300.0	4,921.5	5,043.1	4,938.7	36.0	20.6	160.81	768.1	547.9	1,008.3	971.8	36.50	27.624	
5,400.0	5,014.8	5,119.2	5,014.8	36.5	20.7	161.54	768.7	548.3	1,041.9	1,005.2	36.73	28.366	
5,500.0	5,109.2	5,213.7	5,109.2	37.1	20.8	162.29	768.7	548.3	1,073.2	1,036.3	36.93	29.059	
5,600.0	5,204.8	5,309.2	5,204.8	37.5	20.9	162.93	768.7	548.3	1,101.4	1,064.3	37.14	29.652	
5,700.0	5,301.3	5,405.8	5,301.3	37.9	21.0	163.47	768.7	548.3	1,126.5	1,089.1	37.35	30.159	
5,800.0	5,398.7	5,503.2	5,398.7	38.3	21.2	163.91	768.7	548.3	1,148.3	1,110.7	37.54	30.585	
5,900.0	5,496.9	5,601.3	5,496.9	38.7	21.3	164.28	768.7	548.3	1,166.9	1,129.1	37.72	30.935	
6,000.0	5,595.6	5,700.0	5,595.6	38.9	21.4	164.57	768.7	548.3	1,182.1	1,144.3	37.87	31.213	
6,100.0	5,694.8	5,799.2	5,694.8	39.2	21.5	164.79	768.7	548.3	1,194.1	1,156.1	38.00	31.421	
6,200.0	5,794.4	5,898.8	5,794.4	39.4	21.6	164.95	768.7	548.3	1,202.7	1,164.6	38.11	31.562	
6,300.0	5,894.3	5,998.7	5,894.3	39.5	21.8	165.04	768.7	548.3	1,207.9	1,169.8	38.18	31.636	
6,405.8	6,000.0	6,104.4	6,000.0	39.6	21.9	-179.92	768.7	548.3	1,209.8	1,171.6	38.23	31.645	
6,500.0	6,094.2	6,198.7	6,094.2	39.7	22.0	-179.92	768.7	548.3	1,209.8	1,171.3	38.50	31.425	
6,600.0	6,194.2	6,298.7	6,194.2	39.7	22.2	-179.92	768.7	548.3	1,209.8	1,171.0	38.80	31.184	
6,700.0	6,294.2	6,398.7	6,294.2	39.8	22.3	-179.92	768.7	548.3	1,209.8	1,170.7	39.10	30.945	
6,800.0	6,394.2	6,498.7	6,394.2	39.9	22.4	-179.92	768.7	548.3	1,209.8	1,170.4	39.40	30.707	
6,900.0	6,494.2	6,598.7	6,494.2	40.0	22.6	-179.92	768.7	548.3	1,209.8	1,170.1	39.70	30.471	

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 21-16
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 21-16	**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 25-16 - 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
7,000.0	6,594.2	6,698.7	6,594.2	40.0	22.7	-179.92	768.7	548.3	1,209.8	1,169.8	40.01	30.236	
7,100.0	6,694.2	6,798.7	6,694.2	40.1	22.8	-179.92	768.7	548.3	1,209.8	1,169.5	40.32	30.003	
7,200.0	6,794.2	6,898.7	6,794.2	40.2	23.0	-179.92	768.7	548.3	1,209.8	1,169.2	40.64	29.772	
7,300.0	6,894.2	6,998.7	6,894.2	40.2	23.1	-179.92	768.7	548.3	1,209.8	1,168.9	40.95	29.542	
7,400.0	6,994.2	7,098.7	6,994.2	40.3	23.3	-179.92	768.7	548.3	1,209.8	1,168.6	41.27	29.314	
7,500.0	7,094.2	7,198.7	7,094.2	40.4	23.4	-179.92	768.7	548.3	1,209.8	1,168.2	41.59	29.088	
7,600.0	7,194.2	7,298.7	7,194.2	40.5	23.5	-179.92	768.7	548.3	1,209.8	1,167.9	41.91	28.864	
7,700.0	7,294.2	7,398.7	7,294.2	40.6	23.7	-179.92	768.7	548.3	1,209.8	1,167.6	42.24	28.642	
7,765.8	7,360.0	7,464.4	7,360.0	40.6	23.8	-179.92	768.7	548.3	1,209.8	1,167.4	42.45	28.497	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 21-16
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 21-16	**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 6-16 - 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	0.00	16.0	0.0	16.0	16.0	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	0.00	16.0	0.0	16.0	15.8	0.22	71.296	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	16.0	0.0	16.0	15.4	0.67	23.765	CC, ES
300.0	300.0	299.4	299.4	0.6	0.6	-54.03	17.7	0.2	16.7	15.6	1.12	14.865	
350.0	349.9	349.1	349.0	0.7	0.7	-58.61	19.9	0.3	17.6	16.2	1.35	13.041	
400.0	399.8	398.8	398.6	0.8	0.8	-54.10	22.9	0.6	18.8	17.3	1.58	11.938	
500.0	499.5	498.0	497.5	1.0	1.0	-52.72	31.5	1.4	21.8	19.7	2.06	10.604	
600.0	598.8	597.2	596.0	1.3	1.3	-54.76	43.4	2.5	25.3	22.7	2.57	9.842	
700.0	697.7	696.4	693.9	1.6	1.6	-57.55	58.7	3.9	29.3	26.2	3.15	9.306	
800.0	796.0	795.4	791.2	2.0	2.0	-60.32	77.4	5.6	33.8	30.0	3.82	8.855	
900.0	893.7	894.4	887.7	2.4	2.4	-62.84	99.4	7.5	38.7	34.1	4.58	8.438	
1,000.0	990.5	993.5	983.4	2.8	2.9	-65.10	124.7	9.8	43.9	38.4	5.46	8.038	
1,100.0	1,086.4	1,093.3	1,079.5	3.4	3.4	-69.21	151.5	12.3	48.3	41.9	6.49	7.454	
1,200.0	1,181.3	1,193.0	1,175.6	3.9	3.9	-76.17	178.3	14.7	51.8	44.2	7.67	6.759	
1,300.0	1,275.0	1,292.5	1,271.4	4.6	4.4	-85.66	205.0	17.1	55.4	46.5	8.95	6.193	
1,400.0	1,367.5	1,391.6	1,366.8	5.3	5.0	-97.00	231.6	19.5	60.6	50.4	10.18	5.949	SF
1,447.9	1,411.3	1,439.0	1,412.4	5.6	5.2	-102.74	244.3	20.7	64.0	53.3	10.70	5.983	
1,500.0	1,458.7	1,490.4	1,461.9	6.0	5.5	-108.85	258.1	21.9	68.6	57.4	11.19	6.129	
1,600.0	1,549.8	1,589.1	1,556.9	6.8	6.0	-118.39	284.5	24.3	79.1	67.1	11.97	6.608	
1,700.0	1,640.9	1,687.7	1,652.0	7.6	6.5	-125.57	311.0	26.7	91.3	78.7	12.65	7.219	
1,800.0	1,732.0	1,786.4	1,747.0	8.4	7.1	-131.01	337.5	29.1	104.6	91.3	13.29	7.871	
1,900.0	1,823.1	1,885.1	1,842.0	9.2	7.6	-135.20	364.0	31.5	118.7	104.7	13.93	8.518	
2,000.0	1,914.2	1,983.8	1,937.1	9.9	8.1	-138.50	390.4	33.9	133.2	118.6	14.58	9.138	
2,100.0	2,005.3	2,082.5	2,032.1	10.7	8.7	-141.14	416.9	36.3	148.1	132.8	15.23	9.720	
2,200.0	2,096.4	2,181.1	2,127.1	11.5	9.2	-143.30	443.4	38.7	163.2	147.3	15.90	10.263	
2,300.0	2,187.5	2,279.8	2,222.2	12.3	9.7	-145.10	469.9	41.1	178.5	161.9	16.58	10.766	
2,400.0	2,278.6	2,378.5	2,317.2	13.1	10.3	-146.60	496.4	43.5	193.9	176.7	17.27	11.231	
2,500.0	2,369.7	2,477.2	2,412.2	13.9	10.8	-147.89	522.8	45.9	209.5	191.5	17.97	11.660	
2,600.0	2,460.8	2,575.9	2,507.3	14.7	11.4	-149.00	549.3	48.3	225.2	206.5	18.67	12.058	
2,700.0	2,552.0	2,674.5	2,602.3	15.5	11.9	-149.96	575.8	50.7	240.9	221.5	19.39	12.426	
2,800.0	2,643.1	2,773.2	2,697.3	16.3	12.4	-150.81	602.3	53.1	256.7	236.6	20.10	12.767	
2,900.0	2,734.2	2,871.9	2,792.3	17.1	13.0	-151.55	628.7	55.4	272.5	251.7	20.83	13.084	
3,000.0	2,825.3	2,970.6	2,887.4	17.9	13.5	-152.22	655.2	57.8	288.4	266.8	21.56	13.379	
3,100.0	2,916.4	3,069.3	2,982.4	18.7	14.0	-152.82	681.7	60.2	304.3	282.0	22.29	13.654	
3,200.0	3,007.5	3,167.9	3,077.4	19.5	14.6	-153.35	708.2	62.6	320.2	297.2	23.02	13.911	
3,300.0	3,098.6	3,266.6	3,172.5	20.3	15.1	-153.84	734.6	65.0	336.2	312.4	23.76	14.151	
3,400.0	3,189.7	3,365.3	3,267.5	21.1	15.7	-154.28	761.1	67.4	352.2	327.7	24.50	14.376	
3,500.0	3,280.8	3,464.0	3,362.5	21.8	16.2	-154.68	787.6	69.8	368.2	342.9	25.24	14.588	
3,600.0	3,371.9	3,562.7	3,457.6	22.6	16.7	-155.05	814.1	72.2	384.2	358.2	25.98	14.787	
3,700.0	3,463.0	3,661.3	3,552.6	23.4	17.3	-155.39	840.5	74.6	400.2	373.5	26.73	14.974	
3,800.0	3,554.1	3,760.0	3,647.6	24.2	17.8	-155.71	867.0	77.0	416.3	388.8	27.47	15.151	
3,900.0	3,645.2	3,858.7	3,742.7	25.0	18.3	-156.00	893.5	79.4	432.3	404.1	28.22	15.318	
4,000.0	3,736.3	3,957.4	3,837.7	25.8	18.9	-156.27	920.0	81.8	448.4	419.4	28.97	15.476	
4,100.0	3,827.4	4,056.1	3,932.7	26.6	19.4	-156.52	946.5	84.2	464.5	434.7	29.72	15.626	
4,200.0	3,918.5	4,154.7	4,027.8	27.4	20.0	-156.75	972.9	86.6	480.5	450.1	30.48	15.768	
4,300.0	4,009.6	4,253.4	4,122.8	28.2	20.5	-156.97	999.4	89.0	496.6	465.4	31.23	15.903	
4,400.0	4,100.7	4,352.1	4,217.8	29.0	21.0	-157.18	1,025.9	91.4	512.7	480.8	31.98	16.031	
4,500.0	4,191.8	4,450.8	4,312.8	29.8	21.6	-157.37	1,052.4	93.8	528.8	496.1	32.74	16.154	
4,600.0	4,282.9	4,549.5	4,407.9	30.6	22.1	-157.55	1,078.8	96.2	544.9	511.5	33.49	16.270	
4,700.0	4,374.0	4,648.1	4,502.9	31.4	22.6	-157.72	1,105.3	98.6	561.1	526.8	34.25	16.382	
4,800.0	4,465.1	4,736.2	4,587.9	32.2	23.1	-157.90	1,128.3	100.7	577.8	542.9	34.92	16.549	
4,900.0	4,556.2	4,819.6	4,669.0	33.0	23.4	-158.19	1,147.8	102.4	597.0	561.5	35.48	16.825	

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 21-16
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 21-16	**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 6-16 - 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	4,647.3	4,900.0	4,747.6	33.8	23.7	-158.56	1,164.3	103.9	618.6	582.7	35.99	17.192	
5,100.0	4,738.4	4,983.5	4,829.8	34.6	23.9	-159.03	1,179.2	105.3	642.7	606.3	36.43	17.644	
5,188.1	4,818.7	5,054.2	4,899.7	35.3	24.1	-159.49	1,189.9	106.2	665.9	629.2	36.77	18.111	
5,200.0	4,829.5	5,063.7	4,909.1	35.4	24.1	-159.58	1,191.2	106.3	669.2	632.4	36.81	18.179	
5,300.0	4,921.5	5,143.2	4,988.0	36.0	24.3	-160.29	1,200.9	107.2	696.1	659.0	37.10	18.761	
5,400.0	5,014.8	5,222.2	5,066.6	36.5	24.5	-160.97	1,208.4	107.9	722.3	685.0	37.36	19.336	
5,500.0	5,109.2	5,300.0	5,144.2	37.1	24.6	-161.60	1,213.6	108.4	747.7	710.2	37.56	19.906	
5,600.0	5,204.8	5,379.1	5,223.2	37.5	24.8	-162.21	1,216.8	108.7	772.3	734.6	37.72	20.478	
5,700.0	5,301.3	5,457.2	5,301.3	37.9	24.8	-162.78	1,217.9	108.8	796.1	758.3	37.82	21.051	
5,800.0	5,398.7	5,554.6	5,398.7	38.3	24.9	-163.38	1,217.9	108.8	817.9	780.0	37.90	21.583	
5,900.0	5,496.9	5,652.7	5,496.9	38.7	25.0	-163.86	1,217.9	108.8	836.4	798.4	37.98	22.024	
6,000.0	5,595.6	5,751.4	5,595.6	38.9	25.1	-164.24	1,217.9	108.8	851.7	813.6	38.05	22.381	
6,100.0	5,694.8	5,850.7	5,694.8	39.2	25.2	-164.53	1,217.9	108.8	863.6	825.5	38.11	22.658	
6,200.0	5,794.4	5,950.3	5,794.4	39.4	25.3	-164.73	1,217.9	108.8	872.2	834.0	38.16	22.856	
6,300.0	5,894.3	6,050.1	5,894.3	39.5	25.4	-164.85	1,217.9	108.8	877.5	839.3	38.19	22.976	
6,405.8	6,000.0	6,155.8	6,000.0	39.6	25.6	-149.89	1,217.9	108.8	879.3	841.1	38.20	23.020	
6,500.0	6,094.2	6,250.1	6,094.2	39.7	25.7	-149.89	1,217.9	108.8	879.3	840.9	38.46	22.862	
6,600.0	6,194.2	6,350.1	6,194.2	39.7	25.8	-149.89	1,217.9	108.8	879.3	840.6	38.76	22.690	
6,700.0	6,294.2	6,450.1	6,294.2	39.8	25.9	-149.89	1,217.9	108.8	879.3	840.3	39.05	22.518	
6,800.0	6,394.2	6,550.1	6,394.2	39.9	26.0	-149.89	1,217.9	108.8	879.3	840.0	39.35	22.348	
6,900.0	6,494.2	6,650.1	6,494.2	40.0	26.1	-149.89	1,217.9	108.8	879.3	839.7	39.65	22.179	
7,000.0	6,594.2	6,750.1	6,594.2	40.0	26.2	-149.89	1,217.9	108.8	879.3	839.4	39.95	22.011	
7,100.0	6,694.2	6,850.1	6,694.2	40.1	26.3	-149.89	1,217.9	108.8	879.3	839.1	40.26	21.843	
7,200.0	6,794.2	6,950.1	6,794.2	40.2	26.5	-149.89	1,217.9	108.8	879.3	838.8	40.56	21.677	
7,300.0	6,894.2	7,050.1	6,894.2	40.2	26.6	-149.89	1,217.9	108.8	879.3	838.5	40.88	21.512	
7,400.0	6,994.2	7,150.1	6,994.2	40.3	26.7	-149.89	1,217.9	108.8	879.3	838.1	41.19	21.349	
7,500.0	7,094.2	7,250.1	7,094.2	40.4	26.8	-149.89	1,217.9	108.8	879.3	837.8	41.51	21.186	
7,600.0	7,194.2	7,350.1	7,194.2	40.5	26.9	-149.89	1,217.9	108.8	879.3	837.5	41.82	21.025	
7,700.0	7,294.2	7,450.1	7,294.2	40.6	27.1	-149.89	1,217.9	108.8	879.3	837.2	42.14	20.865	
7,765.8	7,360.0	7,515.8	7,360.0	40.6	27.1	-149.89	1,217.9	108.8	879.3	837.0	42.36	20.760	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 21-16
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 21-16	**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	-55.05	35.0	-50.0	61.1				
100.0	100.0	97.0	97.0	0.1	0.1	-55.05	35.0	-50.0	61.1	60.8	0.22	275.788	
200.0	200.0	197.0	197.0	0.3	0.3	-55.05	35.0	-50.0	61.1	60.4	0.67	91.467	CC, ES
300.0	300.0	297.0	297.0	0.6	0.6	-106.61	35.0	-50.0	61.5	60.4	1.11	55.246	
350.0	349.9	346.9	346.9	0.7	0.7	-108.52	35.0	-50.0	62.2	60.9	1.34	46.473	
400.0	399.8	396.8	396.8	0.8	0.8	-101.63	35.0	-50.0	62.9	61.4	1.57	40.204	
500.0	499.5	496.5	496.5	1.0	1.0	-98.82	35.0	-50.0	64.3	62.2	2.03	31.597	
600.0	598.8	595.8	595.8	1.3	1.2	-103.54	35.0	-50.0	66.5	63.9	2.52	26.328	
700.0	697.7	694.7	694.7	1.6	1.4	-112.13	35.0	-50.0	71.0	68.0	3.03	23.413	
800.0	796.0	793.0	793.0	2.0	1.7	-122.20	35.0	-50.0	79.5	75.9	3.55	22.389	SF
900.0	893.7	890.7	890.7	2.4	1.9	-131.90	35.0	-50.0	92.7	88.7	4.06	22.856	
1,000.0	990.5	987.5	987.5	2.8	2.1	-140.18	35.0	-50.0	111.0	106.5	4.55	24.403	
1,100.0	1,086.4	1,083.4	1,083.4	3.4	2.3	-146.83	35.0	-50.0	134.1	129.1	5.03	26.671	
1,200.0	1,181.3	1,178.3	1,178.3	3.9	2.5	-152.01	35.0	-50.0	161.7	156.2	5.50	29.393	
1,300.0	1,275.0	1,272.0	1,272.0	4.6	2.7	-156.03	35.0	-50.0	193.5	187.5	5.97	32.392	
1,400.0	1,367.5	1,364.5	1,364.5	5.3	3.0	-159.16	35.0	-50.0	229.1	222.6	6.44	35.552	
1,447.9	1,411.3	1,408.3	1,408.3	5.6	3.1	-160.41	35.0	-50.0	247.5	240.8	6.67	37.104	
1,500.0	1,458.7	1,455.7	1,455.7	6.0	3.2	-161.93	35.0	-50.0	268.0	261.0	6.93	38.677	
1,600.0	1,549.8	1,546.8	1,546.8	6.8	3.4	-164.30	35.0	-50.0	307.7	300.3	7.43	41.405	
1,700.0	1,640.9	1,637.9	1,637.9	7.6	3.6	-166.13	35.0	-50.0	347.8	339.9	7.94	43.788	
1,800.0	1,732.0	1,729.0	1,729.0	8.4	3.8	-167.58	35.0	-50.0	388.2	379.7	8.46	45.877	
1,900.0	1,823.1	1,820.1	1,820.1	9.2	4.0	-168.77	35.0	-50.0	428.7	419.7	8.98	47.717	
2,000.0	1,914.2	1,911.2	1,911.2	9.9	4.2	-169.74	35.0	-50.0	469.3	459.8	9.51	49.346	
2,100.0	2,005.3	2,002.3	2,002.3	10.7	4.4	-170.57	35.0	-50.0	510.0	500.0	10.04	50.795	
2,200.0	2,096.4	2,093.4	2,093.4	11.5	4.6	-171.27	35.0	-50.0	550.8	540.3	10.57	52.090	
2,300.0	2,187.5	2,184.5	2,184.5	12.3	4.8	-171.87	35.0	-50.0	591.7	580.6	11.11	53.254	
2,400.0	2,278.6	2,275.6	2,275.6	13.1	5.0	-172.40	35.0	-50.0	632.6	621.0	11.65	54.305	
2,500.0	2,369.7	2,366.7	2,366.7	13.9	5.2	-172.86	35.0	-50.0	673.6	661.4	12.19	55.257	
2,600.0	2,460.8	2,457.8	2,457.8	14.7	5.4	-173.27	35.0	-50.0	714.6	701.8	12.73	56.124	
2,700.0	2,552.0	2,549.0	2,549.0	15.5	5.6	-173.64	35.0	-50.0	755.6	742.3	13.28	56.916	
2,800.0	2,643.1	2,640.1	2,640.1	16.3	5.8	-173.97	35.0	-50.0	796.6	782.8	13.82	57.642	
2,900.0	2,734.2	2,731.2	2,731.2	17.1	6.0	-174.26	35.0	-50.0	837.7	823.3	14.37	58.309	
3,000.0	2,825.3	2,822.3	2,822.3	17.9	6.2	-174.53	35.0	-50.0	878.7	863.8	14.91	58.924	
3,100.0	2,916.4	2,913.4	2,913.4	18.7	6.4	-174.78	35.0	-50.0	919.8	904.4	15.46	59.494	
3,200.0	3,007.5	3,004.5	3,004.5	19.5	6.6	-175.00	35.0	-50.0	960.9	944.9	16.01	60.022	
3,300.0	3,098.6	3,095.6	3,095.6	20.3	6.8	-175.21	35.0	-50.0	1,002.0	985.5	16.56	60.513	
3,400.0	3,189.7	3,186.7	3,186.7	21.1	7.1	-175.40	35.0	-50.0	1,043.1	1,026.0	17.11	60.970	
3,500.0	3,280.8	3,277.8	3,277.8	21.8	7.3	-175.57	35.0	-50.0	1,084.3	1,066.6	17.66	61.397	
3,600.0	3,371.9	3,368.9	3,368.9	22.6	7.5	-175.73	35.0	-50.0	1,125.4	1,107.2	18.21	61.796	
3,700.0	3,463.0	3,460.0	3,460.0	23.4	7.7	-175.88	35.0	-50.0	1,166.6	1,147.8	18.76	62.171	
3,800.0	3,554.1	3,551.1	3,551.1	24.2	7.9	-176.02	35.0	-50.0	1,207.7	1,188.4	19.32	62.523	
3,900.0	3,645.2	3,642.2	3,642.2	25.0	8.1	-176.15	35.0	-50.0	1,248.9	1,229.0	19.87	62.854	
4,000.0	3,736.3	3,733.3	3,733.3	25.8	8.3	-176.28	35.0	-50.0	1,290.0	1,269.6	20.42	63.165	
4,100.0	3,827.4	3,824.4	3,824.4	26.6	8.5	-176.39	35.0	-50.0	1,331.2	1,310.2	20.98	63.460	
4,200.0	3,918.5	3,915.5	3,915.5	27.4	8.7	-176.50	35.0	-50.0	1,372.4	1,350.8	21.53	63.738	
4,300.0	4,009.6	4,006.6	4,006.6	28.2	8.9	-176.60	35.0	-50.0	1,413.5	1,391.5	22.09	64.001	
4,400.0	4,100.7	4,097.7	4,097.7	29.0	9.1	-176.70	35.0	-50.0	1,454.7	1,432.1	22.64	64.250	
4,500.0	4,191.8	4,188.8	4,188.8	29.8	9.3	-176.79	35.0	-50.0	1,495.9	1,472.7	23.20	64.486	
4,600.0	4,282.9	4,279.9	4,279.9	30.6	9.5	-176.88	35.0	-50.0	1,537.1	1,513.3	23.75	64.710	
4,700.0	4,374.0	4,371.0	4,371.0	31.4	9.7	-176.96	35.0	-50.0	1,578.3	1,554.0	24.31	64.924	
4,800.0	4,465.1	4,462.1	4,462.1	32.2	9.9	-177.03	35.0	-50.0	1,619.5	1,594.6	24.87	65.127	
4,900.0	4,556.2	4,553.2	4,553.2	33.0	10.1	-177.11	35.0	-50.0	1,660.6	1,635.2	25.42	65.320	

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 21-16
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 21-16	**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

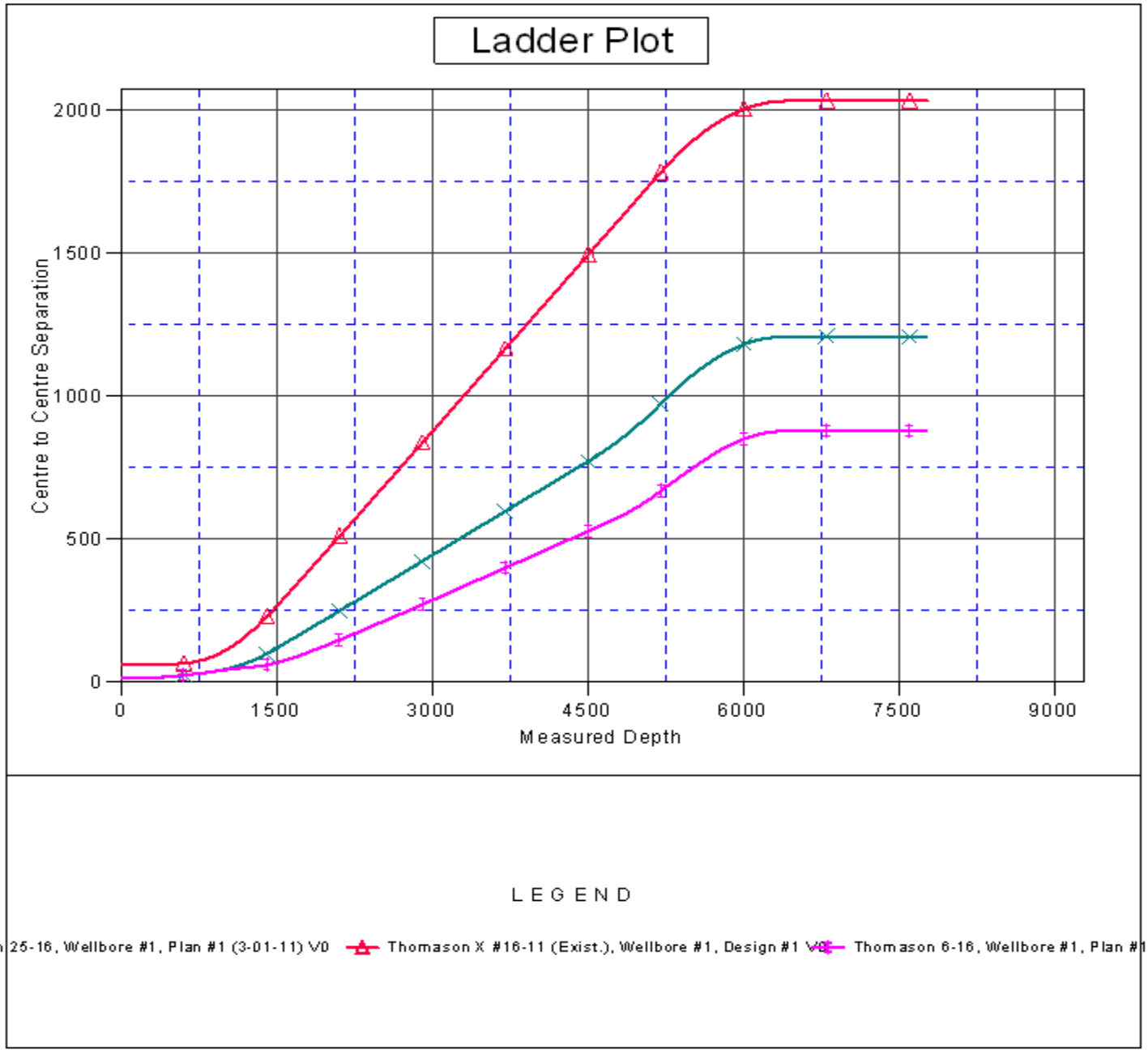
Survey Program: 0-MWD

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	4,647.3	4,644.3	4,644.3	33.8	10.3	-177.18	35.0	-50.0	1,701.8	1,675.9	25.98	65.504	
5,100.0	4,738.4	4,735.4	4,735.4	34.6	10.5	-177.25	35.0	-50.0	1,743.0	1,716.5	26.54	65.680	
5,188.1	4,818.7	4,815.7	4,815.7	35.3	10.7	-177.30	35.0	-50.0	1,779.3	1,752.3	27.03	65.829	
5,200.0	4,829.5	4,826.5	4,826.5	35.4	10.7	-177.31	35.0	-50.0	1,784.2	1,757.1	27.11	65.811	
5,300.0	4,921.5	4,918.5	4,918.5	36.0	10.9	-177.41	35.0	-50.0	1,823.4	1,795.7	27.76	65.693	
5,400.0	5,014.8	5,011.8	5,011.8	36.5	11.2	-177.49	35.0	-50.0	1,859.4	1,831.1	28.36	65.555	
5,500.0	5,109.2	5,106.2	5,106.2	37.1	11.4	-177.57	35.0	-50.0	1,892.1	1,863.2	28.93	65.400	
5,600.0	5,204.8	5,201.8	5,201.8	37.5	11.6	-177.63	35.0	-50.0	1,921.5	1,892.1	29.46	65.232	
5,700.0	5,301.3	5,298.3	5,298.3	37.9	11.8	-177.68	35.0	-50.0	1,947.6	1,917.7	29.94	65.053	
5,800.0	5,398.7	5,395.7	5,395.7	38.3	12.0	-177.73	35.0	-50.0	1,970.3	1,939.9	30.38	64.863	
5,900.0	5,496.9	5,493.9	5,493.9	38.7	12.2	-177.77	35.0	-50.0	1,989.5	1,958.8	30.77	64.666	
6,000.0	5,595.6	5,592.6	5,592.6	38.9	12.5	-177.80	35.0	-50.0	2,005.4	1,974.3	31.11	64.460	
6,100.0	5,694.8	5,691.8	5,691.8	39.2	12.7	-177.82	35.0	-50.0	2,017.7	1,986.3	31.41	64.248	
6,200.0	5,794.4	5,791.4	5,791.4	39.4	12.9	-177.84	35.0	-50.0	2,026.7	1,995.0	31.65	64.029	
6,300.0	5,894.3	5,891.3	5,891.3	39.5	13.1	-177.85	35.0	-50.0	2,032.1	2,000.2	31.85	63.803	
6,405.8	6,000.0	5,997.0	5,997.0	39.6	13.4	-162.84	35.0	-50.0	2,034.0	2,002.0	32.00	63.555	
6,500.0	6,094.2	6,091.2	6,091.2	39.7	13.6	-162.84	35.0	-50.0	2,034.0	2,001.7	32.34	62.895	
6,600.0	6,194.2	6,191.2	6,191.2	39.7	13.8	-162.84	35.0	-50.0	2,034.0	2,001.3	32.71	62.185	
6,700.0	6,294.2	6,291.2	6,291.2	39.8	14.0	-162.84	35.0	-50.0	2,034.0	2,001.0	33.08	61.488	
6,800.0	6,394.2	6,391.2	6,391.2	39.9	14.3	-162.84	35.0	-50.0	2,034.0	2,000.6	33.45	60.803	
6,900.0	6,494.2	6,491.2	6,491.2	40.0	14.5	-162.84	35.0	-50.0	2,034.0	2,000.2	33.83	60.131	
7,000.0	6,594.2	6,591.2	6,591.2	40.0	14.7	-162.84	35.0	-50.0	2,034.0	1,999.8	34.20	59.471	
7,100.0	6,694.2	6,691.2	6,691.2	40.1	14.9	-162.84	35.0	-50.0	2,034.0	1,999.5	34.58	58.824	
7,200.0	6,794.2	6,791.2	6,791.2	40.2	15.2	-162.84	35.0	-50.0	2,034.0	1,999.1	34.96	58.187	
7,300.0	6,894.2	6,891.2	6,891.2	40.2	15.4	-162.84	35.0	-50.0	2,034.0	1,998.7	35.34	57.562	
7,400.0	6,994.2	6,991.2	6,991.2	40.3	15.6	-162.84	35.0	-50.0	2,034.0	1,998.3	35.72	56.949	
7,500.0	7,094.2	7,091.2	7,091.2	40.4	15.8	-162.84	35.0	-50.0	2,034.0	1,997.9	36.10	56.346	
7,600.0	7,194.2	7,191.2	7,191.2	40.5	16.1	-162.84	35.0	-50.0	2,034.0	1,997.6	36.48	55.754	
7,700.0	7,294.2	7,291.2	7,291.2	40.6	16.3	-162.84	35.0	-50.0	2,034.0	1,997.2	36.87	55.172	
7,765.8	7,360.0	7,357.0	7,357.0	40.6	16.4	-162.84	35.0	-50.0	2,034.0	1,996.9	37.12	54.795	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 21-16
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 21-16	**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 21-16
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°



Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Thomason 21-16
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 21-16	**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 21-16
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°