

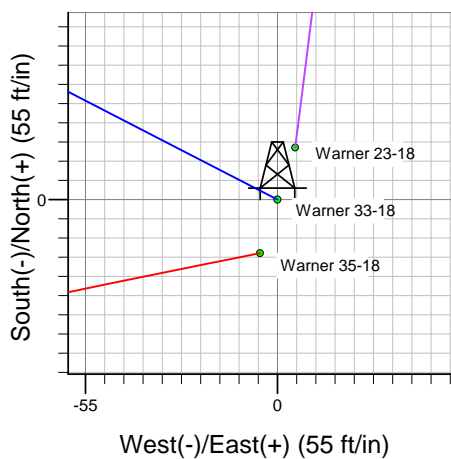
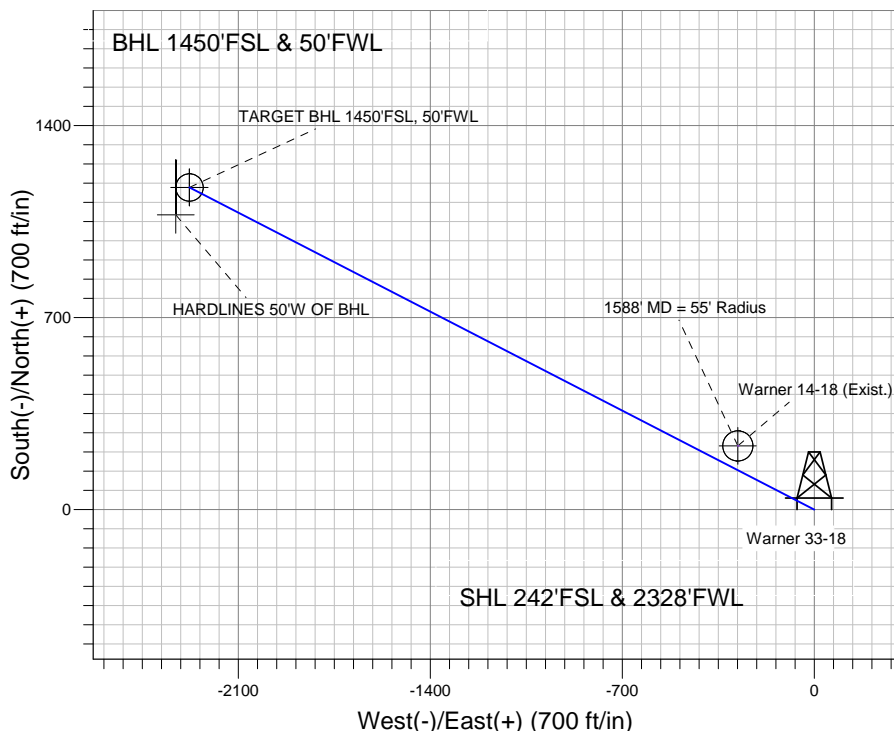
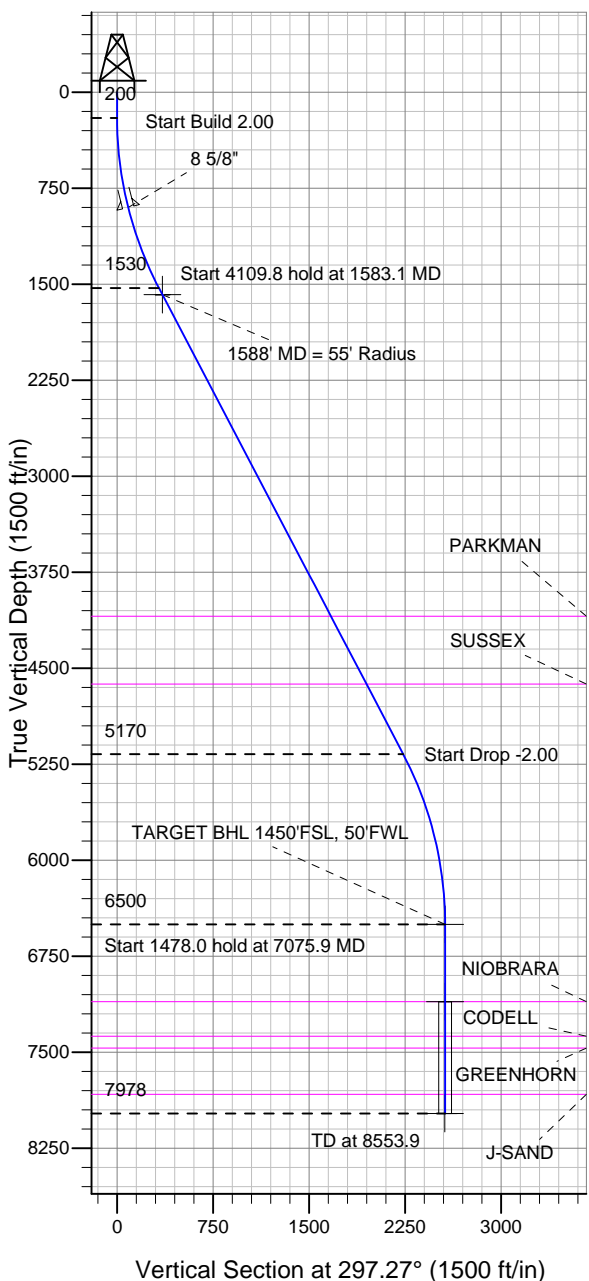
ENSIGN

Directional

Well Name: Warner 33-18

Surface Location: Warner 36-18 Pad Sec.18-T2N-R65W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4993.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1291885.92 3221560.55 40.131903 -104.707603
 Original Well Elev WELL @ 5007.0ft (Original Well Elev)

Anadarko, Weld County CO



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4093.0	4476.9	PARKMAN
4623.0	5075.2	SUSSEX
7103.0	7678.9	NIOBRARA
7373.0	7948.9	CODELL
7466.0	8041.9	GREENHORN
7828.0	8403.9	J-SAND



Azimuths to True North
 Magnetic North: 8.84°

Magnetic Field
 Strength: 53022.1nT
 Dip Angle: 66.85°
 Date: 3/14/2011
 Model: IGRF2010

Well Name: Warner 33-18 Lat/Long: 40.131903 -104.707603

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
1588' MD = 55' Radius	1581.0	232.1	-278.8	40.132540	-104.708600	Circle (Radius: 55.0)
TARGET BHL 1450'FSL, 50'FWL	6500.0	1174.2	-2278.0	40.135126	-104.715750	Point
TARGET CIRCLE 1450'FSL, 50'FWL	7103.0	1174.2	-2278.0	40.135126	-104.715750	Circle (Radius: 50.0)
HARDLINES 50'W OF BHL	7978.0	1074.2	-2328.0	40.134851	-104.715929	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	1583.1	27.66	297.27	1530.0	150.0	-291.0	2.00	297.27	327.4	
4	5692.9	27.66	297.27	5170.0	1024.2	-1986.9	0.00	0.00	2235.4	
5	7075.9	0.00	0.00	6500.0	1174.2	-2278.0	2.00	180.00	2562.8	TARGET BHL 1450'FSL, 50'FWL
6	8553.9	0.00	0.00	7978.0	1174.2	-2278.0	0.00	0.00	2562.8	

CASING DETAILS

TVD	MD	Name	Size
900.0	907.2	8 5/8"	8-5/8

Warner 36-18 Pad Sec.18-T2N-R65W
 Warner 33-18
 Plan #1 (3-14-11)
 12:53, March 15 2011



Directional

Anadarko, Weld County CO

SEC.18-T2N-R65W

Warner 36-18 Pad Sec.18-T2N-R65W

Warner 33-18

Wellbore #1

Plan: Plan #1 (3-14-11)

Standard Planning Report

15 March, 2011

Database:	Landmark	Local Co-ordinate Reference:	Well Warner 33-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site:	Warner 36-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Warner 33-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-14-11)		

Project	SEC.18-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		Warner 36-18 Pad Sec.18-T2N-R65W			
Site Position:		Northing:	1,291,900.91 ft	Latitude:	40.131944
From:	Lat/Long	Easting:	3,221,565.45 ft	Longitude:	-104.707585
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.51 °

Well	Warner 33-18					
Well Position	+N/-S	-14.9 ft	Northing:	1,291,885.92 ft	Latitude:	40.131903
	+E/-W	-5.0 ft	Easting:	3,221,560.55 ft	Longitude:	-104.707603
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,993.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/14/2011	8.84	66.85	53,022

Design	Plan #1 (3-14-11)			
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	297.27

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	
1,583.1	27.66	297.27	1,530.0	150.0	-291.0	2.00	2.00	0.00	297.27	
5,692.9	27.66	297.27	5,170.0	1,024.2	-1,986.9	0.00	0.00	0.00	0.00	
7,075.9	0.00	0.00	6,500.0	1,174.2	-2,278.0	2.00	-2.00	0.00	180.00	TARGET BHL 145C
8,553.9	0.00	0.00	7,978.0	1,174.2	-2,278.0	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Warner 33-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site:	Warner 36-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Warner 33-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-14-11)		

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	297.27	240.0	0.1	-0.2	0.3	2.00	2.00	0.00
280.0	1.60	297.27	280.0	0.5	-1.0	1.1	2.00	2.00	0.00
320.0	2.40	297.27	320.0	1.2	-2.2	2.5	2.00	2.00	0.00
360.0	3.20	297.27	359.9	2.0	-4.0	4.5	2.00	2.00	0.00
400.0	4.00	297.27	399.8	3.2	-6.2	7.0	2.00	2.00	0.00
440.0	4.80	297.27	439.7	4.6	-8.9	10.0	2.00	2.00	0.00
480.0	5.60	297.27	479.6	6.3	-12.2	13.7	2.00	2.00	0.00
520.0	6.40	297.27	519.3	8.2	-15.9	17.9	2.00	2.00	0.00
560.0	7.20	297.27	559.1	10.4	-20.1	22.6	2.00	2.00	0.00
600.0	8.00	297.27	598.7	12.8	-24.8	27.9	2.00	2.00	0.00
640.0	8.80	297.27	638.3	15.5	-30.0	33.7	2.00	2.00	0.00
680.0	9.60	297.27	677.8	18.4	-35.7	40.1	2.00	2.00	0.00
720.0	10.40	297.27	717.1	21.6	-41.8	47.1	2.00	2.00	0.00
760.0	11.20	297.27	756.4	25.0	-48.5	54.6	2.00	2.00	0.00
800.0	12.00	297.27	795.6	28.7	-55.6	62.6	2.00	2.00	0.00
840.0	12.80	297.27	834.7	32.6	-63.3	71.2	2.00	2.00	0.00
880.0	13.60	297.27	873.6	36.8	-71.4	80.3	2.00	2.00	0.00
907.2	14.14	297.27	900.0	39.8	-77.2	86.8	2.00	2.00	0.00
8 5/8"									
920.0	14.40	297.27	912.4	41.2	-80.0	90.0	2.00	2.00	0.00
960.0	15.20	297.27	951.1	45.9	-89.1	100.2	2.00	2.00	0.00
1,000.0	16.00	297.27	989.6	50.8	-98.6	111.0	2.00	2.00	0.00
1,040.0	16.80	297.27	1,028.0	56.0	-108.7	122.3	2.00	2.00	0.00
1,080.0	17.60	297.27	1,066.2	61.4	-119.2	134.1	2.00	2.00	0.00
1,120.0	18.40	297.27	1,104.3	67.1	-130.2	146.5	2.00	2.00	0.00
1,160.0	19.20	297.27	1,142.1	73.0	-141.6	159.3	2.00	2.00	0.00
1,200.0	20.00	297.27	1,179.8	79.2	-153.6	172.8	2.00	2.00	0.00
1,240.0	20.80	297.27	1,217.3	85.5	-166.0	186.7	2.00	2.00	0.00
1,280.0	21.60	297.27	1,254.6	92.2	-178.8	201.2	2.00	2.00	0.00
1,320.0	22.40	297.27	1,291.7	99.0	-192.1	216.2	2.00	2.00	0.00
1,360.0	23.20	297.27	1,328.6	106.1	-205.9	231.7	2.00	2.00	0.00
1,400.0	24.00	297.27	1,365.2	113.5	-220.1	247.7	2.00	2.00	0.00
1,440.0	24.80	297.27	1,401.6	121.1	-234.8	264.2	2.00	2.00	0.00
1,480.0	25.60	297.27	1,437.8	128.9	-250.0	281.2	2.00	2.00	0.00
1,520.0	26.40	297.27	1,473.8	136.9	-265.6	298.8	2.00	2.00	0.00
1,560.0	27.20	297.27	1,509.5	145.2	-281.6	316.8	2.00	2.00	0.00
1,583.1	27.66	297.27	1,530.0	150.0	-291.0	327.4	2.00	2.00	0.00
1,600.0	27.66	297.27	1,545.0	153.6	-298.0	335.3	0.00	0.00	0.00
1,640.0	27.66	297.27	1,580.4	162.1	-314.5	353.9	0.00	0.00	0.00
1,640.7	27.66	297.27	1,581.0	162.3	-314.8	354.2	0.00	0.00	0.00
1588' MD = 55' Radius									
1,680.0	27.66	297.27	1,615.8	170.6	-331.0	372.4	0.00	0.00	0.00
1,720.0	27.66	297.27	1,651.2	179.1	-347.5	391.0	0.00	0.00	0.00
1,760.0	27.66	297.27	1,686.7	187.7	-364.0	409.6	0.00	0.00	0.00
1,800.0	27.66	297.27	1,722.1	196.2	-380.6	428.1	0.00	0.00	0.00
1,840.0	27.66	297.27	1,757.5	204.7	-397.1	446.7	0.00	0.00	0.00
1,880.0	27.66	297.27	1,793.0	213.2	-413.6	465.3	0.00	0.00	0.00
1,920.0	27.66	297.27	1,828.4	221.7	-430.1	483.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Warner 33-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site:	Warner 36-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Warner 33-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-14-11)		

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)
1,960.0	27.66	297.27	1,863.8	230.2	-446.6	502.4	0.00	0.00	0.00
2,000.0	27.66	297.27	1,899.2	238.7	-463.1	521.0	0.00	0.00	0.00
2,040.0	27.66	297.27	1,934.7	247.2	-479.6	539.6	0.00	0.00	0.00
2,080.0	27.66	297.27	1,970.1	255.7	-496.1	558.1	0.00	0.00	0.00
2,120.0	27.66	297.27	2,005.5	264.2	-512.6	576.7	0.00	0.00	0.00
2,160.0	27.66	297.27	2,041.0	272.7	-529.1	595.3	0.00	0.00	0.00
2,200.0	27.66	297.27	2,076.4	281.2	-545.6	613.8	0.00	0.00	0.00
2,240.0	27.66	297.27	2,111.8	289.8	-562.1	632.4	0.00	0.00	0.00
2,280.0	27.66	297.27	2,147.2	298.3	-578.6	651.0	0.00	0.00	0.00
2,320.0	27.66	297.27	2,182.7	306.8	-595.1	669.5	0.00	0.00	0.00
2,360.0	27.66	297.27	2,218.1	315.3	-611.6	688.1	0.00	0.00	0.00
2,400.0	27.66	297.27	2,253.5	323.8	-628.1	706.7	0.00	0.00	0.00
2,440.0	27.66	297.27	2,289.0	332.3	-644.6	725.3	0.00	0.00	0.00
2,480.0	27.66	297.27	2,324.4	340.8	-661.2	743.8	0.00	0.00	0.00
2,520.0	27.66	297.27	2,359.8	349.3	-677.7	762.4	0.00	0.00	0.00
2,560.0	27.66	297.27	2,395.2	357.8	-694.2	781.0	0.00	0.00	0.00
2,600.0	27.66	297.27	2,430.7	366.3	-710.7	799.5	0.00	0.00	0.00
2,640.0	27.66	297.27	2,466.1	374.8	-727.2	818.1	0.00	0.00	0.00
2,680.0	27.66	297.27	2,501.5	383.3	-743.7	836.7	0.00	0.00	0.00
2,720.0	27.66	297.27	2,536.9	391.9	-760.2	855.2	0.00	0.00	0.00
2,760.0	27.66	297.27	2,572.4	400.4	-776.7	873.8	0.00	0.00	0.00
2,800.0	27.66	297.27	2,607.8	408.9	-793.2	892.4	0.00	0.00	0.00
2,840.0	27.66	297.27	2,643.2	417.4	-809.7	911.0	0.00	0.00	0.00
2,880.0	27.66	297.27	2,678.7	425.9	-826.2	929.5	0.00	0.00	0.00
2,920.0	27.66	297.27	2,714.1	434.4	-842.7	948.1	0.00	0.00	0.00
2,960.0	27.66	297.27	2,749.5	442.9	-859.2	966.7	0.00	0.00	0.00
3,000.0	27.66	297.27	2,784.9	451.4	-875.7	985.2	0.00	0.00	0.00
3,040.0	27.66	297.27	2,820.4	459.9	-892.2	1,003.8	0.00	0.00	0.00
3,080.0	27.66	297.27	2,855.8	468.4	-908.7	1,022.4	0.00	0.00	0.00
3,120.0	27.66	297.27	2,891.2	476.9	-925.3	1,040.9	0.00	0.00	0.00
3,160.0	27.66	297.27	2,926.7	485.5	-941.8	1,059.5	0.00	0.00	0.00
3,200.0	27.66	297.27	2,962.1	494.0	-958.3	1,078.1	0.00	0.00	0.00
3,240.0	27.66	297.27	2,997.5	502.5	-974.8	1,096.7	0.00	0.00	0.00
3,280.0	27.66	297.27	3,032.9	511.0	-991.3	1,115.2	0.00	0.00	0.00
3,320.0	27.66	297.27	3,068.4	519.5	-1,007.8	1,133.8	0.00	0.00	0.00
3,360.0	27.66	297.27	3,103.8	528.0	-1,024.3	1,152.4	0.00	0.00	0.00
3,400.0	27.66	297.27	3,139.2	536.5	-1,040.8	1,170.9	0.00	0.00	0.00
3,440.0	27.66	297.27	3,174.7	545.0	-1,057.3	1,189.5	0.00	0.00	0.00
3,480.0	27.66	297.27	3,210.1	553.5	-1,073.8	1,208.1	0.00	0.00	0.00
3,520.0	27.66	297.27	3,245.5	562.0	-1,090.3	1,226.6	0.00	0.00	0.00
3,560.0	27.66	297.27	3,280.9	570.5	-1,106.8	1,245.2	0.00	0.00	0.00
3,600.0	27.66	297.27	3,316.4	579.0	-1,123.3	1,263.8	0.00	0.00	0.00
3,640.0	27.66	297.27	3,351.8	587.6	-1,139.8	1,282.4	0.00	0.00	0.00
3,680.0	27.66	297.27	3,387.2	596.1	-1,156.3	1,300.9	0.00	0.00	0.00
3,720.0	27.66	297.27	3,422.7	604.6	-1,172.8	1,319.5	0.00	0.00	0.00
3,760.0	27.66	297.27	3,458.1	613.1	-1,189.3	1,338.1	0.00	0.00	0.00
3,800.0	27.66	297.27	3,493.5	621.6	-1,205.9	1,356.6	0.00	0.00	0.00
3,840.0	27.66	297.27	3,528.9	630.1	-1,222.4	1,375.2	0.00	0.00	0.00
3,880.0	27.66	297.27	3,564.4	638.6	-1,238.9	1,393.8	0.00	0.00	0.00
3,920.0	27.66	297.27	3,599.8	647.1	-1,255.4	1,412.3	0.00	0.00	0.00
3,960.0	27.66	297.27	3,635.2	655.6	-1,271.9	1,430.9	0.00	0.00	0.00
4,000.0	27.66	297.27	3,670.7	664.1	-1,288.4	1,449.5	0.00	0.00	0.00
4,040.0	27.66	297.27	3,706.1	672.6	-1,304.9	1,468.1	0.00	0.00	0.00
4,080.0	27.66	297.27	3,741.5	681.1	-1,321.4	1,486.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Warner 33-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site:	Warner 36-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Warner 33-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-14-11)		

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)	
4,120.0	27.66	297.27	3,776.9	689.7	-1,337.9	1,505.2	0.00	0.00	0.00	
4,160.0	27.66	297.27	3,812.4	698.2	-1,354.4	1,523.8	0.00	0.00	0.00	
4,200.0	27.66	297.27	3,847.8	706.7	-1,370.9	1,542.3	0.00	0.00	0.00	
4,240.0	27.66	297.27	3,883.2	715.2	-1,387.4	1,560.9	0.00	0.00	0.00	
4,280.0	27.66	297.27	3,918.6	723.7	-1,403.9	1,579.5	0.00	0.00	0.00	
4,320.0	27.66	297.27	3,954.1	732.2	-1,420.4	1,598.0	0.00	0.00	0.00	
4,360.0	27.66	297.27	3,989.5	740.7	-1,436.9	1,616.6	0.00	0.00	0.00	
4,400.0	27.66	297.27	4,024.9	749.2	-1,453.4	1,635.2	0.00	0.00	0.00	
4,440.0	27.66	297.27	4,060.4	757.7	-1,470.0	1,653.8	0.00	0.00	0.00	
4,476.9	27.66	297.27	4,093.0	765.6	-1,485.2	1,670.9	0.00	0.00	0.00	
PARKMAN										
4,480.0	27.66	297.27	4,095.8	766.2	-1,486.5	1,672.3	0.00	0.00	0.00	
4,520.0	27.66	297.27	4,131.2	774.7	-1,503.0	1,690.9	0.00	0.00	0.00	
4,560.0	27.66	297.27	4,166.6	783.2	-1,519.5	1,709.5	0.00	0.00	0.00	
4,600.0	27.66	297.27	4,202.1	791.8	-1,536.0	1,728.0	0.00	0.00	0.00	
4,640.0	27.66	297.27	4,237.5	800.3	-1,552.5	1,746.6	0.00	0.00	0.00	
4,680.0	27.66	297.27	4,272.9	808.8	-1,569.0	1,765.2	0.00	0.00	0.00	
4,720.0	27.66	297.27	4,308.4	817.3	-1,585.5	1,783.7	0.00	0.00	0.00	
4,760.0	27.66	297.27	4,343.8	825.8	-1,602.0	1,802.3	0.00	0.00	0.00	
4,800.0	27.66	297.27	4,379.2	834.3	-1,618.5	1,820.9	0.00	0.00	0.00	
4,840.0	27.66	297.27	4,414.6	842.8	-1,635.0	1,839.5	0.00	0.00	0.00	
4,880.0	27.66	297.27	4,450.1	851.3	-1,651.5	1,858.0	0.00	0.00	0.00	
4,920.0	27.66	297.27	4,485.5	859.8	-1,668.0	1,876.6	0.00	0.00	0.00	
4,960.0	27.66	297.27	4,520.9	868.3	-1,684.5	1,895.2	0.00	0.00	0.00	
5,000.0	27.66	297.27	4,556.4	876.8	-1,701.0	1,913.7	0.00	0.00	0.00	
5,040.0	27.66	297.27	4,591.8	885.3	-1,717.5	1,932.3	0.00	0.00	0.00	
5,075.2	27.66	297.27	4,623.0	892.8	-1,732.1	1,948.7	0.00	0.00	0.00	
SUSSEX										
5,080.0	27.66	297.27	4,627.2	893.9	-1,734.0	1,950.9	0.00	0.00	0.00	
5,120.0	27.66	297.27	4,662.6	902.4	-1,750.6	1,969.4	0.00	0.00	0.00	
5,160.0	27.66	297.27	4,698.1	910.9	-1,767.1	1,988.0	0.00	0.00	0.00	
5,200.0	27.66	297.27	4,733.5	919.4	-1,783.6	2,006.6	0.00	0.00	0.00	
5,240.0	27.66	297.27	4,768.9	927.9	-1,800.1	2,025.2	0.00	0.00	0.00	
5,280.0	27.66	297.27	4,804.4	936.4	-1,816.6	2,043.7	0.00	0.00	0.00	
5,320.0	27.66	297.27	4,839.8	944.9	-1,833.1	2,062.3	0.00	0.00	0.00	
5,360.0	27.66	297.27	4,875.2	953.4	-1,849.6	2,080.9	0.00	0.00	0.00	
5,400.0	27.66	297.27	4,910.6	961.9	-1,866.1	2,099.4	0.00	0.00	0.00	
5,440.0	27.66	297.27	4,946.1	970.4	-1,882.6	2,118.0	0.00	0.00	0.00	
5,480.0	27.66	297.27	4,981.5	978.9	-1,899.1	2,136.6	0.00	0.00	0.00	
5,520.0	27.66	297.27	5,016.9	987.4	-1,915.6	2,155.1	0.00	0.00	0.00	
5,560.0	27.66	297.27	5,052.4	996.0	-1,932.1	2,173.7	0.00	0.00	0.00	
5,600.0	27.66	297.27	5,087.8	1,004.5	-1,948.6	2,192.3	0.00	0.00	0.00	
5,640.0	27.66	297.27	5,123.2	1,013.0	-1,965.1	2,210.9	0.00	0.00	0.00	
5,680.0	27.66	297.27	5,158.6	1,021.5	-1,981.6	2,229.4	0.00	0.00	0.00	
5,692.9	27.66	297.27	5,170.0	1,024.2	-1,986.9	2,235.4	0.00	0.00	0.00	
5,720.0	27.12	297.27	5,194.1	1,029.9	-1,998.0	2,247.9	2.00	-2.00	0.00	
5,760.0	26.32	297.27	5,229.9	1,038.2	-2,014.0	2,265.9	2.00	-2.00	0.00	
5,800.0	25.52	297.27	5,265.8	1,046.2	-2,029.6	2,283.3	2.00	-2.00	0.00	
5,840.0	24.72	297.27	5,302.0	1,054.0	-2,044.7	2,300.3	2.00	-2.00	0.00	
5,880.0	23.92	297.27	5,338.5	1,061.5	-2,059.3	2,316.8	2.00	-2.00	0.00	
5,920.0	23.12	297.27	5,375.2	1,068.8	-2,073.5	2,332.8	2.00	-2.00	0.00	
5,960.0	22.32	297.27	5,412.1	1,075.9	-2,087.2	2,348.2	2.00	-2.00	0.00	
6,000.0	21.52	297.27	5,449.2	1,082.7	-2,100.5	2,363.1	2.00	-2.00	0.00	
6,040.0	20.72	297.27	5,486.5	1,089.4	-2,113.3	2,377.6	2.00	-2.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Warner 33-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site:	Warner 36-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Warner 33-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-14-11)		

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)
6,080.0	19.92	297.27	5,524.0	1,095.7	-2,125.7	2,391.4	2.00	-2.00	0.00
6,120.0	19.12	297.27	5,561.7	1,101.8	-2,137.5	2,404.8	2.00	-2.00	0.00
6,160.0	18.32	297.27	5,599.6	1,107.7	-2,148.9	2,417.6	2.00	-2.00	0.00
6,200.0	17.52	297.27	5,637.6	1,113.4	-2,159.9	2,429.9	2.00	-2.00	0.00
6,240.0	16.72	297.27	5,675.9	1,118.8	-2,170.3	2,441.7	2.00	-2.00	0.00
6,280.0	15.92	297.27	5,714.3	1,123.9	-2,180.3	2,453.0	2.00	-2.00	0.00
6,320.0	15.12	297.27	5,752.8	1,128.8	-2,189.8	2,463.7	2.00	-2.00	0.00
6,360.0	14.32	297.27	5,791.5	1,133.5	-2,198.9	2,473.8	2.00	-2.00	0.00
6,400.0	13.52	297.27	5,830.3	1,137.9	-2,207.4	2,483.4	2.00	-2.00	0.00
6,440.0	12.72	297.27	5,869.3	1,142.0	-2,215.5	2,492.5	2.00	-2.00	0.00
6,480.0	11.92	297.27	5,908.3	1,145.9	-2,223.1	2,501.1	2.00	-2.00	0.00
6,520.0	11.12	297.27	5,947.5	1,149.6	-2,230.2	2,509.1	2.00	-2.00	0.00
6,560.0	10.32	297.27	5,986.8	1,153.0	-2,236.8	2,516.5	2.00	-2.00	0.00
6,600.0	9.52	297.27	6,026.2	1,156.2	-2,242.9	2,523.4	2.00	-2.00	0.00
6,640.0	8.72	297.27	6,065.7	1,159.1	-2,248.6	2,529.7	2.00	-2.00	0.00
6,680.0	7.92	297.27	6,105.3	1,161.7	-2,253.7	2,535.5	2.00	-2.00	0.00
6,720.0	7.12	297.27	6,145.0	1,164.1	-2,258.4	2,540.7	2.00	-2.00	0.00
6,760.0	6.32	297.27	6,184.7	1,166.3	-2,262.5	2,545.4	2.00	-2.00	0.00
6,800.0	5.52	297.27	6,224.5	1,168.2	-2,266.2	2,549.5	2.00	-2.00	0.00
6,840.0	4.72	297.27	6,264.3	1,169.8	-2,269.4	2,553.1	2.00	-2.00	0.00
6,880.0	3.92	297.27	6,304.2	1,171.2	-2,272.0	2,556.1	2.00	-2.00	0.00
6,920.0	3.12	297.27	6,344.1	1,172.3	-2,274.2	2,558.6	2.00	-2.00	0.00
6,960.0	2.32	297.27	6,384.1	1,173.2	-2,275.9	2,560.5	2.00	-2.00	0.00
7,000.0	1.52	297.27	6,424.1	1,173.8	-2,277.1	2,561.8	2.00	-2.00	0.00
7,040.0	0.72	297.27	6,464.1	1,174.1	-2,277.8	2,562.6	2.00	-2.00	0.00
7,075.9	0.00	0.00	6,500.0	1,174.2	-2,278.0	2,562.8	2.00	-2.00	0.00
TARGET BHL 1450'FSL, 50'FWL									
7,080.0	0.00	0.00	6,504.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,120.0	0.00	0.00	6,544.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,160.0	0.00	0.00	6,584.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,200.0	0.00	0.00	6,624.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,240.0	0.00	0.00	6,664.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,280.0	0.00	0.00	6,704.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,320.0	0.00	0.00	6,744.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,360.0	0.00	0.00	6,784.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,400.0	0.00	0.00	6,824.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,440.0	0.00	0.00	6,864.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,480.0	0.00	0.00	6,904.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,520.0	0.00	0.00	6,944.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,560.0	0.00	0.00	6,984.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,600.0	0.00	0.00	7,024.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,640.0	0.00	0.00	7,064.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,678.9	0.00	0.00	7,103.0	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1450'FSL, 50'FWL									
7,680.0	0.00	0.00	7,104.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,720.0	0.00	0.00	7,144.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,760.0	0.00	0.00	7,184.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,800.0	0.00	0.00	7,224.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,840.0	0.00	0.00	7,264.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,880.0	0.00	0.00	7,304.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,920.0	0.00	0.00	7,344.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
7,948.9	0.00	0.00	7,373.0	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00
CODELL									

Database:	Landmark	Local Co-ordinate Reference:	Well Warner 33-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site:	Warner 36-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Warner 33-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-14-11)		

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)	
7,960.0	0.00	0.00	7,384.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,000.0	0.00	0.00	7,424.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,040.0	0.00	0.00	7,464.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,041.9	0.00	0.00	7,466.0	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
GREENHORN										
8,080.0	0.00	0.00	7,504.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,120.0	0.00	0.00	7,544.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,160.0	0.00	0.00	7,584.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,200.0	0.00	0.00	7,624.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,240.0	0.00	0.00	7,664.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,280.0	0.00	0.00	7,704.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,320.0	0.00	0.00	7,744.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,360.0	0.00	0.00	7,784.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,400.0	0.00	0.00	7,824.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,403.9	0.00	0.00	7,828.0	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
J-SAND										
8,440.0	0.00	0.00	7,864.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,480.0	0.00	0.00	7,904.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,520.0	0.00	0.00	7,944.1	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
8,553.9	0.00	0.00	7,978.0	1,174.2	-2,278.0	2,562.8	0.00	0.00	0.00	
HARDLINES 50'W OF BHL										

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
HARDLINES 50'W OF	0.00	0.00	7,978.0	1,074.2	-2,328.0	1,292,939.24	3,219,223.14	40.134851	-104.715929	
- hit/miss target										
- Shape										
- plan misses target center by 111.8ft at 8553.9ft MD (7978.0 TVD, 1174.2 N, -2278.0 E)										
- Polygon										
Point 1			7,978.0	0.0	0.0	1,292,939.24	3,219,223.14			
Point 2			7,978.0	200.0	0.0	1,293,139.22	3,219,221.36			
1588' MD = 55' Radiu:	0.00	0.00	1,581.0	232.1	-278.8	1,292,115.47	3,221,279.72	40.132540	-104.708600	
- plan misses target center by 78.5ft at 1640.7ft MD (1581.0 TVD, 162.3 N, -314.8 E)										
- Circle (radius 55.0)										
TARGET BHL 1450'F:	0.00	0.00	6,500.0	1,174.2	-2,278.0	1,293,039.71	3,219,272.26	40.135126	-104.715750	
- plan hits target center										
- Point										
TARGET CIRCLE 1450'F:	0.00	0.00	7,103.0	1,174.2	-2,278.0	1,293,039.71	3,219,272.26	40.135126	-104.715750	
- plan hits target center										
- Circle (radius 50.0)										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
907.2	900.0	8 5/8"	8-5/8	12-1/4	

Database:	Landmark	Local Co-ordinate Reference:	Well Warner 33-18
Company:	Anadarko, Weld County CO	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site:	Warner 36-18 Pad Sec.18-T2N-R65W	North Reference:	True
Well:	Warner 33-18	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-14-11)		

Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	4,476.9	4,093.0	PARKMAN		0.00	
	5,075.2	4,623.0	SUSSEX		0.00	
	7,678.9	7,103.0	NIOBRARA		0.00	
	7,948.9	7,373.0	CODELL		0.00	
	8,041.9	7,466.0	GREENHORN		0.00	
	8,403.9	7,828.0	J-SAND		0.00	



Directional

Anadarko, Weld County CO

SEC.18-T2N-R65W

Warner 36-18 Pad Sec.18-T2N-R65W

Warner 33-18

Wellbore #1

Plan #1 (3-14-11)

Anticollision Report

15 March, 2011



Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Warner 33-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Reference Site:	Warner 36-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Warner 33-18	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 (3-14-11)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (3-14-11)		
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 3/15/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	8,553.9	Plan #1 (3-14-11) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Warner 36-18 Pad Sec.18-T2N-R65W						
Warner 14-18 (Exist.) - Wellbore #1 - Design #1	1,640.6	1,587.9	78.5	67.2	6.916	CC, ES, SF
Warner 23-18 - Wellbore #1 - Plan #1 (3-14-11)	316.5	316.5	15.6	14.4	13.053	CC, ES
Warner 23-18 - Wellbore #1 - Plan #1 (3-14-11)	500.0	499.5	20.5	18.5	10.054	SF
Warner 35-18 - Wellbore #1 - Plan #1 (3-14-11)	200.0	200.0	16.1	15.4	23.887	CC
Warner 35-18 - Wellbore #1 - Plan #1 (3-14-11)	300.0	300.0	16.5	15.4	14.713	ES
Warner 35-18 - Wellbore #1 - Plan #1 (3-14-11)	400.0	399.8	18.5	17.0	11.766	SF

Offset Design Warner 36-18 Pad Sec.18-T2N-R65W - Warner 14-18 (Exist.) - Wellbore #1 - Design #1												
Survey Program: 0-MWD												
Reference												
Measured Depth (ft)	Vertical Depth (ft)	Offset Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	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
0.0	0.0	7.0	7.0	0.0	0.0	-50.23	232.1	-278.8	362.7	362.7	0.01	N/A
100.0	100.0	107.0	107.0	0.1	0.1	-50.23	232.1	-278.8	362.7	362.5	0.24	1,508.219
200.0	200.0	207.0	207.0	0.3	0.4	-50.23	232.1	-278.8	362.7	362.0	0.69	525.666
300.0	300.0	307.0	307.0	0.6	0.6	12.57	232.1	-278.8	361.0	359.9	1.14	316.441
400.0	399.8	406.8	406.8	0.8	0.8	12.78	232.1	-278.8	355.9	354.3	1.60	223.036
500.0	499.5	506.5	506.5	1.0	1.0	13.13	232.1	-278.8	347.4	345.4	2.06	169.034
600.0	598.7	605.7	605.7	1.3	1.2	13.66	232.1	-278.8	335.6	333.0	2.52	133.192
700.0	697.5	704.5	704.5	1.7	1.5	14.40	232.1	-278.8	320.4	317.4	2.99	107.171
800.0	795.6	802.6	802.6	2.0	1.7	15.40	232.1	-278.8	301.9	298.4	3.47	87.052
900.0	893.1	900.1	900.1	2.5	1.9	16.74	232.1	-278.8	280.3	276.3	3.96	70.760
1,000.0	989.6	996.6	996.6	3.0	2.1	18.57	232.1	-278.8	255.5	251.0	4.48	57.098
1,100.0	1,085.3	1,092.3	1,092.3	3.6	2.3	21.11	232.1	-278.8	227.9	222.8	5.03	45.328
1,200.0	1,179.8	1,186.8	1,186.8	4.2	2.6	24.74	232.1	-278.8	197.6	192.0	5.65	34.992
1,300.0	1,273.2	1,280.2	1,280.2	4.9	2.8	30.20	232.1	-278.8	165.4	159.0	6.40	25.833
1,400.0	1,365.2	1,372.2	1,372.2	5.7	3.0	38.92	232.1	-278.8	132.3	124.9	7.42	17.832
1,500.0	1,455.8	1,462.8	1,462.8	6.6	3.2	53.70	232.1	-278.8	101.4	92.5	8.91	11.383
1,583.1	1,530.0	1,537.0	1,537.0	7.3	3.3	73.25	232.1	-278.8	82.9	72.5	10.48	7.914
1,600.0	1,545.0	1,552.0	1,552.0	7.5	3.4	78.01	232.1	-278.8	80.8	70.0	10.78	7.493
1,640.6	1,580.9	1,587.9	1,587.9	7.9	3.5	90.00	232.1	-278.8	78.5	67.2	11.35	6.916 CC, ES, SF
1,700.0	1,633.5	1,640.5	1,640.5	8.5	3.6	107.28	232.1	-278.8	83.2	71.5	11.72	7.103
1,800.0	1,722.1	1,729.1	1,729.1	9.5	3.8	129.85	232.1	-278.8	107.9	96.4	11.48	9.402

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

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Warner 33-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Reference Site:	Warner 36-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Warner 33-18	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 (3-14-11)	Offset TVD Reference:	Offset Datum

Offset Design Warner 36-18 Pad Sec.18-T2N-R65W - Warner 14-18 (Exist.) - Wellbore #1 - Design #1												Offset Site Error:	0.0ft
Survey Program: 0-MWD												Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
1,900.0	1,810.7	1,817.7	1,817.7	10.4	4.0	143.64	232.1	-278.8	143.8	132.6	11.16	12.885	
2,000.0	1,899.2	1,906.2	1,906.2	11.4	4.2	152.01	232.1	-278.8	184.4	173.3	11.10	16.615	
2,100.0	1,987.8	1,994.8	1,994.8	12.4	4.4	157.43	232.1	-278.8	227.3	216.0	11.25	20.203	
2,200.0	2,076.4	2,083.4	2,083.4	13.4	4.6	161.15	232.1	-278.8	271.3	259.8	11.54	23.522	
2,300.0	2,165.0	2,172.0	2,172.0	14.4	4.8	163.85	232.1	-278.8	316.1	304.1	11.90	26.550	
2,400.0	2,253.5	2,260.5	2,260.5	15.4	5.0	165.88	232.1	-278.8	361.2	348.9	12.33	29.302	
2,500.0	2,342.1	2,349.1	2,349.1	16.4	5.2	167.47	232.1	-278.8	406.6	393.9	12.79	31.804	
2,600.0	2,430.7	2,437.7	2,437.7	17.4	5.4	168.74	232.1	-278.8	452.3	439.0	13.27	34.082	
2,700.0	2,519.2	2,526.2	2,526.2	18.4	5.6	169.78	232.1	-278.8	498.1	484.3	13.77	36.163	
2,800.0	2,607.8	2,614.8	2,614.8	19.5	5.8	170.65	232.1	-278.8	544.0	529.7	14.29	38.070	
2,900.0	2,696.4	2,703.4	2,703.4	20.5	6.0	171.38	232.1	-278.8	589.9	575.1	14.81	39.822	
3,000.0	2,784.9	2,791.9	2,791.9	21.5	6.2	172.00	232.1	-278.8	636.0	620.6	15.35	41.437	
3,100.0	2,873.5	2,880.5	2,880.5	22.5	6.4	172.54	232.1	-278.8	682.1	666.2	15.89	42.929	
3,200.0	2,962.1	2,969.1	2,969.1	23.5	6.6	173.02	232.1	-278.8	728.2	711.8	16.43	44.313	
3,300.0	3,050.7	3,057.7	3,057.7	24.5	6.8	173.43	232.1	-278.8	774.4	757.4	16.98	45.598	
3,400.0	3,139.2	3,146.2	3,146.2	25.5	7.0	173.80	232.1	-278.8	820.6	803.0	17.54	46.796	
3,500.0	3,227.8	3,234.8	3,234.8	26.5	7.2	174.14	232.1	-278.8	866.8	848.7	18.09	47.914	
3,600.0	3,316.4	3,323.4	3,323.4	27.5	7.4	174.43	232.1	-278.8	913.0	894.4	18.65	48.960	
3,700.0	3,404.9	3,411.9	3,411.9	28.5	7.6	174.70	232.1	-278.8	959.3	940.1	19.21	49.940	
3,800.0	3,493.5	3,500.5	3,500.5	29.5	7.8	174.95	232.1	-278.8	1,005.6	985.8	19.77	50.861	
3,900.0	3,582.1	3,589.1	3,589.1	30.5	8.0	175.17	232.1	-278.8	1,051.9	1,031.5	20.33	51.728	
4,000.0	3,670.7	3,677.7	3,677.7	31.6	8.2	175.37	232.1	-278.8	1,098.2	1,077.3	20.90	52.545	
4,100.0	3,759.2	3,766.2	3,766.2	32.6	8.4	175.56	232.1	-278.8	1,144.5	1,123.0	21.47	53.315	
4,200.0	3,847.8	3,854.8	3,854.8	33.6	8.6	175.73	232.1	-278.8	1,190.8	1,168.8	22.03	54.044	
4,300.0	3,936.4	3,943.4	3,943.4	34.6	8.8	175.89	232.1	-278.8	1,237.1	1,214.5	22.60	54.734	
4,400.0	4,024.9	4,031.9	4,031.9	35.6	9.0	176.04	232.1	-278.8	1,283.5	1,260.3	23.17	55.388	
4,500.0	4,113.5	4,120.5	4,120.5	36.6	9.1	176.18	232.1	-278.8	1,329.8	1,306.1	23.74	56.009	
4,600.0	4,202.1	4,209.1	4,209.1	37.6	9.3	176.31	232.1	-278.8	1,376.2	1,351.8	24.31	56.599	
4,700.0	4,290.6	4,297.6	4,297.6	38.6	9.5	176.43	232.1	-278.8	1,422.5	1,397.6	24.89	57.161	
4,800.0	4,379.2	4,386.2	4,386.2	39.6	9.7	176.54	232.1	-278.8	1,468.9	1,443.4	25.46	57.696	
4,900.0	4,467.8	4,474.8	4,474.8	40.7	9.9	176.65	232.1	-278.8	1,515.2	1,489.2	26.03	58.205	
5,000.0	4,556.4	4,563.4	4,563.4	41.7	10.1	176.75	232.1	-278.8	1,561.6	1,535.0	26.61	58.692	
5,100.0	4,644.9	4,651.9	4,651.9	42.7	10.3	176.84	232.1	-278.8	1,608.0	1,580.8	27.18	59.157	
5,200.0	4,733.5	4,740.5	4,740.5	43.7	10.5	176.93	232.1	-278.8	1,654.3	1,626.6	27.76	59.601	
5,300.0	4,822.1	4,829.1	4,829.1	44.7	10.7	177.01	232.1	-278.8	1,700.7	1,672.4	28.33	60.027	
5,400.0	4,910.6	4,917.6	4,917.6	45.7	10.9	177.09	232.1	-278.8	1,747.1	1,718.2	28.91	60.434	
5,500.0	4,999.2	5,006.2	5,006.2	46.7	11.1	177.17	232.1	-278.8	1,793.5	1,764.0	29.49	60.825	
5,600.0	5,087.8	5,094.8	5,094.8	47.7	11.3	177.24	232.1	-278.8	1,839.8	1,809.8	30.06	61.200	
5,692.9	5,170.0	5,177.0	5,177.0	48.7	11.5	177.30	232.1	-278.8	1,882.9	1,852.3	30.60	61.534	
5,700.0	5,176.4	5,183.4	5,183.4	48.7	11.5	177.31	232.1	-278.8	1,886.2	1,855.6	30.65	61.536	
5,800.0	5,265.8	5,272.8	5,272.8	49.5	11.7	177.42	232.1	-278.8	1,930.8	1,899.5	31.35	61.586	
5,900.0	5,356.8	5,363.8	5,363.8	50.3	11.9	177.51	232.1	-278.8	1,972.3	1,940.3	32.01	61.615	
6,000.0	5,449.2	5,456.2	5,456.2	51.0	12.2	177.59	232.1	-278.8	2,010.6	1,977.9	32.62	61.628	
6,100.0	5,542.8	5,549.8	5,549.8	51.6	12.4	177.67	232.1	-278.8	2,045.6	2,012.4	33.19	61.628	
6,200.0	5,637.6	5,644.6	5,644.6	52.1	12.6	177.73	232.1	-278.8	2,077.3	2,043.6	33.71	61.617	
6,300.0	5,733.5	5,740.5	5,740.5	52.6	12.8	177.78	232.1	-278.8	2,105.7	2,071.5	34.19	61.597	
6,400.0	5,830.3	5,837.3	5,837.3	53.1	13.0	177.83	232.1	-278.8	2,130.8	2,096.2	34.61	61.569	
6,500.0	5,927.9	5,934.9	5,934.9	53.4	13.2	177.87	232.1	-278.8	2,152.4	2,117.5	34.98	61.535	
6,600.0	6,026.2	6,033.2	6,033.2	53.7	13.4	177.90	232.1	-278.8	2,170.7	2,135.4	35.30	61.496	
6,700.0	6,125.1	6,132.1	6,132.1	54.0	13.7	177.92	232.1	-278.8	2,185.5	2,149.9	35.56	61.452	
6,800.0	6,224.5	6,231.5	6,231.5	54.2	13.9	177.94	232.1	-278.8	2,196.8	2,161.1	35.78	61.405	
6,900.0	6,324.2	6,331.2	6,331.2	54.4	14.1	177.95	232.1	-278.8	2,204.7	2,168.8	35.93	61.354	

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

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Warner 33-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Reference Site:	Warner 36-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Warner 33-18	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 (3-14-11)	Offset TVD Reference:	Offset Datum

Offset Design Warner 36-18 Pad Sec.18-T2N-R65W - Warner 14-18 (Exist.) - Wellbore #1 - Design #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,000.0	6,424.1	6,431.1	6,431.1	54.5	14.3	177.96	232.1	-278.8	2,209.1	2,173.1	36.04	61.300	
7,075.9	6,500.0	6,507.0	6,507.0	54.5	14.5	115.23	232.1	-278.8	2,210.1	2,174.0	36.08	61.253	
7,100.0	6,524.1	6,531.1	6,531.1	54.5	14.6	115.23	232.1	-278.8	2,210.1	2,173.9	36.16	61.112	
7,200.0	6,624.1	6,631.1	6,631.1	54.6	14.8	115.23	232.1	-278.8	2,210.1	2,173.6	36.52	60.524	
7,300.0	6,724.1	6,731.1	6,731.1	54.7	15.0	115.23	232.1	-278.8	2,210.1	2,173.2	36.87	59.944	
7,400.0	6,824.1	6,831.1	6,831.1	54.7	15.2	115.23	232.1	-278.8	2,210.1	2,172.9	37.22	59.374	
7,500.0	6,924.1	6,931.1	6,931.1	54.8	15.5	115.23	232.1	-278.8	2,210.1	2,172.5	37.58	58.811	
7,600.0	7,024.1	7,031.1	7,031.1	54.8	15.7	115.23	232.1	-278.8	2,210.1	2,172.2	37.94	58.257	
7,700.0	7,124.1	7,131.1	7,131.1	54.9	15.9	115.23	232.1	-278.8	2,210.1	2,171.8	38.30	57.711	
7,800.0	7,224.1	7,231.1	7,231.1	55.0	16.1	115.23	232.1	-278.8	2,210.1	2,171.4	38.66	57.173	
7,900.0	7,324.1	7,331.1	7,331.1	55.0	16.4	115.23	232.1	-278.8	2,210.1	2,171.1	39.02	56.642	
8,000.0	7,424.1	7,431.1	7,431.1	55.1	16.6	115.23	232.1	-278.8	2,210.1	2,170.7	39.38	56.120	
8,100.0	7,524.1	7,531.1	7,531.1	55.2	16.8	115.23	232.1	-278.8	2,210.1	2,170.4	39.75	55.605	
8,200.0	7,624.1	7,631.1	7,631.1	55.2	17.0	115.23	232.1	-278.8	2,210.1	2,170.0	40.11	55.098	
8,300.0	7,724.1	7,731.1	7,731.1	55.3	17.3	115.23	232.1	-278.8	2,210.1	2,169.6	40.48	54.598	
8,400.0	7,824.1	7,831.1	7,831.1	55.4	17.5	115.23	232.1	-278.8	2,210.1	2,169.2	40.85	54.105	
8,500.0	7,924.1	7,931.1	7,931.1	55.4	17.7	115.23	232.1	-278.8	2,210.1	2,168.9	41.22	53.620	
8,553.9	7,978.0	7,985.0	7,985.0	55.5	17.8	115.23	232.1	-278.8	2,210.1	2,168.7	41.42	53.361	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Warner 33-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Reference Site:	Warner 36-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Warner 33-18	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 (3-14-11)	Offset TVD Reference:	Offset Datum

Offset Design Warner 36-18 Pad Sec.18-T2N-R65W - Warner 23-18 - Wellbore #1 - Plan #1 (3-14-11)													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	18.63	14.9	5.0	15.8	15.8	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	18.63	14.9	5.0	15.8	15.5	0.22	70.106		
200.0	200.0	200.0	200.0	0.3	0.3	18.63	14.9	5.0	15.8	15.1	0.67	23.369		
300.0	300.0	300.0	300.0	0.6	0.6	87.71	14.9	5.0	15.6	14.5	1.12	13.934		
316.5	316.5	316.5	316.5	0.6	0.6	90.00	14.9	5.0	15.6	14.4	1.19	13.053 CC, ES		
400.0	399.8	399.8	399.8	0.8	0.8	106.45	14.9	5.0	16.2	14.7	1.57	10.342		
500.0	499.5	499.5	499.5	1.0	1.0	130.39	14.9	5.0	20.5	18.5	2.04	10.054 SF		
600.0	598.7	598.7	598.7	1.3	1.2	148.34	14.9	5.0	29.9	27.4	2.51	11.924		
700.0	697.5	697.5	697.5	1.7	1.5	158.97	14.9	5.0	44.0	41.0	2.97	14.817		
800.0	795.6	795.6	795.6	2.0	1.7	165.19	14.9	5.0	62.2	58.8	3.43	18.128		
900.0	893.1	893.1	893.1	2.5	1.9	169.02	14.9	5.0	84.2	80.3	3.90	21.609		
1,000.0	989.6	989.6	989.6	3.0	2.1	171.51	14.9	5.0	109.7	105.4	4.36	25.156		
1,100.0	1,085.3	1,086.2	1,086.2	3.6	2.3	172.69	16.2	5.2	138.4	133.6	4.83	28.650		
1,200.0	1,179.8	1,182.4	1,182.2	4.2	2.5	172.47	20.7	5.8	169.7	164.4	5.31	31.968		
1,300.0	1,273.2	1,277.8	1,277.3	4.9	2.8	171.49	28.3	6.7	203.6	197.8	5.81	35.074		
1,400.0	1,365.2	1,372.2	1,371.1	5.7	3.0	170.09	38.9	8.1	240.2	233.8	6.33	37.929		
1,500.0	1,455.8	1,465.5	1,463.4	6.6	3.2	168.47	52.4	9.8	279.4	272.5	6.90	40.483		
1,583.1	1,530.0	1,542.0	1,538.7	7.3	3.5	167.05	65.6	11.5	314.2	306.7	7.42	42.347		
1,600.0	1,545.0	1,557.4	1,553.9	7.5	3.5	166.79	68.6	11.8	321.4	313.9	7.54	42.648		
1,700.0	1,633.5	1,648.8	1,643.3	8.5	3.8	165.17	87.5	14.2	364.3	356.0	8.28	44.004		
1,800.0	1,722.1	1,739.9	1,731.7	9.5	4.1	163.45	109.2	17.0	407.0	397.9	9.09	44.761		
1,900.0	1,810.7	1,829.8	1,818.5	10.4	4.5	161.80	132.5	19.9	449.9	439.9	9.98	45.081		
2,000.0	1,899.2	1,919.4	1,905.0	11.4	4.9	160.44	155.7	22.8	493.0	482.1	10.90	45.240		
2,100.0	1,987.8	2,009.1	1,991.6	12.4	5.3	159.29	179.0	25.8	536.3	524.5	11.84	45.287		
2,200.0	2,076.4	2,098.8	2,078.1	13.4	5.7	158.31	202.2	28.7	579.8	567.0	12.81	45.268		
2,300.0	2,165.0	2,188.4	2,164.6	14.4	6.1	157.47	225.5	31.7	623.3	609.5	13.79	45.205		
2,400.0	2,253.5	2,278.1	2,251.2	15.4	6.5	156.74	248.7	34.6	667.0	652.2	14.78	45.119		
2,500.0	2,342.1	2,367.7	2,337.7	16.4	7.0	156.09	272.0	37.6	710.8	695.0	15.79	45.020		
2,600.0	2,430.7	2,457.4	2,424.2	17.4	7.4	155.53	295.2	40.5	754.6	737.8	16.80	44.915		
2,700.0	2,519.2	2,547.0	2,510.8	18.4	7.9	155.02	318.5	43.4	798.4	780.6	17.82	44.807		
2,800.0	2,607.8	2,636.7	2,597.3	19.5	8.3	154.57	341.7	46.4	842.3	823.5	18.84	44.700		
2,900.0	2,696.4	2,726.3	2,683.8	20.5	8.8	154.16	365.0	49.3	886.3	866.4	19.87	44.594		
3,000.0	2,784.9	2,816.0	2,770.4	21.5	9.2	153.79	388.2	52.3	930.3	909.4	20.91	44.492		
3,100.0	2,873.5	2,905.6	2,856.9	22.5	9.7	153.45	411.5	55.2	974.3	952.3	21.95	44.394		
3,200.0	2,962.1	2,995.3	2,943.4	23.5	10.1	153.14	434.7	58.2	1,018.3	995.3	22.99	44.299		
3,300.0	3,050.7	3,084.9	3,030.0	24.5	10.6	152.86	458.0	61.1	1,062.4	1,038.3	24.03	44.209		
3,400.0	3,139.2	3,174.6	3,116.5	25.5	11.0	152.60	481.2	64.0	1,106.4	1,081.4	25.08	44.122		
3,500.0	3,227.8	3,264.2	3,203.1	26.5	11.5	152.36	504.5	67.0	1,150.5	1,124.4	26.12	44.040		
3,600.0	3,316.4	3,353.9	3,289.6	27.5	12.0	152.13	527.7	69.9	1,194.7	1,167.5	27.17	43.962		
3,700.0	3,404.9	3,443.5	3,376.1	28.5	12.4	151.93	551.0	72.9	1,238.8	1,210.5	28.23	43.888		
3,800.0	3,493.5	3,533.2	3,462.7	29.5	12.9	151.74	574.2	75.8	1,282.9	1,253.6	29.28	43.817		
3,900.0	3,582.1	3,622.9	3,549.2	30.5	13.4	151.56	597.5	78.8	1,327.1	1,296.7	30.33	43.749		
4,000.0	3,670.7	3,712.5	3,635.7	31.6	13.8	151.39	620.7	81.7	1,371.2	1,339.8	31.39	43.685		
4,100.0	3,759.2	3,802.2	3,722.3	32.6	14.3	151.23	644.0	84.6	1,415.4	1,382.9	32.44	43.624		
4,200.0	3,847.8	3,891.8	3,808.8	33.6	14.8	151.08	667.2	87.6	1,459.5	1,426.0	33.50	43.566		
4,300.0	3,936.4	3,981.5	3,895.3	34.6	15.2	150.94	690.5	90.5	1,503.7	1,469.2	34.56	43.510		
4,400.0	4,024.9	4,071.1	3,981.9	35.6	15.7	150.81	713.7	93.5	1,547.9	1,512.3	35.62	43.457		
4,500.0	4,113.5	4,160.8	4,068.4	36.6	16.2	150.69	737.0	96.4	1,592.1	1,555.4	36.68	43.406		
4,600.0	4,202.1	4,250.4	4,154.9	37.6	16.6	150.57	760.2	99.3	1,636.3	1,598.6	37.74	43.357		
4,700.0	4,290.6	4,340.1	4,241.5	38.6	17.1	150.46	783.5	102.3	1,680.5	1,641.7	38.80	43.311		
4,800.0	4,379.2	4,429.7	4,328.0	39.6	17.6	150.35	806.7	105.2	1,724.7	1,684.9	39.86	43.266		
4,900.0	4,467.8	4,519.4	4,414.6	40.7	18.1	150.25	830.0	108.2	1,768.9	1,728.0	40.93	43.223		

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

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Warner 33-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Reference Site:	Warner 36-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Warner 33-18	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 (3-14-11)	Offset TVD Reference:	Offset Datum

Offset Design Warner 36-18 Pad Sec.18-T2N-R65W - Warner 23-18 - Wellbore #1 - Plan #1 (3-14-11)												Offset Site Error:	0.0ft
Survey Program: 0-MWD												Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,556.4	4,609.0	4,501.1	41.7	18.5	150.16	853.2	111.1	1,813.1	1,771.2	41.99	43.182	
5,100.0	4,644.9	4,698.7	4,587.6	42.7	19.0	150.06	876.5	114.1	1,857.4	1,814.3	43.05	43.143	
5,200.0	4,733.5	4,788.3	4,674.2	43.7	19.5	149.98	899.7	117.0	1,901.6	1,857.5	44.12	43.105	
5,300.0	4,822.1	4,878.0	4,760.7	44.7	20.0	149.90	923.0	119.9	1,945.8	1,900.6	45.18	43.068	
5,400.0	4,910.6	4,967.6	4,847.2	45.7	20.4	149.82	946.2	122.9	1,990.1	1,943.8	46.24	43.033	
5,500.0	4,999.2	5,057.3	4,933.8	46.7	20.9	149.74	969.5	125.8	2,034.3	1,987.0	47.31	43.000	
5,600.0	5,087.8	5,147.0	5,020.3	47.7	21.4	149.67	992.7	128.8	2,078.5	2,030.2	48.37	42.967	
5,692.9	5,170.0	5,235.4	5,105.8	48.7	21.8	149.62	1,015.1	131.6	2,119.5	2,070.2	49.33	42.969	
5,700.0	5,176.4	5,242.5	5,112.7	48.7	21.8	149.65	1,016.8	131.8	2,122.7	2,073.3	49.40	42.972	
5,800.0	5,265.8	5,342.5	5,210.2	49.5	22.2	150.13	1,038.9	134.6	2,164.9	2,114.6	50.30	43.044	
5,900.0	5,356.8	5,444.2	5,310.0	50.3	22.5	150.60	1,057.9	137.0	2,204.0	2,152.9	51.10	43.127	
6,000.0	5,449.2	5,547.3	5,412.0	51.0	22.8	151.07	1,073.6	139.0	2,239.8	2,188.0	51.82	43.227	
6,100.0	5,542.8	5,651.8	5,515.7	51.6	23.1	151.55	1,085.8	140.5	2,272.4	2,220.0	52.42	43.349	
6,200.0	5,637.6	5,757.2	5,620.7	52.1	23.3	152.03	1,094.2	141.6	2,301.6	2,248.7	52.92	43.496	
6,300.0	5,733.5	5,863.3	5,726.7	52.6	23.4	152.52	1,098.9	142.2	2,327.5	2,274.2	53.29	43.674	
6,400.0	5,830.3	5,966.9	5,830.3	53.1	23.6	153.01	1,099.8	142.3	2,350.1	2,296.5	53.56	43.874	
6,500.0	5,927.9	6,064.5	5,927.9	53.4	23.7	153.43	1,099.8	142.3	2,369.5	2,315.7	53.79	44.053	
6,600.0	6,026.2	6,162.8	6,026.2	53.7	23.8	153.77	1,099.8	142.3	2,385.9	2,331.9	53.98	44.198	
6,700.0	6,125.1	6,261.7	6,125.1	54.0	23.9	154.04	1,099.8	142.3	2,399.2	2,345.1	54.15	44.310	
6,800.0	6,224.5	6,361.0	6,224.5	54.2	24.0	154.25	1,099.8	142.3	2,409.5	2,355.2	54.28	44.389	
6,900.0	6,324.2	6,460.7	6,324.2	54.4	24.1	154.39	1,099.8	142.3	2,416.6	2,362.2	54.39	44.434	
7,000.0	6,424.1	6,560.6	6,424.1	54.5	24.3	154.47	1,099.8	142.3	2,420.5	2,366.1	54.46	44.445	
7,075.9	6,500.0	6,636.6	6,500.0	54.5	24.4	91.76	1,099.8	142.3	2,421.5	2,367.0	54.50	44.430	
7,100.0	6,524.1	6,660.6	6,524.1	54.5	24.4	91.76	1,099.8	142.3	2,421.5	2,366.9	54.55	44.388	
7,200.0	6,624.1	6,760.6	6,624.1	54.6	24.5	91.76	1,099.8	142.3	2,421.5	2,366.7	54.77	44.213	
7,300.0	6,724.1	6,860.6	6,724.1	54.7	24.6	91.76	1,099.8	142.3	2,421.5	2,366.5	54.99	44.037	
7,400.0	6,824.1	6,960.6	6,824.1	54.7	24.8	91.76	1,099.8	142.3	2,421.5	2,366.2	55.21	43.860	
7,500.0	6,924.1	7,060.6	6,924.1	54.8	24.9	91.76	1,099.8	142.3	2,421.5	2,366.0	55.43	43.682	
7,600.0	7,024.1	7,160.6	7,024.1	54.8	25.0	91.76	1,099.8	142.3	2,421.5	2,365.8	55.66	43.504	
7,700.0	7,124.1	7,260.6	7,124.1	54.9	25.2	91.76	1,099.8	142.3	2,421.5	2,365.6	55.89	43.325	
7,800.0	7,224.1	7,360.6	7,224.1	55.0	25.3	91.76	1,099.8	142.3	2,421.5	2,365.3	56.12	43.145	
7,900.0	7,324.1	7,460.6	7,324.1	55.0	25.4	91.76	1,099.8	142.3	2,421.5	2,365.1	56.36	42.965	
8,000.0	7,424.1	7,560.6	7,424.1	55.1	25.6	91.76	1,099.8	142.3	2,421.5	2,364.9	56.60	42.785	
8,100.0	7,524.1	7,660.6	7,524.1	55.2	25.7	91.76	1,099.8	142.3	2,421.5	2,364.6	56.84	42.604	
8,200.0	7,624.1	7,760.6	7,624.1	55.2	25.8	91.76	1,099.8	142.3	2,421.5	2,364.4	57.08	42.423	
8,300.0	7,724.1	7,860.6	7,724.1	55.3	26.0	91.76	1,099.8	142.3	2,421.5	2,364.1	57.32	42.241	
8,400.0	7,824.1	7,960.6	7,824.1	55.4	26.1	91.76	1,099.8	142.3	2,421.5	2,363.9	57.57	42.059	
8,500.0	7,924.1	8,060.6	7,924.1	55.4	26.3	91.76	1,099.8	142.3	2,421.5	2,363.6	57.82	41.877	
8,553.9	7,978.0	8,114.6	7,978.0	55.5	26.3	91.76	1,099.8	142.3	2,421.5	2,363.5	57.96	41.779	

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Warner 33-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Reference Site:	Warner 36-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Warner 33-18	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 (3-14-11)	Offset TVD Reference:	Offset Datum

Offset Design Warner 36-18 Pad Sec.18-T2N-R65W - Warner 35-18 - Wellbore #1 - Plan #1 (3-14-11)													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-161.79	-15.3	-5.0	16.1	16.1	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	-161.79	-15.3	-5.0	16.1	15.9	0.22	71.661		
200.0	200.0	200.0	200.0	0.3	0.3	-161.79	-15.3	-5.0	16.1	15.4	0.67	23.887 CC		
300.0	300.0	300.0	300.0	0.6	0.6	-105.06	-15.3	-5.0	16.5	15.4	1.12	14.713 ES		
400.0	399.8	399.8	399.8	0.8	0.8	-120.83	-15.3	-5.0	18.5	17.0	1.58	11.766 SF		
500.0	499.5	499.5	499.5	1.0	1.0	-138.74	-15.3	-5.0	24.2	22.1	2.05	11.821		
600.0	598.7	598.7	598.7	1.3	1.2	-152.16	-15.3	-5.0	34.3	31.8	2.52	13.634		
700.0	697.5	697.5	697.5	1.7	1.5	-160.68	-15.3	-5.0	48.7	45.7	2.98	16.330		
800.0	795.6	795.6	795.6	2.0	1.7	-165.98	-15.3	-5.0	67.1	63.6	3.45	19.443		
900.0	893.1	893.1	893.1	2.5	1.9	-169.40	-15.3	-5.0	89.1	85.2	3.91	22.756		
1,000.0	989.6	989.6	989.6	3.0	2.1	-171.71	-15.3	-5.0	114.6	110.2	4.38	26.164		
1,100.0	1,085.3	1,085.3	1,085.3	3.6	2.3	-173.32	-15.3	-5.0	143.6	138.8	4.85	29.614		
1,200.0	1,179.8	1,179.8	1,179.8	4.2	2.5	-174.48	-15.3	-5.0	176.0	170.7	5.32	33.077		
1,300.0	1,273.2	1,277.3	1,277.3	4.9	2.7	-175.18	-15.5	-6.1	211.0	205.2	5.79	36.447		
1,400.0	1,365.2	1,376.4	1,376.3	5.7	2.9	-175.19	-16.4	-10.4	247.0	240.7	6.25	39.498		
1,500.0	1,455.8	1,476.1	1,475.6	6.6	3.2	-174.72	-17.9	-18.1	283.8	277.1	6.73	42.143		
1,583.1	1,530.0	1,559.3	1,558.3	7.3	3.3	-174.09	-19.8	-27.1	315.1	308.0	7.16	44.016		
1,600.0	1,545.0	1,576.3	1,575.2	7.5	3.4	-173.96	-20.2	-29.2	321.5	314.3	7.26	44.304		
1,700.0	1,633.5	1,677.8	1,675.6	8.5	3.6	-173.00	-23.2	-44.0	358.1	350.2	7.87	45.504		
1,800.0	1,722.1	1,781.0	1,777.1	9.5	3.9	-171.82	-27.0	-62.6	392.3	383.8	8.54	45.948		
1,900.0	1,810.7	1,885.7	1,879.1	10.4	4.3	-170.44	-31.5	-85.1	424.4	415.1	9.28	45.718		
2,000.0	1,899.2	1,988.2	1,978.4	11.4	4.7	-168.94	-36.7	-110.5	454.3	444.2	10.10	44.985		
2,100.0	1,987.8	2,083.2	2,070.0	12.4	5.1	-167.65	-41.7	-135.0	483.9	473.0	10.96	44.174		
2,200.0	2,076.4	2,178.2	2,161.6	13.4	5.6	-166.50	-46.6	-159.4	513.7	501.9	11.84	43.383		
2,300.0	2,165.0	2,273.2	2,253.3	14.4	6.0	-165.47	-51.6	-183.8	543.7	530.9	12.76	42.595		
2,400.0	2,253.5	2,368.1	2,344.9	15.4	6.5	-164.56	-56.5	-208.3	573.8	560.1	13.71	41.849		
2,500.0	2,342.1	2,463.1	2,436.6	16.4	7.0	-163.73	-61.5	-232.7	604.1	589.4	14.68	41.145		
2,600.0	2,430.7	2,558.1	2,528.2	17.4	7.4	-162.98	-66.4	-257.2	634.4	618.7	15.67	40.489		
2,700.0	2,519.2	2,653.0	2,619.8	18.4	7.9	-162.30	-71.4	-281.6	664.9	648.2	16.67	39.879		
2,800.0	2,607.8	2,748.0	2,711.5	19.5	8.4	-161.68	-76.4	-306.0	695.4	677.7	17.69	39.313		
2,900.0	2,696.4	2,843.0	2,803.1	20.5	8.9	-161.11	-81.3	-330.5	725.9	707.2	18.72	38.788		
3,000.0	2,784.9	2,938.0	2,894.8	21.5	9.4	-160.59	-86.3	-354.9	756.6	736.8	19.75	38.302		
3,100.0	2,873.5	3,032.9	2,986.4	22.5	10.0	-160.11	-91.2	-379.4	787.3	766.5	20.80	37.852		
3,200.0	2,962.1	3,127.9	3,078.0	23.5	10.5	-159.66	-96.2	-403.8	818.0	796.2	21.85	37.434		
3,300.0	3,050.7	3,222.9	3,169.7	24.5	11.0	-159.25	-101.2	-428.2	848.8	825.9	22.91	37.046		
3,400.0	3,139.2	3,317.8	3,261.3	25.5	11.5	-158.86	-106.1	-452.7	879.6	855.6	23.98	36.685		
3,500.0	3,227.8	3,412.8	3,352.9	26.5	12.0	-158.50	-111.1	-477.1	910.5	885.4	25.05	36.348		
3,600.0	3,316.4	3,507.8	3,444.6	27.5	12.5	-158.17	-116.0	-501.6	941.4	915.2	26.12	36.035		
3,700.0	3,404.9	3,602.8	3,536.2	28.5	13.1	-157.85	-121.0	-526.0	972.3	945.1	27.20	35.741		
3,800.0	3,493.5	3,697.7	3,627.9	29.5	13.6	-157.56	-125.9	-550.5	1,003.2	974.9	28.29	35.467		
3,900.0	3,582.1	3,792.7	3,719.5	30.5	14.1	-157.28	-130.9	-574.9	1,034.2	1,004.8	29.37	35.210		
4,000.0	3,670.7	3,887.7	3,811.1	31.6	14.6	-157.02	-135.9	-599.3	1,065.1	1,034.7	30.46	34.968		
4,100.0	3,759.2	3,982.6	3,902.8	32.6	15.2	-156.77	-140.8	-623.8	1,096.1	1,064.6	31.55	34.741		
4,200.0	3,847.8	4,077.6	3,994.4	33.6	15.7	-156.54	-145.8	-648.2	1,127.2	1,094.5	32.65	34.527		
4,300.0	3,936.4	4,172.6	4,086.1	34.6	16.2	-156.32	-150.7	-672.7	1,158.2	1,124.4	33.74	34.325		
4,400.0	4,024.9	4,267.6	4,177.7	35.6	16.8	-156.11	-155.7	-697.1	1,189.2	1,154.4	34.84	34.135		
4,500.0	4,113.5	4,362.5	4,269.3	36.6	17.3	-155.91	-160.7	-721.5	1,220.3	1,184.3	35.94	33.954		
4,600.0	4,202.1	4,457.5	4,361.0	37.6	17.8	-155.72	-165.6	-746.0	1,251.4	1,214.3	37.04	33.784		
4,700.0	4,290.6	4,552.5	4,452.6	38.6	18.4	-155.54	-170.6	-770.4	1,282.4	1,244.3	38.14	33.622		
4,800.0	4,379.2	4,647.4	4,544.3	39.6	18.9	-155.37	-175.5	-794.9	1,313.5	1,274.3	39.25	33.468		
4,900.0	4,467.8	4,742.4	4,635.9	40.7	19.4	-155.21	-180.5	-819.3	1,344.6	1,304.3	40.35	33.322		
5,000.0	4,556.4	4,837.4	4,727.5	41.7	19.9	-155.05	-185.4	-843.7	1,375.8	1,334.3	41.46	33.183		

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

Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Warner 33-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Reference Site:	Warner 36-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Warner 33-18	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 (3-14-11)	Offset TVD Reference:	Offset Datum

Offset Design Warner 36-18 Pad Sec.18-T2N-R65W - Warner 35-18 - Wellbore #1 - Plan #1 (3-14-11)												Offset Site Error:	0.0ft
Survey Program: 0-MWD												Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,644.9	4,918.4	4,805.9	42.7	20.3	-154.95	-189.6	-864.0	1,407.2	1,364.8	42.42	33.175	
5,200.0	4,733.5	5,000.0	4,885.3	43.7	20.7	-154.93	-193.3	-882.3	1,439.9	1,396.7	43.27	33.280	
5,300.0	4,822.1	5,070.9	4,954.7	44.7	20.9	-154.99	-196.1	-896.3	1,473.8	1,429.7	44.02	33.482	
5,400.0	4,910.6	5,145.9	5,028.6	45.7	21.1	-155.11	-198.8	-909.4	1,508.8	1,464.1	44.72	33.737	
5,500.0	4,999.2	5,220.1	5,101.9	46.7	21.3	-155.30	-201.0	-920.4	1,545.0	1,499.6	45.37	34.053	
5,600.0	5,087.8	5,300.0	5,181.1	47.7	21.5	-155.56	-203.0	-930.2	1,582.4	1,536.4	45.96	34.429	
5,692.9	5,170.0	5,360.4	5,241.3	48.7	21.7	-155.81	-204.2	-936.2	1,618.1	1,571.6	46.45	34.832	
5,700.0	5,176.4	5,365.6	5,246.4	48.7	21.7	-155.86	-204.3	-936.6	1,620.9	1,574.4	46.49	34.866	
5,800.0	5,265.8	5,437.3	5,317.9	49.5	21.8	-156.50	-205.4	-942.0	1,658.9	1,612.0	46.89	35.380	
5,900.0	5,356.8	5,500.0	5,380.5	50.3	21.9	-157.08	-206.0	-945.2	1,695.2	1,648.0	47.24	35.889	
6,000.0	5,449.2	5,580.6	5,461.1	51.0	22.0	-157.72	-206.5	-947.4	1,729.7	1,682.2	47.49	36.425	
6,100.0	5,542.8	5,662.3	5,542.8	51.6	22.1	-158.34	-206.5	-947.7	1,762.3	1,714.6	47.68	36.962	
6,200.0	5,637.6	5,757.2	5,637.6	52.1	22.2	-158.94	-206.5	-947.7	1,792.1	1,744.3	47.84	37.461	
6,300.0	5,733.5	5,853.0	5,733.5	52.6	22.3	-159.45	-206.5	-947.7	1,818.8	1,770.8	47.99	37.901	
6,400.0	5,830.3	5,949.8	5,830.3	53.1	22.5	-159.89	-206.5	-947.7	1,842.4	1,794.3	48.12	38.285	
6,500.0	5,927.9	6,047.4	5,927.9	53.4	22.6	-160.26	-206.5	-947.7	1,862.8	1,814.6	48.24	38.616	
6,600.0	6,026.2	6,145.8	6,026.2	53.7	22.7	-160.57	-206.5	-947.7	1,880.1	1,831.7	48.34	38.895	
6,700.0	6,125.1	6,244.7	6,125.1	54.0	22.8	-160.81	-206.5	-947.7	1,894.1	1,845.7	48.41	39.125	
6,800.0	6,224.5	6,344.0	6,224.5	54.2	22.9	-160.99	-206.5	-947.7	1,904.8	1,856.3	48.46	39.306	
6,900.0	6,324.2	6,443.7	6,324.2	54.4	23.1	-161.12	-206.5	-947.7	1,912.3	1,863.8	48.49	39.438	
7,000.0	6,424.1	6,543.6	6,424.1	54.5	23.2	-161.19	-206.5	-947.7	1,916.4	1,867.9	48.49	39.520	
7,075.9	6,500.0	6,619.5	6,500.0	54.5	23.3	136.07	-206.5	-947.7	1,917.4	1,868.9	48.48	39.549	
7,100.0	6,524.1	6,643.6	6,524.1	54.5	23.3	136.07	-206.5	-947.7	1,917.4	1,868.8	48.54	39.503	
7,200.0	6,624.1	6,743.6	6,624.1	54.6	23.5	136.07	-206.5	-947.7	1,917.4	1,868.6	48.78	39.305	
7,300.0	6,724.1	6,843.6	6,724.1	54.7	23.6	136.07	-206.5	-947.7	1,917.4	1,868.3	49.03	39.107	
7,400.0	6,824.1	6,943.6	6,824.1	54.7	23.7	136.07	-206.5	-947.7	1,917.4	1,868.1	49.28	38.909	
7,500.0	6,924.1	7,043.6	6,924.1	54.8	23.9	136.07	-206.5	-947.7	1,917.4	1,867.8	49.53	38.710	
7,600.0	7,024.1	7,143.6	7,024.1	54.8	24.0	136.07	-206.5	-947.7	1,917.4	1,867.6	49.79	38.512	
7,700.0	7,124.1	7,243.6	7,124.1	54.9	24.1	136.07	-206.5	-947.7	1,917.4	1,867.3	50.04	38.313	
7,800.0	7,224.1	7,343.6	7,224.1	55.0	24.3	136.07	-206.5	-947.7	1,917.4	1,867.1	50.31	38.114	
7,900.0	7,324.1	7,443.6	7,324.1	55.0	24.4	136.07	-206.5	-947.7	1,917.4	1,866.8	50.57	37.916	
8,000.0	7,424.1	7,543.6	7,424.1	55.1	24.5	136.07	-206.5	-947.7	1,917.4	1,866.5	50.84	37.717	
8,100.0	7,524.1	7,643.6	7,524.1	55.2	24.7	136.07	-206.5	-947.7	1,917.4	1,866.3	51.10	37.519	
8,200.0	7,624.1	7,743.6	7,624.1	55.2	24.7	136.07	-206.5	-947.7	1,919.5	1,868.3	51.24	37.465	
8,300.0	7,724.1	7,843.6	7,724.1	55.3	24.7	136.07	-206.5	-947.7	1,926.9	1,875.5	51.35	37.521	
8,400.0	7,824.1	7,943.6	7,824.1	55.4	24.7	136.07	-206.5	-947.7	1,939.3	1,887.9	51.48	37.675	
8,500.0	7,924.1	8,043.6	7,924.1	55.4	24.7	136.07	-206.5	-947.7	1,956.8	1,905.2	51.60	37.925	
8,553.9	7,978.0	8,092.5	7,978.0	55.5	24.7	136.07	-206.5	-947.7	1,968.3	1,916.7	51.66	38.099	

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Reference Site:	Warner 36-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Warner 33-18	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 (3-14-11)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5007.0ft (Original Well Elev) Coordinates are relative to: Warner 33-18
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: 0.51°



Company:	Anadarko, Weld County CO	Local Co-ordinate Reference:	Well Warner 33-18
Project:	SEC.18-T2N-R65W	TVD Reference:	WELL @ 5007.0ft (Original Well Elev)
Reference Site:	Warner 36-18 Pad Sec.18-T2N-R65W	MD Reference:	WELL @ 5007.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Warner 33-18	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
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Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.51°

