ENSIGN Directional

Well Name: Hudco 24-18

Surface Location: Hudco 9-18 Pad Sec.18-T2N-R65W

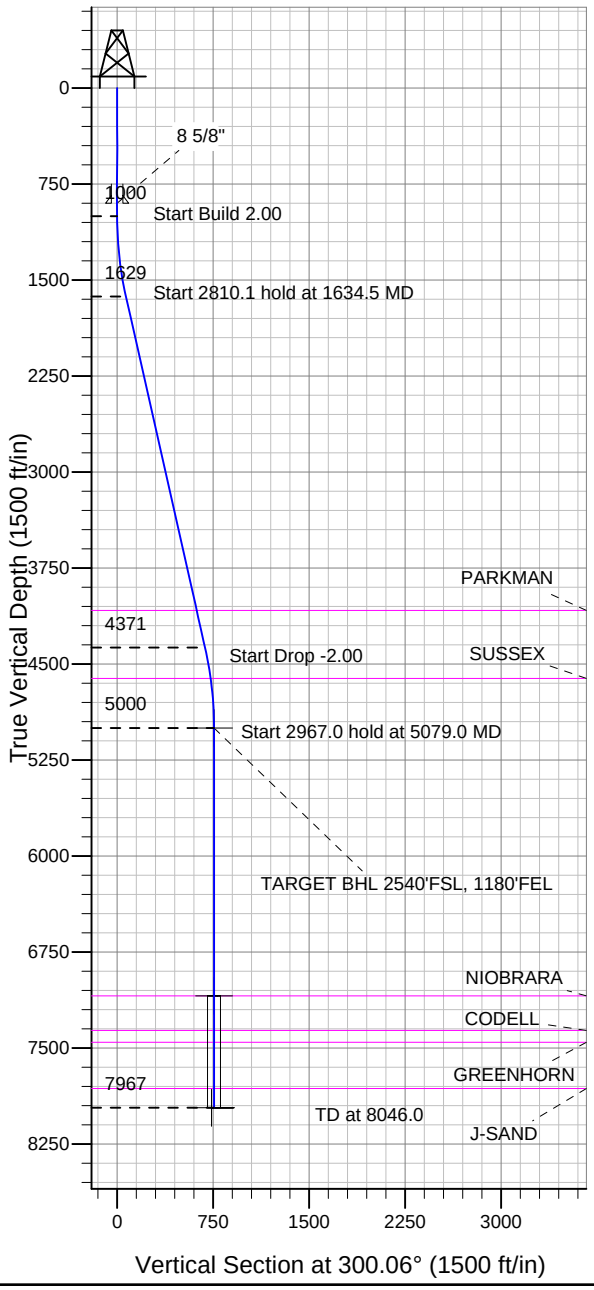
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

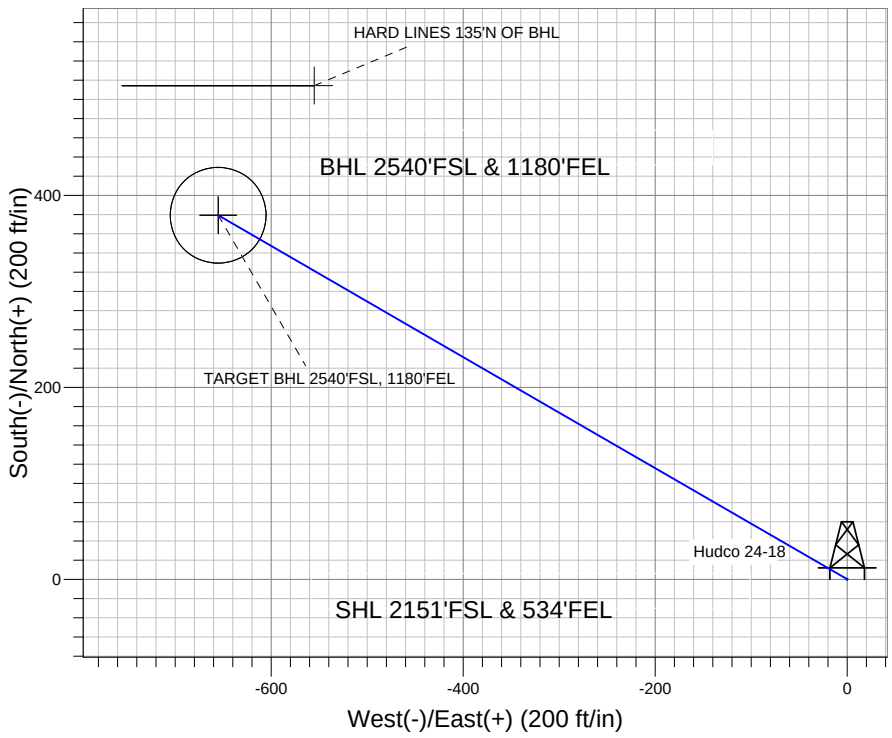
Ground Elevation: 4982.0

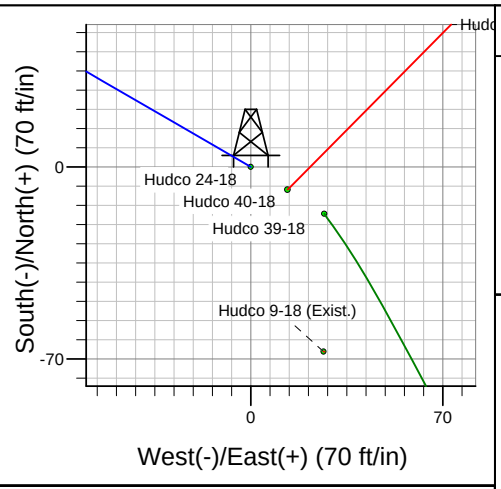
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1293849.24	3223888.30	40.137235	-104.699215	

Original Well Elev WELL @ 4996.0ft (Original Well Elev)

Anadarko, Weld County CO

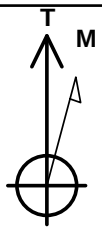






FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4082.0	4148.6	PARKMAN
4612.0	4689.8	SUSSEX
7092.0	7171.0	NIOBRARA
7362.0	7441.0	CODELL
7455.0	7534.0	GREENHORN
7817.0	7896.0	J-SAND



Azimuths to True North
Magnetic North: 8.84°

Magnetic Field
Strength: 53025.3snT
Dip Angle: 66.86°
Date: 3/16/2011
Model: IGRF2010

Well Name: Hudco 24-18 Lat/Long: 40.137235 -104.699215

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2540'FSL, 1180'FEL	5000.0	379.3	-655.4	40.138276	-104.701559	Point
TARGET CIRCLE 2540'FSL & 1180'FEL	7092.0	379.3	-655.4	40.138276	-104.701559	Circle (Radius: 50.0)
HARD LINES 135'N OF BHL	7967.0	514.3	-555.4	40.138647	-104.701201	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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1634.5	12.69	300.06	1629.3	35.0	-60.6	2.00	300.06	70.0	
4	4444.5	12.69	300.06	4370.7	344.2	-594.8	0.00	0.00	687.2	
5	5079.0	0.00	0.00	5000.0	379.3	-655.4	2.00	180.00	757.2	TARGET BHL 2540'FSL, 1180'FEL
6	8046.0	0.00	0.00	7967.0	379.3	-655.4	0.00	0.00	757.2	

CASING DETAILS

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

Hudco 9-18 Pad Sec.18-T2N-R65W
Hudco 24-18
Plan #1 (3-15-11)
7:42, March 16 2011

ENSIGN Directional

Anadarko, Weld County CO

SEC.18-T2N-R65W
Hudco 9-18 Pad Sec.18-T2N-R65W
Hudco 24-18

Wellbore #1

Plan: Plan #1 (3-15-11)

Standard Planning Report

16 March, 2011

Anadarko Petroleum Corporation

Database:	Landmark	**Local Co-ordinate Reference:**	Well Hudco 24-18
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Hudco 24-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

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 Hudco 9-18 Pad Sec.18-T2N-R65W

Site Position:		**Northing:**	1,293,849.26 ft	**Latitude:**	40.137235
From:	Lat/Long	**Easting:**	3,223,888.30 ft	**Longitude:**	-104.699215
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.52 °

Well Hudco 24-18

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,293,849.24 ft	**Latitude:**	40.137235
	+E/-W	0.0 ft	**Easting:**	3,223,888.30 ft	**Longitude:**	-104.699215
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,982.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/16/2011	8.84	66.86	53,025

Design Plan #1 (3-15-11)

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	300.06

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,634.5	12.69	300.06	1,629.3	35.0	-60.6	2.00	2.00	0.00	300.06	
4,444.5	12.69	300.06	4,370.7	344.2	-594.8	0.00	0.00	0.00	0.00	
5,079.0	0.00	0.00	5,000.0	379.3	-655.4	2.00	-2.00	0.00	180.00	TARGET BHL 254C
8,046.0	0.00	0.00	7,967.0	379.3	-655.4	0.00	0.00	0.00	0.00	

Database:	Landmark	**Local Co-ordinate Reference:**	Well Hudco 24-18
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Hudco 24-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,040.0	0.80	300.06	1,040.0	0.1	-0.2	0.3	2.00	2.00	0.00
1,080.0	1.60	300.06	1,080.0	0.6	-1.0	1.1	2.00	2.00	0.00
1,120.0	2.40	300.06	1,120.0	1.3	-2.2	2.5	2.00	2.00	0.00
1,160.0	3.20	300.06	1,159.9	2.2	-3.9	4.5	2.00	2.00	0.00
1,200.0	4.00	300.06	1,199.8	3.5	-6.0	7.0	2.00	2.00	0.00
1,240.0	4.80	300.06	1,239.7	5.0	-8.7	10.0	2.00	2.00	0.00
1,280.0	5.60	300.06	1,279.6	6.8	-11.8	13.7	2.00	2.00	0.00
1,320.0	6.40	300.06	1,319.3	8.9	-15.5	17.9	2.00	2.00	0.00
1,360.0	7.20	300.06	1,359.1	11.3	-19.6	22.6	2.00	2.00	0.00
1,400.0	8.00	300.06	1,398.7	14.0	-24.1	27.9	2.00	2.00	0.00
1,440.0	8.80	300.06	1,438.3	16.9	-29.2	33.7	2.00	2.00	0.00
1,480.0	9.60	300.06	1,477.8	20.1	-34.7	40.1	2.00	2.00	0.00
1,520.0	10.40	300.06	1,517.1	23.6	-40.7	47.1	2.00	2.00	0.00
1,560.0	11.20	300.06	1,556.4	27.3	-47.2	54.6	2.00	2.00	0.00
1,600.0	12.00	300.06	1,595.6	31.4	-54.2	62.6	2.00	2.00	0.00
1,634.5	12.69	300.06	1,629.3	35.0	-60.6	70.0	2.00	2.00	0.00
1,640.0	12.69	300.06	1,634.7	35.7	-61.6	71.2	0.00	0.00	0.00
1,680.0	12.69	300.06	1,673.7	40.1	-69.2	80.0	0.00	0.00	0.00
1,720.0	12.69	300.06	1,712.7	44.5	-76.8	88.8	0.00	0.00	0.00
1,760.0	12.69	300.06	1,751.8	48.9	-84.4	97.5	0.00	0.00	0.00
1,800.0	12.69	300.06	1,790.8	53.3	-92.0	106.3	0.00	0.00	0.00
1,840.0	12.69	300.06	1,829.8	57.7	-99.6	115.1	0.00	0.00	0.00
1,880.0	12.69	300.06	1,868.8	62.1	-107.2	123.9	0.00	0.00	0.00
1,920.0	12.69	300.06	1,907.9	66.5	-114.8	132.7	0.00	0.00	0.00
1,960.0	12.69	300.06	1,946.9	70.9	-122.5	141.5	0.00	0.00	0.00
2,000.0	12.69	300.06	1,985.9	75.3	-130.1	150.3	0.00	0.00	0.00

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Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Hudco 24-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

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)
2,040.0	12.69	300.06	2,024.9	79.7	-137.7	159.1	0.00	0.00	0.00
2,080.0	12.69	300.06	2,063.9	84.1	-145.3	167.8	0.00	0.00	0.00
2,120.0	12.69	300.06	2,103.0	88.5	-152.9	176.6	0.00	0.00	0.00
2,160.0	12.69	300.06	2,142.0	92.9	-160.5	185.4	0.00	0.00	0.00
2,200.0	12.69	300.06	2,181.0	97.3	-168.1	194.2	0.00	0.00	0.00
2,240.0	12.69	300.06	2,220.0	101.7	-175.7	203.0	0.00	0.00	0.00
2,280.0	12.69	300.06	2,259.1	106.1	-183.3	211.8	0.00	0.00	0.00
2,320.0	12.69	300.06	2,298.1	110.5	-190.9	220.6	0.00	0.00	0.00
2,360.0	12.69	300.06	2,337.1	114.9	-198.5	229.3	0.00	0.00	0.00
2,400.0	12.69	300.06	2,376.1	119.3	-206.1	238.1	0.00	0.00	0.00
2,440.0	12.69	300.06	2,415.2	123.7	-213.7	246.9	0.00	0.00	0.00
2,480.0	12.69	300.06	2,454.2	128.1	-221.3	255.7	0.00	0.00	0.00
2,520.0	12.69	300.06	2,493.2	132.5	-228.9	264.5	0.00	0.00	0.00
2,560.0	12.69	300.06	2,532.2	136.9	-236.5	273.3	0.00	0.00	0.00
2,600.0	12.69	300.06	2,571.2	141.3	-244.1	282.1	0.00	0.00	0.00
2,640.0	12.69	300.06	2,610.3	145.7	-251.7	290.8	0.00	0.00	0.00
2,680.0	12.69	300.06	2,649.3	150.1	-259.3	299.6	0.00	0.00	0.00
2,720.0	12.69	300.06	2,688.3	154.5	-266.9	308.4	0.00	0.00	0.00
2,760.0	12.69	300.06	2,727.3	158.9	-274.6	317.2	0.00	0.00	0.00
2,800.0	12.69	300.06	2,766.4	163.3	-282.2	326.0	0.00	0.00	0.00
2,840.0	12.69	300.06	2,805.4	167.7	-289.8	334.8	0.00	0.00	0.00
2,880.0	12.69	300.06	2,844.4	172.1	-297.4	343.6	0.00	0.00	0.00
2,920.0	12.69	300.06	2,883.4	176.5	-305.0	352.4	0.00	0.00	0.00
2,960.0	12.69	300.06	2,922.5	180.9	-312.6	361.1	0.00	0.00	0.00
3,000.0	12.69	300.06	2,961.5	185.3	-320.2	369.9	0.00	0.00	0.00
3,040.0	12.69	300.06	3,000.5	189.7	-327.8	378.7	0.00	0.00	0.00
3,080.0	12.69	300.06	3,039.5	194.1	-335.4	387.5	0.00	0.00	0.00
3,120.0	12.69	300.06	3,078.5	198.5	-343.0	396.3	0.00	0.00	0.00
3,160.0	12.69	300.06	3,117.6	202.9	-350.6	405.1	0.00	0.00	0.00
3,200.0	12.69	300.06	3,156.6	207.3	-358.2	413.9	0.00	0.00	0.00
3,240.0	12.69	300.06	3,195.6	211.7	-365.8	422.6	0.00	0.00	0.00
3,280.0	12.69	300.06	3,234.6	216.1	-373.4	431.4	0.00	0.00	0.00
3,320.0	12.69	300.06	3,273.7	220.5	-381.0	440.2	0.00	0.00	0.00
3,360.0	12.69	300.06	3,312.7	224.9	-388.6	449.0	0.00	0.00	0.00
3,400.0	12.69	300.06	3,351.7	229.3	-396.2	457.8	0.00	0.00	0.00
3,440.0	12.69	300.06	3,390.7	233.7	-403.8	466.6	0.00	0.00	0.00
3,480.0	12.69	300.06	3,429.8	238.1	-411.4	475.4	0.00	0.00	0.00
3,520.0	12.69	300.06	3,468.8	242.5	-419.0	484.2	0.00	0.00	0.00
3,560.0	12.69	300.06	3,507.8	246.9	-426.6	492.9	0.00	0.00	0.00
3,600.0	12.69	300.06	3,546.8	251.3	-434.3	501.7	0.00	0.00	0.00
3,640.0	12.69	300.06	3,585.8	255.7	-441.9	510.5	0.00	0.00	0.00
3,680.0	12.69	300.06	3,624.9	260.1	-449.5	519.3	0.00	0.00	0.00
3,720.0	12.69	300.06	3,663.9	264.5	-457.1	528.1	0.00	0.00	0.00
3,760.0	12.69	300.06	3,702.9	268.9	-464.7	536.9	0.00	0.00	0.00
3,800.0	12.69	300.06	3,741.9	273.3	-472.3	545.7	0.00	0.00	0.00
3,840.0	12.69	300.06	3,781.0	277.7	-479.9	554.4	0.00	0.00	0.00
3,880.0	12.69	300.06	3,820.0	282.1	-487.5	563.2	0.00	0.00	0.00
3,920.0	12.69	300.06	3,859.0	286.5	-495.1	572.0	0.00	0.00	0.00
3,960.0	12.69	300.06	3,898.0	290.9	-502.7	580.8	0.00	0.00	0.00
4,000.0	12.69	300.06	3,937.1	295.3	-510.3	589.6	0.00	0.00	0.00
4,040.0	12.69	300.06	3,976.1	299.7	-517.9	598.4	0.00	0.00	0.00
4,080.0	12.69	300.06	4,015.1	304.1	-525.5	607.2	0.00	0.00	0.00
4,120.0	12.69	300.06	4,054.1	308.5	-533.1	615.9	0.00	0.00	0.00
4,148.6	12.69	300.06	4,082.0	311.7	-538.6	622.2	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Hudco 24-18
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Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Hudco 24-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

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)
PARKMAN									
4,160.0	12.69	300.06	4,093.1	312.9	-540.7	624.7	0.00	0.00	0.00
4,200.0	12.69	300.06	4,132.2	317.3	-548.3	633.5	0.00	0.00	0.00
4,240.0	12.69	300.06	4,171.2	321.7	-555.9	642.3	0.00	0.00	0.00
4,280.0	12.69	300.06	4,210.2	326.1	-563.5	651.1	0.00	0.00	0.00
4,320.0	12.69	300.06	4,249.2	330.5	-571.1	659.9	0.00	0.00	0.00
4,360.0	12.69	300.06	4,288.3	334.9	-578.7	668.7	0.00	0.00	0.00
4,400.0	12.69	300.06	4,327.3	339.3	-586.4	677.5	0.00	0.00	0.00
4,440.0	12.69	300.06	4,366.3	343.7	-594.0	686.2	0.00	0.00	0.00
4,444.5	12.69	300.06	4,370.7	344.2	-594.8	687.2	0.00	0.00	0.00
4,480.0	11.98	300.06	4,405.4	348.0	-601.4	694.8	2.00	-2.00	0.00
4,520.0	11.18	300.06	4,444.6	352.0	-608.3	702.8	2.00	-2.00	0.00
4,560.0	10.38	300.06	4,483.9	355.8	-614.8	710.3	2.00	-2.00	0.00
4,600.0	9.58	300.06	4,523.2	359.3	-620.8	717.3	2.00	-2.00	0.00
4,640.0	8.78	300.06	4,562.7	362.4	-626.3	723.6	2.00	-2.00	0.00
4,680.0	7.98	300.06	4,602.3	365.4	-631.4	729.5	2.00	-2.00	0.00
4,689.8	7.78	300.06	4,612.0	366.0	-632.5	730.8	2.00	-2.00	0.00
SUSSEX									
4,720.0	7.18	300.06	4,642.0	368.0	-635.9	734.7	2.00	-2.00	0.00
4,760.0	6.38	300.06	4,681.7	370.4	-640.0	739.5	2.00	-2.00	0.00
4,800.0	5.58	300.06	4,721.5	372.5	-643.6	743.6	2.00	-2.00	0.00
4,840.0	4.78	300.06	4,761.3	374.3	-646.8	747.2	2.00	-2.00	0.00
4,880.0	3.98	300.06	4,801.2	375.8	-649.4	750.3	2.00	-2.00	0.00
4,920.0	3.18	300.06	4,841.1	377.1	-651.6	752.8	2.00	-2.00	0.00
4,960.0	2.38	300.06	4,881.1	378.0	-653.2	754.7	2.00	-2.00	0.00
5,000.0	1.58	300.06	4,921.0	378.7	-654.4	756.1	2.00	-2.00	0.00
5,040.0	0.78	300.06	4,961.0	379.1	-655.1	756.9	2.00	-2.00	0.00
5,079.0	0.00	0.00	5,000.0	379.3	-655.4	757.2	2.00	-2.00	0.00
TARGET BHL 2540'FSL, 1180'FEL									
5,080.0	0.00	0.00	5,001.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,120.0	0.00	0.00	5,041.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,160.0	0.00	0.00	5,081.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,200.0	0.00	0.00	5,121.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,240.0	0.00	0.00	5,161.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,280.0	0.00	0.00	5,201.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,320.0	0.00	0.00	5,241.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,360.0	0.00	0.00	5,281.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,400.0	0.00	0.00	5,321.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,440.0	0.00	0.00	5,361.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,480.0	0.00	0.00	5,401.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,520.0	0.00	0.00	5,441.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,560.0	0.00	0.00	5,481.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,600.0	0.00	0.00	5,521.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,640.0	0.00	0.00	5,561.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,680.0	0.00	0.00	5,601.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,720.0	0.00	0.00	5,641.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,760.0	0.00	0.00	5,681.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,721.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,840.0	0.00	0.00	5,761.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,880.0	0.00	0.00	5,801.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,920.0	0.00	0.00	5,841.0	379.3	-655.4	757.2	0.00	0.00	0.00
5,960.0	0.00	0.00	5,881.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,000.0	0.00	0.00	5,921.0	379.3	-655.4	757.2	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Hudco 24-18
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Hudco 24-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

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)
6,040.0	0.00	0.00	5,961.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,080.0	0.00	0.00	6,001.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,120.0	0.00	0.00	6,041.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,160.0	0.00	0.00	6,081.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,200.0	0.00	0.00	6,121.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,240.0	0.00	0.00	6,161.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,280.0	0.00	0.00	6,201.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,320.0	0.00	0.00	6,241.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,360.0	0.00	0.00	6,281.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,400.0	0.00	0.00	6,321.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,440.0	0.00	0.00	6,361.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,480.0	0.00	0.00	6,401.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,520.0	0.00	0.00	6,441.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,560.0	0.00	0.00	6,481.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,600.0	0.00	0.00	6,521.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,640.0	0.00	0.00	6,561.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,680.0	0.00	0.00	6,601.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,720.0	0.00	0.00	6,641.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,760.0	0.00	0.00	6,681.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,800.0	0.00	0.00	6,721.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,840.0	0.00	0.00	6,761.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,880.0	0.00	0.00	6,801.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,920.0	0.00	0.00	6,841.0	379.3	-655.4	757.2	0.00	0.00	0.00
6,960.0	0.00	0.00	6,881.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,000.0	0.00	0.00	6,921.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,040.0	0.00	0.00	6,961.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,080.0	0.00	0.00	7,001.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,120.0	0.00	0.00	7,041.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,160.0	0.00	0.00	7,081.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,171.0	0.00	0.00	7,092.0	379.3	-655.4	757.2	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 2540'FSL & 1180'FEL									
7,200.0	0.00	0.00	7,121.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,240.0	0.00	0.00	7,161.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,280.0	0.00	0.00	7,201.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,320.0	0.00	0.00	7,241.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,360.0	0.00	0.00	7,281.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,400.0	0.00	0.00	7,321.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,440.0	0.00	0.00	7,361.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,441.0	0.00	0.00	7,362.0	379.3	-655.4	757.2	0.00	0.00	0.00
CODELL									
7,480.0	0.00	0.00	7,401.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,520.0	0.00	0.00	7,441.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,534.0	0.00	0.00	7,455.0	379.3	-655.4	757.2	0.00	0.00	0.00
GREENHORN									
7,560.0	0.00	0.00	7,481.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,600.0	0.00	0.00	7,521.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,640.0	0.00	0.00	7,561.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,680.0	0.00	0.00	7,601.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,720.0	0.00	0.00	7,641.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,760.0	0.00	0.00	7,681.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,800.0	0.00	0.00	7,721.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,840.0	0.00	0.00	7,761.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,880.0	0.00	0.00	7,801.0	379.3	-655.4	757.2	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Hudco 24-18
Company:	Anadarko, Weld County CO	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Project:	SEC.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**North Reference:**	True
Well:	Hudco 24-18	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (3-15-11)		

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)
7,896.0	0.00	0.00	7,817.0	379.3	-655.4	757.2	0.00	0.00	0.00
J-SAND									
7,920.0	0.00	0.00	7,841.0	379.3	-655.4	757.2	0.00	0.00	0.00
7,960.0	0.00	0.00	7,881.0	379.3	-655.4	757.2	0.00	0.00	0.00
8,000.0	0.00	0.00	7,921.0	379.3	-655.4	757.2	0.00	0.00	0.00
8,040.0	0.00	0.00	7,961.0	379.3	-655.4	757.2	0.00	0.00	0.00
8,046.0	0.00	0.00	7,967.0	379.3	-655.4	757.2	0.00	0.00	0.00
HARD LINES 135'N OF BHL									

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 CIRCLE 254	0.00	0.00	7,092.0	379.3	-655.4	1,294,222.55	3,223,229.55	40.138276	-104.701559
- plan hits target center									
- Circle (radius 50.0)									
HARD LINES 135'N C	0.00	0.00	7,967.0	514.3	-555.4	1,294,358.49	3,223,328.30	40.138647	-104.701201
- plan misses target center by 168.0ft at 8046.0ft MD (7967.0 TVD, 379.3 N, -655.4 E)									
- Polygon									
Point 1			7,967.0	0.0	0.0	1,294,358.49	3,223,328.30		
Point 2			7,967.0	0.0	-200.0	1,294,356.68	3,223,128.32		
TARGET BHL 2540'F	0.00	0.00	5,000.0	379.3	-655.4	1,294,222.55	3,223,229.55	40.138276	-104.701559
- plan hits target center									
- Point									

Casing Points

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

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,148.6	4,082.0	PARKMAN		0.00	
4,689.8	4,612.0	SUSSEX		0.00	
7,171.0	7,092.0	NIOBRARA		0.00	
7,441.0	7,362.0	CODELL		0.00	
7,534.0	7,455.0	GREENHORN		0.00	
7,896.0	7,817.0	J-SAND		0.00	

ENSIGN Directional

Anadarko, Weld County CO

SEC.18-T2N-R65W
Hudco 9-18 Pad Sec.18-T2N-R65W
Hudco 24-18

Wellbore #1
Plan #1 (3-15-11)

Anticollision Report

17 March, 2011

Anadarko Petroleum Corporation

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Hudco 24-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Hudco 24-18	**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 (3-15-11)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (3-15-11)

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** 3/16/2011

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	8,046.0	Plan #1 (3-15-11) (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
Hudco 9-18 Pad Sec.18-T2N-R65W						
Hudco 39-18 - Wellbore #1 - Plan #1 (3-15-11)	200.0	199.0	31.8	31.2	47.367	CC, ES
Hudco 39-18 - Wellbore #1 - Plan #1 (3-15-11)	500.0	495.0	46.4	44.4	23.310	SF
Hudco 40-18 - Wellbore #1 - Plan #1 (3-15-11)	200.0	200.0	15.8	15.1	23.457	CC, ES
Hudco 40-18 - Wellbore #1 - Plan #1 (3-15-11)	800.0	799.1	34.6	31.2	10.111	SF
Hudco 9-18 (Exist.) - Wellbore #1 - Design #1	1,000.0	1,008.0	72.4	68.1	16.890	CC, ES
Hudco 9-18 (Exist.) - Wellbore #1 - Design #1	1,200.0	1,207.8	78.0	72.9	15.095	SF

Offset Design Hudco 9-18 Pad Sec.18-T2N-R65W - Hudco 39-18 - Wellbore #1 - Plan #1 (3-15-11)

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	122.52	-17.1	26.8	31.8				
100.0	100.0	99.0	99.0	0.1	0.1	122.52	-17.1	26.8	31.8	31.6	0.22	142.339	
200.0	200.0	199.0	199.0	0.3	0.3	122.52	-17.1	26.8	31.8	31.2	0.67	47.367	CC, ES
300.0	300.0	298.0	297.9	0.6	0.5	123.62	-18.5	27.8	33.4	32.3	1.10	30.360	
400.0	400.0	396.7	396.5	0.8	0.7	126.40	-22.6	30.7	38.2	36.7	1.53	24.928	
500.0	500.0	495.0	494.4	1.0	1.0	129.81	-29.6	35.5	46.4	44.4	1.99	23.310	SF
600.0	600.0	592.6	591.4	1.2	1.3	133.49	-39.5	41.6	57.9	55.4	2.47	23.428	
700.0	700.0	689.4	687.1	1.5	1.6	136.87	-52.3	49.0	72.6	69.6	2.98	24.360	
800.0	800.0	785.1	781.1	1.7	1.9	139.72	-67.8	57.5	90.7	87.2	3.53	25.712	
900.0	900.0	879.5	873.2	1.9	2.4	142.05	-86.0	67.1	112.1	108.0	4.11	27.253	
1,000.0	1,000.0	975.1	965.9	2.1	2.8	143.91	-106.7	77.8	136.1	131.4	4.74	28.721	
1,100.0	1,100.0	1,071.7	1,059.5	2.4	3.3	-154.86	-127.8	88.7	162.0	157.2	4.79	33.817	
1,200.0	1,199.8	1,167.4	1,152.3	2.6	3.8	-154.30	-148.7	99.4	190.9	185.6	5.25	36.373	
1,300.0	1,299.5	1,262.2	1,244.2	2.8	4.3	-154.20	-169.3	110.1	222.8	217.1	5.70	39.064	
1,400.0	1,398.7	1,355.8	1,335.0	3.0	4.8	-154.37	-189.8	120.7	257.7	251.5	6.16	41.848	
1,500.0	1,497.5	1,448.3	1,424.7	3.3	5.2	-154.71	-210.0	131.1	295.5	288.9	6.61	44.725	
1,600.0	1,595.6	1,539.6	1,513.1	3.6	5.7	-155.14	-229.9	141.4	336.3	329.3	7.06	47.657	
1,634.5	1,629.3	1,570.7	1,543.3	3.8	5.9	-155.30	-236.7	144.9	351.1	343.9	7.21	48.679	
1,700.0	1,693.2	1,629.7	1,600.5	4.0	6.2	-155.82	-249.5	151.5	379.4	371.9	7.54	50.346	
1,800.0	1,790.8	1,719.7	1,687.7	4.4	6.7	-156.48	-269.2	161.6	422.8	414.7	8.04	52.586	
1,900.0	1,888.3	1,809.7	1,775.0	4.8	7.1	-157.02	-288.8	171.8	466.1	457.6	8.55	54.519	

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 Hudco 24-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Hudco 24-18	**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 (3-15-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Hudco 9-18 Pad Sec.18-T2N-R65W - Hudco 39-18 - Wellbore #1 - Plan #1 (3-15-11)

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
2,000.0	1,985.9	1,899.8	1,862.3	5.2	7.6	-157.47	-308.5	181.9	509.5	500.5	9.07	56.199	
2,100.0	2,083.5	1,989.8	1,949.5	5.6	8.1	-157.85	-328.1	192.1	552.9	543.4	9.59	57.670	
2,200.0	2,181.0	2,079.8	2,036.8	6.0	8.5	-158.17	-347.8	202.2	596.4	586.3	10.11	58.967	
2,300.0	2,278.6	2,169.8	2,124.1	6.5	9.0	-158.45	-367.4	212.3	639.8	629.2	10.64	60.118	
2,400.0	2,376.1	2,259.9	2,211.4	6.9	9.5	-158.70	-387.1	222.5	683.3	672.1	11.17	61.146	
2,500.0	2,473.7	2,349.9	2,298.6	7.4	10.0	-158.91	-406.7	232.6	726.7	715.0	11.71	62.067	
2,600.0	2,571.2	2,439.9	2,385.9	7.8	10.4	-159.10	-426.3	242.8	770.2	758.0	12.25	62.898	
2,700.0	2,668.8	2,529.9	2,473.2	8.3	10.9	-159.27	-446.0	252.9	813.7	800.9	12.78	63.650	
2,800.0	2,766.4	2,620.0	2,560.4	8.7	11.4	-159.42	-465.6	263.0	857.2	843.9	13.32	64.334	
2,900.0	2,863.9	2,710.0	2,647.7	9.2	11.9	-159.56	-485.3	273.2	900.7	886.8	13.87	64.958	
3,000.0	2,961.5	2,800.0	2,735.0	9.7	12.3	-159.69	-504.9	283.3	944.2	929.8	14.41	65.530	
3,100.0	3,059.0	2,890.1	2,822.3	10.1	12.8	-159.80	-524.6	293.5	987.7	972.7	14.95	66.055	
3,200.0	3,156.6	2,980.1	2,909.5	10.6	13.3	-159.91	-544.2	303.6	1,031.2	1,015.7	15.50	66.539	
3,300.0	3,254.1	3,070.1	2,996.8	11.0	13.8	-160.00	-563.9	313.7	1,074.7	1,058.6	16.04	66.987	
3,400.0	3,351.7	3,160.1	3,084.1	11.5	14.2	-160.09	-583.5	323.9	1,118.2	1,101.6	16.59	67.401	
3,500.0	3,449.3	3,250.2	3,171.3	12.0	14.7	-160.17	-603.2	334.0	1,161.7	1,144.5	17.14	67.787	
3,600.0	3,546.8	3,340.2	3,258.6	12.4	15.2	-160.25	-622.8	344.2	1,205.2	1,187.5	17.69	68.145	
3,700.0	3,644.4	3,430.2	3,345.9	12.9	15.7	-160.32	-642.4	354.3	1,248.7	1,230.5	18.23	68.480	
3,800.0	3,741.9	3,520.3	3,433.2	13.4	16.1	-160.39	-662.1	364.4	1,292.2	1,273.4	18.78	68.793	
3,900.0	3,839.5	3,610.3	3,520.4	13.9	16.6	-160.45	-681.7	374.6	1,335.7	1,316.4	19.33	69.086	
4,000.0	3,937.1	3,700.3	3,607.7	14.3	17.1	-160.51	-701.4	384.7	1,379.2	1,359.3	19.88	69.362	
4,100.0	4,034.6	3,790.3	3,695.0	14.8	17.6	-160.56	-721.0	394.9	1,422.7	1,402.3	20.44	69.620	
4,200.0	4,132.2	3,880.4	3,782.2	15.3	18.0	-160.61	-740.7	405.0	1,466.3	1,445.3	20.99	69.864	
4,300.0	4,229.7	3,970.4	3,869.5	15.7	18.5	-160.66	-760.3	415.1	1,509.8	1,488.2	21.54	70.094	
4,400.0	4,327.3	4,060.4	3,956.8	16.2	19.0	-160.71	-780.0	425.3	1,553.3	1,531.2	22.09	70.311	
4,444.5	4,370.7	4,100.5	3,995.6	16.4	19.2	-160.73	-788.7	429.8	1,572.7	1,550.3	22.34	70.403	
4,500.0	4,425.0	4,150.7	4,044.3	16.6	19.5	-160.91	-799.7	435.4	1,596.4	1,573.6	22.71	70.285	
4,600.0	4,523.2	4,242.2	4,133.0	17.0	20.0	-161.20	-819.6	445.7	1,636.7	1,613.4	23.34	70.133	
4,700.0	4,622.1	4,334.9	4,222.9	17.3	20.5	-161.41	-839.9	456.2	1,674.0	1,650.1	23.94	69.937	
4,800.0	4,721.5	4,453.5	4,337.9	17.5	21.0	-161.53	-865.5	469.4	1,708.1	1,683.6	24.56	69.540	
4,900.0	4,821.1	4,684.7	4,564.7	17.7	21.8	-161.52	-904.8	489.7	1,734.1	1,708.8	25.33	68.455	
5,000.0	4,921.0	4,925.5	4,804.0	17.9	22.3	-161.51	-928.4	501.9	1,749.1	1,723.1	26.00	67.274	
5,079.0	5,000.0	5,119.2	4,997.5	18.0	22.6	138.55	-934.4	505.0	1,752.7	1,726.3	26.45	66.263	
5,100.0	5,021.0	5,141.7	5,020.0	18.0	22.6	138.55	-934.4	505.0	1,752.7	1,726.2	26.52	66.088	
5,200.0	5,121.0	5,241.7	5,120.0	18.1	22.7	138.55	-934.4	505.0	1,752.7	1,725.9	26.85	65.269	
5,300.0	5,221.0	5,341.7	5,220.0	18.2	22.8	138.55	-934.4	505.0	1,752.7	1,725.6	27.18	64.485	
5,400.0	5,321.0	5,441.7	5,320.0	18.4	22.8	138.55	-934.4	505.0	1,752.7	1,725.2	27.51	63.711	
5,500.0	5,421.0	5,541.7	5,420.0	18.5	22.9	138.55	-934.4	505.0	1,752.7	1,724.9	27.84	62.949	
5,600.0	5,521.0	5,641.7	5,520.0	18.7	23.0	138.55	-934.4	505.0	1,752.7	1,724.6	28.18	62.197	
5,700.0	5,621.0	5,741.7	5,620.0	18.8	23.1	138.55	-934.4	505.0	1,752.7	1,724.2	28.52	61.457	
5,800.0	5,721.0	5,841.7	5,720.0	19.0	23.2	138.55	-934.4	505.0	1,752.7	1,723.9	28.86	60.728	
5,900.0	5,821.0	5,941.7	5,820.0	19.1	23.3	138.55	-934.4	505.0	1,752.7	1,723.5	29.21	60.010	
6,000.0	5,921.0	6,041.7	5,920.0	19.2	23.4	138.55	-934.4	505.0	1,752.7	1,723.2	29.56	59.304	
6,100.0	6,021.0	6,141.7	6,020.0	19.4	23.5	138.55	-934.4	505.0	1,752.7	1,722.8	29.91	58.608	
6,200.0	6,121.0	6,241.7	6,120.0	19.5	23.6	138.55	-934.4	505.0	1,752.7	1,722.5	30.26	57.924	
6,300.0	6,221.0	6,341.7	6,220.0	19.7	23.7	138.55	-934.4	505.0	1,752.7	1,722.1	30.61	57.251	
6,400.0	6,321.0	6,441.7	6,320.0	19.9	23.8	138.55	-934.4	505.0	1,752.7	1,721.8	30.97	56.590	
6,500.0	6,421.0	6,541.7	6,420.0	20.0	24.0	138.55	-934.4	505.0	1,752.7	1,721.4	31.33	55.939	
6,600.0	6,521.0	6,641.7	6,520.0	20.2	24.1	138.55	-934.4	505.0	1,752.7	1,721.0	31.70	55.299	
6,700.0	6,621.0	6,741.7	6,620.0	20.3	24.2	138.55	-934.4	505.0	1,752.7	1,720.7	32.06	54.670	
6,800.0	6,721.0	6,841.7	6,720.0	20.5	24.3	138.55	-934.4	505.0	1,752.7	1,720.3	32.43	54.051	
6,900.0	6,821.0	6,941.7	6,820.0	20.6	24.4	138.55	-934.4	505.0	1,752.7	1,719.9	32.80	53.443	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Hudco 24-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Hudco 24-18	**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 (3-15-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Hudco 9-18 Pad Sec.18-T2N-R65W - Hudco 39-18 - Wellbore #1 - Plan #1 (3-15-11)

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	6,921.0	7,041.7	6,920.0	20.8	24.5	138.55	-934.4	505.0	1,752.7	1,719.6	33.17	52.846	
7,100.0	7,021.0	7,141.7	7,020.0	21.0	24.6	138.55	-934.4	505.0	1,752.7	1,719.2	33.54	52.258	
7,200.0	7,121.0	7,241.7	7,120.0	21.1	24.8	138.55	-934.4	505.0	1,752.7	1,718.8	33.91	51.681	
7,300.0	7,221.0	7,341.7	7,220.0	21.3	24.9	138.55	-934.4	505.0	1,752.7	1,718.5	34.29	51.114	
7,400.0	7,321.0	7,441.7	7,320.0	21.5	25.0	138.55	-934.4	505.0	1,752.7	1,718.1	34.67	50.557	
7,500.0	7,421.0	7,541.7	7,420.0	21.6	25.1	138.55	-934.4	505.0	1,752.7	1,717.7	35.05	50.009	
7,600.0	7,521.0	7,641.7	7,520.0	21.8	25.3	138.55	-934.4	505.0	1,752.7	1,717.3	35.43	49.471	
7,700.0	7,621.0	7,741.7	7,620.0	22.0	25.4	138.55	-934.4	505.0	1,752.7	1,716.9	35.81	48.942	
7,800.0	7,721.0	7,841.7	7,720.0	22.1	25.5	138.55	-934.4	505.0	1,752.7	1,716.5	36.20	48.422	
7,900.0	7,821.0	7,941.7	7,820.0	22.3	25.6	138.55	-934.4	505.0	1,752.7	1,716.2	36.58	47.911	
8,000.0	7,921.0	8,041.7	7,920.0	22.5	25.8	138.55	-934.4	505.0	1,752.7	1,715.8	36.97	47.409	
8,046.0	7,967.0	8,087.6	7,966.0	22.5	25.8	138.55	-934.4	505.0	1,752.7	1,715.6	37.15	47.182	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Hudco 24-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Hudco 24-18	**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 (3-15-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Hudco 9-18 Pad Sec.18-T2N-R65W - Hudco 40-18 - Wellbore #1 - Plan #1 (3-15-11)

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	121.95	-8.4	13.4	15.8	15.8	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	121.95	-8.4	13.4	15.8	15.6	0.22	70.372	
200.0	200.0	200.0	200.0	0.3	0.3	121.95	-8.4	13.4	15.8	15.1	0.67	23.457	CC, ES
300.0	300.0	299.8	299.8	0.6	0.6	115.97	-7.1	14.6	16.3	15.2	1.12	14.519	
400.0	400.0	399.6	399.5	0.8	0.8	101.72	-3.7	18.0	18.4	16.8	1.58	11.682	
500.0	500.0	499.5	499.2	1.0	1.0	90.07	0.0	21.7	21.7	19.7	2.03	10.677	
600.0	600.0	599.3	598.9	1.2	1.3	81.74	3.7	25.4	25.7	23.2	2.50	10.285	
700.0	700.0	699.2	698.7	1.5	1.5	75.72	7.4	29.1	30.0	27.1	2.96	10.143	
800.0	800.0	799.1	798.4	1.7	1.7	71.25	11.1	32.7	34.6	31.2	3.42	10.111	SF
900.0	900.0	898.9	898.1	1.9	2.0	67.85	14.8	36.4	39.4	35.5	3.89	10.128	
1,000.0	1,000.0	998.8	997.8	2.1	2.2	65.19	18.5	40.1	44.2	39.9	4.35	10.167	
1,100.0	1,100.0	1,097.0	1,095.8	2.4	2.5	123.95	23.3	44.8	51.7	46.9	4.72	10.939	
1,200.0	1,199.8	1,194.3	1,192.6	2.6	2.7	124.57	30.4	51.9	64.3	59.1	5.17	12.424	
1,300.0	1,299.5	1,290.4	1,287.8	2.8	3.0	125.99	39.7	61.1	82.0	76.4	5.63	14.556	
1,400.0	1,398.7	1,386.8	1,382.8	3.0	3.3	127.71	50.9	72.2	104.4	98.3	6.11	17.076	
1,500.0	1,497.5	1,483.5	1,478.2	3.3	3.7	129.85	62.3	83.5	129.2	122.6	6.60	19.581	
1,600.0	1,595.6	1,579.5	1,572.9	3.6	4.0	132.14	73.7	94.7	156.5	149.4	7.10	22.026	
1,634.5	1,629.3	1,612.4	1,605.3	3.8	4.1	132.92	77.6	98.6	166.5	159.2	7.28	22.858	
1,700.0	1,693.2	1,674.8	1,666.9	4.0	4.3	134.52	84.9	105.9	185.8	178.2	7.64	24.321	
1,800.0	1,790.8	1,770.1	1,760.8	4.4	4.7	136.40	96.2	117.0	215.5	207.3	8.20	26.296	
1,900.0	1,888.3	1,865.3	1,854.8	4.8	5.0	137.83	107.4	128.2	245.4	236.6	8.76	28.002	
2,000.0	1,985.9	1,960.6	1,948.7	5.2	5.4	138.95	118.7	139.3	275.4	266.1	9.34	29.484	
2,100.0	2,083.5	2,055.9	2,042.7	5.6	5.7	139.85	129.9	150.5	305.5	295.5	9.92	30.779	
2,200.0	2,181.0	2,151.2	2,136.6	6.0	6.1	140.59	141.2	161.7	335.6	325.1	10.51	31.919	
2,300.0	2,278.6	2,246.4	2,230.6	6.5	6.4	141.20	152.4	172.8	365.8	354.7	11.11	32.927	
2,400.0	2,376.1	2,341.7	2,324.5	6.9	6.8	141.72	163.7	184.0	396.0	384.3	11.71	33.824	
2,500.0	2,473.7	2,437.0	2,418.5	7.4	7.1	142.17	174.9	195.1	426.2	413.9	12.31	34.627	
2,600.0	2,571.2	2,532.3	2,512.4	7.8	7.5	142.56	186.2	206.3	456.4	443.5	12.91	35.348	
2,700.0	2,668.8	2,627.5	2,606.3	8.3	7.9	142.90	197.4	217.4	486.7	473.2	13.52	35.999	
2,800.0	2,766.4	2,722.8	2,700.3	8.7	8.2	143.20	208.7	228.6	517.0	502.8	14.13	36.590	
2,900.0	2,863.9	2,818.1	2,794.2	9.2	8.6	143.47	219.9	239.7	547.3	532.5	14.74	37.128	
3,000.0	2,961.5	2,913.4	2,888.2	9.7	8.9	143.71	231.2	250.9	577.6	562.2	15.35	37.619	
3,100.0	3,059.0	3,008.6	2,982.1	10.1	9.3	143.93	242.4	262.0	607.9	591.9	15.97	38.070	
3,200.0	3,156.6	3,103.9	3,076.1	10.6	9.6	144.12	253.7	273.2	638.2	621.6	16.58	38.485	
3,300.0	3,254.1	3,199.2	3,170.0	11.0	10.0	144.30	265.0	284.3	668.5	651.3	17.20	38.868	
3,400.0	3,351.7	3,294.4	3,264.0	11.5	10.4	144.46	276.2	295.5	698.8	681.0	17.82	39.222	
3,500.0	3,449.3	3,389.7	3,357.9	12.0	10.7	144.61	287.5	306.6	729.2	710.7	18.44	39.550	
3,600.0	3,546.8	3,485.0	3,451.9	12.4	11.1	144.75	298.7	317.8	759.5	740.4	19.06	39.856	
3,700.0	3,644.4	3,580.3	3,545.8	12.9	11.4	144.87	310.0	328.9	789.8	770.1	19.68	40.141	
3,800.0	3,741.9	3,675.5	3,639.8	13.4	11.8	144.99	321.2	340.1	820.2	799.9	20.30	40.407	
3,900.0	3,839.5	3,770.8	3,733.7	13.9	12.2	145.10	332.5	351.2	850.5	829.6	20.92	40.657	
4,000.0	3,937.1	3,866.1	3,827.7	14.3	12.5	145.20	343.7	362.4	880.9	859.3	21.54	40.891	
4,100.0	4,034.6	3,961.4	3,921.6	14.8	12.9	145.29	355.0	373.5	911.2	889.0	22.16	41.111	
4,200.0	4,132.2	4,056.6	4,015.6	15.3	13.2	145.38	366.2	384.7	941.5	918.8	22.79	41.317	
4,300.0	4,229.7	4,151.9	4,109.5	15.7	13.6	145.47	377.5	395.8	971.9	948.5	23.41	41.513	
4,400.0	4,327.3	4,247.2	4,203.4	16.2	14.0	145.54	388.7	407.0	1,002.3	978.2	24.04	41.697	
4,444.5	4,370.7	4,289.6	4,245.3	16.4	14.1	145.58	393.7	412.0	1,015.8	991.5	24.31	41.776	
4,500.0	4,425.0	4,342.6	4,297.5	16.6	14.3	145.79	400.0	418.2	1,032.2	1,007.5	24.69	41.803	
4,600.0	4,523.2	4,438.7	4,392.3	17.0	14.7	146.07	411.3	429.4	1,059.6	1,034.3	25.32	41.846	
4,700.0	4,622.1	4,535.6	4,487.9	17.3	15.1	146.20	422.8	440.8	1,084.3	1,058.4	25.92	41.827	
4,800.0	4,721.5	4,657.9	4,608.6	17.5	15.5	146.17	436.3	454.2	1,105.4	1,078.9	26.52	41.691	
4,900.0	4,821.1	4,797.2	4,747.0	17.7	15.8	146.12	447.4	465.2	1,120.4	1,093.4	27.05	41.427	

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 Hudco 24-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Hudco 24-18	**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 (3-15-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Hudco 9-18 Pad Sec.18-T2N-R65W - Hudco 40-18 - Wellbore #1 - Plan #1 (3-15-11)

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	4,921.0	4,938.3	4,887.9	17.9	16.1	146.09	453.8	471.5	1,129.0	1,101.5	27.49	41.067	
5,079.0	5,000.0	5,050.5	5,000.0	18.0	16.2	86.14	455.4	473.1	1,131.0	1,103.2	27.79	40.704	
5,100.0	5,021.0	5,071.5	5,021.0	18.0	16.3	86.14	455.4	473.1	1,131.0	1,103.2	27.85	40.609	
5,200.0	5,121.0	5,171.5	5,121.0	18.1	16.4	86.14	455.4	473.1	1,131.0	1,102.8	28.18	40.133	
5,300.0	5,221.0	5,271.5	5,221.0	18.2	16.5	86.14	455.4	473.1	1,131.0	1,102.5	28.52	39.661	
5,400.0	5,321.0	5,371.5	5,321.0	18.4	16.7	86.14	455.4	473.1	1,131.0	1,102.2	28.86	39.195	
5,500.0	5,421.0	5,471.5	5,421.0	18.5	16.8	86.14	455.4	473.1	1,131.0	1,101.8	29.20	38.736	
5,600.0	5,521.0	5,571.5	5,521.0	18.7	17.0	86.14	455.4	473.1	1,131.0	1,101.5	29.54	38.284	
5,700.0	5,621.0	5,671.5	5,621.0	18.8	17.2	86.14	455.4	473.1	1,131.0	1,101.1	29.89	37.839	
5,800.0	5,721.0	5,771.5	5,721.0	19.0	17.3	86.14	455.4	473.1	1,131.0	1,100.8	30.24	37.401	
5,900.0	5,821.0	5,871.5	5,821.0	19.1	17.5	86.14	455.4	473.1	1,131.0	1,100.4	30.59	36.970	
6,000.0	5,921.0	5,971.5	5,921.0	19.2	17.6	86.14	455.4	473.1	1,131.0	1,100.1	30.95	36.546	
6,100.0	6,021.0	6,071.5	6,021.0	19.4	17.8	86.14	455.4	473.1	1,131.0	1,099.7	31.31	36.128	
6,200.0	6,121.0	6,171.5	6,121.0	19.5	17.9	86.14	455.4	473.1	1,131.0	1,099.4	31.67	35.717	
6,300.0	6,221.0	6,271.5	6,221.0	19.7	18.1	86.14	455.4	473.1	1,131.0	1,099.0	32.03	35.313	
6,400.0	6,321.0	6,371.5	6,321.0	19.9	18.3	86.14	455.4	473.1	1,131.0	1,098.6	32.39	34.916	
6,500.0	6,421.0	6,471.5	6,421.0	20.0	18.4	86.14	455.4	473.1	1,131.0	1,098.3	32.76	34.525	
6,600.0	6,521.0	6,571.5	6,521.0	20.2	18.6	86.14	455.4	473.1	1,131.0	1,097.9	33.13	34.141	
6,700.0	6,621.0	6,671.5	6,621.0	20.3	18.8	86.14	455.4	473.1	1,131.0	1,097.5	33.50	33.763	
6,800.0	6,721.0	6,771.5	6,721.0	20.5	18.9	86.14	455.4	473.1	1,131.0	1,097.1	33.87	33.392	
6,900.0	6,821.0	6,871.5	6,821.0	20.6	19.1	86.14	455.4	473.1	1,131.0	1,096.8	34.25	33.027	
7,000.0	6,921.0	6,971.5	6,921.0	20.8	19.3	86.14	455.4	473.1	1,131.0	1,096.4	34.62	32.668	
7,100.0	7,021.0	7,071.5	7,021.0	21.0	19.5	86.14	455.4	473.1	1,131.0	1,096.0	35.00	32.315	
7,200.0	7,121.0	7,171.5	7,121.0	21.1	19.6	86.14	455.4	473.1	1,131.0	1,095.6	35.38	31.969	
7,300.0	7,221.0	7,271.5	7,221.0	21.3	19.8	86.14	455.4	473.1	1,131.0	1,095.3	35.76	31.628	
7,400.0	7,321.0	7,371.5	7,321.0	21.5	20.0	86.14	455.4	473.1	1,131.0	1,094.9	36.14	31.293	
7,500.0	7,421.0	7,471.5	7,421.0	21.6	20.2	86.14	455.4	473.1	1,131.0	1,094.5	36.53	30.964	
7,600.0	7,521.0	7,571.5	7,521.0	21.8	20.3	86.14	455.4	473.1	1,131.0	1,094.1	36.91	30.640	
7,700.0	7,621.0	7,572.5	7,522.0	22.0	20.3	86.14	455.4	473.1	1,135.3	1,098.2	37.11	30.596	
7,800.0	7,721.0	7,572.5	7,522.0	22.1	20.3	86.14	455.4	473.1	1,148.4	1,111.1	37.30	30.787	
7,900.0	7,821.0	7,572.5	7,522.0	22.3	20.3	86.14	455.4	473.1	1,169.9	1,132.4	37.50	31.201	
8,000.0	7,921.0	7,572.5	7,522.0	22.5	20.3	86.14	455.4	473.1	1,199.3	1,161.7	37.69	31.821	
8,046.0	7,967.0	7,572.5	7,522.0	22.5	20.3	86.14	455.4	473.1	1,215.4	1,177.6	37.78	32.171	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Hudco 24-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Hudco 24-18	**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 (3-15-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Hudco 9-18 Pad Sec.18-T2N-R65W - Hudco 9-18 (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	8.0	8.0	0.0	0.0	158.49	-67.4	26.6	72.4	72.4	0.01	7,894.860	
100.0	100.0	108.0	108.0	0.1	0.1	158.49	-67.4	26.6	72.4	72.2	0.24	298.386	
200.0	200.0	208.0	208.0	0.3	0.4	158.49	-67.4	26.6	72.4	71.7	0.69	104.629	
300.0	300.0	308.0	308.0	0.6	0.6	158.49	-67.4	26.6	72.4	71.3	1.14	63.436	
400.0	400.0	408.0	408.0	0.8	0.8	158.49	-67.4	26.6	72.4	70.8	1.59	45.517	
500.0	500.0	508.0	508.0	1.0	1.0	158.49	-67.4	26.6	72.4	70.4	2.04	35.491	
600.0	600.0	608.0	608.0	1.2	1.3	158.49	-67.4	26.6	72.4	69.9	2.49	29.085	
700.0	700.0	708.0	708.0	1.5	1.5	158.49	-67.4	26.6	72.4	69.5	2.94	24.637	
800.0	800.0	808.0	808.0	1.7	1.7	158.49	-67.4	26.6	72.4	69.0	3.39	21.370	
900.0	900.0	908.0	908.0	1.9	1.9	158.49	-67.4	26.6	72.4	68.6	3.84	18.868	
1,000.0	1,000.0	1,008.0	1,008.0	2.1	2.2	158.49	-67.4	26.6	72.4	68.1	4.29	16.890	CC, ES
1,100.0	1,100.0	1,108.0	1,108.0	2.4	2.4	-142.40	-67.4	26.6	73.8	69.1	4.73	15.600	
1,200.0	1,199.8	1,207.8	1,207.8	2.6	2.6	-144.69	-67.4	26.6	78.0	72.9	5.17	15.095	SF
1,300.0	1,299.5	1,307.5	1,307.5	2.8	2.8	-148.00	-67.4	26.6	85.3	79.7	5.61	15.211	
1,400.0	1,398.7	1,406.7	1,406.7	3.0	3.0	-151.75	-67.4	26.6	95.9	89.8	6.04	15.860	
1,500.0	1,497.5	1,505.5	1,505.5	3.3	3.3	-155.49	-67.4	26.6	109.9	103.4	6.48	16.967	
1,600.0	1,595.6	1,603.6	1,603.6	3.6	3.5	-158.91	-67.4	26.6	127.6	120.6	6.91	18.466	
1,634.5	1,629.3	1,637.3	1,637.3	3.8	3.6	-159.99	-67.4	26.6	134.5	127.4	7.05	19.063	
1,700.0	1,693.2	1,701.2	1,701.2	4.0	3.7	-161.89	-67.4	26.6	148.1	140.8	7.35	20.146	
1,800.0	1,790.8	1,798.8	1,798.8	4.4	3.9	-164.20	-67.4	26.6	169.2	161.4	7.81	21.663	
1,900.0	1,888.3	1,896.3	1,896.3	4.8	4.1	-166.00	-67.4	26.6	190.4	182.2	8.27	23.028	
2,000.0	1,985.9	1,993.9	1,993.9	5.2	4.4	-167.43	-67.4	26.6	211.8	203.1	8.73	24.258	
2,100.0	2,083.5	2,091.5	2,091.5	5.6	4.6	-168.61	-67.4	26.6	233.4	224.2	9.20	25.369	
2,200.0	2,181.0	2,189.0	2,189.0	6.0	4.8	-169.58	-67.4	26.6	254.9	245.3	9.67	26.376	
2,300.0	2,278.6	2,286.6	2,286.6	6.5	5.0	-170.40	-67.4	26.6	276.6	266.5	10.13	27.291	
2,400.0	2,376.1	2,384.1	2,384.1	6.9	5.2	-171.11	-67.4	26.6	298.3	287.7	10.61	28.125	
2,500.0	2,473.7	2,481.7	2,481.7	7.4	5.5	-171.71	-67.4	26.6	320.0	308.9	11.08	28.888	
2,600.0	2,571.2	2,579.2	2,579.2	7.8	5.7	-172.24	-67.4	26.6	341.8	330.2	11.55	29.588	
2,700.0	2,668.8	2,676.8	2,676.8	8.3	5.9	-172.71	-67.4	26.6	363.6	351.5	12.03	30.231	
2,800.0	2,766.4	2,774.4	2,774.4	8.7	6.1	-173.12	-67.4	26.6	385.4	372.9	12.50	30.825	
2,900.0	2,863.9	2,871.9	2,871.9	9.2	6.3	-173.49	-67.4	26.6	407.2	394.2	12.98	31.374	
3,000.0	2,961.5	2,969.5	2,969.5	9.7	6.6	-173.83	-67.4	26.6	429.0	415.6	13.46	31.884	
3,100.0	3,059.0	3,067.0	3,067.0	10.1	6.8	-174.13	-67.4	26.6	450.9	437.0	13.93	32.357	
3,200.0	3,156.6	3,164.6	3,164.6	10.6	7.0	-174.40	-67.4	26.6	472.8	458.3	14.41	32.799	
3,300.0	3,254.1	3,262.1	3,262.1	11.0	7.2	-174.65	-67.4	26.6	494.6	479.7	14.89	33.211	
3,400.0	3,351.7	3,359.7	3,359.7	11.5	7.4	-174.88	-67.4	26.6	516.5	501.1	15.37	33.597	
3,500.0	3,449.3	3,457.3	3,457.3	12.0	7.7	-175.08	-67.4	26.6	538.4	522.5	15.85	33.958	
3,600.0	3,546.8	3,554.8	3,554.8	12.4	7.9	-175.28	-67.4	26.6	560.3	543.9	16.34	34.298	
3,700.0	3,644.4	3,652.4	3,652.4	12.9	8.1	-175.45	-67.4	26.6	582.2	565.4	16.82	34.617	
3,800.0	3,741.9	3,749.9	3,749.9	13.4	8.3	-175.62	-67.4	26.6	604.1	586.8	17.30	34.918	
3,900.0	3,839.5	3,847.5	3,847.5	13.9	8.5	-175.77	-67.4	26.6	626.0	608.2	17.78	35.203	
4,000.0	3,937.1	3,945.1	3,945.1	14.3	8.8	-175.92	-67.4	26.6	647.9	629.6	18.27	35.471	
4,100.0	4,034.6	4,042.6	4,042.6	14.8	9.0	-176.05	-67.4	26.6	669.8	651.1	18.75	35.726	
4,200.0	4,132.2	4,140.2	4,140.2	15.3	9.2	-176.18	-67.4	26.6	691.7	672.5	19.23	35.967	
4,300.0	4,229.7	4,237.7	4,237.7	15.7	9.4	-176.29	-67.4	26.6	713.7	693.9	19.72	36.196	
4,400.0	4,327.3	4,335.3	4,335.3	16.2	9.6	-176.40	-67.4	26.6	735.6	715.4	20.20	36.414	
4,444.5	4,370.7	4,378.7	4,378.7	16.4	9.7	-176.45	-67.4	26.6	745.3	724.9	20.42	36.507	
4,500.0	4,425.0	4,433.0	4,433.0	16.6	9.9	-176.52	-67.4	26.6	757.0	736.3	20.71	36.550	
4,600.0	4,523.2	4,531.2	4,531.2	17.0	10.1	-176.62	-67.4	26.6	775.3	754.1	21.20	36.575	
4,700.0	4,622.1	4,630.1	4,630.1	17.3	10.3	-176.71	-67.4	26.6	790.2	768.5	21.66	36.487	
4,800.0	4,721.5	4,729.5	4,729.5	17.5	10.5	-176.77	-67.4	26.6	801.6	779.6	22.09	36.295	
4,900.0	4,821.1	4,829.1	4,829.1	17.7	10.7	-176.81	-67.4	26.6	809.6	787.1	22.49	36.005	

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 Hudco 24-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Hudco 24-18	**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 (3-15-11)	**Offset TVD Reference:**	Offset Datum

Offset Design Hudco 9-18 Pad Sec.18-T2N-R65W - Hudco 9-18 (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	4,921.0	4,929.0	4,929.0	17.9	11.0	-176.83	-67.4	26.6	814.1	791.2	22.85	35.623	
5,079.0	5,000.0	5,008.0	5,008.0	18.0	11.1	123.22	-67.4	26.6	815.2	792.1	23.12	35.256	
5,100.0	5,021.0	5,029.0	5,029.0	18.0	11.2	123.22	-67.4	26.6	815.2	792.0	23.21	35.127	
5,200.0	5,121.0	5,129.0	5,129.0	18.1	11.4	123.22	-67.4	26.6	815.2	791.6	23.62	34.507	
5,300.0	5,221.0	5,229.0	5,229.0	18.2	11.6	123.22	-67.4	26.6	815.2	791.1	24.04	33.906	
5,400.0	5,321.0	5,329.0	5,329.0	18.4	11.9	123.22	-67.4	26.6	815.2	790.7	24.46	33.325	
5,500.0	5,421.0	5,429.0	5,429.0	18.5	12.1	123.22	-67.4	26.6	815.2	790.3	24.88	32.762	
5,600.0	5,521.0	5,529.0	5,529.0	18.7	12.3	123.22	-67.4	26.6	815.2	789.9	25.30	32.217	
5,700.0	5,621.0	5,629.0	5,629.0	18.8	12.5	123.22	-67.4	26.6	815.2	789.5	25.73	31.688	
5,800.0	5,721.0	5,729.0	5,729.0	19.0	12.8	123.22	-67.4	26.6	815.2	789.0	26.15	31.176	
5,900.0	5,821.0	5,829.0	5,829.0	19.1	13.0	123.22	-67.4	26.6	815.2	788.6	26.57	30.678	
6,000.0	5,921.0	5,929.0	5,929.0	19.2	13.2	123.22	-67.4	26.6	815.2	788.2	27.00	30.196	
6,100.0	6,021.0	6,029.0	6,029.0	19.4	13.4	123.22	-67.4	26.6	815.2	787.8	27.42	29.727	
6,200.0	6,121.0	6,129.0	6,129.0	19.5	13.7	123.22	-67.4	26.6	815.2	787.3	27.85	29.272	
6,300.0	6,221.0	6,229.0	6,229.0	19.7	13.9	123.22	-67.4	26.6	815.2	786.9	28.28	28.831	
6,400.0	6,321.0	6,329.0	6,329.0	19.9	14.1	123.22	-67.4	26.6	815.2	786.5	28.70	28.401	
6,500.0	6,421.0	6,429.0	6,429.0	20.0	14.3	123.22	-67.4	26.6	815.2	786.1	29.13	27.984	
6,600.0	6,521.0	6,529.0	6,529.0	20.2	14.6	123.22	-67.4	26.6	815.2	785.6	29.56	27.578	
6,700.0	6,621.0	6,629.0	6,629.0	20.3	14.8	123.22	-67.4	26.6	815.2	785.2	29.99	27.183	
6,800.0	6,721.0	6,729.0	6,729.0	20.5	15.0	123.22	-67.4	26.6	815.2	784.8	30.42	26.799	
6,900.0	6,821.0	6,829.0	6,829.0	20.6	15.2	123.22	-67.4	26.6	815.2	784.3	30.85	26.425	
7,000.0	6,921.0	6,929.0	6,929.0	20.8	15.5	123.22	-67.4	26.6	815.2	783.9	31.28	26.061	
7,100.0	7,021.0	7,029.0	7,029.0	21.0	15.7	123.22	-67.4	26.6	815.2	783.5	31.71	25.707	
7,200.0	7,121.0	7,129.0	7,129.0	21.1	15.9	123.22	-67.4	26.6	815.2	783.0	32.14	25.361	
7,300.0	7,221.0	7,229.0	7,229.0	21.3	16.1	123.22	-67.4	26.6	815.2	782.6	32.58	25.024	
7,400.0	7,321.0	7,329.0	7,329.0	21.5	16.4	123.22	-67.4	26.6	815.2	782.2	33.01	24.696	
7,500.0	7,421.0	7,429.0	7,429.0	21.6	16.6	123.22	-67.4	26.6	815.2	781.7	33.44	24.376	
7,600.0	7,521.0	7,529.0	7,529.0	21.8	16.8	123.22	-67.4	26.6	815.2	781.3	33.88	24.064	
7,700.0	7,621.0	7,629.0	7,629.0	22.0	17.0	123.22	-67.4	26.6	815.2	780.9	34.31	23.760	
7,800.0	7,721.0	7,729.0	7,729.0	22.1	17.3	123.22	-67.4	26.6	815.2	780.4	34.74	23.463	
7,900.0	7,821.0	7,829.0	7,829.0	22.3	17.5	123.22	-67.4	26.6	815.2	780.0	35.18	23.173	
8,000.0	7,921.0	7,929.0	7,929.0	22.5	17.7	123.22	-67.4	26.6	815.2	779.6	35.61	22.890	
8,026.4	7,947.4	7,955.4	7,955.4	22.5	17.8	123.22	-67.4	26.6	815.2	779.5	35.73	22.816	
8,046.0	7,967.0	7,965.0	7,965.0	22.5	17.8	123.22	-67.4	26.6	815.3	779.5	35.79	22.778	

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Hudco 24-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Hudco 24-18	**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 (3-15-11)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4996.0ft (Original Well Elev) Coordinates are relative to: Hudco 24-18
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: 0.52°

Company:	Anadarko, Weld County CO	**Local Co-ordinate Reference:**	Well Hudco 24-18
Project:	SEC.18-T2N-R65W	**TVD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Reference Site:	Hudco 9-18 Pad Sec.18-T2N-R65W	**MD Reference:**	WELL @ 4996.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Hudco 24-18	**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 (3-15-11)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4996.0ft (Original Well Elev) Coordinates are relative to: Hudco 24-18
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