



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_KERR MCGEE 19-3 PAD

P_KERR-MCGEE 19-3

P_KERR-MCGEE 19-3

Plan: PLAN #1 1-15-10 RHS

Standard Planning Report

15 January, 2010





P_KERR-MCGEE 19-3
COLORADO NORTHERN ZONE - 83
SECTION 3 T1N R68W
1682 FSL 1136 FWL
LAT: 40° 4' 39.522 N
LONG: 104° 59' 41.564 W



Azimuths to True North
Magnetic North: 9.15°
Magnetic Field
Strength: 53083.2aT
Dip Angle: 66.80°
Date: 1/15/2010
Model: IGRF2010

WELL DETAILS: P_KERR-MCGEE 19-3

+N/-S	+E/-W	Northing	Ground Level: Easting	5042.00 Latitude	Longitude	Slot
0.00	0.00	1271533.57	3141349.58	40° 4' 39.522 N	104° 59' 41.564 W	

SECTION DETAILS

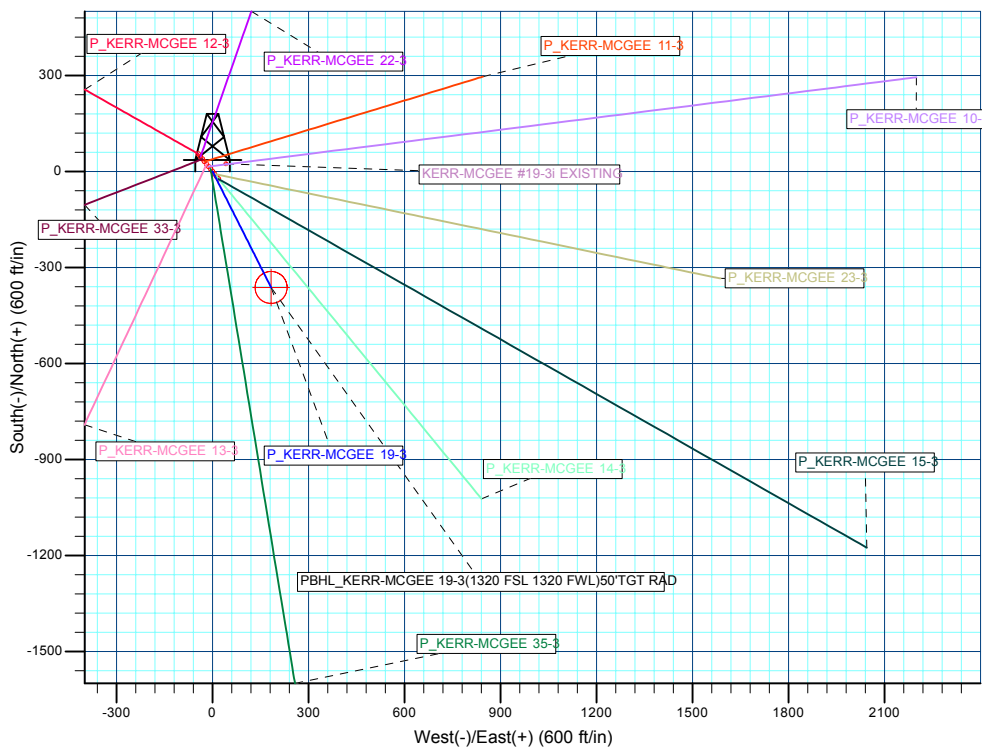
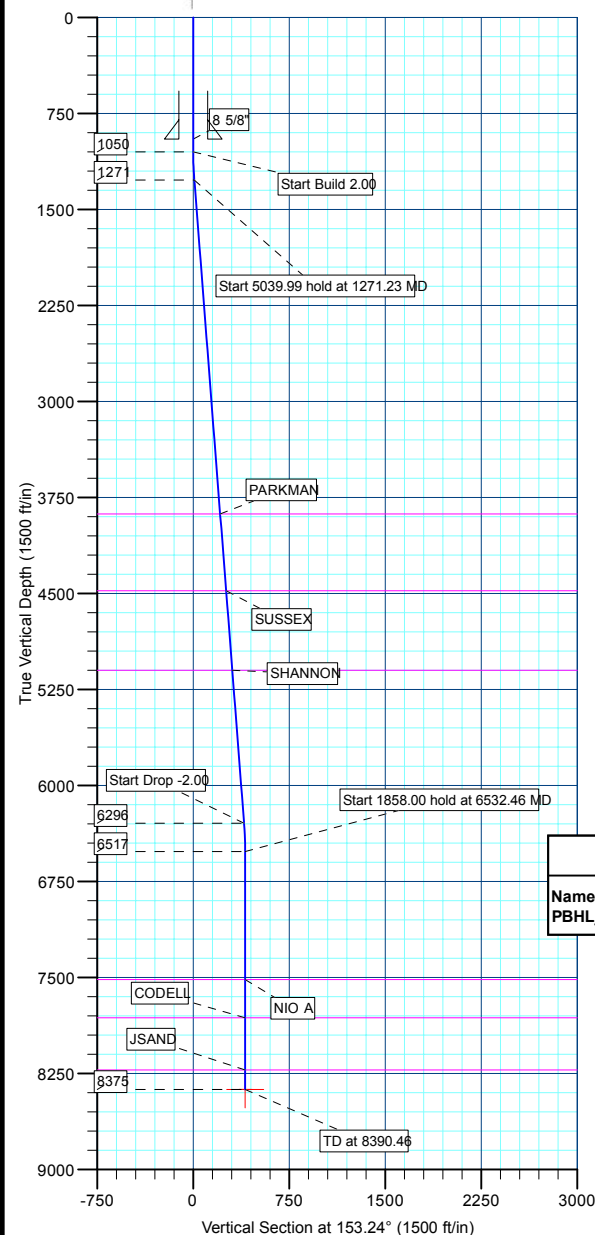
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1050.00	0.00	0.00	1050.00	0.00	0.00	0.00	0.00	0.00	
1271.23	4.42	153.24	1271.01	-7.62	3.84	2.00	153.24	8.54	
6311.23	4.42	153.24	6295.99	-354.82	178.89	0.00	0.00	397.36	
6532.46	0.00	0.00	6517.00	-362.44	182.74	2.00	180.00	405.90	
8390.46	0.00	0.00	8375.00	-362.44	182.74	0.00	0.00	405.90	PBHL_KERR-MCGEE 19-3(1320 FSL 1320 FWL)50°TGT RAD

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3880.00	3888.02	PARKMAN
4480.00	4489.81	SUSSEX
5100.00	5111.67	SHANNON
7517.00	7532.46	NIO A
7816.00	7831.46	CODELL
8224.00	8239.46	JSAND



KB ELEV:WELL @ 5057.00ft (Original Well Elev)
3RD ELEV: 5042.00



WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL_	8375.00	-362.44	182.74	1271172.17	3141534.38	40° 4' 35.940 N 104° 59' 39.214 W		Circle (Radius: 50.00)

CASING DETAILS

TVD	MD	Name	Size
950.00	950.00	8 5/8"	8.62

Plan: PLAN #1 1-15-10 RHS (P_KERR-MCGEE 19-3/P_KERR-MCGEE 19-3)

Created By: Robert H. Scott

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site:	WELD_KERR MCGEE 19-3 PAD	North Reference:	True
Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_KERR-MCGEE 19-3		
Design:	PLAN #1 1-15-10 RHS		

Project	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site						WELD_KERR MCGEE 19-3 PAD, SECTION 3 T1N R68W											
Site Position:						Northing:			1,271,548.81 ft			Latitude:			40° 4' 39.673 N		
From:			Lat/Long			Easting:			3,141,336.90 ft			Longitude:			104° 59' 41.726 W		
Position Uncertainty:			0.00 ft			Slot Radius:			in			Grid Convergence:			0.33 °		

Well	P_KERR-MCGEE 19-3					
Well Position	+N/-S	-15.31 ft	Northing:	1,271,533.57 ft	Latitude:	40° 4' 39.522 N
	+E/-W	12.59 ft	Easting:	3,141,349.58 ft	Longitude:	104° 59' 41.564 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,042.00 ft

Wellbore	P_KERR-MCGEE 19-3				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/15/2010	9.15	66.80	53,083

Design	PLAN #1 1-15-10 RHS			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	153.24

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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,271.23	4.42	153.24	1,271.01	-7.62	3.84	2.00	2.00	0.00	153.24	
6,311.23	4.42	153.24	6,295.99	-354.82	178.89	0.00	0.00	0.00	0.00	
6,532.46	0.00	0.00	6,517.00	-362.44	182.74	2.00	-2.00	0.00	180.00	
8,390.46	0.00	0.00	8,375.00	-362.44	182.74	0.00	0.00	0.00	0.00	PBHL_KERR-MCG

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site:	WELD_KERR MCGEE 19-3 PAD	North Reference:	True
Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_KERR-MCGEE 19-3		
Design:	PLAN #1 1-15-10 RHS		

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)
Start Build 2.00									
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	1.00	153.24	1,100.00	-0.39	0.20	0.44	2.00	2.00	0.00
1,200.00	3.00	153.24	1,199.93	-3.51	1.77	3.93	2.00	2.00	0.00
Start 5039.99 hold at 1271.23 MD									
1,271.23	4.42	153.24	1,271.01	-7.62	3.84	8.54	2.00	2.00	0.00
1,300.00	4.42	153.24	1,299.69	-9.61	4.84	10.76	0.00	0.00	0.00
1,400.00	4.42	153.24	1,399.40	-16.49	8.32	18.47	0.00	0.00	0.00
1,500.00	4.42	153.24	1,499.10	-23.38	11.79	26.19	0.00	0.00	0.00
1,600.00	4.42	153.24	1,598.80	-30.27	15.26	33.90	0.00	0.00	0.00
1,700.00	4.42	153.24	1,698.50	-37.16	18.74	41.62	0.00	0.00	0.00
1,800.00	4.42	153.24	1,798.20	-44.05	22.21	49.33	0.00	0.00	0.00
1,900.00	4.42	153.24	1,897.91	-50.94	25.68	57.05	0.00	0.00	0.00
2,000.00	4.42	153.24	1,997.61	-57.83	29.16	64.76	0.00	0.00	0.00
2,100.00	4.42	153.24	2,097.31	-64.72	32.63	72.48	0.00	0.00	0.00
2,200.00	4.42	153.24	2,197.01	-71.60	36.10	80.19	0.00	0.00	0.00
2,300.00	4.42	153.24	2,296.71	-78.49	39.57	87.91	0.00	0.00	0.00
2,400.00	4.42	153.24	2,396.42	-85.38	43.05	95.62	0.00	0.00	0.00
2,500.00	4.42	153.24	2,496.12	-92.27	46.52	103.34	0.00	0.00	0.00
2,600.00	4.42	153.24	2,595.82	-99.16	49.99	111.05	0.00	0.00	0.00
2,700.00	4.42	153.24	2,695.52	-106.05	53.47	118.76	0.00	0.00	0.00
2,800.00	4.42	153.24	2,795.22	-112.94	56.94	126.48	0.00	0.00	0.00
2,900.00	4.42	153.24	2,894.93	-119.83	60.41	134.19	0.00	0.00	0.00
3,000.00	4.42	153.24	2,994.63	-126.72	63.89	141.91	0.00	0.00	0.00
3,100.00	4.42	153.24	3,094.33	-133.60	67.36	149.62	0.00	0.00	0.00
3,200.00	4.42	153.24	3,194.03	-140.49	70.83	157.34	0.00	0.00	0.00
3,300.00	4.42	153.24	3,293.73	-147.38	74.31	165.05	0.00	0.00	0.00
3,400.00	4.42	153.24	3,393.44	-154.27	77.78	172.77	0.00	0.00	0.00
3,500.00	4.42	153.24	3,493.14	-161.16	81.25	180.48	0.00	0.00	0.00
3,600.00	4.42	153.24	3,592.84	-168.05	84.73	188.20	0.00	0.00	0.00
3,700.00	4.42	153.24	3,692.54	-174.94	88.20	195.91	0.00	0.00	0.00
3,800.00	4.42	153.24	3,792.24	-181.83	91.67	203.63	0.00	0.00	0.00
PARKMAN									
3,888.02	4.42	153.24	3,880.00	-187.89	94.73	210.42	0.00	0.00	0.00
3,900.00	4.42	153.24	3,891.95	-188.71	95.15	211.34	0.00	0.00	0.00
4,000.00	4.42	153.24	3,991.65	-195.60	98.62	219.06	0.00	0.00	0.00
4,100.00	4.42	153.24	4,091.35	-202.49	102.09	226.77	0.00	0.00	0.00
4,200.00	4.42	153.24	4,191.05	-209.38	105.56	234.49	0.00	0.00	0.00
4,300.00	4.42	153.24	4,290.75	-216.27	109.04	242.20	0.00	0.00	0.00
4,400.00	4.42	153.24	4,390.46	-223.16	112.51	249.92	0.00	0.00	0.00
SUSSEX									
4,489.81	4.42	153.24	4,480.00	-229.35	115.63	256.85	0.00	0.00	0.00
4,500.00	4.42	153.24	4,490.16	-230.05	115.98	257.63	0.00	0.00	0.00
4,600.00	4.42	153.24	4,589.86	-236.94	119.46	265.35	0.00	0.00	0.00
4,700.00	4.42	153.24	4,689.56	-243.82	122.93	273.06	0.00	0.00	0.00
4,800.00	4.42	153.24	4,789.26	-250.71	126.40	280.78	0.00	0.00	0.00
4,900.00	4.42	153.24	4,888.97	-257.60	129.88	288.49	0.00	0.00	0.00
5,000.00	4.42	153.24	4,988.67	-264.49	133.35	296.21	0.00	0.00	0.00
5,100.00	4.42	153.24	5,088.37	-271.38	136.82	303.92	0.00	0.00	0.00
SHANNON									
5,111.67	4.42	153.24	5,100.00	-272.18	137.23	304.82	0.00	0.00	0.00
5,200.00	4.42	153.24	5,188.07	-278.27	140.30	311.64	0.00	0.00	0.00
5,300.00	4.42	153.24	5,287.77	-285.16	143.77	319.35	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site:	WELD_KERR MCGEE 19-3 PAD	North Reference:	True
Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_KERR-MCGEE 19-3		
Design:	PLAN #1 1-15-10 RHS		

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)
5,400.00	4.42	153.24	5,387.47	-292.05	147.24	327.07	0.00	0.00	0.00
5,500.00	4.42	153.24	5,487.18	-298.94	150.72	334.78	0.00	0.00	0.00
5,600.00	4.42	153.24	5,586.88	-305.82	154.19	342.49	0.00	0.00	0.00
5,700.00	4.42	153.24	5,686.58	-312.71	157.66	350.21	0.00	0.00	0.00
5,800.00	4.42	153.24	5,786.28	-319.60	161.14	357.92	0.00	0.00	0.00
5,900.00	4.42	153.24	5,885.98	-326.49	164.61	365.64	0.00	0.00	0.00
6,000.00	4.42	153.24	5,985.69	-333.38	168.08	373.35	0.00	0.00	0.00
6,100.00	4.42	153.24	6,085.39	-340.27	171.55	381.07	0.00	0.00	0.00
6,200.00	4.42	153.24	6,185.09	-347.16	175.03	388.78	0.00	0.00	0.00
6,300.00	4.42	153.24	6,284.79	-354.05	178.50	396.50	0.00	0.00	0.00
Start Drop -2.00									
6,311.23	4.42	153.24	6,295.99	-354.82	178.89	397.36	0.00	0.00	0.00
6,400.00	2.65	153.24	6,384.59	-359.71	181.36	402.84	2.00	-2.00	0.00
6,500.00	0.65	153.24	6,484.54	-362.28	182.65	405.72	2.00	-2.00	0.00
Start 1858.00 hold at 6532.46 MD									
6,532.46	0.00	0.00	6,517.00	-362.44	182.74	405.90	2.00	-2.00	-472.09
6,600.00	0.00	0.00	6,584.54	-362.44	182.74	405.90	0.00	0.00	0.00
6,700.00	0.00	0.00	6,684.54	-362.44	182.74	405.90	0.00	0.00	0.00
6,800.00	0.00	0.00	6,784.54	-362.44	182.74	405.90	0.00	0.00	0.00
6,900.00	0.00	0.00	6,884.54	-362.44	182.74	405.90	0.00	0.00	0.00
7,000.00	0.00	0.00	6,984.54	-362.44	182.74	405.90	0.00	0.00	0.00
7,100.00	0.00	0.00	7,084.54	-362.44	182.74	405.90	0.00	0.00	0.00
7,200.00	0.00	0.00	7,184.54	-362.44	182.74	405.90	0.00	0.00	0.00
7,300.00	0.00	0.00	7,284.54	-362.44	182.74	405.90	0.00	0.00	0.00
7,400.00	0.00	0.00	7,384.54	-362.44	182.74	405.90	0.00	0.00	0.00
7,500.00	0.00	0.00	7,484.54	-362.44	182.74	405.90	0.00	0.00	0.00
NIO A									
7,532.46	0.00	0.00	7,517.00	-362.44	182.74	405.90	0.00	0.00	0.00
7,600.00	0.00	0.00	7,584.54	-362.44	182.74	405.90	0.00	0.00	0.00
7,700.00	0.00	0.00	7,684.54	-362.44	182.74	405.90	0.00	0.00	0.00
7,800.00	0.00	0.00	7,784.54	-362.44	182.74	405.90	0.00	0.00	0.00
CODELL									
7,831.46	0.00	0.00	7,816.00	-362.44	182.74	405.90	0.00	0.00	0.00
7,900.00	0.00	0.00	7,884.54	-362.44	182.74	405.90	0.00	0.00	0.00
8,000.00	0.00	0.00	7,984.54	-362.44	182.74	405.90	0.00	0.00	0.00
8,100.00	0.00	0.00	8,084.54	-362.44	182.74	405.90	0.00	0.00	0.00
8,200.00	0.00	0.00	8,184.54	-362.44	182.74	405.90	0.00	0.00	0.00
JSAND									
8,239.46	0.00	0.00	8,224.00	-362.44	182.74	405.90	0.00	0.00	0.00
8,300.00	0.00	0.00	8,284.54	-362.44	182.74	405.90	0.00	0.00	0.00
PBHL_KERR-MCGEE 19-3(1320 FSL 1320 FWL)50'TGT RAD									
8,390.46	0.00	0.00	8,375.00	-362.44	182.74	405.90	0.00	0.00	0.00

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
PBHL_KERR-MCGEE	0.00	0.00	8,375.00	-362.44	182.74	1,271,172.17	3,141,534.38	40° 4' 35.940 N	104° 59' 39.214 W
- plan hits target center									
- Circle (radius 50.00)									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site:	WELD_KERR MCGEE 19-3 PAD	North Reference:	True
Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_KERR-MCGEE 19-3		
Design:	PLAN #1 1-15-10 RHS		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
950.00	950.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,888.02	3,880.00	PARKMAN				
4,489.81	4,480.00	SUSSEX				
5,111.67	5,100.00	SHANNON				
7,532.46	7,517.00	NIO A				
7,831.46	7,816.00	CODELL				
8,239.46	8,224.00	JSAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,050.00	1,050.00	0.00	0.00	Start Build 2.00	
1,271.23	1,271.01	-7.62	3.84	Start 5039.99 hold at 1271.23 MD	
6,311.23	6,295.99	-354.82	178.89	Start Drop -2.00	
6,532.46	6,517.00	-362.44	182.74	Start 1858.00 hold at 6532.46 MD	
8,390.46	8,375.00	-362.44	182.74	TD at 8390.46	



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_KERR MCGEE 19-3 PAD
P_KERR-MCGEE 19-3**

**P_KERR-MCGEE 19-3
PLAN #1 1-15-10 RHS**

Anticollision Report

15 January, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 1-15-10 RHS		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	0.00 to 20,000.00ft	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	1/15/2010		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,390.46	PLAN #1 1-15-10 RHS (P_KERR-MCGEE	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						
WELD_KERR MCGEE 19-3 PAD						
KERR-MCGEE #19-3i EXISTING - KERR-MCGEE #19-3	1,050.00	1,044.00	47.95	5.96	1.142	Level 2, CC
KERR-MCGEE #19-3i EXISTING - KERR-MCGEE #19-3	1,500.00	1,493.10	55.76	-5.02	0.917	Level 1, ES, SF
P_KERR-MCGEE 10-3 - P_KERR-MCGEE 10-3 - PLAN	1,050.00	1,050.00	19.83	-22.11	0.473	Level 1, CC
P_KERR-MCGEE 10-3 - P_KERR-MCGEE 10-3 - PLAN	1,100.00	1,100.18	20.02	-23.14	0.464	Level 1, ES, SF
P_KERR-MCGEE 11-3 - P_KERR-MCGEE 11-3 - PLAN	1,050.00	1,050.00	39.91	35.45	8.945	CC, ES
P_KERR-MCGEE 11-3 - P_KERR-MCGEE 11-3 - PLAN	1,200.00	1,200.62	42.50	37.45	8.422	SF
P_KERR-MCGEE 12-3 - P_KERR-MCGEE 12-3 - PLAN	1,050.00	1,050.00	70.29	65.82	15.754	CC, ES
P_KERR-MCGEE 12-3 - P_KERR-MCGEE 12-3 - PLAN	1,100.00	1,098.87	71.11	66.44	15.240	SF
P_KERR-MCGEE 13-3 - P_KERR-MCGEE 13-3 - PLAN	1,050.00	1,050.00	29.63	25.17	6.641	CC, ES
P_KERR-MCGEE 13-3 - P_KERR-MCGEE 13-3 - PLAN	1,200.00	1,200.59	31.87	26.87	6.369	SF
P_KERR-MCGEE 14-3 - P_KERR-MCGEE 14-3 - PLAN	1,050.00	1,050.00	20.10	15.64	4.505	CC
P_KERR-MCGEE 14-3 - P_KERR-MCGEE 14-3 - PLAN	1,271.23	1,269.68	20.31	15.05	3.862	ES
P_KERR-MCGEE 14-3 - P_KERR-MCGEE 14-3 - PLAN	1,300.00	1,298.24	20.54	15.17	3.827	SF
P_KERR-MCGEE 15-3 - P_KERR-MCGEE 15-3 - PLAN	1,229.71	1,227.92	30.02	24.90	5.860	CC
P_KERR-MCGEE 15-3 - P_KERR-MCGEE 15-3 - PLAN	1,271.23	1,268.99	30.07	24.79	5.701	ES
P_KERR-MCGEE 15-3 - P_KERR-MCGEE 15-3 - PLAN	1,300.00	1,297.43	30.31	24.92	5.631	SF
P_KERR-MCGEE 22-3 - P_KERR-MCGEE 22-3 - PLAN	1,050.00	1,050.00	60.01	55.55	13.450	CC, ES
P_KERR-MCGEE 22-3 - P_KERR-MCGEE 22-3 - PLAN	1,100.00	1,099.44	60.66	55.99	12.989	SF
P_KERR-MCGEE 23-3 - P_KERR-MCGEE 23-3 - PLAN	1,182.29	1,181.88	9.75	4.79	1.965	CC
P_KERR-MCGEE 23-3 - P_KERR-MCGEE 23-3 - PLAN	1,200.00	1,199.52	9.78	4.75	1.946	ES, SF
P_KERR-MCGEE 33-3 - P_KERR-MCGEE 33-3 - PLAN	1,050.00	1,050.00	50.01	45.55	11.209	CC, ES
P_KERR-MCGEE 33-3 - P_KERR-MCGEE 33-3 - PLAN	1,100.00	1,099.73	50.57	45.91	10.848	SF
P_KERR-MCGEE 35-3 - P_KERR-MCGEE 35-3 - PLAN	1,050.00	1,050.00	9.81	5.35	2.199	CC
P_KERR-MCGEE 35-3 - P_KERR-MCGEE 35-3 - PLAN	1,100.00	1,100.15	9.86	5.20	2.116	ES
P_KERR-MCGEE 35-3 - P_KERR-MCGEE 35-3 - PLAN	1,400.00	1,400.85	11.41	5.64	1.979	SF

WELD_KERR MCGEE 19-3 PAD - KERR-MCGEE #19-3i EXISTING - KERR-MCGEE #19-3i EXISTING										Offset Site Error:		0.00 ft	
Survey Program: 0-UNKNOWN										Offset Well Error:		0.00 ft	
Reference		Offset		Semi Major Axis		Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
0.00	0.00	0.00	0.00	0.00	0.00	60.41	23.67	41.70	48.32				
100.00	100.00	94.00	94.00	0.10	1.88	60.41	23.67	41.70	47.95	45.97	1.98	24.271	
200.00	200.00	194.00	194.00	0.32	5.76	60.41	23.67	41.70	47.95	41.87	6.08	7.886	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_KERR MCGEE 19-3 PAD - KERR-MCGEE #19-3i EXISTING - KERR-MCGEE #19-3i EXISTING													Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN													Offset Well Error:	0.00 ft
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		
300.00	300.00	294.00	294.00	0.55	9.76	60.41	23.67	41.70	47.95	37.64	10.31	4.653		
400.00	400.00	394.00	394.00	0.77	13.76	60.41	23.67	41.70	47.95	33.42	14.53	3.300		
500.00	500.00	494.00	494.00	0.99	17.76	60.41	23.67	41.70	47.95	29.19	18.75	2.557		
600.00	600.00	594.00	594.00	1.22	21.76	60.41	23.67	41.70	47.95	24.97	22.98	2.087		
700.00	700.00	694.00	694.00	1.44	25.76	60.41	23.67	41.70	47.95	20.74	27.20	1.763		
800.00	800.00	794.00	794.00	1.67	29.76	60.41	23.67	41.70	47.95	16.52	31.43	1.526		
900.00	900.00	894.00	894.00	1.89	33.76	60.41	23.67	41.70	47.95	12.29	35.65	1.345 Level 3		
1,000.00	1,000.00	994.00	994.00	2.12	37.76	60.41	23.67	41.70	47.95	8.07	39.88	1.202 Level 2		
1,050.00	1,050.00	1,044.00	1,044.00	2.23	39.76	60.41	23.67	41.70	47.95	5.96	41.99	1.142 Level 2, CC		
1,100.00	1,100.00	1,094.00	1,094.00	2.33	41.76	-93.35	23.67	41.70	47.97	3.88	44.09	1.088 Level 2		
1,200.00	1,199.93	1,193.93	1,193.93	2.51	45.76	-97.48	23.67	41.70	48.30	0.04	48.26	1.001 Level 2		
1,271.23	1,271.01	1,265.01	1,265.01	2.64	48.60	-102.79	23.67	41.70	49.12	-2.12	51.23	0.959 Level 1		
1,300.00	1,299.69	1,293.69	1,293.69	2.69	49.75	-105.28	23.67	41.70	49.66	-2.78	52.43	0.947 Level 1		
1,400.00	1,399.40	1,393.40	1,393.40	2.90	53.74	-113.46	23.67	41.70	52.23	-4.38	56.61	0.923 Level 1		
1,500.00	1,499.10	1,493.10	1,493.10	3.11	57.72	-120.73	23.67	41.70	55.76	-5.02	60.78	0.917 Level 1, ES, SF		
1,600.00	1,598.80	1,592.80	1,592.80	3.33	61.71	-127.06	23.67	41.70	60.07	-4.88	64.96	0.925 Level 1		
1,700.00	1,698.50	1,692.50	1,692.50	3.56	65.70	-132.48	23.67	41.70	65.02	-4.11	69.14	0.941 Level 1		
1,800.00	1,798.20	1,792.20	1,792.20	3.79	69.69	-137.11	23.67	41.70	70.47	-2.84	73.31	0.961 Level 1		
1,900.00	1,897.91	1,891.91	1,891.91	4.03	73.68	-141.05	23.67	41.70	76.31	-1.18	77.49	0.985 Level 1		
2,000.00	1,997.61	1,991.61	1,991.61	4.27	77.66	-144.42	23.67	41.70	82.46	0.78	81.68	1.010 Level 2		
2,100.00	2,097.31	2,091.31	2,091.31	4.52	81.65	-147.31	23.67	41.70	88.85	2.99	85.86	1.035 Level 2		
2,200.00	2,197.01	2,191.01	2,191.01	4.76	85.64	-149.81	23.67	41.70	95.44	5.40	90.05	1.060 Level 2		
2,300.00	2,296.71	2,290.71	2,290.71	5.01	89.63	-151.98	23.67	41.70	102.19	7.96	94.23	1.084 Level 2		
2,400.00	2,396.42	2,390.42	2,390.42	5.27	93.62	-153.89	23.67	41.70	109.06	10.64	98.42	1.108 Level 2		
2,500.00	2,496.12	2,490.12	2,490.12	5.52	97.60	-155.56	23.67	41.70	116.05	13.43	102.61	1.131 Level 2		
2,600.00	2,595.82	2,589.82	2,589.82	5.78	101.59	-157.05	23.67	41.70	123.11	16.31	106.81	1.153 Level 2		
2,700.00	2,695.52	2,689.52	2,689.52	6.04	105.58	-158.37	23.67	41.70	130.26	19.26	111.00	1.173 Level 2		
2,800.00	2,795.22	2,789.22	2,789.22	6.29	109.57	-159.56	23.67	41.70	137.46	22.27	115.19	1.193 Level 2		
2,900.00	2,894.93	2,888.93	2,888.93	6.55	113.56	-160.62	23.67	41.70	144.72	25.33	119.39	1.212 Level 2		
3,000.00	2,994.63	2,988.63	2,988.63	6.82	117.55	-161.59	23.67	41.70	152.02	28.43	123.58	1.230 Level 2		
3,100.00	3,094.33	3,088.33	3,088.33	7.08	121.53	-162.46	23.67	41.70	159.36	31.58	127.78	1.247 Level 2		
3,200.00	3,194.03	3,188.03	3,188.03	7.34	125.52	-163.26	23.67	41.70	166.73	34.76	131.98	1.263 Level 3		
3,300.00	3,293.73	3,287.73	3,287.73	7.60	129.51	-163.99	23.67	41.70	174.14	37.96	136.18	1.279 Level 3		
3,400.00	3,393.44	3,387.44	3,387.44	7.87	133.50	-164.66	23.67	41.70	181.57	41.19	140.37	1.293 Level 3		
3,500.00	3,493.14	3,487.14	3,487.14	8.13	137.49	-165.28	23.67	41.70	189.02	44.45	144.57	1.307 Level 3		
3,600.00	3,592.84	3,586.84	3,586.84	8.39	141.47	-165.85	23.67	41.70	196.49	47.72	148.77	1.321 Level 3		
3,700.00	3,692.54	3,686.54	3,686.54	8.66	145.46	-166.38	23.67	41.70	203.98	51.01	152.97	1.333 Level 3		
3,800.00	3,792.24	3,786.24	3,786.24	8.92	149.45	-166.87	23.67	41.70	211.49	54.32	157.17	1.346 Level 3		
3,900.00	3,891.95	3,885.95	3,885.95	9.19	153.44	-167.33	23.67	41.70	219.01	57.64	161.37	1.357 Level 3		
4,000.00	3,991.65	3,985.65	3,985.65	9.46	157.43	-167.76	23.67	41.70	226.55	60.97	165.58	1.368 Level 3		
4,100.00	4,091.35	4,085.35	4,085.35	9.72	161.41	-168.16	23.67	41.70	234.09	64.31	169.78	1.379 Level 3		
4,200.00	4,191.05	4,185.05	4,185.05	9.99	165.40	-168.54	23.67	41.70	241.65	67.67	173.98	1.389 Level 3		
4,300.00	4,290.75	4,284.75	4,284.75	10.26	169.39	-168.89	23.67	41.70	249.21	71.03	178.18	1.399 Level 3		
4,400.00	4,390.46	4,384.46	4,384.46	10.52	173.38	-169.22	23.67	41.70	256.79	74.41	182.38	1.408 Level 3		
4,500.00	4,490.16	4,484.16	4,484.16	10.79	177.37	-169.53	23.67	41.70	264.37	77.79	186.59	1.417 Level 3		
4,600.00	4,589.86	4,583.86	4,583.86	11.06	181.35	-169.83	23.67	41.70	271.96	81.17	190.79	1.425 Level 3		
4,700.00	4,689.56	4,683.56	4,683.56	11.33	185.34	-170.11	23.67	41.70	279.56	84.57	194.99	1.434 Level 3		
4,800.00	4,789.26	4,783.26	4,783.26	11.59	189.33	-170.37	23.67	41.70	287.17	87.97	199.20	1.442 Level 3		
4,900.00	4,888.97	4,882.97	4,882.97	11.86	193.32	-170.62	23.67	41.70	294.78	91.38	203.40	1.449 Level 3		
5,000.00	4,988.67	4,982.67	4,982.67	12.13	197.31	-170.86	23.67	41.70	302.39	94.79	207.60	1.457 Level 3		
5,100.00	5,088.37	5,082.37	5,082.37	12.40	201.29	-171.09	23.67	41.70	310.01	98.20	211.81	1.464 Level 3		
5,200.00	5,188.07	5,182.07	5,182.07	12.67	205.28	-171.30	23.67	41.70	317.63	101.62	216.01	1.470 Level 3		

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN													Offset Well Error:	0.00 ft
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		
5,300.00	5,287.77	5,281.77	5,281.77	12.94	209.27	-171.51	23.67	41.70	325.26	105.05	220.22	1.477	Level 3	
5,400.00	5,387.47	5,381.47	5,381.47	13.21	213.26	-171.70	23.67	41.70	332.90	108.48	224.42	1.483	Level 3	
5,500.00	5,487.18	5,481.18	5,481.18	13.47	217.25	-171.89	23.67	41.70	340.53	111.91	228.62	1.489	Level 3	
5,600.00	5,586.88	5,580.88	5,580.88	13.74	221.24	-172.07	23.67	41.70	348.17	115.34	232.83	1.495	Level 3	
5,700.00	5,686.58	5,680.58	5,680.58	14.01	225.22	-172.24	23.67	41.70	355.82	118.78	237.03	1.501		
5,800.00	5,786.28	5,780.28	5,780.28	14.28	229.21	-172.41	23.67	41.70	363.46	122.22	241.24	1.507		
5,900.00	5,885.98	5,879.98	5,879.98	14.55	233.20	-172.56	23.67	41.70	371.11	125.67	245.44	1.512		
6,000.00	5,985.69	5,979.69	5,979.69	14.82	237.19	-172.71	23.67	41.70	378.76	129.11	249.65	1.517		
6,100.00	6,085.39	6,079.39	6,079.39	15.09	241.18	-172.86	23.67	41.70	386.42	132.56	253.85	1.522		
6,200.00	6,185.09	6,179.09	6,179.09	15.36	245.16	-173.00	23.67	41.70	394.07	136.01	258.06	1.527		
6,300.00	6,284.79	6,278.79	6,278.79	15.63	249.15	-173.13	23.67	41.70	401.73	139.47	262.26	1.532		
6,311.23	6,295.99	6,289.99	6,289.99	15.66	249.60	-173.15	23.67	41.70	402.59	139.86	262.74	1.532		
6,400.00	6,384.59	6,378.59	6,378.59	15.86	253.14	-173.25	23.67	41.70	408.03	141.10	266.93	1.529		
6,500.00	6,484.54	6,478.54	6,478.54	16.03	257.14	-173.31	23.67	41.70	410.89	139.55	271.34	1.514		
6,532.46	6,517.00	6,511.00	6,511.00	16.09	258.44	-20.07	23.67	41.70	411.07	138.36	272.71	1.507		
6,600.00	6,584.54	6,578.54	6,578.54	16.21	261.14	-20.07	23.67	41.70	411.07	135.52	275.55	1.492	Level 3	
6,700.00	6,684.54	6,678.54	6,678.54	16.37	265.14	-20.07	23.67	41.70	411.07	131.34	279.73	1.470	Level 3	
6,800.00	6,784.54	6,778.54	6,778.54	16.53	269.14	-20.07	23.67	41.70	411.07	127.16	283.91	1.448	Level 3	
6,900.00	6,884.54	6,878.54	6,878.54	16.70	273.14	-20.07	23.67	41.70	411.07	122.97	288.10	1.427	Level 3	
7,000.00	6,984.54	6,978.54	6,978.54	16.86	277.14	-20.07	23.67	41.70	411.07	118.79	292.28	1.406	Level 3	
7,100.00	7,084.54	7,078.54	7,078.54	17.03	281.14	-20.07	23.67	41.70	411.07	114.60	296.47	1.387	Level 3	
7,200.00	7,184.54	7,178.54	7,178.54	17.20	285.14	-20.07	23.67	41.70	411.07	110.41	300.66	1.367	Level 3	
7,300.00	7,284.54	7,278.54	7,278.54	17.37	289.14	-20.07	23.67	41.70	411.07	106.22	304.85	1.348	Level 3	
7,400.00	7,384.54	7,378.54	7,378.54	17.54	293.14	-20.07	23.67	41.70	411.07	102.03	309.04	1.330	Level 3	
7,500.00	7,484.54	7,478.54	7,478.54	17.71	297.14	-20.07	23.67	41.70	411.07	97.84	313.23	1.312	Level 3	
7,600.00	7,584.54	7,578.54	7,578.54	17.88	301.14	-20.07	23.67	41.70	411.07	93.65	317.42	1.295	Level 3	
7,700.00	7,684.54	7,678.54	7,678.54	18.06	305.14	-20.07	23.67	41.70	411.07	89.46	321.61	1.278	Level 3	
7,800.00	7,784.54	7,778.54	7,778.54	18.23	309.14	-20.07	23.67	41.70	411.07	85.26	325.81	1.262	Level 3	
7,900.00	7,884.54	7,878.54	7,878.54	18.41	313.14	-20.07	23.67	41.70	411.07	81.07	330.00	1.246	Level 2	
8,000.00	7,984.54	7,978.54	7,978.54	18.58	317.14	-20.07	23.67	41.70	411.07	76.87	334.20	1.230	Level 2	
8,100.00	8,084.54	8,078.54	8,078.54	18.76	321.14	-20.07	23.67	41.70	411.07	72.68	338.39	1.215	Level 2	
8,200.00	8,184.54	8,178.54	8,178.54	18.94	325.14	-20.07	23.67	41.70	411.07	68.48	342.59	1.200	Level 2	
8,300.00	8,284.54	8,278.54	8,278.54	19.12	329.14	-20.07	23.67	41.70	411.07	64.28	346.79	1.185	Level 2	
8,390.46	8,375.00	8,369.00	8,369.00	19.29	332.76	-20.07	23.67	41.70	411.07	60.49	350.58	1.173	Level 2	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												Offset Well Error:	0.00 ft
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	
0.00	0.00	0.00	0.00	0.00	0.00	-39.43	15.31	-12.59	19.83				
100.00	100.00	100.00	100.00	0.10	1.70	-39.43	15.31	-12.59	19.83	18.03	1.80	11.041	
200.00	200.00	200.00	200.00	0.32	5.70	-39.43	15.31	-12.59	19.83	13.80	6.02	3.293	
300.00	300.00	300.00	300.00	0.55	9.70	-39.43	15.31	-12.59	19.83	9.58	10.25	1.935	
400.00	400.00	400.00	400.00	0.77	13.70	-39.43	15.31	-12.59	19.83	5.36	14.47	1.370 Level 3	
500.00	500.00	500.00	500.00	0.99	17.70	-39.43	15.31	-12.59	19.83	1.13	18.69	1.060 Level 2	
600.00	600.00	600.00	600.00	1.22	21.70	-39.43	15.31	-12.59	19.83	-3.09	22.92	0.865 Level 1	
700.00	700.00	700.00	700.00	1.44	25.70	-39.43	15.31	-12.59	19.83	-7.32	27.14	0.730 Level 1	
800.00	800.00	800.00	800.00	1.67	29.70	-39.43	15.31	-12.59	19.83	-11.54	31.37	0.632 Level 1	
900.00	900.00	900.00	900.00	1.89	33.70	-39.43	15.31	-12.59	19.83	-15.77	35.59	0.557 Level 1	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	37.70	-39.43	15.31	-12.59	19.83	-19.99	39.82	0.498 Level 1	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	39.70	-39.43	15.31	-12.59	19.83	-22.11	41.93	0.473 Level 1, CC	
1,100.00	1,100.00	1,100.18	1,100.18	2.33	40.84	168.66	15.37	-12.16	20.02	-23.14	43.16	0.464 Level 1, ES, SF	
1,200.00	1,199.93	1,200.42	1,200.35	2.51	41.63	178.35	15.81	-8.68	21.96	-22.12	44.08	0.498 Level 1	
1,271.23	1,271.01	1,271.61	1,271.39	2.64	42.46	-171.52	16.38	-4.09	25.29	-19.66	44.95	0.563 Level 1	
1,300.00	1,299.69	1,300.30	1,299.98	2.69	42.79	-167.30	16.68	-1.75	27.10	-18.23	45.34	0.598 Level 1	
1,400.00	1,399.40	1,399.71	1,398.84	2.90	44.30	-152.74	17.98	8.56	34.48	-12.54	47.02	0.733 Level 1	
1,500.00	1,499.10	1,498.45	1,496.62	3.11	46.15	-139.46	19.70	22.16	44.38	-4.66	49.04	0.905 Level 1	
1,600.00	1,598.80	1,596.31	1,593.01	3.33	48.32	-128.37	21.81	38.93	57.50	6.19	51.31	1.121 Level 2	
1,700.00	1,698.50	1,693.08	1,687.69	3.56	50.78	-119.56	24.31	58.72	74.12	20.34	53.78	1.378 Level 3	
1,800.00	1,798.20	1,788.54	1,780.39	3.79	53.51	-112.69	27.16	81.33	94.26	37.87	56.39	1.672	
1,900.00	1,897.91	1,882.53	1,870.86	4.03	56.49	-107.33	30.35	106.58	117.83	58.74	59.10	1.994	
2,000.00	1,997.61	1,974.87	1,958.89	4.27	59.71	-103.11	33.84	134.24	144.73	82.87	61.86	2.340	
2,100.00	2,097.31	2,065.43	2,044.30	4.52	63.12	-99.72	37.61	164.09	174.82	110.17	64.65	2.704	
2,200.00	2,197.01	2,154.08	2,126.95	4.76	66.72	-96.97	41.62	195.89	207.99	140.54	67.45	3.084	
2,300.00	2,296.71	2,240.71	2,206.72	5.01	70.46	-94.70	45.85	229.40	244.12	173.90	70.22	3.476	
2,400.00	2,396.42	2,330.20	2,288.27	5.27	74.57	-92.76	50.46	265.96	282.56	209.43	73.13	3.864	
2,500.00	2,496.12	2,422.05	2,371.90	5.52	78.93	-91.22	55.22	303.64	321.39	245.23	76.16	4.220	
2,600.00	2,595.82	2,513.89	2,455.53	5.78	83.41	-90.01	59.97	341.31	360.38	281.13	79.25	4.547	
2,700.00	2,695.52	2,605.74	2,539.16	6.04	88.00	-89.04	64.73	378.99	399.47	317.08	82.39	4.848	
2,800.00	2,795.22	2,697.59	2,622.79	6.29	92.68	-88.24	69.48	416.67	438.65	353.07	85.58	5.126	
2,900.00	2,894.93	2,789.44	2,706.42	6.55	97.44	-87.58	74.23	454.35	477.89	389.07	88.81	5.381	
3,000.00	2,994.63	2,881.29	2,790.05	6.82	102.26	-87.01	78.99	492.02	517.17	425.09	92.08	5.616	
3,100.00	3,094.33	2,973.14	2,873.68	7.08	107.14	-86.52	83.74	529.70	556.49	461.11	95.38	5.834	
3,200.00	3,194.03	3,064.99	2,957.31	7.34	112.07	-86.10	88.50	567.38	595.84	497.13	98.71	6.036	
3,300.00	3,293.73	3,156.84	3,040.94	7.60	117.04	-85.73	93.25	605.05	635.22	533.15	102.07	6.224	
3,400.00	3,393.44	3,248.69	3,124.57	7.87	122.04	-85.40	98.01	642.73	674.61	569.17	105.45	6.398	
3,500.00	3,493.14	3,340.54	3,208.20	8.13	127.08	-85.11	102.76	680.41	714.02	605.18	108.85	6.560	
3,600.00	3,592.84	3,432.38	3,291.83	8.39	132.15	-84.85	107.51	718.09	753.45	641.18	112.27	6.711	
3,700.00	3,692.54	3,524.23	3,375.46	8.66	137.25	-84.61	112.27	755.76	792.88	677.18	115.71	6.853	
3,800.00	3,792.24	3,616.08	3,459.09	8.92	142.37	-84.40	117.02	793.44	832.33	713.17	119.16	6.985	
3,900.00	3,891.95	3,707.93	3,542.72	9.19	147.51	-84.21	121.78	831.12	871.79	749.16	122.63	7.109	
4,000.00	3,991.65	3,799.78	3,626.36	9.46	152.67	-84.03	126.53	868.79	911.25	785.14	126.12	7.226	
4,100.00	4,091.35	3,891.63	3,709.99	9.72	157.85	-83.87	131.29	906.47	950.72	821.11	129.61	7.335	
4,200.00	4,191.05	3,983.48	3,793.62	9.99	163.04	-83.72	136.04	944.15	990.20	857.08	133.12	7.438	
4,300.00	4,290.75	4,075.33	3,877.25	10.26	168.25	-83.58	140.80	981.83	1,029.68	893.04	136.64	7.536	
4,400.00	4,390.46	4,167.18	3,960.88	10.52	173.47	-83.45	145.55	1,019.50	1,069.17	928.99	140.17	7.628	
4,500.00	4,490.16	4,259.02	4,044.51	10.79	178.70	-83.33	150.30	1,057.18	1,108.66	964.95	143.71	7.715	
4,600.00	4,589.86	4,350.87	4,128.14	11.06	183.94	-83.22	155.06	1,094.86	1,148.15	1,000.89	147.26	7.797	
4,700.00	4,689.56	4,442.72	4,211.77	11.33	189.19	-83.12	159.81	1,132.53	1,187.65	1,036.84	150.81	7.875	
4,800.00	4,789.26	4,534.57	4,295.40	11.59	194.45	-83.02	164.57	1,170.21	1,227.15	1,072.77	154.38	7.949	
4,900.00	4,888.97	4,626.42	4,379.03	11.86	199.72	-82.93	169.32	1,207.89	1,266.65	1,108.71	157.94	8.020	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												Offset Well Error:	0.00 ft
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	
5,000.00	4,988.67	4,718.27	4,462.66	12.13	204.99	-82.85	174.08	1,245.57	1,306.16	1,144.64	161.52	8.087	
5,100.00	5,088.37	4,810.12	4,546.29	12.40	210.28	-82.77	178.83	1,283.24	1,345.67	1,180.56	165.10	8.151	
5,200.00	5,188.07	4,901.97	4,629.92	12.67	215.57	-82.69	183.58	1,320.92	1,385.18	1,216.49	168.69	8.211	
5,300.00	5,287.77	4,993.82	4,713.55	12.94	220.86	-82.62	188.34	1,358.60	1,424.69	1,252.41	172.28	8.270	
5,400.00	5,387.47	5,085.67	4,797.18	13.21	226.16	-82.56	193.09	1,396.27	1,464.20	1,288.32	175.88	8.325	
5,500.00	5,487.18	5,177.51	4,880.81	13.47	231.47	-82.49	197.85	1,433.95	1,503.72	1,324.23	179.48	8.378	
5,600.00	5,586.88	5,269.36	4,964.44	13.74	236.78	-82.43	202.60	1,471.63	1,543.23	1,360.14	183.09	8.429	
5,700.00	5,686.58	5,361.21	5,048.07	14.01	242.10	-82.37	207.36	1,509.31	1,582.75	1,396.05	186.70	8.478	
5,800.00	5,786.28	5,453.06	5,131.70	14.28	247.42	-82.32	212.11	1,546.98	1,622.27	1,431.96	190.31	8.524	
5,900.00	5,885.98	5,544.91	5,215.33	14.55	252.74	-82.27	216.87	1,584.66	1,661.79	1,467.86	193.93	8.569	
6,000.00	5,985.69	5,636.76	5,298.97	14.82	258.07	-82.22	221.62	1,622.34	1,701.31	1,503.76	197.56	8.612	
6,100.00	6,085.39	5,728.61	5,382.60	15.09	263.40	-82.17	226.37	1,660.01	1,740.84	1,539.66	201.18	8.653	
6,200.00	6,185.09	5,820.46	5,466.23	15.36	268.73	-82.12	231.13	1,697.69	1,780.36	1,575.55	204.81	8.693	
6,300.00	6,284.79	5,912.31	5,549.86	15.63	274.07	-82.08	235.88	1,735.37	1,819.88	1,611.45	208.44	8.731	
6,311.23	6,295.99	5,922.62	5,559.25	15.66	274.67	-82.08	236.42	1,739.60	1,824.32	1,615.47	208.85	8.735	
6,400.00	6,384.59	6,004.05	5,633.39	15.86	279.41	-82.76	240.63	1,773.00	1,859.58	1,647.39	212.19	8.764	
6,500.00	6,484.54	6,095.46	5,716.62	16.03	284.72	-83.43	245.36	1,810.50	1,899.69	1,683.76	215.93	8.798	
6,532.46	6,517.00	6,125.04	5,743.55	16.09	286.44	69.62	246.89	1,822.63	1,912.79	1,695.65	217.14	8.809	
6,600.00	6,584.54	6,186.53	5,799.55	16.21	290.02	69.80	250.08	1,847.86	1,940.11	1,720.72	219.39	8.843	
6,700.00	6,684.54	6,277.59	5,882.45	16.37	295.33	70.07	254.79	1,885.21	1,980.59	1,757.88	222.71	8.893	
6,800.00	6,784.54	6,368.64	5,965.36	16.53	300.63	70.33	259.50	1,922.56	2,021.10	1,795.06	226.04	8.941	
6,900.00	6,884.54	6,545.98	6,127.87	16.70	310.77	70.79	268.38	1,992.93	2,060.90	1,828.47	232.43	8.867	
7,000.00	6,984.54	6,874.34	6,438.74	16.86	327.75	71.41	281.55	2,097.29	2,092.40	1,847.86	244.54	8.556	
7,100.00	7,084.54	7,224.74	6,781.39	17.03	343.06	71.80	290.60	2,168.97	2,112.70	1,854.74	257.95	8.190	
7,200.00	7,184.54	7,588.20	7,143.35	17.20	355.91	71.96	294.38	2,198.92	2,120.88	1,848.69	272.19	7.792	
7,300.00	7,284.54	7,729.39	7,284.54	17.37	357.89	71.96	294.45	2,199.48	2,121.03	1,846.16	274.87	7.717	
7,400.00	7,384.54	7,829.39	7,384.54	17.54	358.79	71.96	294.45	2,199.48	2,121.03	1,844.84	276.19	7.680	
7,500.00	7,484.54	7,929.39	7,484.54	17.71	359.72	71.96	294.45	2,199.48	2,121.03	1,843.46	277.57	7.641	
7,600.00	7,584.54	8,029.39	7,584.54	17.88	360.70	71.96	294.45	2,199.48	2,121.03	1,842.02	279.01	7.602	
7,700.00	7,684.54	8,129.39	7,684.54	18.06	361.72	71.96	294.45	2,199.48	2,121.03	1,840.53	280.50	7.562	
7,800.00	7,784.54	8,229.39	7,784.54	18.23	362.78	71.96	294.45	2,199.48	2,121.03	1,838.98	282.05	7.520	
7,900.00	7,884.54	8,329.39	7,884.54	18.41	363.88	71.96	294.45	2,199.48	2,121.03	1,837.38	283.65	7.478	
8,000.00	7,984.54	8,429.39	7,984.54	18.58	365.03	71.96	294.45	2,199.48	2,121.03	1,835.72	285.31	7.434	
8,100.00	8,084.54	8,529.39	8,084.54	18.76	366.21	71.96	294.45	2,199.48	2,121.03	1,834.01	287.01	7.390	
8,200.00	8,184.54	8,629.39	8,184.54	18.94	367.43	71.96	294.45	2,199.48	2,121.03	1,832.25	288.77	7.345	
8,300.00	8,284.54	8,729.39	8,284.54	19.12	368.69	71.96	294.45	2,199.48	2,121.03	1,830.44	290.59	7.299	
8,348.79	8,333.33	8,778.18	8,333.33	19.21	369.32	71.96	294.45	2,199.48	2,121.03	1,829.54	291.49	7.277	
8,390.46	8,375.00	8,794.85	8,350.00	19.29	369.54	71.96	294.45	2,199.48	2,121.18	1,829.34	291.84	7.268	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 11-3 - P_KERR-MCGEE 11-3 - PLAN #1 1-15-10													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 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
0.00	0.00	0.00	0.00	0.00	0.00	-39.13	30.96	-25.19	39.91				
100.00	100.00	100.00	100.00	0.10	0.10	-39.13	30.96	-25.19	39.91	39.72	0.19	208.895	
200.00	200.00	200.00	200.00	0.32	0.32	-39.13	30.96	-25.19	39.91	39.27	0.64	62.302	
300.00	300.00	300.00	300.00	0.55	0.55	-39.13	30.96	-25.19	39.91	38.82	1.09	36.610	
400.00	400.00	400.00	400.00	0.77	0.77	-39.13	30.96	-25.19	39.91	38.37	1.54	25.921	
500.00	500.00	500.00	500.00	0.99	0.99	-39.13	30.96	-25.19	39.91	37.92	1.99	20.063	
600.00	600.00	600.00	600.00	1.22	1.22	-39.13	30.96	-25.19	39.91	37.47	2.44	16.365	
700.00	700.00	700.00	700.00	1.44	1.44	-39.13	30.96	-25.19	39.91	37.02	2.89	13.818	
800.00	800.00	800.00	800.00	1.67	1.67	-39.13	30.96	-25.19	39.91	36.57	3.34	11.957	
900.00	900.00	900.00	900.00	1.89	1.89	-39.13	30.96	-25.19	39.91	36.12	3.79	10.538	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-39.13	30.96	-25.19	39.91	35.67	4.24	9.420	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-39.13	30.96	-25.19	39.91	35.45	4.46	8.945 CC, ES	
1,100.00	1,100.00	1,100.26	1,100.26	2.33	2.34	168.34	31.09	-24.76	40.17	35.51	4.67	8.607	
1,200.00	1,199.93	1,200.62	1,200.55	2.51	2.55	173.71	32.12	-21.40	42.50	37.45	5.05	8.422 SF	
1,271.23	1,271.01	1,271.85	1,271.63	2.64	2.70	179.89	33.47	-16.97	46.07	40.74	5.32	8.654	
1,300.00	1,299.69	1,300.53	1,300.21	2.69	2.77	-177.32	34.16	-14.71	47.94	42.50	5.44	8.813	
1,400.00	1,399.40	1,399.88	1,399.01	2.90	3.00	-166.90	37.19	-4.78	55.26	49.39	5.87	9.421	
1,500.00	1,499.10	1,498.48	1,496.65	3.11	3.25	-156.19	41.19	8.32	64.71	58.39	6.32	10.235	
1,600.00	1,598.80	1,596.36	1,593.07	3.33	3.53	-146.16	46.10	24.40	77.13	70.32	6.81	11.329	
1,700.00	1,698.50	1,694.65	1,689.73	3.56	3.84	-138.47	51.30	41.45	91.75	84.45	7.31	12.557	
1,800.00	1,798.20	1,792.93	1,786.38	3.79	4.16	-132.95	56.51	58.51	107.56	99.75	7.81	13.773	
1,900.00	1,897.91	1,891.22	1,883.04	4.03	4.50	-128.86	61.71	75.56	124.10	115.78	8.32	14.924	
2,000.00	1,997.61	1,989.50	1,979.69	4.27	4.85	-125.74	66.92	92.61	141.10	132.28	8.82	15.991	
2,100.00	2,097.31	2,087.79	2,076.35	4.52	5.20	-123.29	72.13	109.67	158.43	149.10	9.34	16.971	
2,200.00	2,197.01	2,186.07	2,173.00	4.76	5.56	-121.33	77.33	126.72	175.99	166.13	9.85	17.864	
2,300.00	2,296.71	2,284.36	2,269.66	5.01	5.93	-119.72	82.54	143.77	193.70	183.33	10.37	18.674	
2,400.00	2,396.42	2,382.65	2,366.31	5.27	6.30	-118.38	87.74	160.83	211.55	200.65	10.90	19.413	
2,500.00	2,496.12	2,480.93	2,462.96	5.52	6.67	-117.25	92.95	177.88	229.48	218.06	11.42	20.088	
2,600.00	2,595.82	2,579.22	2,559.62	5.78	7.05	-116.29	98.16	194.94	247.49	235.54	11.95	20.706	
2,700.00	2,695.52	2,677.50	2,656.27	6.04	7.43	-115.45	103.36	211.99	265.56	253.08	12.48	21.273	
2,800.00	2,795.22	2,775.79	2,752.93	6.29	7.81	-114.73	108.57	229.04	283.68	270.66	13.02	21.795	
2,900.00	2,894.93	2,874.07	2,849.58	6.55	8.20	-114.09	113.77	246.10	301.83	288.28	13.55	22.276	
3,000.00	2,994.63	2,972.36	2,946.24	6.82	8.58	-113.52	118.98	263.15	320.02	305.94	14.09	22.721	
3,100.00	3,094.33	3,070.64	3,042.89	7.08	8.97	-113.01	124.19	280.20	338.24	323.61	14.62	23.133	
3,200.00	3,194.03	3,168.93	3,139.55	7.34	9.36	-112.55	129.39	297.26	356.47	341.31	15.16	23.515	
3,300.00	3,293.73	3,267.21	3,236.20	7.60	9.75	-112.14	134.60	314.31	374.73	359.03	15.70	23.871	
3,400.00	3,393.44	3,365.50	3,332.86	7.87	10.14	-111.77	139.80	331.36	393.01	376.77	16.24	24.204	
3,500.00	3,493.14	3,463.78	3,429.51	8.13	10.53	-111.43	145.01	348.42	411.30	394.52	16.78	24.514	
3,600.00	3,592.84	3,562.07	3,526.16	8.39	10.92	-111.12	150.22	365.47	429.60	412.28	17.32	24.805	
3,700.00	3,692.54	3,660.35	3,622.82	8.66	11.32	-110.84	155.42	382.52	447.91	430.05	17.86	25.078	
3,800.00	3,792.24	3,758.64	3,719.47	8.92	11.71	-110.57	160.63	399.58	466.23	447.83	18.40	25.334	
3,900.00	3,891.95	3,856.93	3,816.13	9.19	12.11	-110.33	165.83	416.63	484.57	465.62	18.95	25.576	
4,000.00	3,991.65	3,955.21	3,912.78	9.46	12.50	-110.10	171.04	433.68	502.91	483.42	19.49	25.803	
4,100.00	4,091.35	4,053.50	4,009.44	9.72	12.90	-109.90	176.24	450.74	521.25	501.22	20.03	26.018	
4,200.00	4,191.05	4,151.78	4,106.09	9.99	13.29	-109.70	181.45	467.79	539.61	519.03	20.58	26.222	
4,300.00	4,290.75	4,250.07	4,202.75	10.26	13.69	-109.52	186.66	484.84	557.96	536.84	21.12	26.414	
4,400.00	4,390.46	4,348.35	4,299.40	10.52	14.08	-109.35	191.86	501.90	576.33	554.66	21.67	26.597	
4,500.00	4,490.16	4,446.64	4,396.05	10.79	14.48	-109.19	197.07	518.95	594.70	572.48	22.21	26.771	
4,600.00	4,589.86	4,544.92	4,492.71	11.06	14.88	-109.04	202.27	536.00	613.07	590.31	22.76	26.936	
4,700.00	4,689.56	4,643.21	4,589.36	11.33	15.27	-108.89	207.48	553.06	631.45	608.14	23.31	27.093	
4,800.00	4,789.26	4,741.49	4,686.02	11.59	15.67	-108.76	212.69	570.11	649.83	625.97	23.85	27.243	
4,900.00	4,888.97	4,839.78	4,782.67	11.86	16.07	-108.63	217.89	587.16	668.21	643.81	24.40	27.385	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
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	
5,000.00	4,988.67	4,938.06	4,879.33	12.13	16.47	-108.51	223.10	604.22	686.60	661.65	24.95	27.522	
5,100.00	5,088.37	5,036.35	4,975.98	12.40	16.87	-108.40	228.30	621.27	704.98	679.49	25.49	27.652	
5,200.00	5,188.07	5,134.63	5,072.64	12.67	17.26	-108.29	233.51	638.32	723.38	697.33	26.04	27.777	
5,300.00	5,287.77	5,232.92	5,169.29	12.94	17.66	-108.19	238.72	655.38	741.77	715.18	26.59	27.896	
5,400.00	5,387.47	5,331.21	5,265.95	13.21	18.06	-108.09	243.92	672.43	760.17	733.03	27.14	28.011	
5,500.00	5,487.18	5,429.49	5,362.60	13.47	18.46	-108.00	249.13	689.48	778.56	750.88	27.69	28.121	
5,600.00	5,586.88	5,527.78	5,459.25	13.74	18.86	-107.91	254.33	706.54	796.96	768.73	28.23	28.226	
5,700.00	5,686.58	5,626.06	5,555.91	14.01	19.26	-107.83	259.54	723.59	815.37	786.58	28.78	28.328	
5,800.00	5,786.28	5,724.35	5,652.56	14.28	19.66	-107.75	264.75	740.64	833.77	804.44	29.33	28.425	
5,900.00	5,885.98	5,822.63	5,749.22	14.55	20.06	-107.67	269.95	757.70	852.17	822.29	29.88	28.519	
6,000.00	5,985.69	5,920.92	5,845.87	14.82	20.46	-107.60	275.16	774.75	870.58	840.15	30.43	28.610	
6,100.00	6,085.39	6,019.20	5,942.53	15.09	20.86	-107.52	280.36	791.80	888.99	858.01	30.98	28.697	
6,200.00	6,185.09	6,138.86	6,060.37	15.36	21.28	-107.47	286.41	811.61	906.75	875.21	31.55	28.744	
6,300.00	6,284.79	6,276.88	6,197.18	15.63	21.63	-107.58	291.70	828.95	920.73	888.63	32.10	28.682	
6,311.23	6,295.99	6,292.47	6,212.68	15.66	21.67	-107.61	292.18	830.51	922.04	889.87	32.16	28.667	
6,400.00	6,384.59	6,416.28	6,336.08	15.86	21.92	-107.92	295.09	840.04	930.05	897.41	32.64	28.496	
6,500.00	6,484.54	6,556.55	6,476.26	16.03	22.13	-108.10	296.50	844.67	933.99	900.92	33.07	28.240	
6,532.46	6,517.00	6,597.29	6,517.00	16.09	22.19	45.13	296.55	844.81	934.14	900.94	33.20	28.135	
6,600.00	6,584.54	6,664.83	6,584.54	16.21	22.28	45.13	296.55	844.81	934.14	900.70	33.44	27.935	
6,700.00	6,684.54	6,764.83	6,684.54	16.37	22.42	45.13	296.55	844.81	934.14	900.36	33.78	27.654	
6,800.00	6,784.54	6,864.83	6,784.54	16.53	22.56	45.13	296.55	844.81	934.14	900.02	34.12	27.377	
6,900.00	6,884.54	6,964.83	6,884.54	16.70	22.71	45.13	296.55	844.81	934.14	899.67	34.47	27.103	
7,000.00	6,984.54	7,064.83	6,984.54	16.86	22.85	45.13	296.55	844.81	934.14	899.32	34.81	26.833	
7,100.00	7,084.54	7,164.83	7,084.54	17.03	23.00	45.13	296.55	844.81	934.14	898.98	35.16	26.567	
7,200.00	7,184.54	7,264.83	7,184.54	17.20	23.14	45.13	296.55	844.81	934.14	898.62	35.51	26.304	
7,300.00	7,284.54	7,364.83	7,284.54	17.37	23.29	45.13	296.55	844.81	934.14	898.27	35.87	26.045	
7,400.00	7,384.54	7,464.83	7,384.54	17.54	23.44	45.13	296.55	844.81	934.14	897.91	36.22	25.789	
7,500.00	7,484.54	7,564.83	7,484.54	17.71	23.59	45.13	296.55	844.81	934.14	897.56	36.58	25.536	
7,600.00	7,584.54	7,664.83	7,584.54	17.88	23.74	45.13	296.55	844.81	934.14	897.20	36.94	25.288	
7,700.00	7,684.54	7,764.83	7,684.54	18.06	23.90	45.13	296.55	844.81	934.14	896.83	37.30	25.042	
7,800.00	7,784.54	7,864.83	7,784.54	18.23	24.05	45.13	296.55	844.81	934.14	896.47	37.67	24.801	
7,900.00	7,884.54	7,964.83	7,884.54	18.41	24.21	45.13	296.55	844.81	934.14	896.11	38.03	24.562	
8,000.00	7,984.54	8,064.83	7,984.54	18.58	24.36	45.13	296.55	844.81	934.14	895.74	38.40	24.327	
8,100.00	8,084.54	8,164.83	8,084.54	18.76	24.52	45.13	296.55	844.81	934.14	895.37	38.77	24.096	
8,200.00	8,184.54	8,264.83	8,184.54	18.94	24.68	45.13	296.55	844.81	934.14	895.00	39.14	23.867	
8,300.00	8,284.54	8,364.83	8,284.54	19.12	24.84	45.13	296.55	844.81	934.14	894.63	39.51	23.642	
8,345.34	8,329.88	8,410.17	8,329.88	19.20	24.91	45.13	296.55	844.81	934.14	894.46	39.68	23.541	
8,390.46	8,375.00	8,425.29	8,345.00	19.29	24.93	45.13	296.55	844.81	934.62	894.83	39.79	23.487	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
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	
0.00	0.00	0.00	0.00	0.00	0.00	-38.98	54.64	-44.21	70.29				
100.00	100.00	100.00	100.00	0.10	0.10	-38.98	54.64	-44.21	70.29	70.09	0.19	367.891	
200.00	200.00	200.00	200.00	0.32	0.32	-38.98	54.64	-44.21	70.29	69.65	0.64	109.722	
300.00	300.00	300.00	300.00	0.55	0.55	-38.98	54.64	-44.21	70.29	69.20	1.09	64.476	
400.00	400.00	400.00	400.00	0.77	0.77	-38.98	54.64	-44.21	70.29	68.75	1.54	45.651	
500.00	500.00	500.00	500.00	0.99	0.99	-38.98	54.64	-44.21	70.29	68.30	1.99	35.334	
600.00	600.00	600.00	600.00	1.22	1.22	-38.98	54.64	-44.21	70.29	67.85	2.44	28.821	
700.00	700.00	700.00	700.00	1.44	1.44	-38.98	54.64	-44.21	70.29	67.40	2.89	24.335	
800.00	800.00	800.00	800.00	1.67	1.67	-38.98	54.64	-44.21	70.29	66.95	3.34	21.058	
900.00	900.00	900.00	900.00	1.89	1.89	-38.98	54.64	-44.21	70.29	66.50	3.79	18.558	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-38.98	54.64	-44.21	70.29	66.05	4.24	16.589	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-38.98	54.64	-44.21	70.29	65.82	4.46	15.754 CC, ES	
1,100.00	1,100.00	1,098.87	1,098.87	2.33	2.34	167.72	54.84	-44.58	71.11	66.44	4.67	15.240 SF	
1,200.00	1,199.93	1,196.29	1,196.23	2.51	2.55	167.33	56.48	-47.46	77.69	72.65	5.04	15.408	
1,271.23	1,271.01	1,265.15	1,264.95	2.64	2.70	166.90	58.62	-51.24	86.37	81.05	5.31	16.259	
1,300.00	1,299.69	1,292.80	1,292.50	2.69	2.76	166.71	59.71	-53.16	90.66	85.24	5.42	16.714	
1,400.00	1,399.40	1,390.57	1,389.85	2.90	2.99	165.92	64.20	-61.10	106.87	101.05	5.83	18.340	
1,500.00	1,499.10	1,489.21	1,488.05	3.11	3.23	165.30	68.81	-69.24	123.24	117.00	6.24	19.747	
1,600.00	1,598.80	1,587.86	1,586.25	3.33	3.47	164.83	73.42	-77.38	139.62	132.96	6.66	20.957	
1,700.00	1,698.50	1,686.50	1,684.45	3.56	3.72	164.46	78.04	-85.53	156.01	148.92	7.09	22.005	
1,800.00	1,798.20	1,785.14	1,782.65	3.79	3.97	164.16	82.65	-93.67	172.40	164.88	7.52	22.919	
1,900.00	1,897.91	1,883.79	1,880.85	4.03	4.23	163.91	87.26	-101.81	188.80	180.84	7.96	23.721	
2,000.00	1,997.61	1,982.43	1,979.04	4.27	4.49	163.70	91.87	-109.95	205.19	196.79	8.40	24.430	
2,100.00	2,097.31	2,081.08	2,077.24	4.52	4.76	163.52	96.48	-118.09	221.59	212.75	8.84	25.059	
2,200.00	2,197.01	2,179.72	2,175.44	4.76	5.02	163.37	101.09	-126.23	238.00	228.71	9.29	25.622	
2,300.00	2,296.71	2,278.36	2,273.64	5.01	5.29	163.23	105.70	-134.38	254.40	244.66	9.74	26.126	
2,400.00	2,396.42	2,377.01	2,371.84	5.27	5.56	163.11	110.32	-142.52	270.81	260.62	10.19	26.582	
2,500.00	2,496.12	2,475.65	2,470.04	5.52	5.83	163.01	114.93	-150.66	287.21	276.57	10.64	26.994	
2,600.00	2,595.82	2,574.29	2,568.24	5.78	6.10	162.92	119.54	-158.80	303.62	292.53	11.09	27.369	
2,700.00	2,695.52	2,672.94	2,666.44	6.04	6.37	162.83	124.15	-166.94	320.03	308.48	11.55	27.711	
2,800.00	2,795.22	2,771.58	2,764.64	6.29	6.64	162.76	128.76	-175.09	336.44	324.43	12.00	28.025	
2,900.00	2,894.93	2,870.22	2,862.84	6.55	6.91	162.69	133.37	-183.23	352.85	340.38	12.46	28.313	
3,000.00	2,994.63	2,968.87	2,961.03	6.82	7.19	162.63	137.99	-191.37	369.26	356.34	12.92	28.579	
3,100.00	3,094.33	3,067.51	3,059.23	7.08	7.46	162.57	142.60	-199.51	385.67	372.29	13.38	28.825	
3,200.00	3,194.03	3,166.16	3,157.43	7.34	7.74	162.52	147.21	-207.65	402.08	388.24	13.84	29.053	
3,300.00	3,293.73	3,264.80	3,255.63	7.60	8.01	162.47	151.82	-215.79	418.49	404.19	14.30	29.265	
3,400.00	3,393.44	3,363.44	3,353.83	7.87	8.29	162.43	156.43	-223.94	434.90	420.14	14.76	29.463	
3,500.00	3,493.14	3,462.09	3,452.03	8.13	8.56	162.38	161.04	-232.08	451.31	436.09	15.22	29.647	
3,600.00	3,592.84	3,560.73	3,550.23	8.39	8.84	162.35	165.65	-240.22	467.72	452.03	15.68	29.820	
3,700.00	3,692.54	3,659.37	3,648.43	8.66	9.12	162.31	170.27	-248.36	484.13	467.98	16.15	29.981	
3,800.00	3,792.24	3,758.02	3,746.63	8.92	9.39	162.28	174.88	-256.50	500.54	483.93	16.61	30.133	
3,900.00	3,891.95	3,856.66	3,844.82	9.19	9.67	162.25	179.49	-264.64	516.95	499.88	17.07	30.277	
4,000.00	3,991.65	3,955.31	3,943.02	9.46	9.95	162.22	184.10	-272.79	533.37	515.83	17.54	30.411	
4,100.00	4,091.35	4,053.95	4,041.22	9.72	10.23	162.19	188.71	-280.93	549.78	531.78	18.00	30.539	
4,200.00	4,191.05	4,152.59	4,139.42	9.99	10.51	162.16	193.32	-289.07	566.19	547.72	18.47	30.659	
4,300.00	4,290.75	4,251.24	4,237.62	10.26	10.78	162.14	197.93	-297.21	582.60	563.67	18.93	30.773	
4,400.00	4,390.46	4,349.88	4,335.82	10.52	11.06	162.11	202.55	-305.35	599.02	579.62	19.40	30.882	
4,500.00	4,490.16	4,448.52	4,434.02	10.79	11.34	162.09	207.16	-313.49	615.43	595.57	19.86	30.984	
4,600.00	4,589.86	4,547.17	4,532.22	11.06	11.62	162.07	211.77	-321.64	631.84	611.51	20.33	31.082	
4,700.00	4,689.56	4,645.81	4,630.42	11.33	11.90	162.05	216.38	-329.78	648.25	627.46	20.79	31.175	
4,800.00	4,789.26	4,744.45	4,728.61	11.59	12.18	162.03	220.99	-337.92	664.67	643.41	21.26	31.264	
4,900.00	4,888.97	4,843.10	4,826.81	11.86	12.46	162.01	225.60	-346.06	681.08	659.35	21.73	31.348	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
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	
5,000.00	4,988.67	4,941.74	4,925.01	12.13	12.74	162.00	230.21	-354.20	697.49	675.30	22.19	31.429	
5,100.00	5,088.37	5,040.39	5,023.21	12.40	13.02	161.98	234.83	-362.35	713.90	691.24	22.66	31.506	
5,200.00	5,188.07	5,139.03	5,121.41	12.67	13.30	161.97	239.44	-370.49	730.32	707.19	23.13	31.580	
5,300.00	5,287.77	5,237.67	5,219.61	12.94	13.57	161.95	244.05	-378.63	746.73	723.14	23.59	31.651	
5,400.00	5,387.47	5,336.32	5,317.81	13.21	13.85	161.94	248.66	-386.77	763.14	739.08	24.06	31.718	
5,500.00	5,487.18	5,434.96	5,416.01	13.47	14.13	161.92	253.27	-394.91	779.56	755.03	24.53	31.784	
5,600.00	5,586.88	5,533.60	5,514.21	13.74	14.41	161.91	257.88	-403.05	795.97	770.97	24.99	31.846	
5,700.00	5,686.58	5,632.25	5,612.40	14.01	14.69	161.90	262.49	-411.20	812.38	786.92	25.46	31.906	
5,800.00	5,786.28	5,730.89	5,710.60	14.28	14.97	161.89	267.11	-419.34	828.80	802.87	25.93	31.964	
5,900.00	5,885.98	5,829.54	5,808.80	14.55	15.25	161.87	271.72	-427.48	845.21	818.81	26.40	32.019	
6,000.00	5,985.69	5,928.18	5,907.00	14.82	15.53	161.86	276.33	-435.62	861.62	834.76	26.86	32.073	
6,100.00	6,085.39	6,026.82	6,005.20	15.09	15.81	161.85	280.94	-443.76	878.04	850.70	27.33	32.125	
6,200.00	6,185.09	6,125.47	6,103.40	15.36	16.09	161.84	285.55	-451.90	894.45	866.65	27.80	32.174	
6,300.00	6,284.79	6,224.11	6,201.60	15.63	16.37	161.83	290.16	-460.05	910.86	882.59	28.27	32.222	
6,311.23	6,295.99	6,235.19	6,212.62	15.66	16.41	161.83	290.68	-460.96	912.70	884.38	28.32	32.228	
6,400.00	6,384.59	6,346.43	6,323.45	15.86	16.67	161.88	295.39	-469.28	925.32	896.54	28.79	32.146	
6,500.00	6,484.54	6,491.48	6,468.35	16.03	16.93	161.90	298.49	-474.75	932.23	902.99	29.25	31.875	
6,532.46	6,517.00	6,538.76	6,515.63	16.09	17.01	-44.86	298.72	-475.15	932.71	903.32	29.39	31.732	
6,600.00	6,584.54	6,607.67	6,584.54	16.21	17.12	-44.86	298.72	-475.15	932.71	903.06	29.66	31.450	
6,700.00	6,684.54	6,707.67	6,684.54	16.37	17.31	-44.86	298.72	-475.15	932.71	902.67	30.04	31.047	
6,800.00	6,784.54	6,807.67	6,784.54	16.53	17.49	-44.86	298.72	-475.15	932.71	902.29	30.43	30.653	
6,900.00	6,884.54	6,907.67	6,884.54	16.70	17.68	-44.86	298.72	-475.15	932.71	901.90	30.82	30.266	
7,000.00	6,984.54	7,007.67	6,984.54	16.86	17.86	-44.86	298.72	-475.15	932.71	901.51	31.21	29.888	
7,100.00	7,084.54	7,107.67	7,084.54	17.03	18.05	-44.86	298.72	-475.15	932.71	901.12	31.60	29.517	
7,200.00	7,184.54	7,207.67	7,184.54	17.20	18.24	-44.86	298.72	-475.15	932.71	900.72	31.99	29.155	
7,300.00	7,284.54	7,307.67	7,284.54	17.37	18.43	-44.86	298.72	-475.15	932.71	900.33	32.39	28.799	
7,400.00	7,384.54	7,407.67	7,384.54	17.54	18.62	-44.86	298.72	-475.15	932.71	899.93	32.78	28.451	
7,500.00	7,484.54	7,507.67	7,484.54	17.71	18.81	-44.86	298.72	-475.15	932.71	899.53	33.18	28.111	
7,600.00	7,584.54	7,607.67	7,584.54	17.88	19.00	-44.86	298.72	-475.15	932.71	899.14	33.58	27.777	
7,700.00	7,684.54	7,707.67	7,684.54	18.06	19.19	-44.86	298.72	-475.15	932.71	898.74	33.98	27.450	
7,800.00	7,784.54	7,807.67	7,784.54	18.23	19.39	-44.86	298.72	-475.15	932.71	898.33	34.38	27.130	
7,900.00	7,884.54	7,907.67	7,884.54	18.41	19.58	-44.86	298.72	-475.15	932.71	897.93	34.78	26.816	
8,000.00	7,984.54	8,007.67	7,984.54	18.58	19.77	-44.86	298.72	-475.15	932.71	897.53	35.19	26.508	
8,100.00	8,084.54	8,107.67	8,084.54	18.76	19.97	-44.86	298.72	-475.15	932.71	897.12	35.59	26.207	
8,200.00	8,184.54	8,207.67	8,184.54	18.94	20.16	-44.86	298.72	-475.15	932.71	896.72	36.00	25.912	
8,300.00	8,284.54	8,307.67	8,284.54	19.12	20.36	-44.86	298.72	-475.15	932.71	896.31	36.40	25.622	
8,351.75	8,336.29	8,359.42	8,336.29	19.22	20.46	-44.86	298.72	-475.15	932.71	896.10	36.61	25.474	
8,390.46	8,375.00	8,378.13	8,355.00	19.29	20.50	-44.86	298.72	-475.15	932.93	896.20	36.73	25.400	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 13-3 - P_KERR-MCGEE 13-3 - PLAN #1 1-15-10													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
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	
0.00	0.00	0.00	0.00	0.00	0.00	-39.26	22.94	-18.75	29.63				
100.00	100.00	100.00	100.00	0.10	0.10	-39.26	22.94	-18.75	29.63	29.44	0.19	155.079	
200.00	200.00	200.00	200.00	0.32	0.32	-39.26	22.94	-18.75	29.63	28.99	0.64	46.252	
300.00	300.00	300.00	300.00	0.55	0.55	-39.26	22.94	-18.75	29.63	28.54	1.09	27.179	
400.00	400.00	400.00	400.00	0.77	0.77	-39.26	22.94	-18.75	29.63	28.09	1.54	19.243	
500.00	500.00	500.00	500.00	0.99	0.99	-39.26	22.94	-18.75	29.63	27.64	1.99	14.895	
600.00	600.00	600.00	600.00	1.22	1.22	-39.26	22.94	-18.75	29.63	27.19	2.44	12.149	
700.00	700.00	700.00	700.00	1.44	1.44	-39.26	22.94	-18.75	29.63	26.74	2.89	10.258	
800.00	800.00	800.00	800.00	1.67	1.67	-39.26	22.94	-18.75	29.63	26.29	3.34	8.877	
900.00	900.00	900.00	900.00	1.89	1.89	-39.26	22.94	-18.75	29.63	25.84	3.79	7.823	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-39.26	22.94	-18.75	29.63	25.39	4.24	6.993	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-39.26	22.94	-18.75	29.63	25.17	4.46	6.641 CC, ES	
1,100.00	1,100.00	1,100.22	1,100.22	2.33	2.33	166.92	22.54	-18.94	29.87	25.21	4.66	6.411	
1,200.00	1,199.93	1,200.59	1,200.53	2.51	2.51	162.60	19.36	-20.43	31.87	26.87	5.00	6.369 SF	
1,271.23	1,271.01	1,271.97	1,271.75	2.64	2.64	157.70	15.16	-22.40	34.76	29.50	5.26	6.608	
1,300.00	1,299.69	1,300.76	1,300.44	2.69	2.69	155.41	13.01	-23.40	36.19	30.82	5.37	6.742	
1,400.00	1,399.40	1,400.61	1,399.74	2.90	2.90	145.68	3.54	-27.84	41.34	35.57	5.77	7.166	
1,500.00	1,499.10	1,500.00	1,498.15	3.11	3.13	134.15	-9.00	-33.72	47.74	41.53	6.21	7.689	
1,600.00	1,598.80	1,598.54	1,595.19	3.33	3.40	122.34	-24.47	-40.97	56.64	49.96	6.69	8.473	
1,700.00	1,698.50	1,696.15	1,690.69	3.56	3.71	111.54	-42.76	-49.54	68.95	61.77	7.18	9.597	
1,800.00	1,798.20	1,794.36	1,786.39	3.79	4.06	103.15	-62.71	-58.89	84.06	76.37	7.69	10.929	
1,900.00	1,897.91	1,892.58	1,882.11	4.03	4.43	97.37	-82.67	-68.25	100.40	92.20	8.20	12.248	
2,000.00	1,997.61	1,990.81	1,977.83	4.27	4.82	93.22	-102.63	-77.60	117.45	108.75	8.71	13.488	
2,100.00	2,097.31	2,089.04	2,073.56	4.52	5.23	90.14	-122.59	-86.96	134.96	125.74	9.22	14.634	
2,200.00	2,197.01	2,187.27	2,169.28	4.76	5.65	87.76	-142.55	-96.31	152.76	143.02	9.74	15.682	
2,300.00	2,296.71	2,285.50	2,265.01	5.01	6.07	85.89	-162.50	-105.66	170.76	160.49	10.26	16.639	
2,400.00	2,396.42	2,383.73	2,360.73	5.27	6.51	84.37	-182.46	-115.02	188.90	178.11	10.79	17.511	
2,500.00	2,496.12	2,481.96	2,456.45	5.52	6.95	83.11	-202.42	-124.37	207.15	195.83	11.32	18.306	
2,600.00	2,595.82	2,580.18	2,552.18	5.78	7.39	82.06	-222.38	-133.73	225.48	213.63	11.85	19.032	
2,700.00	2,695.52	2,678.41	2,647.90	6.04	7.84	81.17	-242.33	-143.08	243.87	231.49	12.38	19.698	
2,800.00	2,795.22	2,776.64	2,743.62	6.29	8.29	80.41	-262.29	-152.43	262.31	249.40	12.92	20.309	
2,900.00	2,894.93	2,874.87	2,839.35	6.55	8.74	79.74	-282.25	-161.79	280.79	267.34	13.45	20.870	
3,000.00	2,994.63	2,973.10	2,935.07	6.82	9.20	79.16	-302.21	-171.14	299.31	285.31	13.99	21.389	
3,100.00	3,094.33	3,071.33	3,030.80	7.08	9.65	78.64	-322.17	-180.50	317.84	303.31	14.53	21.868	
3,200.00	3,194.03	3,169.56	3,126.52	7.34	10.11	78.18	-342.12	-189.85	336.41	321.33	15.08	22.312	
3,300.00	3,293.73	3,267.78	3,222.24	7.60	10.58	77.77	-362.08	-199.21	354.99	339.37	15.62	22.724	
3,400.00	3,393.44	3,366.01	3,317.97	7.87	11.04	77.40	-382.04	-208.56	373.58	357.42	16.17	23.109	
3,500.00	3,493.14	3,464.24	3,413.69	8.13	11.50	77.06	-402.00	-217.91	392.19	375.48	16.71	23.467	
3,600.00	3,592.84	3,562.47	3,509.41	8.39	11.97	76.76	-421.96	-227.27	410.81	393.55	17.26	23.802	
3,700.00	3,692.54	3,660.70	3,605.14	8.66	12.43	76.48	-441.91	-236.62	429.45	411.64	17.81	24.116	
3,800.00	3,792.24	3,758.93	3,700.86	8.92	12.90	76.23	-461.87	-245.98	448.09	429.73	18.36	24.410	
3,900.00	3,891.95	3,857.15	3,796.58	9.19	13.37	75.99	-481.83	-255.33	466.74	447.83	18.91	24.687	
4,000.00	3,991.65	3,955.38	3,892.31	9.46	13.84	75.78	-501.79	-264.68	485.39	465.94	19.46	24.948	
4,100.00	4,091.35	4,053.61	3,988.03	9.72	14.30	75.57	-521.74	-274.04	504.05	484.05	20.01	25.194	
4,200.00	4,191.05	4,151.84	4,083.76	9.99	14.77	75.39	-541.70	-283.39	522.72	502.16	20.56	25.426	
4,300.00	4,290.75	4,250.07	4,179.48	10.26	15.24	75.21	-561.66	-292.75	541.39	520.28	21.11	25.646	
4,400.00	4,390.46	4,348.30	4,275.20	10.52	15.71	75.05	-581.62	-302.10	560.07	538.41	21.66	25.854	
4,500.00	4,490.16	4,446.53	4,370.93	10.79	16.18	74.90	-601.58	-311.45	578.75	556.54	22.22	26.051	
4,600.00	4,589.86	4,544.75	4,466.65	11.06	16.65	74.76	-621.53	-320.81	597.44	574.67	22.77	26.239	
4,700.00	4,689.56	4,642.98	4,562.37	11.33	17.13	74.63	-641.49	-330.16	616.12	592.80	23.32	26.417	
4,800.00	4,789.26	4,741.21	4,658.10	11.59	17.60	74.50	-661.45	-339.52	634.81	610.94	23.88	26.587	
4,900.00	4,888.97	4,839.44	4,753.82	11.86	18.07	74.38	-681.41	-348.87	653.51	629.08	24.43	26.749	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 13-3 - P_KERR-MCGEE 13-3 - PLAN #1 1-15-10												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 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
5,000.00	4,988.67	4,937.67	4,849.55	12.13	18.54	74.27	-701.37	-358.22	672.20	647.22	24.99	26.903	
5,100.00	5,088.37	5,035.90	4,945.27	12.40	19.01	74.16	-721.32	-367.58	690.90	665.36	25.54	27.051	
5,200.00	5,188.07	5,134.12	5,040.99	12.67	19.49	74.06	-741.28	-376.93	709.60	683.51	26.10	27.192	
5,300.00	5,287.77	5,232.35	5,136.72	12.94	19.96	73.97	-761.24	-386.29	728.31	701.65	26.65	27.327	
5,400.00	5,387.47	5,330.58	5,232.44	13.21	20.43	73.88	-781.20	-395.64	747.01	719.80	27.21	27.456	
5,500.00	5,487.18	5,428.81	5,328.16	13.47	20.90	73.79	-801.15	-404.99	765.72	737.95	27.76	27.580	
5,600.00	5,586.88	5,527.04	5,423.89	13.74	21.38	73.71	-821.11	-414.35	784.43	756.11	28.32	27.698	
5,700.00	5,686.58	5,625.27	5,519.61	14.01	21.85	73.63	-841.07	-423.70	803.13	774.26	28.88	27.813	
5,800.00	5,786.28	5,723.50	5,615.33	14.28	22.33	73.56	-861.03	-433.06	821.85	792.41	29.43	27.922	
5,900.00	5,885.98	5,821.72	5,711.06	14.55	22.80	73.49	-880.99	-442.41	840.56	810.57	29.99	28.028	
6,000.00	5,985.69	5,919.95	5,806.78	14.82	23.27	73.42	-900.94	-451.76	859.27	828.72	30.55	28.129	
6,100.00	6,085.39	6,029.33	5,913.43	15.09	23.75	73.35	-922.93	-462.07	877.81	846.69	31.12	28.210	
6,200.00	6,185.09	6,167.93	6,049.56	15.36	24.17	73.39	-946.44	-473.09	893.06	861.35	31.71	28.161	
6,300.00	6,284.79	6,308.12	6,188.37	15.63	24.53	73.59	-964.12	-481.38	903.84	871.53	32.31	27.976	
6,311.23	6,295.99	6,323.93	6,204.08	15.66	24.56	73.62	-965.73	-482.13	904.77	872.40	32.37	27.948	
6,400.00	6,384.59	6,449.29	6,328.94	15.86	24.81	73.94	-975.70	-486.80	910.48	877.64	32.83	27.729	
6,500.00	6,484.54	6,591.01	6,470.53	16.03	25.01	74.11	-980.99	-489.28	913.51	880.27	33.25	27.477	
6,532.46	6,517.00	6,637.06	6,516.58	16.09	25.07	-132.64	-981.35	-489.45	913.72	880.34	33.37	27.379	
6,600.00	6,584.54	6,705.02	6,584.54	16.21	25.15	-132.64	-981.35	-489.45	913.72	880.12	33.60	27.193	
6,700.00	6,684.54	6,805.02	6,684.54	16.37	25.25	-132.64	-981.35	-489.45	913.72	879.80	33.91	26.943	
6,800.00	6,784.54	6,905.02	6,784.54	16.53	25.35	-132.64	-981.35	-489.45	913.72	879.49	34.23	26.695	
6,900.00	6,884.54	7,005.02	6,884.54	16.70	25.46	-132.64	-981.35	-489.45	913.72	879.17	34.55	26.449	
7,000.00	6,984.54	7,105.02	6,984.54	16.86	25.57	-132.64	-981.35	-489.45	913.72	878.85	34.87	26.206	
7,100.00	7,084.54	7,205.02	7,084.54	17.03	25.68	-132.64	-981.35	-489.45	913.72	878.53	35.19	25.965	
7,200.00	7,184.54	7,305.02	7,184.54	17.20	25.79	-132.64	-981.35	-489.45	913.72	878.20	35.52	25.727	
7,300.00	7,284.54	7,405.02	7,284.54	17.37	25.90	-132.64	-981.35	-489.45	913.72	877.87	35.85	25.490	
7,400.00	7,384.54	7,505.02	7,384.54	17.54	26.01	-132.64	-981.35	-489.45	913.72	877.54	36.18	25.257	
7,500.00	7,484.54	7,605.02	7,484.54	17.71	26.13	-132.64	-981.35	-489.45	913.72	877.21	36.51	25.026	
7,600.00	7,584.54	7,705.02	7,584.54	17.88	26.24	-132.64	-981.35	-489.45	913.72	876.87	36.85	24.797	
7,700.00	7,684.54	7,805.02	7,684.54	18.06	26.36	-132.64	-981.35	-489.45	913.72	876.53	37.19	24.571	
7,800.00	7,784.54	7,905.02	7,784.54	18.23	26.48	-132.64	-981.35	-489.45	913.72	876.19	37.53	24.348	
7,900.00	7,884.54	8,005.02	7,884.54	18.41	26.60	-132.64	-981.35	-489.45	913.72	875.85	37.87	24.127	
8,000.00	7,984.54	8,105.02	7,984.54	18.58	26.72	-132.64	-981.35	-489.45	913.72	875.50	38.22	23.909	
8,100.00	8,084.54	8,205.02	8,084.54	18.76	26.85	-132.64	-981.35	-489.45	913.72	875.15	38.56	23.693	
8,200.00	8,184.54	8,305.02	8,184.54	18.94	26.97	-132.64	-981.35	-489.45	913.72	874.80	38.91	23.480	
8,300.00	8,284.54	8,405.02	8,284.54	19.12	27.10	-132.64	-981.35	-489.45	913.72	874.45	39.27	23.270	
8,345.34	8,329.88	8,450.36	8,329.88	19.20	27.15	-132.64	-981.35	-489.45	913.72	874.29	39.43	23.175	
8,390.46	8,375.00	8,465.48	8,345.00	19.29	27.17	-132.64	-981.35	-489.45	914.21	874.68	39.53	23.124	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 14-3 - P_KERR-MCGEE 14-3 - PLAN #1 1-15-10													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
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		
0.00	0.00	0.00	0.00	0.00	0.00	141.20	-15.66	12.59	20.10					
100.00	100.00	100.00	100.00	0.10	0.10	141.20	-15.66	12.59	20.10	19.91	0.19	105.197		
200.00	200.00	200.00	200.00	0.32	0.32	141.20	-15.66	12.59	20.10	19.46	0.64	31.375		
300.00	300.00	300.00	300.00	0.55	0.55	141.20	-15.66	12.59	20.10	19.01	1.09	18.437		
400.00	400.00	400.00	400.00	0.77	0.77	141.20	-15.66	12.59	20.10	18.56	1.54	13.054		
500.00	500.00	500.00	500.00	0.99	0.99	141.20	-15.66	12.59	20.10	18.11	1.99	10.104		
600.00	600.00	600.00	600.00	1.22	1.22	141.20	-15.66	12.59	20.10	17.66	2.44	8.241		
700.00	700.00	700.00	700.00	1.44	1.44	141.20	-15.66	12.59	20.10	17.21	2.89	6.959		
800.00	800.00	800.00	800.00	1.67	1.67	141.20	-15.66	12.59	20.10	16.76	3.34	6.021		
900.00	900.00	900.00	900.00	1.89	1.89	141.20	-15.66	12.59	20.10	16.31	3.79	5.307		
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	141.20	-15.66	12.59	20.10	15.86	4.24	4.744		
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	141.20	-15.66	12.59	20.10	15.64	4.46	4.505 CC		
1,100.00	1,100.00	1,099.65	1,099.65	2.33	2.33	-12.31	-16.00	12.87	20.10	15.45	4.66	4.316		
1,200.00	1,199.93	1,198.95	1,198.88	2.51	2.51	-14.47	-18.65	15.05	20.18	15.17	5.01	4.031		
1,271.23	1,271.01	1,269.68	1,269.46	2.64	2.64	-17.29	-22.17	17.94	20.31	15.05	5.26	3.862 ES		
1,300.00	1,299.69	1,298.24	1,297.93	2.69	2.70	-18.59	-23.97	19.42	20.54	15.17	5.37	3.827 SF		
1,400.00	1,399.40	1,397.43	1,396.58	2.90	2.91	-21.93	-31.92	25.95	23.60	17.85	5.75	4.105		
1,500.00	1,499.10	1,496.31	1,494.51	3.11	3.15	-23.15	-42.47	34.62	30.11	23.97	6.15	4.900		
1,600.00	1,598.80	1,594.64	1,591.37	3.33	3.42	-22.97	-55.54	45.37	40.00	33.45	6.55	6.103		
1,700.00	1,698.50	1,692.20	1,686.83	3.56	3.73	-22.21	-71.04	58.10	53.23	46.26	6.97	7.634		
1,800.00	1,798.20	1,788.77	1,780.61	3.79	4.10	-21.32	-88.85	72.74	69.79	62.38	7.40	9.428		
1,900.00	1,897.91	1,885.83	1,874.17	4.03	4.51	-20.51	-108.80	89.13	89.09	81.25	7.84	11.361		
2,000.00	1,997.61	1,983.88	1,968.61	4.27	4.96	-19.96	-129.17	105.88	108.71	100.41	8.29	13.105		
2,100.00	2,097.31	2,081.94	2,063.05	4.52	5.44	-19.58	-149.55	122.62	128.33	119.58	8.76	14.657		
2,200.00	2,197.01	2,179.99	2,157.49	4.76	5.92	-19.30	-169.92	139.37	147.96	138.74	9.22	16.042		
2,300.00	2,296.71	2,278.04	2,251.93	5.01	6.42	-19.08	-190.30	156.12	167.59	157.90	9.70	17.283		
2,400.00	2,396.42	2,376.09	2,346.37	5.27	6.93	-18.91	-210.67	172.86	187.23	177.05	10.18	18.399		
2,500.00	2,496.12	2,474.14	2,440.80	5.52	7.45	-18.78	-231.05	189.61	206.86	196.20	10.66	19.407		
2,600.00	2,595.82	2,572.20	2,535.24	5.78	7.98	-18.66	-251.42	206.35	226.50	215.35	11.15	20.321		
2,700.00	2,695.52	2,670.25	2,629.68	6.04	8.50	-18.57	-271.80	223.10	246.14	234.50	11.64	21.153		
2,800.00	2,795.22	2,768.30	2,724.12	6.29	9.04	-18.49	-292.18	239.84	265.77	253.64	12.13	21.912		
2,900.00	2,894.93	2,866.35	2,818.56	6.55	9.57	-18.42	-312.55	256.59	285.41	272.79	12.62	22.607		
3,000.00	2,994.63	2,964.41	2,913.00	6.82	10.11	-18.35	-332.93	273.33	305.05	291.93	13.12	23.246		
3,100.00	3,094.33	3,062.46	3,007.44	7.08	10.65	-18.30	-353.30	290.08	324.69	311.07	13.62	23.834		
3,200.00	3,194.03	3,160.51	3,101.88	7.34	11.19	-18.25	-373.68	306.83	344.33	330.20	14.12	24.378		
3,300.00	3,293.73	3,258.56	3,196.31	7.60	11.74	-18.21	-394.05	323.57	363.97	349.34	14.63	24.882		
3,400.00	3,393.44	3,356.62	3,290.75	7.87	12.29	-18.17	-414.43	340.32	383.60	368.47	15.13	25.350		
3,500.00	3,493.14	3,454.67	3,385.19	8.13	12.83	-18.14	-434.80	357.06	403.24	387.61	15.64	25.785		
3,600.00	3,592.84	3,552.72	3,479.63	8.39	13.38	-18.11	-455.18	373.81	422.88	406.74	16.15	26.192		
3,700.00	3,692.54	3,650.77	3,574.07	8.66	13.93	-18.08	-475.56	390.55	442.52	425.87	16.65	26.572		
3,800.00	3,792.24	3,748.82	3,668.51	8.92	14.48	-18.05	-495.93	407.30	462.16	445.00	17.16	26.928		
3,900.00	3,891.95	3,846.88	3,762.95	9.19	15.04	-18.03	-516.31	424.05	481.80	464.13	17.67	27.262		
4,000.00	3,991.65	3,944.93	3,857.39	9.46	15.59	-18.01	-536.68	440.79	501.44	483.26	18.18	27.576		
4,100.00	4,091.35	4,042.98	3,951.82	9.72	16.14	-17.99	-557.06	457.54	521.08	502.39	18.70	27.872		
4,200.00	4,191.05	4,141.03	4,046.26	9.99	16.70	-17.97	-577.43	474.28	540.72	521.51	19.21	28.151		
4,300.00	4,290.75	4,239.09	4,140.70	10.26	17.25	-17.95	-597.81	491.03	560.36	540.64	19.72	28.414		
4,400.00	4,390.46	4,337.14	4,235.14	10.52	17.80	-17.93	-618.18	507.77	580.00	559.77	20.23	28.664		
4,500.00	4,490.16	4,435.19	4,329.58	10.79	18.36	-17.92	-638.56	524.52	599.64	578.89	20.75	28.900		
4,600.00	4,589.86	4,533.24	4,424.02	11.06	18.92	-17.90	-658.94	541.26	619.28	598.02	21.26	29.125		
4,700.00	4,689.56	4,631.29	4,518.46	11.33	19.47	-17.89	-679.31	558.01	638.92	617.14	21.78	29.338		
4,800.00	4,789.26	4,729.35	4,612.89	11.59	20.03	-17.88	-699.69	574.76	658.56	636.27	22.29	29.540		
4,900.00	4,888.97	4,827.40	4,707.33	11.86	20.59	-17.86	-720.06	591.50	678.20	655.39	22.81	29.733		

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 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
5,000.00	4,988.67	4,925.45	4,801.77	12.13	21.14	-17.85	-740.44	608.25	697.84	674.52	23.33	29.917	
5,100.00	5,088.37	5,023.50	4,896.21	12.40	21.70	-17.84	-760.81	624.99	717.48	693.64	23.84	30.093	
5,200.00	5,188.07	5,121.56	4,990.65	12.67	22.26	-17.83	-781.19	641.74	737.12	712.76	24.36	30.261	
5,300.00	5,287.77	5,219.61	5,085.09	12.94	22.82	-17.82	-801.56	658.48	756.76	731.89	24.88	30.421	
5,400.00	5,387.47	5,317.66	5,179.53	13.21	23.37	-17.81	-821.94	675.23	776.40	751.01	25.39	30.575	
5,500.00	5,487.18	5,415.71	5,273.97	13.47	23.93	-17.81	-842.32	691.97	796.04	770.13	25.91	30.722	
5,600.00	5,586.88	5,513.77	5,368.40	13.74	24.49	-17.80	-862.69	708.72	815.68	789.25	26.43	30.863	
5,700.00	5,686.58	5,611.82	5,462.84	14.01	25.05	-17.79	-883.07	725.47	835.32	808.37	26.95	30.998	
5,800.00	5,786.28	5,709.87	5,557.28	14.28	25.61	-17.78	-903.44	742.21	854.96	827.50	27.47	31.128	
5,900.00	5,885.98	5,807.92	5,651.72	14.55	26.17	-17.78	-923.82	758.96	874.60	846.62	27.98	31.253	
6,000.00	5,985.69	5,911.46	5,751.46	14.82	26.73	-17.77	-945.29	776.61	894.21	865.69	28.51	31.361	
6,100.00	6,085.39	6,055.17	5,891.00	15.09	27.28	-17.78	-971.80	798.39	910.79	881.69	29.10	31.299	
6,200.00	6,185.09	6,200.95	6,034.12	15.36	27.76	-17.84	-993.13	815.92	922.39	892.72	29.67	31.086	
6,300.00	6,284.79	6,348.08	6,179.81	15.63	28.13	-17.94	-1,008.92	828.90	928.93	898.71	30.22	30.739	
6,311.23	6,295.99	6,364.65	6,196.27	15.66	28.17	-17.96	-1,010.34	830.07	929.34	899.06	30.28	30.691	
6,400.00	6,384.59	6,495.80	6,326.94	15.86	28.43	-18.06	-1,018.95	837.14	931.65	901.01	30.64	30.405	
6,500.00	6,484.54	6,643.71	6,474.73	16.03	28.62	-18.12	-1,023.11	840.56	932.54	901.58	30.96	30.121	
6,532.46	6,517.00	6,685.97	6,517.00	16.09	28.67	135.12	-1,023.23	840.66	932.47	901.42	31.05	30.032	
6,600.00	6,584.54	6,753.51	6,584.54	16.21	28.73	135.12	-1,023.23	840.66	932.47	901.18	31.29	29.801	
6,700.00	6,684.54	6,853.51	6,684.54	16.37	28.83	135.12	-1,023.23	840.66	932.47	900.84	31.63	29.482	
6,800.00	6,784.54	6,953.51	6,784.54	16.53	28.92	135.12	-1,023.23	840.66	932.47	900.50	31.97	29.168	
6,900.00	6,884.54	7,053.51	6,884.54	16.70	29.02	135.12	-1,023.23	840.66	932.47	900.16	32.31	28.857	
7,000.00	6,984.54	7,153.51	6,984.54	16.86	29.12	135.12	-1,023.23	840.66	932.47	899.81	32.66	28.552	
7,100.00	7,084.54	7,253.51	7,084.54	17.03	29.22	135.12	-1,023.23	840.66	932.47	899.46	33.01	28.250	
7,200.00	7,184.54	7,353.51	7,184.54	17.20	29.33	135.12	-1,023.23	840.66	932.47	899.11	33.36	27.953	
7,300.00	7,284.54	7,453.51	7,284.54	17.37	29.43	135.12	-1,023.23	840.66	932.47	898.76	33.71	27.660	
7,400.00	7,384.54	7,553.51	7,384.54	17.54	29.53	135.12	-1,023.23	840.66	932.47	898.40	34.07	27.371	
7,500.00	7,484.54	7,653.51	7,484.54	17.71	29.64	135.12	-1,023.23	840.66	932.47	898.05	34.43	27.086	
7,600.00	7,584.54	7,753.51	7,584.54	17.88	29.75	135.12	-1,023.23	840.66	932.47	897.69	34.79	26.806	
7,700.00	7,684.54	7,853.51	7,684.54	18.06	29.86	135.12	-1,023.23	840.66	932.47	897.32	35.15	26.530	
7,800.00	7,784.54	7,953.51	7,784.54	18.23	29.97	135.12	-1,023.23	840.66	932.47	896.96	35.51	26.258	
7,900.00	7,884.54	8,053.51	7,884.54	18.41	30.08	135.12	-1,023.23	840.66	932.47	896.59	35.88	25.990	
8,000.00	7,984.54	8,153.51	7,984.54	18.58	30.19	135.12	-1,023.23	840.66	932.47	896.23	36.25	25.727	
8,100.00	8,084.54	8,253.51	8,084.54	18.76	30.31	135.12	-1,023.23	840.66	932.47	895.86	36.62	25.467	
8,200.00	8,184.54	8,353.51	8,184.54	18.94	30.42	135.12	-1,023.23	840.66	932.47	895.48	36.99	25.211	
8,300.00	8,284.54	8,453.51	8,284.54	19.12	30.54	135.12	-1,023.23	840.66	932.47	895.11	37.36	24.960	
8,351.75	8,336.29	8,505.26	8,336.29	19.22	30.60	135.12	-1,023.23	840.66	932.47	894.92	37.55	24.831	
8,390.46	8,375.00	8,523.97	8,355.00	19.29	30.62	135.12	-1,023.23	840.66	932.69	895.02	37.66	24.765	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
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	
0.00	0.00	0.00	0.00	0.00	0.00	141.62	-23.67	18.75	30.20				
100.00	100.00	100.00	100.00	0.10	0.10	141.62	-23.67	18.75	30.20	30.00	0.19	158.050	
200.00	200.00	200.00	200.00	0.32	0.32	141.62	-23.67	18.75	30.20	29.56	0.64	47.138	
300.00	300.00	300.00	300.00	0.55	0.55	141.62	-23.67	18.75	30.20	29.11	1.09	27.699	
400.00	400.00	400.00	400.00	0.77	0.77	141.62	-23.67	18.75	30.20	28.66	1.54	19.612	
500.00	500.00	500.00	500.00	0.99	0.99	141.62	-23.67	18.75	30.20	28.21	1.99	15.180	
600.00	600.00	600.00	600.00	1.22	1.22	141.62	-23.67	18.75	30.20	27.76	2.44	12.382	
700.00	700.00	700.00	700.00	1.44	1.44	141.62	-23.67	18.75	30.20	27.31	2.89	10.455	
800.00	800.00	800.00	800.00	1.67	1.67	141.62	-23.67	18.75	30.20	26.86	3.34	9.047	
900.00	900.00	900.00	900.00	1.89	1.89	141.62	-23.67	18.75	30.20	26.41	3.79	7.973	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	141.62	-23.67	18.75	30.20	25.96	4.24	7.127	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	141.62	-23.67	18.75	30.20	25.73	4.46	6.768	
1,100.00	1,100.00	1,099.51	1,099.51	2.33	2.33	-12.10	-23.88	19.12	30.17	25.51	4.66	6.474	
1,200.00	1,199.93	1,198.52	1,198.45	2.51	2.52	-15.87	-25.57	22.09	30.04	25.02	5.01	5.990	
1,229.71	1,229.59	1,227.92	1,227.80	2.56	2.58	-17.73	-26.40	23.55	30.02	24.90	5.12	5.860 CC	
1,271.23	1,271.01	1,268.99	1,268.77	2.64	2.66	-20.88	-27.81	26.02	30.07	24.79	5.27	5.701 ES	
1,300.00	1,299.69	1,297.43	1,297.12	2.69	2.72	-23.32	-28.95	28.03	30.31	24.92	5.38	5.631 SF	
1,400.00	1,399.40	1,396.17	1,395.33	2.90	2.93	-31.57	-34.00	36.91	33.77	28.00	5.77	5.851	
1,500.00	1,499.10	1,494.53	1,492.75	3.11	3.18	-37.77	-40.68	48.67	41.23	35.05	6.18	6.676	
1,600.00	1,598.80	1,592.27	1,589.04	3.33	3.45	-41.48	-48.97	63.23	52.40	45.80	6.60	7.944	
1,700.00	1,698.50	1,689.19	1,683.90	3.56	3.77	-43.36	-58.77	80.48	67.03	60.00	7.03	9.536	
1,800.00	1,798.20	1,785.07	1,777.03	3.79	4.13	-44.13	-70.03	100.28	84.96	77.49	7.47	11.369	
1,900.00	1,897.91	1,879.71	1,868.16	4.03	4.55	-44.28	-82.65	122.47	106.10	98.17	7.93	13.384	
2,000.00	1,997.61	1,972.95	1,957.06	4.27	5.01	-44.12	-96.53	146.87	130.38	121.99	8.39	15.540	
2,100.00	2,097.31	2,064.61	2,043.53	4.52	5.53	-43.80	-111.56	173.30	157.72	148.86	8.86	17.802	
2,200.00	2,197.01	2,154.56	2,127.39	4.76	6.11	-43.41	-127.64	201.57	188.06	178.72	9.34	20.143	
2,300.00	2,296.71	2,242.66	2,208.51	5.01	6.72	-43.00	-144.63	231.46	221.30	211.48	9.82	22.544	
2,400.00	2,396.42	2,328.82	2,286.77	5.27	7.38	-42.59	-162.44	262.77	257.37	247.07	10.30	24.992	
2,500.00	2,496.12	2,420.96	2,369.80	5.52	8.13	-42.21	-182.18	297.48	294.99	284.18	10.81	27.289	
2,600.00	2,595.82	2,513.59	2,453.28	5.78	8.91	-41.91	-202.03	332.39	332.63	321.30	11.33	29.359	
2,700.00	2,695.52	2,606.22	2,536.76	6.04	9.70	-41.67	-221.88	367.29	370.28	358.42	11.86	31.229	
2,800.00	2,795.22	2,698.86	2,620.24	6.29	10.50	-41.48	-241.73	402.20	407.93	395.54	12.39	32.924	
2,900.00	2,894.93	2,791.49	2,703.71	6.55	11.30	-41.32	-261.58	437.10	445.59	432.66	12.93	34.465	
3,000.00	2,994.63	2,884.12	2,787.19	6.82	12.12	-41.18	-281.43	472.00	483.25	469.77	13.47	35.870	
3,100.00	3,094.33	2,976.76	2,870.67	7.08	12.93	-41.07	-301.28	506.91	520.91	506.89	14.02	37.156	
3,200.00	3,194.03	3,069.39	2,954.15	7.34	13.76	-40.96	-321.13	541.81	558.57	544.00	14.57	38.337	
3,300.00	3,293.73	3,162.02	3,037.63	7.60	14.58	-40.88	-340.98	576.72	596.23	581.11	15.12	39.424	
3,400.00	3,393.44	3,254.65	3,121.10	7.87	15.41	-40.80	-360.83	611.62	633.89	618.21	15.68	40.427	
3,500.00	3,493.14	3,347.29	3,204.58	8.13	16.25	-40.73	-380.68	646.53	671.56	655.32	16.24	41.355	
3,600.00	3,592.84	3,439.92	3,288.06	8.39	17.08	-40.67	-400.53	681.43	709.22	692.42	16.80	42.216	
3,700.00	3,692.54	3,532.55	3,371.54	8.66	17.92	-40.61	-420.38	716.34	746.89	729.53	17.36	43.016	
3,800.00	3,792.24	3,625.19	3,455.01	8.92	18.75	-40.56	-440.23	751.24	784.55	766.63	17.93	43.762	
3,900.00	3,891.95	3,717.82	3,538.49	9.19	19.59	-40.52	-460.08	786.14	822.22	803.73	18.49	44.459	
4,000.00	3,991.65	3,810.45	3,621.97	9.46	20.43	-40.48	-479.93	821.05	859.89	840.83	19.06	45.110	
4,100.00	4,091.35	3,903.08	3,705.45	9.72	21.28	-40.44	-499.78	855.95	897.56	877.93	19.63	45.721	
4,200.00	4,191.05	3,995.72	3,788.93	9.99	22.12	-40.40	-519.63	890.86	935.22	915.02	20.20	46.295	
4,300.00	4,290.75	4,088.35	3,872.40	10.26	22.96	-40.37	-539.48	925.76	972.89	952.12	20.77	46.834	
4,400.00	4,390.46	4,180.98	3,955.88	10.52	23.81	-40.34	-559.33	960.67	1,010.56	989.22	21.35	47.342	
4,500.00	4,490.16	4,273.62	4,039.36	10.79	24.65	-40.31	-579.18	995.57	1,048.23	1,026.31	21.92	47.822	
4,600.00	4,589.86	4,366.25	4,122.84	11.06	25.50	-40.29	-599.03	1,030.48	1,085.90	1,063.40	22.49	48.275	
4,700.00	4,689.56	4,458.88	4,206.31	11.33	26.34	-40.26	-618.88	1,065.38	1,123.57	1,100.50	23.07	48.705	
4,800.00	4,789.26	4,551.52	4,289.79	11.59	27.19	-40.24	-638.73	1,100.28	1,161.24	1,137.59	23.64	49.112	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 15-3 - P_KERR-MCGEE 15-3 - PLAN #1 1-15-10												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 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
4,900.00	4,888.97	4,644.15	4,373.27	11.86	28.04	-40.22	-658.58	1,135.19	1,198.91	1,174.68	24.22	49.498	
5,000.00	4,988.67	4,736.78	4,456.75	12.13	28.89	-40.20	-678.43	1,170.09	1,236.58	1,211.78	24.80	49.865	
5,100.00	5,088.37	4,829.41	4,540.22	12.40	29.73	-40.18	-698.28	1,205.00	1,274.25	1,248.87	25.38	50.214	
5,200.00	5,188.07	4,922.05	4,623.70	12.67	30.58	-40.17	-718.13	1,239.90	1,311.91	1,285.96	25.95	50.546	
5,300.00	5,287.77	5,014.68	4,707.18	12.94	31.43	-40.15	-737.98	1,274.81	1,349.58	1,323.05	26.53	50.863	
5,400.00	5,387.47	5,107.31	4,790.66	13.21	32.28	-40.13	-757.83	1,309.71	1,387.25	1,360.14	27.11	51.166	
5,500.00	5,487.18	5,199.95	4,874.14	13.47	33.13	-40.12	-777.68	1,344.62	1,424.92	1,397.23	27.69	51.455	
5,600.00	5,586.88	5,292.58	4,957.61	13.74	33.98	-40.10	-797.53	1,379.52	1,462.59	1,434.32	28.27	51.732	
5,700.00	5,686.58	5,385.21	5,041.09	14.01	34.83	-40.09	-817.38	1,414.42	1,500.26	1,471.41	28.85	51.996	
5,800.00	5,786.28	5,477.84	5,124.57	14.28	35.68	-40.08	-837.23	1,449.33	1,537.93	1,508.50	29.43	52.250	
5,900.00	5,885.98	5,570.48	5,208.05	14.55	36.53	-40.07	-857.08	1,484.23	1,575.60	1,545.59	30.02	52.493	
6,000.00	5,985.69	5,663.11	5,291.52	14.82	37.38	-40.05	-876.93	1,519.14	1,613.28	1,582.68	30.60	52.726	
6,100.00	6,085.39	5,755.74	5,375.00	15.09	38.23	-40.04	-896.78	1,554.04	1,650.95	1,619.77	31.18	52.950	
6,200.00	6,185.09	5,848.38	5,458.48	15.36	39.08	-40.03	-916.62	1,588.95	1,688.62	1,656.85	31.76	53.166	
6,300.00	6,284.79	5,941.01	5,541.96	15.63	39.93	-40.02	-936.47	1,623.85	1,726.29	1,693.94	32.34	53.373	
6,311.23	6,295.99	5,951.41	5,551.33	15.66	40.03	-40.02	-938.70	1,627.77	1,730.52	1,698.11	32.41	53.396	
6,400.00	6,384.59	6,033.23	5,625.06	15.86	40.78	-40.46	-956.24	1,658.60	1,764.93	1,732.09	32.84	53.746	
6,500.00	6,484.54	6,124.34	5,707.17	16.03	41.61	-40.94	-975.76	1,692.93	1,805.99	1,772.73	33.26	54.294	
6,532.46	6,517.00	6,153.66	5,733.59	16.09	41.88	112.16	-982.04	1,703.98	1,819.84	1,786.44	33.40	54.484	
6,600.00	6,584.54	6,214.53	5,788.44	16.21	42.44	112.28	-995.09	1,726.91	1,848.92	1,815.20	33.72	54.832	
6,700.00	6,684.54	6,304.64	5,869.65	16.37	43.27	112.45	-1,014.40	1,760.87	1,891.98	1,857.81	34.18	55.361	
6,800.00	6,784.54	6,394.76	5,950.86	16.53	44.10	112.61	-1,033.71	1,794.83	1,935.06	1,900.42	34.63	55.873	
6,900.00	6,884.54	6,663.66	6,198.00	16.70	45.98	113.01	-1,085.97	1,886.72	1,974.43	1,938.87	35.57	55.515	
7,000.00	6,984.54	6,972.03	6,492.14	16.86	47.53	113.32	-1,131.50	1,966.80	2,004.19	1,967.68	36.51	54.895	
7,100.00	7,084.54	7,298.25	6,812.14	17.03	48.62	113.52	-1,162.38	2,021.08	2,023.27	1,985.90	37.37	54.140	
7,200.00	7,184.54	7,634.89	7,147.59	17.20	49.16	113.59	-1,175.18	2,043.60	2,030.94	1,992.85	38.09	53.325	
7,300.00	7,284.54	7,771.84	7,284.54	17.37	49.26	113.59	-1,175.42	2,044.01	2,031.08	1,992.63	38.45	52.825	
7,400.00	7,384.54	7,871.84	7,384.54	17.54	49.32	113.59	-1,175.42	2,044.01	2,031.08	1,992.32	38.76	52.399	
7,500.00	7,484.54	7,971.84	7,484.54	17.71	49.39	113.59	-1,175.42	2,044.01	2,031.08	1,992.00	39.08	51.977	
7,600.00	7,584.54	8,071.84	7,584.54	17.88	49.46	113.59	-1,175.42	2,044.01	2,031.08	1,991.68	39.39	51.558	
7,700.00	7,684.54	8,171.84	7,684.54	18.06	49.53	113.59	-1,175.42	2,044.01	2,031.08	1,991.36	39.71	51.142	
7,800.00	7,784.54	8,271.84	7,784.54	18.23	49.60	113.59	-1,175.42	2,044.01	2,031.08	1,991.04	40.04	50.731	
7,900.00	7,884.54	8,371.84	7,884.54	18.41	49.67	113.59	-1,175.42	2,044.01	2,031.08	1,990.72	40.36	50.322	
8,000.00	7,984.54	8,471.84	7,984.54	18.58	49.74	113.59	-1,175.42	2,044.01	2,031.08	1,990.39	40.69	49.918	
8,100.00	8,084.54	8,571.84	8,084.54	18.76	49.82	113.59	-1,175.42	2,044.01	2,031.08	1,990.06	41.02	49.517	
8,200.00	8,184.54	8,671.84	8,184.54	18.94	49.89	113.59	-1,175.42	2,044.01	2,031.08	1,989.73	41.35	49.121	
8,300.00	8,284.54	8,771.84	8,284.54	19.12	49.97	113.59	-1,175.42	2,044.01	2,031.08	1,989.40	41.68	48.728	
8,351.75	8,336.29	8,823.59	8,336.29	19.22	50.00	113.59	-1,175.42	2,044.01	2,031.08	1,989.22	41.86	48.526	
8,390.46	8,375.00	8,842.30	8,355.00	19.29	50.02	113.59	-1,175.42	2,044.01	2,031.18	1,989.22	41.96	48.412	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
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	
0.00	0.00	0.00	0.00	0.00	0.00	-39.02	46.62	-37.78	60.01				
100.00	100.00	100.00	100.00	0.10	0.10	-39.02	46.62	-37.78	60.01	59.82	0.19	314.091	
200.00	200.00	200.00	200.00	0.32	0.32	-39.02	46.62	-37.78	60.01	59.37	0.64	93.676	
300.00	300.00	300.00	300.00	0.55	0.55	-39.02	46.62	-37.78	60.01	58.92	1.09	55.047	
400.00	400.00	400.00	400.00	0.77	0.77	-39.02	46.62	-37.78	60.01	58.47	1.54	38.975	
500.00	500.00	500.00	500.00	0.99	0.99	-39.02	46.62	-37.78	60.01	58.02	1.99	30.167	
600.00	600.00	600.00	600.00	1.22	1.22	-39.02	46.62	-37.78	60.01	57.57	2.44	24.606	
700.00	700.00	700.00	700.00	1.44	1.44	-39.02	46.62	-37.78	60.01	57.12	2.89	20.776	
800.00	800.00	800.00	800.00	1.67	1.67	-39.02	46.62	-37.78	60.01	56.67	3.34	17.978	
900.00	900.00	900.00	900.00	1.89	1.89	-39.02	46.62	-37.78	60.01	56.22	3.79	15.844	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-39.02	46.62	-37.78	60.01	55.77	4.24	14.163	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-39.02	46.62	-37.78	60.01	55.55	4.46	13.450 CC, ES	
1,100.00	1,100.00	1,099.44	1,099.44	2.33	2.34	168.17	47.03	-37.64	60.66	55.99	4.67	12.989 SF	
1,200.00	1,199.93	1,198.03	1,197.96	2.51	2.56	171.27	50.23	-36.52	66.01	60.95	5.06	13.047	
1,271.23	1,271.01	1,267.74	1,267.53	2.64	2.72	174.64	54.43	-35.05	73.32	67.98	5.34	13.736	
1,300.00	1,299.69	1,295.74	1,295.44	2.69	2.78	176.12	56.57	-34.30	77.00	71.55	5.45	14.119	
1,400.00	1,399.40	1,392.43	1,391.61	2.90	3.01	-178.75	65.92	-31.03	91.65	85.79	5.87	15.626	
1,500.00	1,499.10	1,487.99	1,486.29	3.11	3.25	-173.95	78.17	-26.74	109.37	103.08	6.29	17.395	
1,600.00	1,598.80	1,582.34	1,579.28	3.33	3.51	-169.67	93.17	-21.49	130.27	123.55	6.72	19.395	
1,700.00	1,698.50	1,679.35	1,674.64	3.56	3.81	-166.17	110.01	-15.60	152.99	145.83	7.16	21.358	
1,800.00	1,798.20	1,776.37	1,770.01	3.79	4.12	-163.57	126.84	-9.71	176.12	168.51	7.62	23.127	
1,900.00	1,897.91	1,873.39	1,865.37	4.03	4.44	-161.58	143.68	-3.82	199.51	191.44	8.07	24.715	
2,000.00	1,997.61	1,970.41	1,960.74	4.27	4.77	-160.01	160.51	2.07	223.08	214.55	8.53	26.141	
2,100.00	2,097.31	2,067.43	2,056.10	4.52	5.12	-158.73	177.35	7.96	246.79	237.79	9.00	27.424	
2,200.00	2,197.01	2,164.44	2,151.46	4.76	5.46	-157.68	194.19	13.85	270.58	261.11	9.47	28.582	
2,300.00	2,296.71	2,261.46	2,246.83	5.01	5.82	-156.80	211.02	19.74	294.45	284.51	9.94	29.630	
2,400.00	2,396.42	2,358.48	2,342.19	5.27	6.18	-156.05	227.86	25.63	318.37	307.96	10.41	30.582	
2,500.00	2,496.12	2,455.50	2,437.56	5.52	6.54	-155.41	244.69	31.52	342.34	331.46	10.89	31.449	
2,600.00	2,595.82	2,552.52	2,532.92	5.78	6.91	-154.85	261.53	37.41	366.35	354.98	11.36	32.242	
2,700.00	2,695.52	2,649.53	2,628.29	6.04	7.28	-154.36	278.36	43.30	390.38	378.54	11.84	32.968	
2,800.00	2,795.22	2,746.55	2,723.65	6.29	7.65	-153.92	295.20	49.19	414.44	402.12	12.32	33.637	
2,900.00	2,894.93	2,843.57	2,819.02	6.55	8.02	-153.54	312.03	55.08	438.51	425.71	12.80	34.253	
3,000.00	2,994.63	2,940.59	2,914.38	6.82	8.40	-153.19	328.87	60.97	462.61	449.32	13.28	34.823	
3,100.00	3,094.33	3,037.61	3,009.74	7.08	8.78	-152.88	345.71	66.86	486.72	472.95	13.77	35.351	
3,200.00	3,194.03	3,134.62	3,105.11	7.34	9.15	-152.60	362.54	72.75	510.84	496.58	14.25	35.842	
3,300.00	3,293.73	3,231.64	3,200.47	7.60	9.53	-152.34	379.38	78.64	534.97	520.23	14.74	36.300	
3,400.00	3,393.44	3,328.66	3,295.84	7.87	9.91	-152.10	396.21	84.53	559.11	543.88	15.22	36.727	
3,500.00	3,493.14	3,425.68	3,391.20	8.13	10.30	-151.89	413.05	90.42	583.26	567.55	15.71	37.126	
3,600.00	3,592.84	3,522.70	3,486.57	8.39	10.68	-151.69	429.88	96.31	607.41	591.22	16.20	37.501	
3,700.00	3,692.54	3,619.71	3,581.93	8.66	11.06	-151.51	446.72	102.20	631.57	614.89	16.69	37.853	
3,800.00	3,792.24	3,716.73	3,677.30	8.92	11.44	-151.34	463.55	108.09	655.74	638.57	17.17	38.183	
3,900.00	3,891.95	3,813.75	3,772.66	9.19	11.83	-151.18	480.39	113.98	679.91	662.25	17.66	38.495	
4,000.00	3,991.65	3,910.77	3,868.02	9.46	12.21	-151.03	497.23	119.87	704.09	685.94	18.15	38.790	
4,100.00	4,091.35	4,007.79	3,963.39	9.72	12.60	-150.90	514.06	125.76	728.27	709.63	18.64	39.068	
4,200.00	4,191.05	4,104.80	4,058.75	9.99	12.99	-150.77	530.90	131.65	752.46	733.33	19.13	39.331	
4,300.00	4,290.75	4,201.82	4,154.12	10.26	13.37	-150.65	547.73	137.54	776.65	757.02	19.62	39.581	
4,400.00	4,390.46	4,298.84	4,249.48	10.52	13.76	-150.53	564.57	143.43	800.84	780.73	20.11	39.818	
4,500.00	4,490.16	4,395.86	4,344.85	10.79	14.15	-150.43	581.40	149.32	825.03	804.43	20.60	40.043	
4,600.00	4,589.86	4,492.88	4,440.21	11.06	14.53	-150.33	598.24	155.21	849.23	828.13	21.10	40.257	
4,700.00	4,689.56	4,589.90	4,535.57	11.33	14.92	-150.23	615.07	161.10	873.43	851.84	21.59	40.461	
4,800.00	4,789.26	4,686.91	4,630.94	11.59	15.31	-150.14	631.91	166.99	897.63	875.55	22.08	40.656	
4,900.00	4,888.97	4,783.93	4,726.30	11.86	15.70	-150.06	648.74	172.88	921.83	899.26	22.57	40.842	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 22-3 - P_KERR-MCGEE 22-3 - PLAN #1 1-15-10												Offset Well Error:	0.00 ft
Survey Program: 0-MWD													
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
5,000.00	4,988.67	4,880.95	4,821.67	12.13	16.08	-149.98	665.58	178.77	946.04	922.97	23.06	41.020	
5,100.00	5,088.37	4,977.97	4,917.03	12.40	16.47	-149.90	682.42	184.66	970.24	946.69	23.56	41.190	
5,200.00	5,188.07	5,074.99	5,012.40	12.67	16.86	-149.83	699.25	190.55	994.45	970.40	24.05	41.352	
5,300.00	5,287.77	5,172.00	5,107.76	12.94	17.25	-149.76	716.09	196.44	1,018.66	994.12	24.54	41.508	
5,400.00	5,387.47	5,269.02	5,203.13	13.21	17.64	-149.69	732.92	202.33	1,042.87	1,017.84	25.03	41.658	
5,500.00	5,487.18	5,366.04	5,298.49	13.47	18.03	-149.63	749.76	208.22	1,067.08	1,041.56	25.53	41.802	
5,600.00	5,586.88	5,463.06	5,393.85	13.74	18.42	-149.57	766.59	214.11	1,091.30	1,065.28	26.02	41.940	
5,700.00	5,686.58	5,560.08	5,489.22	14.01	18.81	-149.51	783.43	220.00	1,115.51	1,089.00	26.51	42.072	
5,800.00	5,786.28	5,657.09	5,584.58	14.28	19.20	-149.46	800.26	225.89	1,139.73	1,112.72	27.01	42.200	
5,900.00	5,885.98	5,754.11	5,679.95	14.55	19.59	-149.40	817.10	231.78	1,163.94	1,136.44	27.50	42.323	
6,000.00	5,985.69	5,851.13	5,775.31	14.82	19.98	-149.35	833.94	237.67	1,188.16	1,160.16	28.00	42.441	
6,100.00	6,085.39	5,948.15	5,870.68	15.09	20.37	-149.30	850.77	243.56	1,212.38	1,183.89	28.49	42.555	
6,200.00	6,185.09	6,045.17	5,966.04	15.36	20.76	-149.26	867.61	249.45	1,236.60	1,207.61	28.98	42.665	
6,300.00	6,284.79	6,196.86	6,115.64	15.63	21.24	-149.22	891.23	257.71	1,259.20	1,229.65	29.55	42.609	
6,311.23	6,295.99	6,215.97	6,134.57	15.66	21.29	-149.22	893.68	258.57	1,261.41	1,231.80	29.62	42.592	
6,400.00	6,384.59	6,368.92	6,286.64	15.86	21.65	-149.39	909.03	263.94	1,275.19	1,245.01	30.18	42.260	
6,500.00	6,484.54	6,543.96	6,461.44	16.03	21.95	-149.47	917.16	266.79	1,282.41	1,251.69	30.72	41.747	
6,532.46	6,517.00	6,599.52	6,517.00	16.09	22.03	3.76	917.63	266.95	1,282.84	1,251.96	30.88	41.538	
6,600.00	6,584.54	6,667.06	6,584.54	16.21	22.12	3.76	917.63	266.95	1,282.84	1,251.70	31.15	41.189	
6,700.00	6,684.54	6,767.06	6,684.54	16.37	22.26	3.76	917.63	266.95	1,282.84	1,251.32	31.52	40.700	
6,800.00	6,784.54	6,867.06	6,784.54	16.53	22.41	3.76	917.63	266.95	1,282.84	1,250.95	31.90	40.221	
6,900.00	6,884.54	6,967.06	6,884.54	16.70	22.55	3.76	917.63	266.95	1,282.84	1,250.57	32.27	39.750	
7,000.00	6,984.54	7,067.06	6,984.54	16.86	22.70	3.76	917.63	266.95	1,282.84	1,250.19	32.65	39.287	
7,100.00	7,084.54	7,167.06	7,084.54	17.03	22.84	3.76	917.63	266.95	1,282.84	1,249.81	33.03	38.834	
7,200.00	7,184.54	7,267.06	7,184.54	17.20	22.99	3.76	917.63	266.95	1,282.84	1,249.42	33.42	38.388	
7,300.00	7,284.54	7,367.06	7,284.54	17.37	23.14	3.76	917.63	266.95	1,282.84	1,249.04	33.80	37.951	
7,400.00	7,384.54	7,467.06	7,384.54	17.54	23.29	3.76	917.63	266.95	1,282.84	1,248.65	34.19	37.522	
7,500.00	7,484.54	7,567.06	7,484.54	17.71	23.44	3.76	917.63	266.95	1,282.84	1,248.26	34.58	37.101	
7,600.00	7,584.54	7,667.06	7,584.54	17.88	23.59	3.76	917.63	266.95	1,282.84	1,247.87	34.97	36.688	
7,700.00	7,684.54	7,767.06	7,684.54	18.06	23.74	3.76	917.63	266.95	1,282.84	1,247.48	35.36	36.283	
7,800.00	7,784.54	7,867.06	7,784.54	18.23	23.90	3.76	917.63	266.95	1,282.84	1,247.09	35.75	35.884	
7,900.00	7,884.54	7,967.06	7,884.54	18.41	24.05	3.76	917.63	266.95	1,282.84	1,246.70	36.14	35.494	
7,963.15	7,947.69	8,030.21	7,947.69	18.52	24.15	3.76	917.63	266.95	1,282.84	1,246.45	36.39	35.251	
8,000.00	7,984.54	8,057.52	7,975.00	18.58	24.20	3.76	917.63	266.95	1,282.88	1,246.36	36.52	35.130	
8,100.00	8,084.54	8,057.52	7,975.00	18.76	24.20	3.76	917.63	266.95	1,287.51	1,250.80	36.71	35.072	
8,200.00	8,184.54	8,057.52	7,975.00	18.94	24.20	3.76	917.63	266.95	1,299.84	1,262.94	36.90	35.223	
8,300.00	8,284.54	8,057.52	7,975.00	19.12	24.20	3.76	917.63	266.95	1,319.66	1,282.56	37.10	35.573	
8,390.46	8,375.00	8,057.52	7,975.00	19.29	24.20	3.76	917.63	266.95	1,343.76	1,306.48	37.27	36.051	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
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	
0.00	0.00	0.00	0.00	0.00	0.00	142.47	-8.01	6.16	10.11				
100.00	100.00	100.00	100.00	0.10	0.10	142.47	-8.01	6.16	10.11	9.91	0.19	52.896	
200.00	200.00	200.00	200.00	0.32	0.32	142.47	-8.01	6.16	10.11	9.47	0.64	15.776	
300.00	300.00	300.00	300.00	0.55	0.55	142.47	-8.01	6.16	10.11	9.02	1.09	9.270	
400.00	400.00	400.00	400.00	0.77	0.77	142.47	-8.01	6.16	10.11	8.57	1.54	6.564	
500.00	500.00	500.00	500.00	0.99	0.99	142.47	-8.01	6.16	10.11	8.12	1.99	5.080	
600.00	600.00	600.00	600.00	1.22	1.22	142.47	-8.01	6.16	10.11	7.67	2.44	4.144	
700.00	700.00	700.00	700.00	1.44	1.44	142.47	-8.01	6.16	10.11	7.22	2.89	3.499	
800.00	800.00	800.00	800.00	1.67	1.67	142.47	-8.01	6.16	10.11	6.77	3.34	3.028	
900.00	900.00	900.00	900.00	1.89	1.89	142.47	-8.01	6.16	10.11	6.32	3.79	2.668	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	142.47	-8.01	6.16	10.11	5.87	4.24	2.385	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	142.47	-8.01	6.16	10.11	5.64	4.46	2.265	
1,100.00	1,100.00	1,099.86	1,099.86	2.33	2.33	-12.86	-8.10	6.58	10.01	5.35	4.66	2.147	
1,182.29	1,182.24	1,181.88	1,181.84	2.47	2.50	-25.95	-8.63	9.13	9.75	4.79	4.96	1.965 CC	
1,200.00	1,199.93	1,199.52	1,199.46	2.51	2.53	-30.37	-8.80	9.98	9.78	4.75	5.03	1.946 ES, SF	
1,271.23	1,271.01	1,270.40	1,270.18	2.64	2.68	-51.85	-9.73	14.46	10.85	5.55	5.30	2.048	
1,300.00	1,299.69	1,298.98	1,298.67	2.69	2.74	-60.13	-10.20	16.75	11.96	6.55	5.41	2.211	
1,400.00	1,399.40	1,398.14	1,397.28	2.90	2.96	-75.61	-12.28	26.85	19.12	13.30	5.82	3.284	
1,500.00	1,499.10	1,496.80	1,494.99	3.11	3.21	-79.03	-15.04	40.21	29.90	23.65	6.25	4.782	
1,600.00	1,598.80	1,594.72	1,591.45	3.33	3.49	-78.45	-18.45	56.72	43.74	37.04	6.70	6.530	
1,700.00	1,698.50	1,691.70	1,686.35	3.56	3.81	-76.72	-22.48	76.25	60.59	53.43	7.15	8.469	
1,800.00	1,798.20	1,787.52	1,779.40	3.79	4.18	-74.77	-27.10	98.62	80.50	72.87	7.62	10.561	
1,900.00	1,897.91	1,882.01	1,870.36	4.03	4.59	-72.91	-32.26	123.65	103.47	95.37	8.10	12.776	
2,000.00	1,997.61	1,974.97	1,958.98	4.27	5.06	-71.25	-37.94	151.13	129.48	120.90	8.58	15.086	
2,100.00	2,097.31	2,067.08	2,045.87	4.52	5.57	-69.77	-44.12	181.08	158.46	149.39	9.07	17.463	
2,200.00	2,197.01	2,162.40	2,135.43	4.76	6.15	-68.61	-50.71	213.04	188.51	178.92	9.59	19.664	
2,300.00	2,296.71	2,257.72	2,224.99	5.01	6.75	-67.77	-57.31	244.99	218.60	208.50	10.11	21.628	
2,400.00	2,396.42	2,353.04	2,314.56	5.27	7.36	-67.13	-63.90	276.94	248.73	238.10	10.64	23.387	
2,500.00	2,496.12	2,448.37	2,404.12	5.52	7.99	-66.63	-70.50	308.89	278.88	267.71	11.17	24.967	
2,600.00	2,595.82	2,543.69	2,493.69	5.78	8.62	-66.23	-77.09	340.84	309.05	297.34	11.71	26.391	
2,700.00	2,695.52	2,639.01	2,583.25	6.04	9.27	-65.89	-83.69	372.79	339.23	326.97	12.26	27.679	
2,800.00	2,795.22	2,734.33	2,672.81	6.29	9.91	-65.62	-90.28	404.75	369.41	356.61	12.81	28.849	
2,900.00	2,894.93	2,829.65	2,762.38	6.55	10.57	-65.38	-96.88	436.70	399.61	386.25	13.36	29.915	
3,000.00	2,994.63	2,924.97	2,851.94	6.82	11.23	-65.18	-103.47	468.65	429.81	415.89	13.91	30.889	
3,100.00	3,094.33	3,020.29	2,941.50	7.08	11.89	-65.00	-110.07	500.60	460.01	445.54	14.47	31.783	
3,200.00	3,194.03	3,115.61	3,031.07	7.34	12.55	-64.85	-116.66	532.55	490.21	475.18	15.03	32.605	
3,300.00	3,293.73	3,210.93	3,120.63	7.60	13.22	-64.71	-123.25	564.51	520.42	504.83	15.60	33.363	
3,400.00	3,393.44	3,306.26	3,210.20	7.87	13.88	-64.59	-129.85	596.46	550.64	534.47	16.16	34.064	
3,500.00	3,493.14	3,401.58	3,299.76	8.13	14.55	-64.48	-136.44	628.41	580.85	564.12	16.73	34.715	
3,600.00	3,592.84	3,496.90	3,389.32	8.39	15.23	-64.39	-143.04	660.36	611.06	593.76	17.30	35.319	
3,700.00	3,692.54	3,592.22	3,478.89	8.66	15.90	-64.30	-149.63	692.31	641.28	623.41	17.87	35.882	
3,800.00	3,792.24	3,687.54	3,568.45	8.92	16.57	-64.22	-156.23	724.26	671.50	653.05	18.44	36.407	
3,900.00	3,891.95	3,782.86	3,658.02	9.19	17.25	-64.14	-162.82	756.22	701.72	682.70	19.02	36.899	
4,000.00	3,991.65	3,878.18	3,747.58	9.46	17.92	-64.08	-169.42	788.17	731.94	712.35	19.59	37.360	
4,100.00	4,091.35	3,973.50	3,837.14	9.72	18.60	-64.01	-176.01	820.12	762.16	741.99	20.17	37.793	
4,200.00	4,191.05	4,068.82	3,926.71	9.99	19.28	-63.96	-182.61	852.07	792.38	771.64	20.74	38.200	
4,300.00	4,290.75	4,164.14	4,016.27	10.26	19.96	-63.90	-189.20	884.02	822.60	801.28	21.32	38.584	
4,400.00	4,390.46	4,259.47	4,105.84	10.52	20.64	-63.85	-195.80	915.98	852.83	830.93	21.90	38.946	
4,500.00	4,490.16	4,354.79	4,195.40	10.79	21.31	-63.81	-202.39	947.93	883.05	860.57	22.48	39.289	
4,600.00	4,589.86	4,450.11	4,284.96	11.06	21.99	-63.76	-208.99	979.88	913.27	890.22	23.05	39.613	
4,700.00	4,689.56	4,545.43	4,374.53	11.33	22.68	-63.72	-215.58	1,011.83	943.50	919.86	23.63	39.920	
4,800.00	4,789.26	4,640.75	4,464.09	11.59	23.36	-63.69	-222.18	1,043.78	973.72	949.51	24.21	40.212	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
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	
4,900.00	4,888.97	4,736.07	4,553.65	11.86	24.04	-63.65	-228.77	1,075.73	1,003.95	979.15	24.80	40.489	
5,000.00	4,988.67	4,831.39	4,643.22	12.13	24.72	-63.62	-235.36	1,107.69	1,034.17	1,008.80	25.38	40.753	
5,100.00	5,088.37	4,926.71	4,732.78	12.40	25.40	-63.59	-241.96	1,139.64	1,064.40	1,038.44	25.96	41.004	
5,200.00	5,188.07	5,022.03	4,822.35	12.67	26.08	-63.56	-248.55	1,171.59	1,094.62	1,068.08	26.54	41.243	
5,300.00	5,287.77	5,117.35	4,911.91	12.94	26.76	-63.53	-255.15	1,203.54	1,124.85	1,097.73	27.12	41.472	
5,400.00	5,387.47	5,212.68	5,001.47	13.21	27.45	-63.50	-261.74	1,235.49	1,155.08	1,127.37	27.71	41.691	
5,500.00	5,487.18	5,308.00	5,091.04	13.47	28.13	-63.48	-268.34	1,267.44	1,185.30	1,157.01	28.29	41.900	
5,600.00	5,586.88	5,403.32	5,180.60	13.74	28.81	-63.45	-274.93	1,299.40	1,215.53	1,186.66	28.87	42.100	
5,700.00	5,686.58	5,498.64	5,270.17	14.01	29.50	-63.43	-281.53	1,331.35	1,245.76	1,216.30	29.46	42.292	
5,800.00	5,786.28	5,593.96	5,359.73	14.28	30.18	-63.41	-288.12	1,363.30	1,275.99	1,245.94	30.04	42.475	
5,900.00	5,885.98	5,689.28	5,449.29	14.55	30.86	-63.39	-294.72	1,395.25	1,306.21	1,275.59	30.62	42.652	
6,000.00	5,985.69	5,808.10	5,561.10	14.82	31.66	-63.37	-302.85	1,434.65	1,336.19	1,304.92	31.27	42.727	
6,100.00	6,085.39	5,987.13	5,732.09	15.09	32.54	-63.41	-313.54	1,486.47	1,361.81	1,329.78	32.03	42.513	
6,200.00	6,185.09	6,171.31	5,911.11	15.36	33.27	-63.56	-322.27	1,528.76	1,381.40	1,348.63	32.78	42.144	
6,300.00	6,284.79	6,359.30	6,096.30	15.63	33.84	-63.82	-328.77	1,560.22	1,394.74	1,361.24	33.50	41.634	
6,311.23	6,295.99	6,380.58	6,117.39	15.66	33.90	-63.85	-329.34	1,563.03	1,395.84	1,362.26	33.58	41.568	
6,400.00	6,384.59	6,549.62	6,285.53	15.86	34.25	-64.20	-332.82	1,579.88	1,402.28	1,368.19	34.09	41.131	
6,500.00	6,484.54	6,741.07	6,476.79	16.03	34.49	-64.38	-334.33	1,587.20	1,404.85	1,370.32	34.52	40.691	
6,532.46	6,517.00	6,781.28	6,517.00	16.09	34.52	88.85	-334.34	1,587.25	1,404.79	1,370.17	34.62	40.578	
6,600.00	6,584.54	6,848.82	6,584.54	16.21	34.58	88.85	-334.34	1,587.25	1,404.79	1,369.95	34.84	40.322	
6,700.00	6,684.54	6,948.82	6,684.54	16.37	34.67	88.85	-334.34	1,587.25	1,404.79	1,369.64	35.15	39.965	
6,800.00	6,784.54	7,048.82	6,784.54	16.53	34.76	88.85	-334.34	1,587.25	1,404.79	1,369.33	35.46	39.612	
6,900.00	6,884.54	7,148.82	6,884.54	16.70	34.85	88.85	-334.34	1,587.25	1,404.79	1,369.01	35.78	39.262	
7,000.00	6,984.54	7,248.82	6,984.54	16.86	34.95	88.85	-334.34	1,587.25	1,404.79	1,368.69	36.10	38.915	
7,100.00	7,084.54	7,348.82	7,084.54	17.03	35.04	88.85	-334.34	1,587.25	1,404.79	1,368.37	36.42	38.571	
7,200.00	7,184.54	7,448.82	7,184.54	17.20	35.14	88.85	-334.34	1,587.25	1,404.79	1,368.05	36.75	38.230	
7,300.00	7,284.54	7,548.82	7,284.54	17.37	35.23	88.85	-334.34	1,587.25	1,404.79	1,367.72	37.07	37.893	
7,400.00	7,384.54	7,648.82	7,384.54	17.54	35.33	88.85	-334.34	1,587.25	1,404.79	1,367.39	37.40	37.558	
7,500.00	7,484.54	7,748.82	7,484.54	17.71	35.43	88.85	-334.34	1,587.25	1,404.79	1,367.06	37.74	37.228	
7,600.00	7,584.54	7,848.82	7,584.54	17.88	35.53	88.85	-334.34	1,587.25	1,404.79	1,366.72	38.07	36.901	
7,700.00	7,684.54	7,948.82	7,684.54	18.06	35.63	88.85	-334.34	1,587.25	1,404.79	1,366.39	38.41	36.577	
7,800.00	7,784.54	8,048.82	7,784.54	18.23	35.73	88.85	-334.34	1,587.25	1,404.79	1,366.05	38.75	36.257	
7,900.00	7,884.54	8,148.82	7,884.54	18.41	35.84	88.85	-334.34	1,587.25	1,404.79	1,365.71	39.09	35.940	
8,000.00	7,984.54	8,248.82	7,984.54	18.58	35.94	88.85	-334.34	1,587.25	1,404.79	1,365.36	39.43	35.627	
8,100.00	8,084.54	8,348.82	8,084.54	18.76	36.05	88.85	-334.34	1,587.25	1,404.79	1,365.02	39.78	35.317	
8,200.00	8,184.54	8,448.82	8,184.54	18.94	36.15	88.85	-334.34	1,587.25	1,404.79	1,364.67	40.12	35.011	
8,300.00	8,284.54	8,548.82	8,284.54	19.12	36.26	88.85	-334.34	1,587.25	1,404.79	1,364.32	40.47	34.709	
8,351.75	8,336.29	8,600.57	8,336.29	19.22	36.32	88.85	-334.34	1,587.25	1,404.79	1,364.14	40.66	34.553	
8,390.46	8,375.00	8,619.28	8,355.00	19.29	36.34	88.85	-334.34	1,587.25	1,404.93	1,364.18	40.76	34.470	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
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	
0.00	0.00	0.00	0.00	0.00	0.00	-38.81	38.97	-31.34	50.01				
100.00	100.00	100.00	100.00	0.10	0.10	-38.81	38.97	-31.34	50.01	49.82	0.19	261.774	
200.00	200.00	200.00	200.00	0.32	0.32	-38.81	38.97	-31.34	50.01	49.37	0.64	78.073	
300.00	300.00	300.00	300.00	0.55	0.55	-38.81	38.97	-31.34	50.01	48.92	1.09	45.878	
400.00	400.00	400.00	400.00	0.77	0.77	-38.81	38.97	-31.34	50.01	48.47	1.54	32.483	
500.00	500.00	500.00	500.00	0.99	0.99	-38.81	38.97	-31.34	50.01	48.02	1.99	25.142	
600.00	600.00	600.00	600.00	1.22	1.22	-38.81	38.97	-31.34	50.01	47.57	2.44	20.508	
700.00	700.00	700.00	700.00	1.44	1.44	-38.81	38.97	-31.34	50.01	47.12	2.89	17.316	
800.00	800.00	800.00	800.00	1.67	1.67	-38.81	38.97	-31.34	50.01	46.67	3.34	14.984	
900.00	900.00	900.00	900.00	1.89	1.89	-38.81	38.97	-31.34	50.01	46.22	3.79	13.205	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-38.81	38.97	-31.34	50.01	45.78	4.24	11.804	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-38.81	38.97	-31.34	50.01	45.55	4.46	11.209 CC, ES	
1,100.00	1,100.00	1,099.73	1,099.73	2.33	2.33	167.58	38.82	-31.74	50.57	45.91	4.66	10.848 SF	
1,200.00	1,199.93	1,198.99	1,198.92	2.51	2.52	164.93	37.57	-34.95	55.11	50.09	5.02	10.976	
1,271.23	1,271.01	1,269.36	1,269.14	2.64	2.67	162.03	35.94	-39.17	61.25	55.96	5.28	11.591	
1,300.00	1,299.69	1,297.67	1,297.36	2.69	2.72	160.74	35.11	-41.32	64.31	58.91	5.39	11.921	
1,400.00	1,399.40	1,395.66	1,394.82	2.90	2.94	155.64	31.45	-50.76	76.22	70.42	5.80	13.151	
1,500.00	1,499.10	1,492.78	1,491.02	3.11	3.18	150.19	26.63	-63.18	90.49	84.26	6.22	14.545	
1,600.00	1,598.80	1,589.14	1,585.96	3.33	3.46	144.91	20.70	-78.48	107.48	100.81	6.67	16.116	
1,700.00	1,698.50	1,687.02	1,682.20	3.56	3.76	140.59	14.23	-95.18	126.03	118.89	7.14	17.657	
1,800.00	1,798.20	1,784.90	1,778.43	3.79	4.09	137.39	7.76	-111.87	145.10	137.48	7.62	19.053	
1,900.00	1,897.91	1,882.79	1,874.66	4.03	4.42	134.93	1.29	-128.56	164.50	156.40	8.10	20.308	
2,000.00	1,997.61	1,980.67	1,970.89	4.27	4.77	132.99	-5.18	-145.26	184.14	175.54	8.59	21.433	
2,100.00	2,097.31	2,078.55	2,067.12	4.52	5.13	131.43	-11.65	-161.95	203.93	194.85	9.09	22.442	
2,200.00	2,197.01	2,176.43	2,163.35	4.76	5.50	130.14	-18.12	-178.65	223.85	214.27	9.59	23.349	
2,300.00	2,296.71	2,274.32	2,259.58	5.01	5.87	129.07	-24.59	-195.34	243.87	233.77	10.09	24.167	
2,400.00	2,396.42	2,372.20	2,355.82	5.27	6.25	128.15	-31.06	-212.04	263.95	253.35	10.60	24.906	
2,500.00	2,496.12	2,470.08	2,452.05	5.52	6.63	127.37	-37.53	-228.73	284.08	272.97	11.11	25.568	
2,600.00	2,595.82	2,567.97	2,548.28	5.78	7.02	126.69	-44.00	-245.43	304.26	292.64	11.63	26.169	
2,700.00	2,695.52	2,665.85	2,644.51	6.04	7.40	126.09	-50.47	-262.12	324.48	312.33	12.15	26.716	
2,800.00	2,795.22	2,763.73	2,740.74	6.29	7.79	125.57	-56.94	-278.82	344.73	332.06	12.67	27.216	
2,900.00	2,894.93	2,861.61	2,836.97	6.55	8.19	125.10	-63.41	-295.51	365.00	351.81	13.19	27.675	
3,000.00	2,994.63	2,959.50	2,933.20	6.82	8.58	124.68	-69.89	-312.20	385.29	371.58	13.71	28.097	
3,100.00	3,094.33	3,057.38	3,029.43	7.08	8.98	124.30	-76.36	-328.90	405.60	391.36	14.24	28.486	
3,200.00	3,194.03	3,155.26	3,125.67	7.34	9.37	123.96	-82.83	-345.59	425.92	411.16	14.77	28.847	
3,300.00	3,293.73	3,253.14	3,221.90	7.60	9.77	123.65	-89.30	-362.29	446.26	430.97	15.29	29.180	
3,400.00	3,393.44	3,351.03	3,318.13	7.87	10.17	123.37	-95.77	-378.98	466.61	450.79	15.82	29.491	
3,500.00	3,493.14	3,448.91	3,414.36	8.13	10.57	123.11	-102.24	-395.68	486.97	470.62	16.35	29.780	
3,600.00	3,592.84	3,546.79	3,510.59	8.39	10.97	122.87	-108.71	-412.37	507.34	490.45	16.88	30.050	
3,700.00	3,692.54	3,644.68	3,606.82	8.66	11.37	122.65	-115.18	-429.07	527.71	510.30	17.41	30.302	
3,800.00	3,792.24	3,742.56	3,703.05	8.92	11.78	122.45	-121.65	-445.76	548.10	530.15	17.95	30.539	
3,900.00	3,891.95	3,840.44	3,799.29	9.19	12.18	122.26	-128.12	-462.46	568.49	550.01	18.48	30.761	
4,000.00	3,991.65	3,938.32	3,895.52	9.46	12.58	122.09	-134.59	-479.15	588.88	569.87	19.01	30.971	
4,100.00	4,091.35	4,036.21	3,991.75	9.72	12.99	121.92	-141.06	-495.84	609.28	589.73	19.55	31.168	
4,200.00	4,191.05	4,134.09	4,087.98	9.99	13.39	121.77	-147.53	-512.54	629.68	609.60	20.08	31.354	
4,300.00	4,290.75	4,231.97	4,184.21	10.26	13.80	121.62	-154.00	-529.23	650.09	629.47	20.62	31.530	
4,400.00	4,390.46	4,329.86	4,280.44	10.52	14.20	121.49	-160.47	-545.93	670.50	649.35	21.15	31.696	
4,500.00	4,490.16	4,427.74	4,376.67	10.79	14.61	121.36	-166.94	-562.62	690.92	669.23	21.69	31.854	
4,600.00	4,589.86	4,525.62	4,472.90	11.06	15.01	121.24	-173.41	-579.32	711.34	689.11	22.23	32.004	
4,700.00	4,689.56	4,623.50	4,569.14	11.33	15.42	121.13	-179.89	-596.01	731.76	708.99	22.76	32.146	
4,800.00	4,789.26	4,721.39	4,665.37	11.59	15.83	121.02	-186.36	-612.71	752.18	728.88	23.30	32.282	
4,900.00	4,888.97	4,819.27	4,761.60	11.86	16.23	120.92	-192.83	-629.40	772.61	748.77	23.84	32.411	

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

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
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	
5,000.00	4,988.67	4,917.15	4,857.83	12.13	16.64	120.83	-199.30	-646.10	793.03	768.66	24.38	32.534	
5,100.00	5,088.37	5,015.04	4,954.06	12.40	17.05	120.73	-205.77	-662.79	813.46	788.55	24.91	32.652	
5,200.00	5,188.07	5,112.92	5,050.29	12.67	17.46	120.65	-212.24	-679.48	833.90	808.44	25.45	32.764	
5,300.00	5,287.77	5,210.80	5,146.52	12.94	17.86	120.57	-218.71	-696.18	854.33	828.34	25.99	32.871	
5,400.00	5,387.47	5,308.68	5,242.76	13.21	18.27	120.49	-225.18	-712.87	874.77	848.24	26.53	32.974	
5,500.00	5,487.18	5,406.57	5,338.99	13.47	18.68	120.41	-231.65	-729.57	895.20	868.13	27.07	33.073	
5,600.00	5,586.88	5,504.45	5,435.22	13.74	19.09	120.34	-238.12	-746.26	915.64	888.03	27.61	33.167	
5,700.00	5,686.58	5,602.33	5,531.45	14.01	19.50	120.27	-244.59	-762.96	936.08	907.93	28.15	33.258	
5,800.00	5,786.28	5,700.21	5,627.68	14.28	19.90	120.20	-251.06	-779.65	956.52	927.84	28.69	33.345	
5,900.00	5,885.98	5,798.10	5,723.91	14.55	20.31	120.14	-257.53	-796.35	976.96	947.74	29.23	33.429	
6,000.00	5,985.69	5,895.98	5,820.14	14.82	20.72	120.08	-264.00	-813.04	997.41	967.64	29.76	33.510	
6,100.00	6,085.39	5,993.86	5,916.37	15.09	21.13	120.02	-270.47	-829.73	1,017.85	987.55	30.30	33.587	
6,200.00	6,185.09	6,091.75	6,012.61	15.36	21.54	119.97	-276.94	-846.43	1,038.30	1,007.45	30.84	33.662	
6,300.00	6,284.79	6,189.63	6,108.84	15.63	21.95	119.91	-283.41	-863.12	1,058.74	1,027.36	31.38	33.734	
6,311.23	6,295.99	6,200.62	6,119.64	15.66	21.99	119.91	-284.14	-865.00	1,061.04	1,029.59	31.45	33.742	
6,400.00	6,384.59	6,287.63	6,205.18	15.86	22.36	120.11	-289.89	-879.84	1,078.52	1,046.56	31.95	33.754	
6,500.00	6,484.54	6,385.84	6,301.74	16.03	22.77	120.15	-296.39	-896.59	1,096.59	1,064.14	32.45	33.791	
6,532.46	6,517.00	6,417.75	6,333.11	16.09	22.90	-86.63	-298.49	-902.03	1,102.10	1,069.49	32.61	33.795	
6,600.00	6,584.54	6,484.15	6,398.39	16.21	23.18	-86.89	-302.88	-913.36	1,113.38	1,080.48	32.90	33.839	
6,700.00	6,684.54	6,582.46	6,495.04	16.37	23.59	-87.27	-309.38	-930.12	1,130.12	1,096.81	33.32	33.921	
6,800.00	6,784.54	6,680.78	6,591.70	16.53	24.00	-87.64	-315.88	-946.89	1,146.91	1,113.18	33.73	34.002	
6,900.00	6,884.54	6,779.09	6,688.35	16.70	24.41	-88.00	-322.38	-963.66	1,163.75	1,129.60	34.15	34.081	
7,000.00	6,984.54	6,877.40	6,785.01	16.86	24.83	-88.35	-328.88	-980.43	1,180.63	1,146.07	34.56	34.159	
7,100.00	7,084.54	6,975.72	6,881.66	17.03	25.24	-88.69	-335.38	-997.20	1,197.55	1,162.57	34.98	34.236	
7,200.00	7,184.54	7,074.03	6,978.31	17.20	25.65	-89.02	-341.88	-1,013.96	1,214.51	1,179.11	35.40	34.311	
7,300.00	7,284.54	7,225.12	7,127.37	17.37	26.10	-89.45	-350.78	-1,036.93	1,229.81	1,193.95	35.86	34.295	
7,400.00	7,384.54	7,391.15	7,292.39	17.54	26.47	-89.76	-357.30	-1,053.75	1,239.93	1,203.61	36.32	34.140	
7,500.00	7,484.54	7,558.73	7,459.74	17.71	26.74	-89.90	-360.36	-1,061.66	1,244.64	1,207.88	36.76	33.860	
7,600.00	7,584.54	7,683.54	7,584.54	17.88	26.89	-89.92	-360.60	-1,062.27	1,245.01	1,207.87	37.13	33.527	
7,700.00	7,684.54	7,783.54	7,684.54	18.06	27.02	-89.92	-360.60	-1,062.27	1,245.01	1,207.53	37.47	33.223	
7,800.00	7,784.54	7,883.54	7,784.54	18.23	27.14	-89.92	-360.60	-1,062.27	1,245.01	1,207.19	37.82	32.923	
7,900.00	7,884.54	7,983.54	7,884.54	18.41	27.27	-89.92	-360.60	-1,062.27	1,245.01	1,206.85	38.16	32.627	
7,965.08	7,949.62	8,048.62	7,949.62	18.52	27.36	-89.92	-360.60	-1,062.27	1,245.01	1,206.62	38.38	32.436	
8,000.00	7,984.54	8,079.00	7,980.00	18.58	27.39	-89.92	-360.60	-1,062.27	1,245.01	1,206.52	38.50	32.341	
8,100.00	8,084.54	8,079.00	7,980.00	18.76	27.39	-89.92	-360.60	-1,062.27	1,249.39	1,210.71	38.68	32.303	
8,200.00	8,184.54	8,079.00	7,980.00	18.94	27.39	-89.92	-360.60	-1,062.27	1,261.70	1,222.84	38.86	32.469	
8,300.00	8,284.54	8,079.00	7,980.00	19.12	27.39	-89.92	-360.60	-1,062.27	1,281.71	1,242.67	39.04	32.830	
8,390.46	8,375.00	8,079.00	7,980.00	19.29	27.39	-89.92	-360.60	-1,062.27	1,306.16	1,266.96	39.21	33.315	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
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	
0.00	0.00	0.00	0.00	0.00	0.00	-38.87	7.64	-6.16	9.81				
100.00	100.00	100.00	100.00	0.10	0.10	-38.87	7.64	-6.16	9.81	9.62	0.19	51.345	
200.00	200.00	200.00	200.00	0.32	0.32	-38.87	7.64	-6.16	9.81	9.17	0.64	15.314	
300.00	300.00	300.00	300.00	0.55	0.55	-38.87	7.64	-6.16	9.81	8.72	1.09	8.999	
400.00	400.00	400.00	400.00	0.77	0.77	-38.87	7.64	-6.16	9.81	8.27	1.54	6.371	
500.00	500.00	500.00	500.00	0.99	0.99	-38.87	7.64	-6.16	9.81	7.82	1.99	4.931	
600.00	600.00	600.00	600.00	1.22	1.22	-38.87	7.64	-6.16	9.81	7.37	2.44	4.022	
700.00	700.00	700.00	700.00	1.44	1.44	-38.87	7.64	-6.16	9.81	6.92	2.89	3.396	
800.00	800.00	800.00	800.00	1.67	1.67	-38.87	7.64	-6.16	9.81	6.47	3.34	2.939	
900.00	900.00	900.00	900.00	1.89	1.89	-38.87	7.64	-6.16	9.81	6.02	3.79	2.590	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	-38.87	7.64	-6.16	9.81	5.57	4.24	2.315	
1,050.00	1,050.00	1,050.00	1,050.00	2.23	2.23	-38.87	7.64	-6.16	9.81	5.35	4.46	2.199 CC	
1,100.00	1,100.00	1,100.15	1,100.15	2.33	2.33	167.16	7.20	-6.09	9.86	5.20	4.66	2.116 ES	
1,200.00	1,199.93	1,200.44	1,200.37	2.51	2.50	161.62	3.74	-5.52	10.28	5.28	5.00	2.057	
1,271.23	1,271.01	1,271.86	1,271.64	2.64	2.63	155.04	-0.84	-4.77	10.98	5.73	5.25	2.090	
1,300.00	1,299.69	1,300.70	1,300.38	2.69	2.69	151.66	-3.18	-4.38	11.26	5.90	5.36	2.101	
1,400.00	1,399.40	1,400.85	1,399.97	2.90	2.89	131.88	-13.54	-2.69	11.41	5.64	5.76	1.979 SF	
1,500.00	1,499.10	1,500.66	1,498.80	3.11	3.12	98.99	-27.27	-0.43	12.83	6.60	6.23	2.061	
1,600.00	1,598.80	1,600.00	1,596.63	3.33	3.39	68.95	-44.30	2.36	19.19	12.52	6.67	2.877	
1,700.00	1,698.50	1,698.31	1,692.79	3.56	3.70	51.79	-64.45	5.66	30.79	23.71	7.08	4.348	
1,800.00	1,798.20	1,795.70	1,787.31	3.79	4.06	42.45	-87.60	9.45	46.67	39.17	7.50	6.224	
1,900.00	1,897.91	1,891.86	1,879.79	4.03	4.47	36.91	-113.55	13.71	66.27	58.35	7.93	8.361	
2,000.00	1,997.61	1,986.59	1,970.00	4.27	4.94	33.33	-142.11	18.39	89.34	80.97	8.37	10.679	
2,100.00	2,097.31	2,080.36	2,058.31	4.52	5.45	30.84	-173.21	23.49	115.65	106.84	8.81	13.121	
2,200.00	2,197.01	2,176.43	2,148.43	4.76	6.02	29.13	-206.06	28.87	143.15	133.87	9.28	15.421	
2,300.00	2,296.71	2,272.51	2,238.55	5.01	6.61	27.97	-238.92	34.26	170.72	160.96	9.76	17.492	
2,400.00	2,396.42	2,368.58	2,328.67	5.27	7.21	27.14	-271.77	39.64	198.35	188.10	10.25	19.359	
2,500.00	2,496.12	2,464.66	2,418.79	5.52	7.82	26.51	-304.63	45.03	226.00	215.26	10.74	21.046	
2,600.00	2,595.82	2,560.73	2,508.91	5.78	8.45	26.02	-337.48	50.41	253.67	242.44	11.24	22.576	
2,700.00	2,695.52	2,656.81	2,599.04	6.04	9.08	25.62	-370.33	55.80	281.36	269.62	11.74	23.967	
2,800.00	2,795.22	2,752.88	2,689.16	6.29	9.71	25.29	-403.19	61.18	309.05	296.81	12.25	25.237	
2,900.00	2,894.93	2,848.96	2,779.28	6.55	10.35	25.02	-436.04	66.57	336.76	324.00	12.76	26.398	
3,000.00	2,994.63	2,945.03	2,869.40	6.82	11.00	24.79	-468.90	71.95	364.47	351.20	13.27	27.465	
3,100.00	3,094.33	3,041.11	2,959.52	7.08	11.65	24.59	-501.75	77.34	392.18	378.39	13.79	28.446	
3,200.00	3,194.03	3,137.18	3,049.64	7.34	12.30	24.42	-534.61	82.72	419.90	405.59	14.31	29.352	
3,300.00	3,293.73	3,233.26	3,139.77	7.60	12.95	24.27	-567.46	88.11	447.62	432.79	14.83	30.190	
3,400.00	3,393.44	3,329.33	3,229.89	7.87	13.61	24.14	-600.32	93.49	475.34	459.99	15.35	30.967	
3,500.00	3,493.14	3,425.40	3,320.01	8.13	14.26	24.02	-633.17	98.88	503.07	487.20	15.87	31.690	
3,600.00	3,592.84	3,521.48	3,410.13	8.39	14.92	23.92	-666.03	104.26	530.80	514.40	16.40	32.364	
3,700.00	3,692.54	3,617.55	3,500.25	8.66	15.58	23.82	-698.88	109.65	558.53	541.60	16.93	32.993	
3,800.00	3,792.24	3,713.63	3,590.37	8.92	16.24	23.73	-731.73	115.03	586.26	568.80	17.46	33.582	
3,900.00	3,891.95	3,809.70	3,680.50	9.19	16.90	23.66	-764.59	120.42	613.99	596.00	17.99	34.134	
4,000.00	3,991.65	3,905.78	3,770.62	9.46	17.57	23.58	-797.44	125.80	641.72	623.20	18.52	34.652	
4,100.00	4,091.35	4,001.85	3,860.74	9.72	18.23	23.52	-830.30	131.19	669.45	650.40	19.05	35.140	
4,200.00	4,191.05	4,097.93	3,950.86	9.99	18.89	23.46	-863.15	136.57	697.19	677.60	19.58	35.600	
4,300.00	4,290.75	4,194.00	4,040.98	10.26	19.56	23.40	-896.01	141.96	724.92	704.80	20.12	36.034	
4,400.00	4,390.46	4,290.08	4,131.10	10.52	20.22	23.35	-928.86	147.34	752.66	732.01	20.65	36.444	
4,500.00	4,490.16	4,386.15	4,221.23	10.79	20.89	23.30	-961.72	152.73	780.39	759.21	21.19	36.832	
4,600.00	4,589.86	4,482.23	4,311.35	11.06	21.56	23.26	-994.57	158.11	808.13	786.41	21.72	37.200	
4,700.00	4,689.56	4,578.30	4,401.47	11.33	22.22	23.21	-1,027.43	163.50	835.87	813.61	22.26	37.550	
4,800.00	4,789.26	4,674.38	4,491.59	11.59	22.89	23.18	-1,060.28	168.88	863.60	840.81	22.80	37.882	
4,900.00	4,888.97	4,770.45	4,581.71	11.86	23.56	23.14	-1,093.13	174.27	891.34	868.01	23.33	38.198	

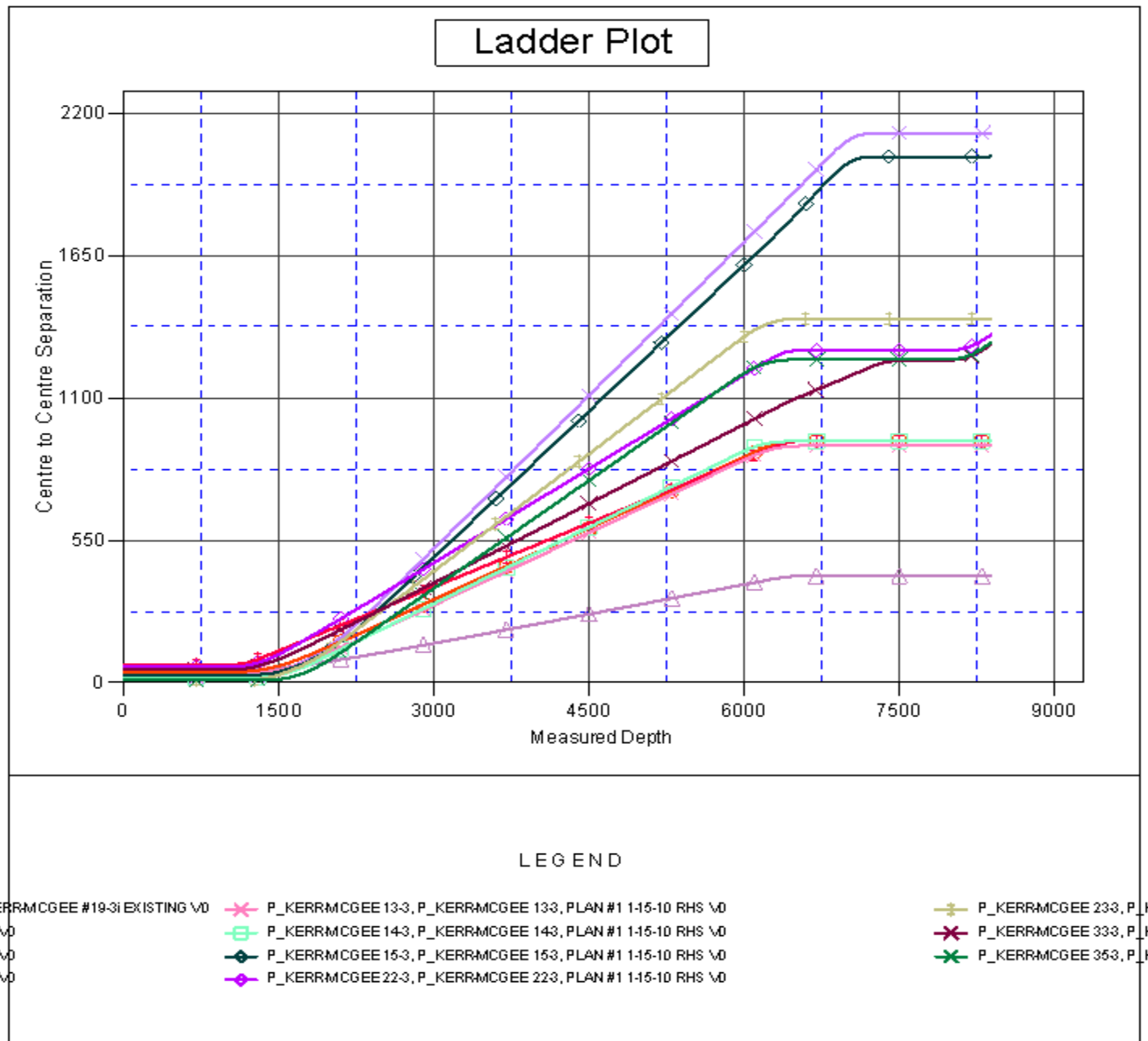
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_KERR MCGEE 19-3 PAD - P_KERR-MCGEE 35-3 - P_KERR-MCGEE 35-3 - PLAN #1 1-15-10												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 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
5,000.00	4,988.67	4,866.52	4,671.83	12.13	24.23	23.10	-1,125.99	179.65	919.08	895.21	23.87	38.499	
5,100.00	5,088.37	4,962.60	4,761.96	12.40	24.89	23.07	-1,158.84	185.04	946.82	922.41	24.41	38.786	
5,200.00	5,188.07	5,058.67	4,852.08	12.67	25.56	23.04	-1,191.70	190.42	974.56	949.61	24.95	39.060	
5,300.00	5,287.77	5,154.75	4,942.20	12.94	26.23	23.01	-1,224.55	195.81	1,002.29	976.80	25.49	39.322	
5,400.00	5,387.47	5,250.82	5,032.32	13.21	26.90	22.98	-1,257.41	201.19	1,030.03	1,004.00	26.03	39.573	
5,500.00	5,487.18	5,346.90	5,122.44	13.47	27.57	22.96	-1,290.26	206.58	1,057.77	1,031.20	26.57	39.813	
5,600.00	5,586.88	5,442.97	5,212.56	13.74	28.24	22.93	-1,323.12	211.97	1,085.51	1,058.40	27.11	40.043	
5,700.00	5,686.58	5,539.05	5,302.69	14.01	28.91	22.91	-1,355.97	217.35	1,113.25	1,085.60	27.65	40.263	
5,800.00	5,786.28	5,635.12	5,392.81	14.28	29.58	22.89	-1,388.83	222.74	1,140.99	1,112.80	28.19	40.475	
5,900.00	5,885.98	5,731.20	5,482.93	14.55	30.25	22.87	-1,421.68	228.12	1,168.73	1,140.00	28.73	40.678	
6,000.00	5,985.69	5,873.32	5,616.96	14.82	31.03	22.85	-1,468.29	235.76	1,195.22	1,165.83	29.39	40.672	
6,100.00	6,085.39	6,041.52	5,778.32	15.09	31.75	22.87	-1,515.08	243.43	1,216.40	1,186.33	30.08	40.442	
6,200.00	6,185.09	6,213.46	5,945.84	15.36	32.37	22.93	-1,553.17	249.67	1,231.78	1,201.03	30.75	40.064	
6,300.00	6,284.79	6,387.97	6,117.93	15.63	32.87	23.05	-1,581.62	254.34	1,241.18	1,209.80	31.38	39.556	
6,311.23	6,295.99	6,407.67	6,137.46	15.66	32.92	23.06	-1,584.18	254.76	1,241.86	1,210.41	31.45	39.491	
6,400.00	6,384.59	6,563.80	6,292.76	15.86	33.23	23.20	-1,599.77	257.31	1,245.78	1,213.95	31.83	39.139	
6,500.00	6,484.54	6,740.13	6,468.90	16.03	33.47	23.27	-1,607.32	258.55	1,247.45	1,215.29	32.16	38.794	
6,532.46	6,517.00	6,788.23	6,517.00	16.09	33.51	176.51	-1,607.54	258.58	1,247.41	1,215.17	32.24	38.693	
6,600.00	6,584.54	6,855.77	6,584.54	16.21	33.56	176.51	-1,607.54	258.58	1,247.41	1,214.94	32.47	38.418	
6,700.00	6,684.54	6,955.77	6,684.54	16.37	33.64	176.51	-1,607.54	258.58	1,247.41	1,214.61	32.80	38.034	
6,800.00	6,784.54	7,055.77	6,784.54	16.53	33.72	176.51	-1,607.54	258.58	1,247.41	1,214.28	33.13	37.654	
6,900.00	6,884.54	7,155.77	6,884.54	16.70	33.80	176.51	-1,607.54	258.58	1,247.41	1,213.95	33.46	37.279	
7,000.00	6,984.54	7,255.77	6,984.54	16.86	33.88	176.51	-1,607.54	258.58	1,247.41	1,213.61	33.80	36.908	
7,100.00	7,084.54	7,355.77	7,084.54	17.03	33.96	176.51	-1,607.54	258.58	1,247.41	1,213.27	34.14	36.542	
7,200.00	7,184.54	7,455.77	7,184.54	17.20	34.04	176.51	-1,607.54	258.58	1,247.41	1,212.93	34.48	36.180	
7,300.00	7,284.54	7,555.77	7,284.54	17.37	34.12	176.51	-1,607.54	258.58	1,247.41	1,212.59	34.82	35.824	
7,400.00	7,384.54	7,655.77	7,384.54	17.54	34.21	176.51	-1,607.54	258.58	1,247.41	1,212.24	35.17	35.471	
7,500.00	7,484.54	7,755.77	7,484.54	17.71	34.29	176.51	-1,607.54	258.58	1,247.41	1,211.89	35.51	35.124	
7,600.00	7,584.54	7,855.77	7,584.54	17.88	34.38	176.51	-1,607.54	258.58	1,247.41	1,211.54	35.86	34.781	
7,700.00	7,684.54	7,955.77	7,684.54	18.06	34.47	176.51	-1,607.54	258.58	1,247.41	1,211.19	36.22	34.442	
7,800.00	7,784.54	8,055.77	7,784.54	18.23	34.56	176.51	-1,607.54	258.58	1,247.41	1,210.84	36.57	34.108	
7,900.00	7,884.54	8,155.77	7,884.54	18.41	34.65	176.51	-1,607.54	258.58	1,247.41	1,210.48	36.93	33.779	
7,958.57	7,943.11	8,214.34	7,943.11	18.51	34.70	176.51	-1,607.54	258.58	1,247.41	1,210.27	37.14	33.588	
8,000.00	7,984.54	8,236.23	7,965.00	18.58	34.72	176.51	-1,607.54	258.58	1,247.56	1,210.31	37.25	33.488	
8,100.00	8,084.54	8,236.23	7,965.00	18.76	34.72	176.51	-1,607.54	258.58	1,253.12	1,215.67	37.45	33.463	
8,200.00	8,184.54	8,236.23	7,965.00	18.94	34.72	176.51	-1,607.54	258.58	1,266.58	1,228.94	37.64	33.647	
8,300.00	8,284.54	8,236.23	7,965.00	19.12	34.72	176.51	-1,607.54	258.58	1,287.68	1,249.85	37.84	34.031	
8,390.46	8,375.00	8,236.23	7,965.00	19.29	34.72	176.51	-1,607.54	258.58	1,313.06	1,275.04	38.02	34.540	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5057.00ft (Original Well Elev) Coordinates are relative to: P_KERR-MCGEE 19-3
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.33°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_KERR-MCGEE 19-3
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 5057.00ft (Original Well Elev)
Reference Site:	WELD_KERR MCGEE 19-3 PAD	MD Reference:	WELL @ 5057.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_KERR-MCGEE 19-3	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_KERR-MCGEE 19-3	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 1-15-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5057.00ft (Original Well Elev) Coordinates are relative to: P_KERR-MCGEE 19-3
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.33°

