



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_CURTIS 4 PAD

P_CURTIS 15-25

P_CURTIS 15-25

Plan: PLAN #1 12-29-09 RHS

Standard Planning Report

29 December, 2009





Azimuths to True North
Magnetic North: 9.00°
Magnetic Field
Strength: 53292.2nT
Dip Angle: 67.09°
Date: 12/29/2009
Model: IGRF200510

WELL DETAILS: P_CURTIS 15-25

+N/-S	+E/-W	Northing	Ground Level:	Easting	Latitude	Longitude	Slot
0.00	0.00	1376816.01	4665.00	3216407.89	40° 21' 54.576 N	104° 43' 24.132 W	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3585.00	3585.24	PARKMAN
4270.00	4270.30	SUSSEX
4750.00	4750.34	SHANNON
6822.00	6822.43	NIO A
7143.00	7143.43	CODELL
7219.00	7219.43	JSAND

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	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	
837.72	0.75	357.57	837.72	0.25	-0.01	2.00	357.57	0.25	
5784.71	0.75	357.57	5784.28	65.32	-2.78	0.00	0.00	65.38	
5822.43	0.00	0.00	5822.00	65.57	-2.79	2.00	180.00	65.63	
7305.43	0.00	0.00	7305.00	65.57	-2.79	0.00	0.00	65.63	PBHL_CURTIS 15-25(810 FSL 2130 FEL)50'TGT RAD

CASING DETAILS

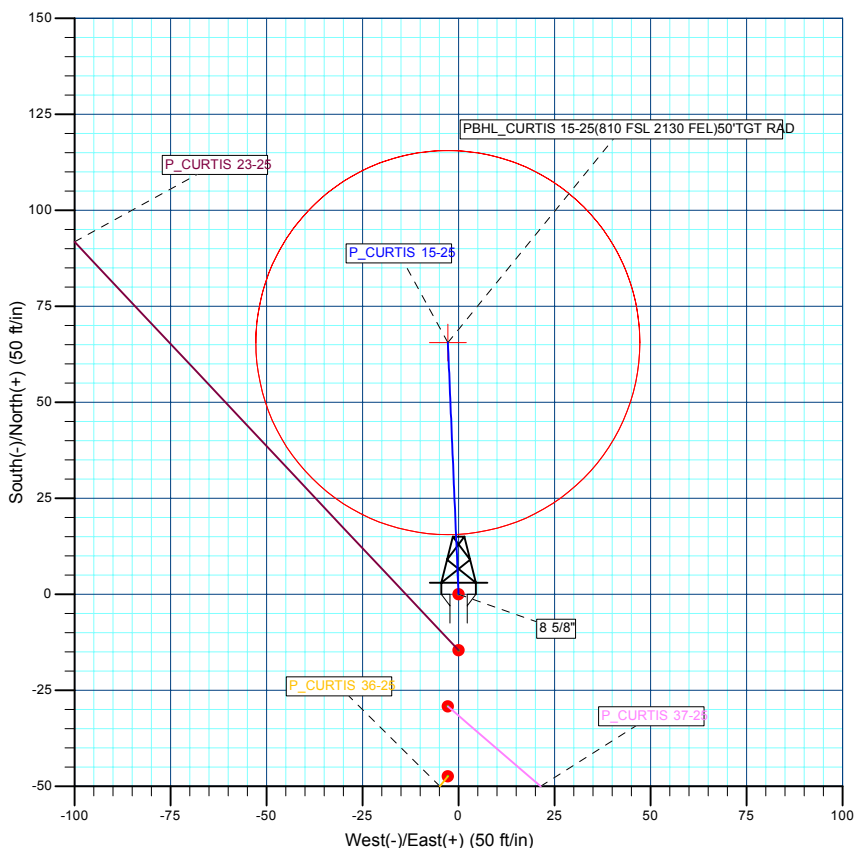
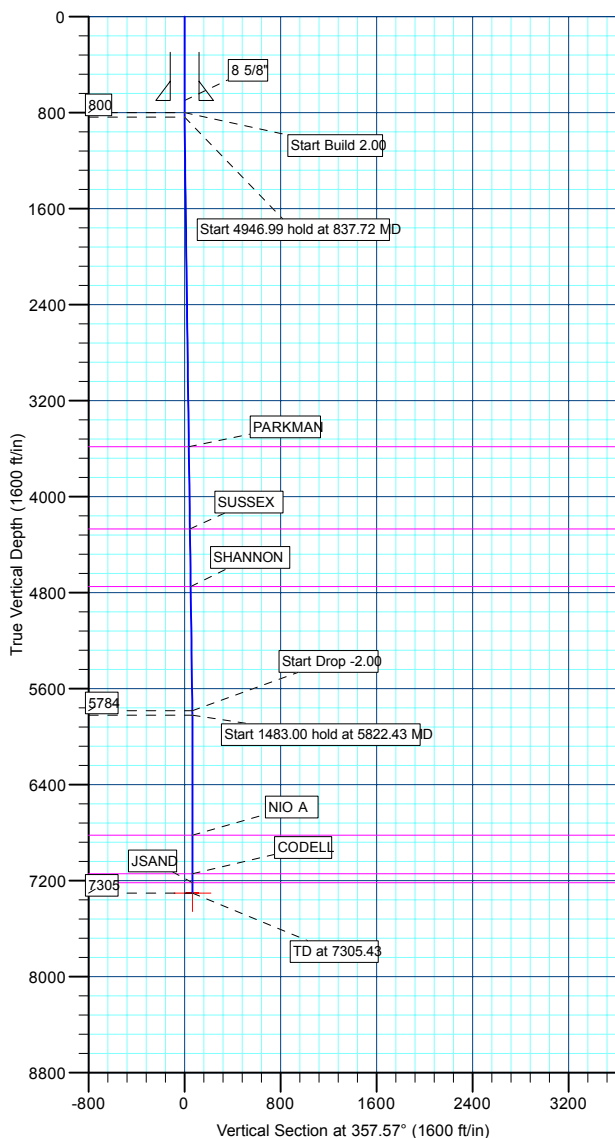
TVD	MD	Name	Size
700.00	700.00	8 5/8"	8.62

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

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PBHL	7305.00	65.57	-2.79	1376881.56	3216404.53	40° 21' 55.224 N	104° 43' 24.168 W	Circle (Radius: 50.00)



KB ELEV WELL @ 4680.00ft (Original Well Elev)
3RD ELEV: 4665.00



Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_CURTIS 15-25
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site:	WELD_CURTIS 4 PAD	North Reference:	True
Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_CURTIS 15-25		
Design:	PLAN #1 12-29-09 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_CURTIS 4 PAD, SECTION 25 T5N R66W			
Site Position:		Northing:	1,376,816.01 ft	Latitude:	40° 21' 54.576 N
From:	Lat/Long	Easting:	3,216,407.89 ft	Longitude:	104° 43' 24.132 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	0.50 °

Well	P_CURTIS 15-25					
Well Position	+N/-S	0.00 ft	Northing:	1,376,816.01 ft	Latitude:	40° 21' 54.576 N
	+E/-W	0.00 ft	Easting:	3,216,407.89 ft	Longitude:	104° 43' 24.132 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,665.00 ft

Wellbore	P_CURTIS 15-25				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/29/2009	9.00	67.09	53,292

Design	PLAN #1 12-29-09 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	357.57

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	
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00	
837.72	0.75	357.57	837.72	0.25	-0.01	2.00	2.00	0.00	357.57	
5,784.71	0.75	357.57	5,784.28	65.32	-2.78	0.00	0.00	0.00	0.00	
5,822.43	0.00	0.00	5,822.00	65.57	-2.79	2.00	-2.00	0.00	180.00	
7,305.43	0.00	0.00	7,305.00	65.57	-2.79	0.00	0.00	0.00	0.00	PBHL_CURTIS 15-

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_CURTIS 15-25
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site:	WELD_CURTIS 4 PAD	North Reference:	True
Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_CURTIS 15-25		
Design:	PLAN #1 12-29-09 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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
8 5/8"									
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
Start 4946.99 hold at 837.72 MD									
837.72	0.75	357.57	837.72	0.25	-0.01	0.25	2.00	2.00	0.00
900.00	0.75	357.57	899.99	1.07	-0.05	1.07	0.00	0.00	0.00
1,000.00	0.75	357.57	999.98	2.38	-0.10	2.39	0.00	0.00	0.00
1,100.00	0.75	357.57	1,099.98	3.70	-0.16	3.70	0.00	0.00	0.00
1,200.00	0.75	357.57	1,199.97	5.01	-0.21	5.02	0.00	0.00	0.00
1,300.00	0.75	357.57	1,299.96	6.33	-0.27	6.34	0.00	0.00	0.00
1,400.00	0.75	357.57	1,399.95	7.64	-0.32	7.65	0.00	0.00	0.00
1,500.00	0.75	357.57	1,499.94	8.96	-0.38	8.97	0.00	0.00	0.00
1,600.00	0.75	357.57	1,599.93	10.28	-0.44	10.29	0.00	0.00	0.00
1,700.00	0.75	357.57	1,699.92	11.59	-0.49	11.60	0.00	0.00	0.00
1,800.00	0.75	357.57	1,799.92	12.91	-0.55	12.92	0.00	0.00	0.00
1,900.00	0.75	357.57	1,899.91	14.22	-0.60	14.24	0.00	0.00	0.00
2,000.00	0.75	357.57	1,999.90	15.54	-0.66	15.55	0.00	0.00	0.00
2,100.00	0.75	357.57	2,099.89	16.85	-0.72	16.87	0.00	0.00	0.00
2,200.00	0.75	357.57	2,199.88	18.17	-0.77	18.19	0.00	0.00	0.00
2,300.00	0.75	357.57	2,299.87	19.48	-0.83	19.50	0.00	0.00	0.00
2,400.00	0.75	357.57	2,399.86	20.80	-0.88	20.82	0.00	0.00	0.00
2,500.00	0.75	357.57	2,499.85	22.12	-0.94	22.14	0.00	0.00	0.00
2,600.00	0.75	357.57	2,599.85	23.43	-1.00	23.45	0.00	0.00	0.00
2,700.00	0.75	357.57	2,699.84	24.75	-1.05	24.77	0.00	0.00	0.00
2,800.00	0.75	357.57	2,799.83	26.06	-1.11	26.09	0.00	0.00	0.00
2,900.00	0.75	357.57	2,899.82	27.38	-1.16	27.40	0.00	0.00	0.00
3,000.00	0.75	357.57	2,999.81	28.69	-1.22	28.72	0.00	0.00	0.00
3,100.00	0.75	357.57	3,099.80	30.01	-1.28	30.04	0.00	0.00	0.00
3,200.00	0.75	357.57	3,199.79	31.32	-1.33	31.35	0.00	0.00	0.00
3,300.00	0.75	357.57	3,299.79	32.64	-1.39	32.67	0.00	0.00	0.00
3,400.00	0.75	357.57	3,399.78	33.95	-1.44	33.99	0.00	0.00	0.00
3,500.00	0.75	357.57	3,499.77	35.27	-1.50	35.30	0.00	0.00	0.00
PARKMAN									
3,585.24	0.75	357.57	3,585.00	36.39	-1.55	36.42	0.00	0.00	0.00
3,600.00	0.75	357.57	3,599.76	36.59	-1.55	36.62	0.00	0.00	0.00
3,700.00	0.75	357.57	3,699.75	37.90	-1.61	37.94	0.00	0.00	0.00
3,800.00	0.75	357.57	3,799.74	39.22	-1.67	39.25	0.00	0.00	0.00
3,900.00	0.75	357.57	3,899.73	40.53	-1.72	40.57	0.00	0.00	0.00
4,000.00	0.75	357.57	3,999.72	41.85	-1.78	41.89	0.00	0.00	0.00
4,100.00	0.75	357.57	4,099.72	43.16	-1.83	43.20	0.00	0.00	0.00
4,200.00	0.75	357.57	4,199.71	44.48	-1.89	44.52	0.00	0.00	0.00
SUSSEX									
4,270.30	0.75	357.57	4,270.00	45.40	-1.93	45.44	0.00	0.00	0.00
4,300.00	0.75	357.57	4,299.70	45.79	-1.95	45.84	0.00	0.00	0.00
4,400.00	0.75	357.57	4,399.69	47.11	-2.00	47.15	0.00	0.00	0.00
4,500.00	0.75	357.57	4,499.68	48.42	-2.06	48.47	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_CURTIS 15-25
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site:	WELD_CURTIS 4 PAD	North Reference:	True
Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_CURTIS 15-25		
Design:	PLAN #1 12-29-09 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)
4,600.00	0.75	357.57	4,599.67	49.74	-2.11	49.79	0.00	0.00	0.00
4,700.00	0.75	357.57	4,699.66	51.06	-2.17	51.10	0.00	0.00	0.00
SHANNON									
4,750.34	0.75	357.57	4,750.00	51.72	-2.20	51.76	0.00	0.00	0.00
4,800.00	0.75	357.57	4,799.66	52.37	-2.23	52.42	0.00	0.00	0.00
4,900.00	0.75	357.57	4,899.65	53.69	-2.28	53.74	0.00	0.00	0.00
5,000.00	0.75	357.57	4,999.64	55.00	-2.34	55.05	0.00	0.00	0.00
5,100.00	0.75	357.57	5,099.63	56.32	-2.39	56.37	0.00	0.00	0.00
5,200.00	0.75	357.57	5,199.62	57.63	-2.45	57.69	0.00	0.00	0.00
5,300.00	0.75	357.57	5,299.61	58.95	-2.51	59.00	0.00	0.00	0.00
5,400.00	0.75	357.57	5,399.60	60.26	-2.56	60.32	0.00	0.00	0.00
5,500.00	0.75	357.57	5,499.59	61.58	-2.62	61.64	0.00	0.00	0.00
5,600.00	0.75	357.57	5,599.59	62.90	-2.67	62.95	0.00	0.00	0.00
5,700.00	0.75	357.57	5,699.58	64.21	-2.73	64.27	0.00	0.00	0.00
Start Drop -2.00									
5,784.71	0.75	357.57	5,784.28	65.32	-2.78	65.38	0.00	0.00	0.00
5,800.00	0.45	357.57	5,799.57	65.49	-2.78	65.54	2.00	-2.00	0.00
Start 1483.00 hold at 5822.43 MD									
5,822.43	0.00	0.00	5,822.00	65.57	-2.79	65.63	2.00	-2.00	0.00
5,900.00	0.00	0.00	5,899.57	65.57	-2.79	65.63	0.00	0.00	0.00
6,000.00	0.00	0.00	5,999.57	65.57	-2.79	65.63	0.00	0.00	0.00
6,100.00	0.00	0.00	6,099.57	65.57	-2.79	65.63	0.00	0.00	0.00
6,200.00	0.00	0.00	6,199.57	65.57	-2.79	65.63	0.00	0.00	0.00
6,300.00	0.00	0.00	6,299.57	65.57	-2.79	65.63	0.00	0.00	0.00
6,400.00	0.00	0.00	6,399.57	65.57	-2.79	65.63	0.00	0.00	0.00
6,500.00	0.00	0.00	6,499.57	65.57	-2.79	65.63	0.00	0.00	0.00
6,600.00	0.00	0.00	6,599.57	65.57	-2.79	65.63	0.00	0.00	0.00
6,700.00	0.00	0.00	6,699.57	65.57	-2.79	65.63	0.00	0.00	0.00
6,800.00	0.00	0.00	6,799.57	65.57	-2.79	65.63	0.00	0.00	0.00
NIO A									
6,822.43	0.00	0.00	6,822.00	65.57	-2.79	65.63	0.00	0.00	0.00
6,900.00	0.00	0.00	6,899.57	65.57	-2.79	65.63	0.00	0.00	0.00
7,000.00	0.00	0.00	6,999.57	65.57	-2.79	65.63	0.00	0.00	0.00
7,100.00	0.00	0.00	7,099.57	65.57	-2.79	65.63	0.00	0.00	0.00
CODELL									
7,143.43	0.00	0.00	7,143.00	65.57	-2.79	65.63	0.00	0.00	0.00
7,200.00	0.00	0.00	7,199.57	65.57	-2.79	65.63	0.00	0.00	0.00
JSAND									
7,219.43	0.00	0.00	7,219.00	65.57	-2.79	65.63	0.00	0.00	0.00
7,300.00	0.00	0.00	7,299.57	65.57	-2.79	65.63	0.00	0.00	0.00
TD at 7305.43 - PBHL_CURTIS 15-25(810 FSL 2130 FEL)50'TGT RAD									
7,305.43	0.00	0.00	7,305.00	65.57	-2.79	65.63	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_CURTIS 15-25	0.00	0.00	7,305.00	65.57	-2.79	1,376,881.56	3,216,404.53	40° 21' 55.224 N	104° 43' 24.168 W
- plan hits target center									
- Circle (radius 50.00)									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_CURTIS 15-25
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site:	WELD_CURTIS 4 PAD	North Reference:	True
Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_CURTIS 15-25		
Design:	PLAN #1 12-29-09 RHS		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
700.00	700.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,585.24	3,585.00	PARKMAN				
4,270.30	4,270.00	SUSSEX				
4,750.34	4,750.00	SHANNON				
6,822.43	6,822.00	NIO A				
7,143.43	7,143.00	CODELL				
7,219.43	7,219.00	JSAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
800.00	800.00	0.00	0.00	Start Build 2.00	
837.72	837.72	0.25	-0.01	Start 4946.99 hold at 837.72 MD	
5,784.71	5,784.28	65.32	-2.78	Start Drop -2.00	
5,822.43	5,822.00	65.57	-2.79	Start 1483.00 hold at 5822.43 MD	
7,305.43	7,305.00	65.57	-2.79	TD at 7305.43	



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_CURTIS 4 PAD
P_CURTIS 15-25**

**P_CURTIS 15-25
PLAN #1 12-29-09 RHS**

Anticollision Report

29 December, 2009



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_CURTIS 15-25
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Reference Site:	WELD_CURTIS 4 PAD	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_CURTIS 15-25	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-29-09 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 12-29-09 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 12/29/2009			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	7,305.43	PLAN #1 12-29-09 RHS (P_CURTIS 15-25)	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_CURTIS 4 PAD						
P_CURTIS 23-25 - P_CURTIS 23-25 - PLAN #1 12-29-0	1,058.98	1,059.44	12.12	7.62	2.693	CC, ES, SF
P_CURTIS 36-25 - P_CURTIS 36-25 - PLAN #1 12-29-0	800.00	800.00	47.46	44.12	14.218	CC, ES
P_CURTIS 36-25 - P_CURTIS 36-25 - PLAN #1 12-29-0	900.00	898.58	49.94	46.18	13.284	SF
P_CURTIS 37-25 - P_CURTIS 37-25 - PLAN #1 12-29-0	800.00	800.00	29.29	25.95	8.775	CC, ES
P_CURTIS 37-25 - P_CURTIS 37-25 - PLAN #1 12-29-0	900.00	899.34	31.39	27.63	8.341	SF

Offset Design WELD_CURTIS 4 PAD - P_CURTIS 23-25 - P_CURTIS 23-25 - PLAN #1 12-29-09 RHS												
Survey Program: 0-MWD												
Reference												
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis			Offset Wellbore Centre		Distance			Warning
				Reference (ft)	Offset (ft)	Highside Toolface (°)	+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	
0.00	0.00	0.00	0.00	0.00	0.00	180.00	-14.58	0.00	14.58			
100.00	100.00	100.00	100.00	0.10	0.10	180.00	-14.58	0.00	14.58	14.39	0.19	76.336
200.00	200.00	200.00	200.00	0.32	0.32	180.00	-14.58	0.00	14.58	13.94	0.64	22.767
300.00	300.00	300.00	300.00	0.55	0.55	180.00	-14.58	0.00	14.58	13.49	1.09	13.378
400.00	400.00	400.00	400.00	0.77	0.77	180.00	-14.58	0.00	14.58	13.04	1.54	9.472
500.00	500.00	500.00	500.00	0.99	0.99	180.00	-14.58	0.00	14.58	12.59	1.99	7.332
600.00	600.00	600.00	600.00	1.22	1.22	180.00	-14.58	0.00	14.58	12.15	2.44	5.980
700.00	700.00	700.00	700.00	1.44	1.44	180.00	-14.58	0.00	14.58	11.70	2.89	5.049
800.00	800.00	800.00	800.00	1.67	1.67	180.00	-14.58	0.00	14.58	11.25	3.34	4.369
837.72	837.72	837.86	837.86	1.75	1.75	-176.94	-14.40	-0.17	14.65	11.15	3.51	4.179
900.00	899.99	900.35	900.33	1.89	1.89	-172.96	-13.30	-1.20	14.42	10.64	3.78	3.810
1,000.00	999.98	1,000.53	1,000.36	2.12	2.11	-155.94	-9.47	-4.80	12.76	8.53	4.23	3.015
1,058.98	1,058.96	1,059.44	1,059.08	2.25	2.25	-136.86	-6.03	-8.04	12.12	7.62	4.50	2.693 CC, ES, SF
1,100.00	1,099.98	1,100.28	1,099.73	2.34	2.35	-120.30	-3.13	-10.77	12.62	7.93	4.69	2.693
1,200.00	1,199.97	1,199.38	1,198.09	2.57	2.60	-85.49	5.67	-19.03	18.92	13.79	5.13	3.689
1,300.00	1,299.96	1,297.60	1,295.10	2.79	2.88	-67.71	16.83	-29.52	31.46	25.88	5.57	5.644
1,400.00	1,399.95	1,395.37	1,391.15	3.02	3.19	-59.11	30.12	-42.01	48.17	42.15	6.02	8.001
1,500.00	1,499.94	1,493.69	1,487.64	3.24	3.53	-54.83	43.89	-54.95	65.95	59.48	6.48	10.185
1,600.00	1,599.93	1,592.01	1,584.12	3.47	3.88	-52.37	57.66	-67.89	83.94	77.00	6.93	12.105
1,700.00	1,699.92	1,690.33	1,680.61	3.69	4.25	-50.77	71.43	-80.83	102.02	94.63	7.40	13.795
1,800.00	1,799.92	1,788.64	1,777.10	3.92	4.62	-49.66	85.20	-93.77	120.16	112.30	7.86	15.289
1,900.00	1,899.91	1,886.96	1,873.58	4.14	5.01	-48.84	98.97	-106.71	138.33	130.00	8.32	16.616

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_CURTIS 15-25
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Reference Site:	WELD_CURTIS 4 PAD	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_CURTIS 15-25	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-29-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_CURTIS 4 PAD - P_CURTIS 23-25 - P_CURTIS 23-25 - PLAN #1 12-29-09 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,000.00	1,999.90	1,985.28	1,970.07	4.37	5.39	-48.21	112.74	-119.65	156.52	147.72	8.79	17.802	
2,100.00	2,099.89	2,083.60	2,066.55	4.59	5.78	-47.72	126.51	-132.59	174.72	165.46	9.26	18.867	
2,200.00	2,199.88	2,181.92	2,163.04	4.82	6.18	-47.31	140.28	-145.53	192.93	183.20	9.73	19.829	
2,300.00	2,299.87	2,280.24	2,259.53	5.04	6.58	-46.98	154.05	-158.47	211.16	200.96	10.20	20.700	
2,400.00	2,399.86	2,378.56	2,356.01	5.27	6.98	-46.69	167.82	-171.41	229.38	218.71	10.67	21.494	
2,500.00	2,499.85	2,476.88	2,452.50	5.49	7.38	-46.45	181.59	-184.35	247.62	236.47	11.14	22.220	
2,600.00	2,599.85	2,575.20	2,548.99	5.72	7.79	-46.25	195.36	-197.29	265.85	254.24	11.62	22.885	
2,700.00	2,699.84	2,673.52	2,645.47	5.94	8.19	-46.07	209.13	-210.23	284.09	272.00	12.09	23.498	
2,800.00	2,799.83	2,771.83	2,741.96	6.17	8.60	-45.91	222.90	-223.17	302.33	289.77	12.56	24.064	
2,900.00	2,899.82	2,870.15	2,838.44	6.39	9.01	-45.77	236.67	-236.11	320.58	307.54	13.04	24.588	
3,000.00	2,999.81	2,968.47	2,934.93	6.62	9.42	-45.64	250.44	-249.04	338.82	325.31	13.51	25.074	
3,100.00	3,099.80	3,066.79	3,031.42	6.84	9.83	-45.53	264.21	-261.98	357.07	343.08	13.99	25.527	
3,200.00	3,199.79	3,165.11	3,127.90	7.07	10.24	-45.43	277.98	-274.92	375.32	360.85	14.46	25.950	
3,300.00	3,299.79	3,263.43	3,224.39	7.29	10.65	-45.34	291.75	-287.86	393.56	378.63	14.94	26.346	
3,400.00	3,399.78	3,361.75	3,320.87	7.52	11.06	-45.25	305.52	-300.80	411.81	396.40	15.41	26.716	
3,500.00	3,499.77	3,460.07	3,417.36	7.74	11.47	-45.17	319.29	-313.74	430.06	414.17	15.89	27.064	
3,600.00	3,599.76	3,558.39	3,513.85	7.97	11.89	-45.10	333.06	-326.68	448.32	431.95	16.37	27.392	
3,700.00	3,699.75	3,656.70	3,610.33	8.19	12.30	-45.04	346.83	-339.62	466.57	449.72	16.84	27.701	
3,800.00	3,799.74	3,755.02	3,706.82	8.42	12.71	-44.98	360.60	-352.56	484.82	467.50	17.32	27.992	
3,900.00	3,899.73	3,853.34	3,803.30	8.64	13.13	-44.92	374.37	-365.50	503.07	485.28	17.80	28.268	
4,000.00	3,999.72	3,951.66	3,899.79	8.87	13.54	-44.87	388.14	-378.44	521.32	503.05	18.27	28.529	
4,100.00	4,099.72	4,049.98	3,996.28	9.09	13.96	-44.82	401.91	-391.38	539.58	520.83	18.75	28.777	
4,200.00	4,199.71	4,148.30	4,092.76	9.32	14.37	-44.78	415.68	-404.32	557.83	538.60	19.23	29.012	
4,300.00	4,299.70	4,246.62	4,189.25	9.55	14.79	-44.73	429.45	-417.26	576.09	556.38	19.70	29.236	
4,400.00	4,399.69	4,344.94	4,285.74	9.77	15.20	-44.69	443.22	-430.20	594.34	574.16	20.18	29.449	
4,500.00	4,499.68	4,443.26	4,382.22	10.00	15.62	-44.66	456.99	-443.14	612.60	591.94	20.66	29.652	
4,600.00	4,599.67	4,541.58	4,478.71	10.22	16.03	-44.62	470.76	-456.08	630.85	609.71	21.14	29.845	
4,700.00	4,699.66	4,639.89	4,575.19	10.45	16.45	-44.59	484.53	-469.02	649.11	627.49	21.61	30.030	
4,800.00	4,799.66	4,738.21	4,671.68	10.67	16.87	-44.56	498.30	-481.96	667.36	645.27	22.09	30.207	
4,900.00	4,899.65	4,836.53	4,768.17	10.90	17.28	-44.53	512.07	-494.90	685.62	663.05	22.57	30.377	
5,000.00	4,999.64	4,934.85	4,864.65	11.12	17.70	-44.50	525.84	-507.83	703.87	680.82	23.05	30.539	
5,100.00	5,099.63	5,033.17	4,961.14	11.35	18.12	-44.47	539.61	-520.77	722.13	698.60	23.53	30.694	
5,200.00	5,199.62	5,131.49	5,057.62	11.57	18.53	-44.45	553.38	-533.71	740.38	716.38	24.00	30.844	
5,300.00	5,299.61	5,229.81	5,154.11	11.80	18.95	-44.42	567.15	-546.65	758.64	734.16	24.48	30.987	
5,400.00	5,399.60	5,328.13	5,250.60	12.02	19.37	-44.40	580.92	-559.59	776.90	751.94	24.96	31.125	
5,500.00	5,499.59	5,455.54	5,375.99	12.25	19.80	-44.38	594.69	-575.06	795.16	769.29	25.44	31.264	
5,600.00	5,599.59	5,593.14	5,512.36	12.47	20.16	-44.39	608.46	-587.52	813.41	787.07	25.92	31.403	
5,700.00	5,699.58	5,732.06	5,650.77	12.70	20.45	-44.43	622.23	-595.54	831.66	805.32	26.40	31.542	
5,784.71	5,784.28	5,850.29	5,768.90	12.89	20.63	-44.48	622.58	-598.74	831.66	805.32	26.40	31.542	
5,800.00	5,799.57	5,871.65	5,790.26	12.92	20.66	-44.49	622.82	-598.96	831.66	805.32	26.40	31.542	
5,822.43	5,822.00	5,902.99	5,821.60	12.96	20.70	-46.93	622.95	-599.09	831.66	805.32	26.40	31.542	
5,900.00	5,899.57	5,980.96	5,899.57	13.11	20.79	-46.93	622.95	-599.09	831.66	805.32	26.40	31.542	
6,000.00	5,999.57	6,080.96	5,999.57	13.33	20.93	-46.93	622.95	-599.09	831.66	805.32	26.40	31.542	
6,100.00	6,099.57	6,180.96	6,099.57	13.56	21.07	-46.93	622.95	-599.09	831.66	805.32	26.40	31.542	
6,200.00	6,199.57	6,280.96	6,199.57	13.78	21.20	-46.93	622.95	-599.09	831.66	805.32	26.40	31.542	
6,300.00	6,299.57	6,380.96	6,299.57	14.00	21.35	-46.93	622.95	-599.09	831.66	805.32	26.40	31.542	
6,400.00	6,399.57	6,480.96	6,399.57	14.23	21.49	-46.93	622.95	-599.09	831.66	805.32	26.40	31.542	
6,500.00	6,499.57	6,580.96	6,499.57	14.45	21.63	-46.93	622.95	-599.09	831.66	805.32	26.40	31.542	
6,600.00	6,599.57	6,680.96	6,599.57	14.68	21.78	-46.93	622.95	-599.09	831.66	805.32	26.40	31.542	
6,700.00	6,699.57	6,780.96	6,699.57	14.90	21.92	-46.93	622.95	-599.09	831.66	805.32	26.40	31.542	
6,800.00	6,799.57	6,880.96	6,799.57	15.12	22.07	-46.93	622.95	-599.09	831.66	805.32	26.40	31.542	
6,900.00	6,899.57	6,980.96	6,899.57	15.35	22.22	-46.93	622.95	-599.09	831.66	805.32	26.40	31.542	

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_CURTIS 15-25
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Reference Site:	WELD_CURTIS 4 PAD	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_CURTIS 15-25	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-29-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_CURTIS 4 PAD - P_CURTIS 23-25 - P_CURTIS 23-25 - PLAN #1 12-29-09 RHS												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
7,000.00	6,999.57	7,080.96	6,999.57	15.57	22.37	-46.93	622.95	-599.09	816.24	784.33	31.91	25.578	
7,100.00	7,099.57	7,180.96	7,099.57	15.80	22.52	-46.93	622.95	-599.09	816.24	783.90	32.34	25.240	
7,200.00	7,199.57	7,280.96	7,199.57	16.02	22.67	-46.93	622.95	-599.09	816.24	783.47	32.77	24.911	
7,305.43	7,305.00	7,386.39	7,305.00	16.26	22.84	-46.93	622.95	-599.09	816.24	783.02	33.22	24.572	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_CURTIS 15-25
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Reference Site:	WELD_CURTIS 4 PAD	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_CURTIS 15-25	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-29-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_CURTIS 4 PAD - P_CURTIS 36-25 - P_CURTIS 36-25 - PLAN #1 12-29-09 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
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	-176.63	-47.37	-2.79	47.46				
100.00	100.00	100.00	100.00	0.10	0.10	-176.63	-47.37	-2.79	47.46	47.27	0.19	248.397	
200.00	200.00	200.00	200.00	0.32	0.32	-176.63	-47.37	-2.79	47.46	46.82	0.64	74.083	
300.00	300.00	300.00	300.00	0.55	0.55	-176.63	-47.37	-2.79	47.46	46.37	1.09	43.534	
400.00	400.00	400.00	400.00	0.77	0.77	-176.63	-47.37	-2.79	47.46	45.92	1.54	30.823	
500.00	500.00	500.00	500.00	0.99	0.99	-176.63	-47.37	-2.79	47.46	45.47	1.99	23.857	
600.00	600.00	600.00	600.00	1.22	1.22	-176.63	-47.37	-2.79	47.46	45.02	2.44	19.460	
700.00	700.00	700.00	700.00	1.44	1.44	-176.63	-47.37	-2.79	47.46	44.57	2.89	16.431	
800.00	800.00	800.00	800.00	1.67	1.67	-176.63	-47.37	-2.79	47.46	44.12	3.34	14.218 CC, ES	
837.72	837.72	837.21	837.21	1.75	1.74	-174.06	-47.56	-2.94	47.91	44.41	3.50	13.700	
900.00	899.99	898.58	898.56	1.89	1.87	-173.21	-48.71	-3.83	49.94	46.18	3.76	13.284 SF	
1,000.00	999.98	996.86	996.71	2.12	2.05	-170.47	-52.70	-6.95	55.60	51.44	4.17	13.349	
1,100.00	1,099.98	1,094.62	1,094.10	2.34	2.25	-166.80	-59.29	-12.12	64.39	59.81	4.58	14.059	
1,200.00	1,199.97	1,191.62	1,190.40	2.57	2.47	-163.00	-68.42	-19.26	76.46	71.46	5.00	15.287	
1,300.00	1,299.96	1,287.66	1,285.31	2.79	2.73	-159.52	-79.98	-28.31	91.92	86.49	5.43	16.931	
1,400.00	1,399.95	1,385.71	1,381.89	3.02	3.02	-156.68	-93.28	-38.73	109.49	103.62	5.87	18.661	
1,500.00	1,499.94	1,484.03	1,478.74	3.24	3.34	-154.62	-106.64	-49.18	127.25	120.94	6.31	20.167	
1,600.00	1,599.93	1,582.35	1,575.58	3.47	3.67	-153.07	-119.99	-59.63	145.14	138.38	6.76	21.481	
1,700.00	1,699.92	1,680.67	1,672.43	3.69	4.02	-151.85	-133.34	-70.08	163.11	155.90	7.21	22.634	
1,800.00	1,799.92	1,778.99	1,769.28	3.92	4.37	-150.88	-146.69	-80.54	181.13	173.47	7.66	23.651	
1,900.00	1,899.91	1,877.31	1,866.13	4.14	4.73	-150.09	-160.04	-90.99	199.20	191.08	8.11	24.552	
2,000.00	1,999.90	1,975.63	1,962.97	4.37	5.09	-149.42	-173.40	-101.44	217.29	208.73	8.57	25.356	
2,100.00	2,099.89	2,073.95	2,059.82	4.59	5.46	-148.86	-186.75	-111.90	235.42	226.39	9.03	26.076	
2,200.00	2,199.88	2,172.27	2,156.67	4.82	5.84	-148.38	-200.10	-122.35	253.56	244.07	9.49	26.725	
2,300.00	2,299.87	2,270.59	2,253.51	5.04	6.21	-147.96	-213.45	-132.80	271.71	261.76	9.95	27.312	
2,400.00	2,399.86	2,368.91	2,350.36	5.27	6.59	-147.60	-226.81	-143.26	289.88	279.47	10.41	27.845	
2,500.00	2,499.85	2,467.23	2,447.21	5.49	6.97	-147.27	-240.16	-153.71	308.05	297.18	10.87	28.331	
2,600.00	2,599.85	2,565.55	2,544.05	5.72	7.36	-146.99	-253.51	-164.16	326.24	314.90	11.34	28.776	
2,700.00	2,699.84	2,663.87	2,640.90	5.94	7.74	-146.73	-266.86	-174.61	344.43	332.63	11.80	29.185	
2,800.00	2,799.83	2,762.19	2,737.75	6.17	8.12	-146.50	-280.22	-185.07	362.63	350.36	12.27	29.562	
2,900.00	2,899.82	2,860.51	2,834.59	6.39	8.51	-146.29	-293.57	-195.52	380.83	368.10	12.73	29.910	
3,000.00	2,999.81	2,958.83	2,931.44	6.62	8.90	-146.10	-306.92	-205.97	399.04	385.84	13.20	30.233	
3,100.00	3,099.80	3,057.15	3,028.29	6.84	9.29	-145.93	-320.27	-216.43	417.25	403.59	13.67	30.533	
3,200.00	3,199.79	3,155.47	3,125.13	7.07	9.67	-145.77	-333.62	-226.88	435.47	421.34	14.13	30.813	
3,300.00	3,299.79	3,253.79	3,221.98	7.29	10.06	-145.63	-346.98	-237.33	453.69	439.09	14.60	31.074	
3,400.00	3,399.78	3,352.11	3,318.83	7.52	10.45	-145.49	-360.33	-247.78	471.91	456.84	15.07	31.318	
3,500.00	3,499.77	3,450.43	3,415.68	7.74	10.84	-145.37	-373.68	-258.24	490.13	474.59	15.54	31.547	
3,600.00	3,599.76	3,548.75	3,512.52	7.97	11.23	-145.25	-387.03	-268.69	508.36	492.35	16.00	31.762	
3,700.00	3,699.75	3,647.07	3,609.37	8.19	11.63	-145.15	-400.39	-279.14	526.58	510.11	16.47	31.965	
3,800.00	3,799.74	3,745.40	3,706.22	8.42	12.02	-145.05	-413.74	-289.60	544.81	527.87	16.94	32.156	
3,900.00	3,899.73	3,843.72	3,803.06	8.64	12.41	-144.95	-427.09	-300.05	563.04	545.63	17.41	32.337	
4,000.00	3,999.72	3,942.04	3,899.91	8.87	12.80	-144.86	-440.44	-310.50	581.27	563.39	17.88	32.507	
4,100.00	4,099.72	4,040.36	3,996.76	9.09	13.19	-144.78	-453.80	-320.95	599.50	581.15	18.35	32.669	
4,200.00	4,199.71	4,138.68	4,093.60	9.32	13.59	-144.70	-467.15	-331.41	617.74	598.92	18.82	32.822	
4,300.00	4,299.70	4,237.00	4,190.45	9.55	13.98	-144.63	-480.50	-341.86	635.97	616.68	19.29	32.968	
4,400.00	4,399.69	4,335.32	4,287.30	9.77	14.37	-144.56	-493.85	-352.31	654.21	634.45	19.76	33.106	
4,500.00	4,499.68	4,433.64	4,384.14	10.00	14.76	-144.50	-507.20	-362.77	672.45	652.21	20.23	33.238	
4,600.00	4,599.67	4,531.96	4,480.99	10.22	15.16	-144.43	-520.56	-373.22	690.68	669.98	20.70	33.364	
4,700.00	4,699.66	4,630.28	4,577.84	10.45	15.55	-144.38	-533.91	-383.67	708.92	687.75	21.17	33.484	
4,800.00	4,799.66	4,728.60	4,674.69	10.67	15.95	-144.32	-547.26	-394.12	727.16	705.52	21.64	33.599	
4,900.00	4,899.65	4,826.92	4,771.53	10.90	16.34	-144.27	-560.61	-404.58	745.40	723.29	22.11	33.708	
5,000.00	4,999.64	4,925.24	4,868.38	11.12	16.73	-144.22	-573.97	-415.03	763.64	741.06	22.58	33.813	

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_CURTIS 15-25
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Reference Site:	WELD_CURTIS 4 PAD	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_CURTIS 15-25	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-29-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_CURTIS 4 PAD - P_CURTIS 36-25 - P_CURTIS 36-25 - PLAN #1 12-29-09 RHS												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
5,100.00	5,099.63	5,023.56	4,965.23	11.35	17.13	-144.17	-587.32	-425.48	781.88	758.83	23.05	33.914	
5,200.00	5,199.62	5,121.88	5,062.07	11.57	17.52	-144.12	-600.67	-435.94	800.12	776.60	23.53	34.010	
5,300.00	5,299.61	5,220.20	5,158.92	11.80	17.92	-144.08	-614.02	-446.39	818.36	794.37	24.00	34.103	
5,400.00	5,399.60	5,318.52	5,255.77	12.02	18.31	-144.04	-627.38	-456.84	836.61	812.14	24.47	34.192	
5,500.00	5,499.59	5,430.03	5,365.67	12.25	18.71	-143.99	-642.25	-468.49	854.61	829.65	24.96	34.244	
5,600.00	5,599.59	5,571.42	5,505.78	12.47	19.06	-143.97	-657.03	-480.06	868.90	843.44	25.47	34.117	
5,700.00	5,699.58	5,714.48	5,648.33	12.70	19.34	-143.98	-666.43	-487.42	878.29	852.32	25.97	33.823	
5,784.71	5,784.28	5,836.47	5,770.23	12.89	19.53	-144.02	-670.01	-490.22	882.34	855.95	26.38	33.446	
5,800.00	5,799.57	5,858.53	5,792.29	12.92	19.56	-144.03	-670.22	-490.38	882.65	856.19	26.46	33.358	
5,822.43	5,822.00	5,888.24	5,822.00	12.96	19.60	-146.47	-670.30	-490.44	882.79	856.22	26.56	33.232	
5,900.00	5,899.57	5,965.81	5,899.57	13.11	19.69	-146.47	-670.30	-490.44	882.79	855.94	26.85	32.876	
6,000.00	5,999.57	6,065.81	5,999.57	13.33	19.81	-146.47	-670.30	-490.44	882.79	855.54	27.25	32.395	
6,100.00	6,099.57	6,165.81	6,099.57	13.56	19.94	-146.47	-670.30	-490.44	882.79	855.14	27.65	31.926	
6,200.00	6,199.57	6,265.81	6,199.57	13.78	20.06	-146.47	-670.30	-490.44	882.79	854.74	28.05	31.469	
6,300.00	6,299.57	6,365.81	6,299.57	14.00	20.19	-146.47	-670.30	-490.44	882.79	854.33	28.46	31.024	
6,400.00	6,399.57	6,465.81	6,399.57	14.23	20.32	-146.47	-670.30	-490.44	882.79	853.93	28.86	30.589	
6,500.00	6,499.57	6,565.81	6,499.57	14.45	20.45	-146.47	-670.30	-490.44	882.79	853.52	29.26	30.165	
6,600.00	6,599.57	6,665.81	6,599.57	14.68	20.58	-146.47	-670.30	-490.44	882.79	853.12	29.67	29.752	
6,700.00	6,699.57	6,765.81	6,699.57	14.90	20.71	-146.47	-670.30	-490.44	882.79	852.71	30.08	29.349	
6,800.00	6,799.57	6,865.81	6,799.57	15.12	20.84	-146.47	-670.30	-490.44	882.79	852.30	30.49	28.955	
6,900.00	6,899.57	6,965.81	6,899.57	15.35	20.98	-146.47	-670.30	-490.44	882.79	851.89	30.90	28.571	
7,000.00	6,999.57	7,065.81	6,999.57	15.57	21.12	-146.47	-670.30	-490.44	882.79	851.48	31.31	28.196	
7,100.00	7,099.57	7,165.81	7,099.57	15.80	21.26	-146.47	-670.30	-490.44	882.79	851.07	31.72	27.830	
7,200.00	7,199.57	7,265.81	7,199.57	16.02	21.40	-146.47	-670.30	-490.44	882.79	850.65	32.13	27.472	
7,268.54	7,268.11	7,334.35	7,268.11	16.18	21.49	-146.47	-670.30	-490.44	882.79	850.37	32.42	27.232	
7,305.43	7,305.00	7,366.24	7,300.00	16.26	21.54	-146.47	-670.30	-490.44	882.80	850.24	32.56	27.112	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_CURTIS 15-25
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Reference Site:	WELD_CURTIS 4 PAD	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_CURTIS 15-25	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-29-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_CURTIS 4 PAD - P_CURTIS 37-25 - P_CURTIS 37-25 - PLAN #1 12-29-09 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWD												Offset Well Error:	0.00 ft
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	-174.54	-29.16	-2.79	29.29				
100.00	100.00	100.00	100.00	0.10	0.10	-174.54	-29.16	-2.79	29.29	29.10	0.19	153.303	
200.00	200.00	200.00	200.00	0.32	0.32	-174.54	-29.16	-2.79	29.29	28.65	0.64	45.722	
300.00	300.00	300.00	300.00	0.55	0.55	-174.54	-29.16	-2.79	29.29	28.20	1.09	26.868	
400.00	400.00	400.00	400.00	0.77	0.77	-174.54	-29.16	-2.79	29.29	27.75	1.54	19.023	
500.00	500.00	500.00	500.00	0.99	0.99	-174.54	-29.16	-2.79	29.29	27.30	1.99	14.724	
600.00	600.00	600.00	600.00	1.22	1.22	-174.54	-29.16	-2.79	29.29	26.85	2.44	12.010	
700.00	700.00	700.00	700.00	1.44	1.44	-174.54	-29.16	-2.79	29.29	26.40	2.89	10.141	
800.00	800.00	800.00	800.00	1.67	1.67	-174.54	-29.16	-2.79	29.29	25.95	3.34	8.775 CC, ES	
837.72	837.72	837.49	837.49	1.75	1.74	-172.56	-29.32	-2.60	29.68	26.18	3.50	8.484	
900.00	899.99	899.34	899.32	1.89	1.87	-174.94	-30.28	-1.48	31.39	27.63	3.76	8.341 SF	
1,000.00	999.98	998.38	998.22	2.12	2.06	178.45	-33.64	2.41	36.16	31.98	4.18	8.660	
1,100.00	1,099.98	1,096.88	1,096.35	2.34	2.26	170.57	-39.20	8.84	43.98	39.39	4.60	9.570	
1,200.00	1,199.97	1,194.63	1,193.38	2.57	2.50	163.32	-46.89	17.75	55.32	50.30	5.02	11.012	
1,300.00	1,299.96	1,291.39	1,288.99	2.79	2.76	157.43	-56.64	29.03	70.31	64.85	5.46	12.888	
1,400.00	1,399.95	1,386.98	1,382.89	3.02	3.06	152.92	-68.33	42.56	88.89	83.01	5.89	15.093	
1,500.00	1,499.94	1,481.72	1,475.31	3.24	3.41	149.50	-81.90	58.28	110.93	104.60	6.33	17.532	
1,600.00	1,599.93	1,578.80	1,569.77	3.47	3.81	147.02	-96.56	75.25	134.35	127.58	6.78	19.824	
1,700.00	1,699.92	1,675.88	1,664.23	3.69	4.22	145.28	-111.21	92.21	157.95	150.72	7.23	21.844	
1,800.00	1,799.92	1,772.96	1,758.68	3.92	4.65	143.99	-125.86	109.18	181.65	173.96	7.69	23.626	
1,900.00	1,899.91	1,870.04	1,853.14	4.14	5.09	143.00	-140.51	126.14	205.41	197.26	8.15	25.206	
2,000.00	1,999.90	1,967.12	1,947.60	4.37	5.54	142.22	-155.17	143.11	229.22	220.61	8.61	26.613	
2,100.00	2,099.89	2,064.20	2,042.06	4.59	5.99	141.58	-169.82	160.07	253.07	243.99	9.08	27.871	
2,200.00	2,199.88	2,161.28	2,136.51	4.82	6.45	141.05	-184.47	177.03	276.94	267.39	9.55	29.003	
2,300.00	2,299.87	2,258.37	2,230.97	5.04	6.92	140.61	-199.12	194.00	300.82	290.80	10.02	30.025	
2,400.00	2,399.86	2,355.45	2,325.43	5.27	7.39	140.23	-213.78	210.96	324.72	314.23	10.49	30.952	
2,500.00	2,499.85	2,452.53	2,419.89	5.49	7.86	139.91	-228.43	227.93	348.64	337.67	10.96	31.795	
2,600.00	2,599.85	2,549.61	2,514.34	5.72	8.33	139.62	-243.08	244.89	372.56	361.12	11.44	32.567	
2,700.00	2,699.84	2,646.69	2,608.80	5.94	8.81	139.37	-257.73	261.86	396.49	384.57	11.92	33.274	
2,800.00	2,799.83	2,743.77	2,703.26	6.17	9.28	139.15	-272.39	278.82	420.42	408.03	12.39	33.925	
2,900.00	2,899.82	2,840.85	2,797.72	6.39	9.76	138.95	-287.04	295.78	444.36	431.49	12.87	34.526	
3,000.00	2,999.81	2,937.93	2,892.17	6.62	10.24	138.77	-301.69	312.75	468.31	454.96	13.35	35.083	
3,100.00	3,099.80	3,035.01	2,986.63	6.84	10.72	138.61	-316.34	329.71	492.26	478.43	13.83	35.599	
3,200.00	3,199.79	3,132.09	3,081.09	7.07	11.20	138.47	-330.99	346.68	516.21	501.91	14.31	36.080	
3,300.00	3,299.79	3,229.18	3,175.55	7.29	11.68	138.33	-345.65	363.64	540.17	525.38	14.79	36.528	
3,400.00	3,399.78	3,326.26	3,270.00	7.52	12.17	138.21	-360.30	380.61	564.13	548.86	15.27	36.947	
3,500.00	3,499.77	3,423.34	3,364.46	7.74	12.65	138.10	-374.95	397.57	588.09	572.34	15.75	37.339	
3,600.00	3,599.76	3,520.42	3,458.92	7.97	13.13	138.00	-389.60	414.53	612.05	595.82	16.23	37.708	
3,700.00	3,699.75	3,617.50	3,553.38	8.19	13.62	137.90	-404.26	431.50	636.01	619.30	16.71	38.054	
3,800.00	3,799.74	3,714.58	3,647.83	8.42	14.10	137.82	-418.91	448.46	659.98	642.78	17.20	38.380	
3,900.00	3,899.73	3,811.66	3,742.29	8.64	14.59	137.73	-433.56	465.43	683.95	666.27	17.68	38.688	
4,000.00	3,999.72	3,908.74	3,836.75	8.87	15.07	137.66	-448.21	482.39	707.91	689.75	18.16	38.979	
4,100.00	4,099.72	4,005.82	3,931.21	9.09	15.56	137.59	-462.87	499.36	731.88	713.24	18.64	39.255	
4,200.00	4,199.71	4,102.90	4,025.66	9.32	16.05	137.52	-477.52	516.32	755.85	736.73	19.13	39.516	
4,300.00	4,299.70	4,199.99	4,120.12	9.55	16.53	137.46	-492.17	533.29	779.83	760.21	19.61	39.764	
4,400.00	4,399.69	4,297.07	4,214.58	9.77	17.02	137.40	-506.82	550.25	803.80	783.70	20.10	39.999	
4,500.00	4,499.68	4,394.15	4,309.04	10.00	17.51	137.34	-521.48	567.21	827.77	807.19	20.58	40.224	
4,600.00	4,599.67	4,491.23	4,403.49	10.22	17.99	137.29	-536.13	584.18	851.74	830.68	21.06	40.437	
4,700.00	4,699.66	4,588.31	4,497.95	10.45	18.48	137.24	-550.78	601.14	875.72	854.17	21.55	40.641	
4,800.00	4,799.66	4,685.39	4,592.41	10.67	18.97	137.19	-565.43	618.11	899.69	877.66	22.03	40.835	
4,900.00	4,899.65	4,782.47	4,686.87	10.90	19.45	137.15	-580.09	635.07	923.67	901.15	22.52	41.021	
5,000.00	4,999.64	4,879.55	4,781.33	11.12	19.94	137.11	-594.74	652.04	947.64	924.64	23.00	41.199	

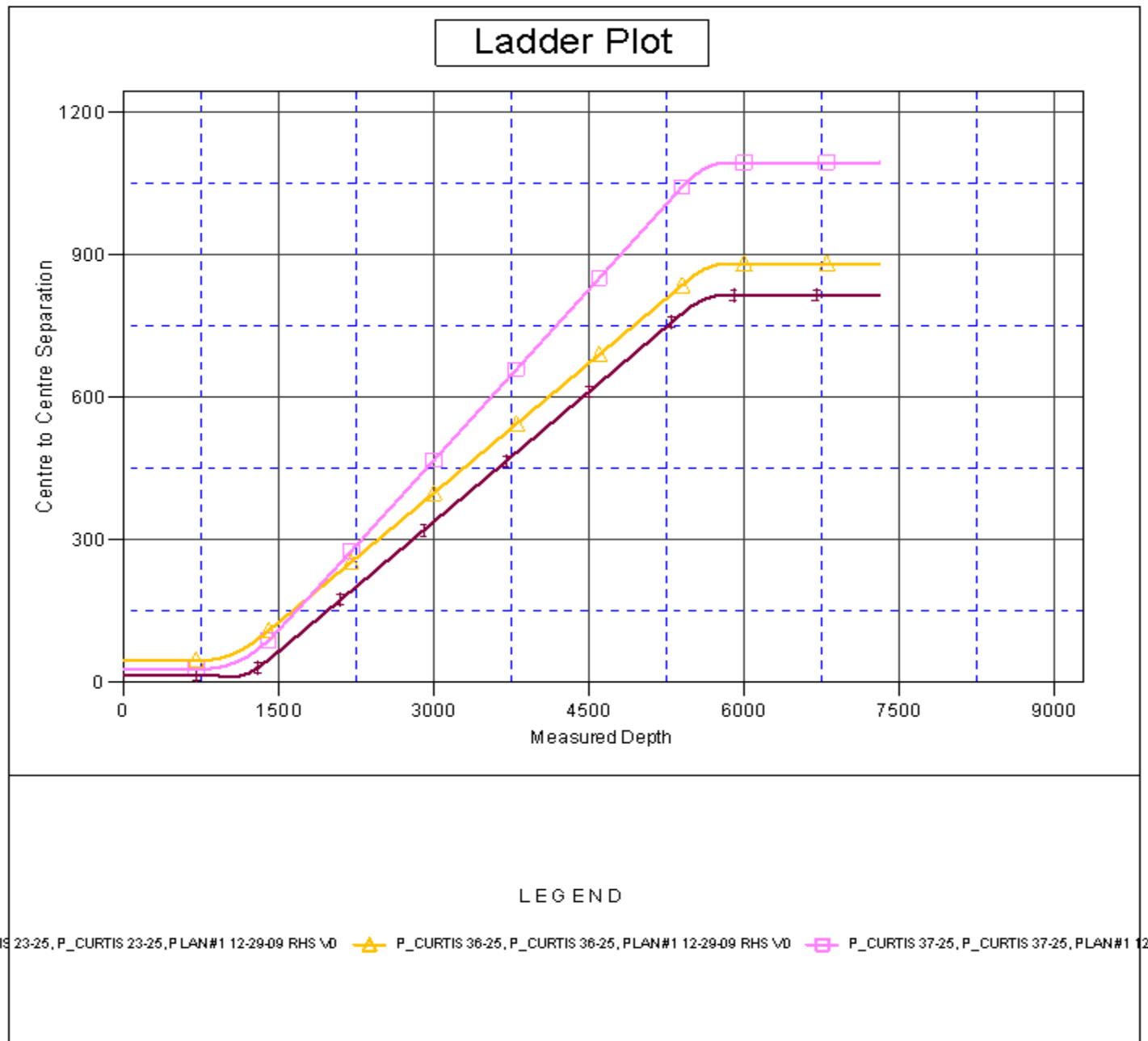
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_CURTIS 15-25
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Reference Site:	WELD_CURTIS 4 PAD	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_CURTIS 15-25	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-29-09 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_CURTIS 4 PAD - P_CURTIS 37-25 - P_CURTIS 37-25 - PLAN #1 12-29-09 RHS												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
5,100.00	5,099.63	4,976.63	4,875.78	11.35	20.43	137.07	-609.39	669.00	971.62	948.13	23.49	41.369	
5,200.00	5,199.62	5,073.71	4,970.24	11.57	20.92	137.03	-624.04	685.96	995.60	971.62	23.97	41.533	
5,300.00	5,299.61	5,170.79	5,064.70	11.80	21.41	136.99	-638.70	702.93	1,019.57	995.12	24.46	41.689	
5,400.00	5,399.60	5,271.19	5,162.38	12.02	21.90	136.96	-653.84	720.46	1,043.54	1,018.59	24.95	41.827	
5,500.00	5,499.59	5,425.68	5,313.69	12.25	22.44	136.92	-674.18	744.01	1,064.60	1,039.07	25.53	41.706	
5,600.00	5,599.59	5,583.36	5,469.61	12.47	22.87	136.91	-689.42	761.65	1,080.31	1,054.22	26.08	41.419	
5,700.00	5,699.58	5,743.33	5,628.87	12.70	23.19	136.94	-699.12	772.89	1,090.53	1,063.91	26.61	40.976	
5,784.71	5,784.28	5,879.93	5,765.34	12.89	23.39	136.99	-702.80	777.14	1,094.82	1,067.78	27.04	40.483	
5,800.00	5,799.57	5,904.64	5,790.05	12.92	23.42	137.00	-703.01	777.38	1,095.14	1,068.01	27.13	40.371	
5,822.43	5,822.00	5,936.59	5,822.00	12.96	23.45	134.57	-703.08	777.47	1,095.27	1,068.04	27.23	40.216	
5,900.00	5,899.57	6,014.16	5,899.57	13.11	23.54	134.57	-703.08	777.47	1,095.27	1,067.75	27.52	39.799	
6,000.00	5,999.57	6,114.16	5,999.57	13.33	23.64	134.57	-703.08	777.47	1,095.27	1,067.36	27.91	39.239	
6,100.00	6,099.57	6,214.16	6,099.57	13.56	23.75	134.57	-703.08	777.47	1,095.27	1,066.96	28.31	38.693	
6,200.00	6,199.57	6,314.16	6,199.57	13.78	23.86	134.57	-703.08	777.47	1,095.27	1,066.57	28.70	38.159	
6,300.00	6,299.57	6,414.16	6,299.57	14.00	23.97	134.57	-703.08	777.47	1,095.27	1,066.17	29.10	37.639	
6,400.00	6,399.57	6,514.16	6,399.57	14.23	24.09	134.57	-703.08	777.47	1,095.27	1,065.77	29.50	37.130	
6,500.00	6,499.57	6,614.16	6,499.57	14.45	24.20	134.57	-703.08	777.47	1,095.27	1,065.37	29.90	36.634	
6,600.00	6,599.57	6,714.16	6,599.57	14.68	24.32	134.57	-703.08	777.47	1,095.27	1,064.97	30.30	36.149	
6,700.00	6,699.57	6,814.16	6,699.57	14.90	24.44	134.57	-703.08	777.47	1,095.27	1,064.57	30.70	35.675	
6,800.00	6,799.57	6,914.16	6,799.57	15.12	24.55	134.57	-703.08	777.47	1,095.27	1,064.17	31.10	35.212	
6,900.00	6,899.57	7,014.16	6,899.57	15.35	24.68	134.57	-703.08	777.47	1,095.27	1,063.76	31.51	34.760	
7,000.00	6,999.57	7,114.16	6,999.57	15.57	24.80	134.57	-703.08	777.47	1,095.27	1,063.36	31.92	34.318	
7,100.00	7,099.57	7,214.16	7,099.57	15.80	24.92	134.57	-703.08	777.47	1,095.27	1,062.95	32.32	33.886	
7,200.00	7,199.57	7,314.16	7,199.57	16.02	25.05	134.57	-703.08	777.47	1,095.27	1,062.54	32.73	33.464	
7,266.60	7,266.17	7,380.76	7,266.17	16.17	25.13	134.57	-703.08	777.47	1,095.27	1,062.27	33.00	33.188	
7,305.43	7,305.00	7,409.59	7,295.00	16.26	25.17	134.57	-703.08	777.47	1,095.32	1,062.17	33.14	33.049	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_CURTIS 15-25
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Reference Site:	WELD_CURTIS 4 PAD	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_CURTIS 15-25	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-29-09 RHS	Offset TVD Reference:	Offset Datum

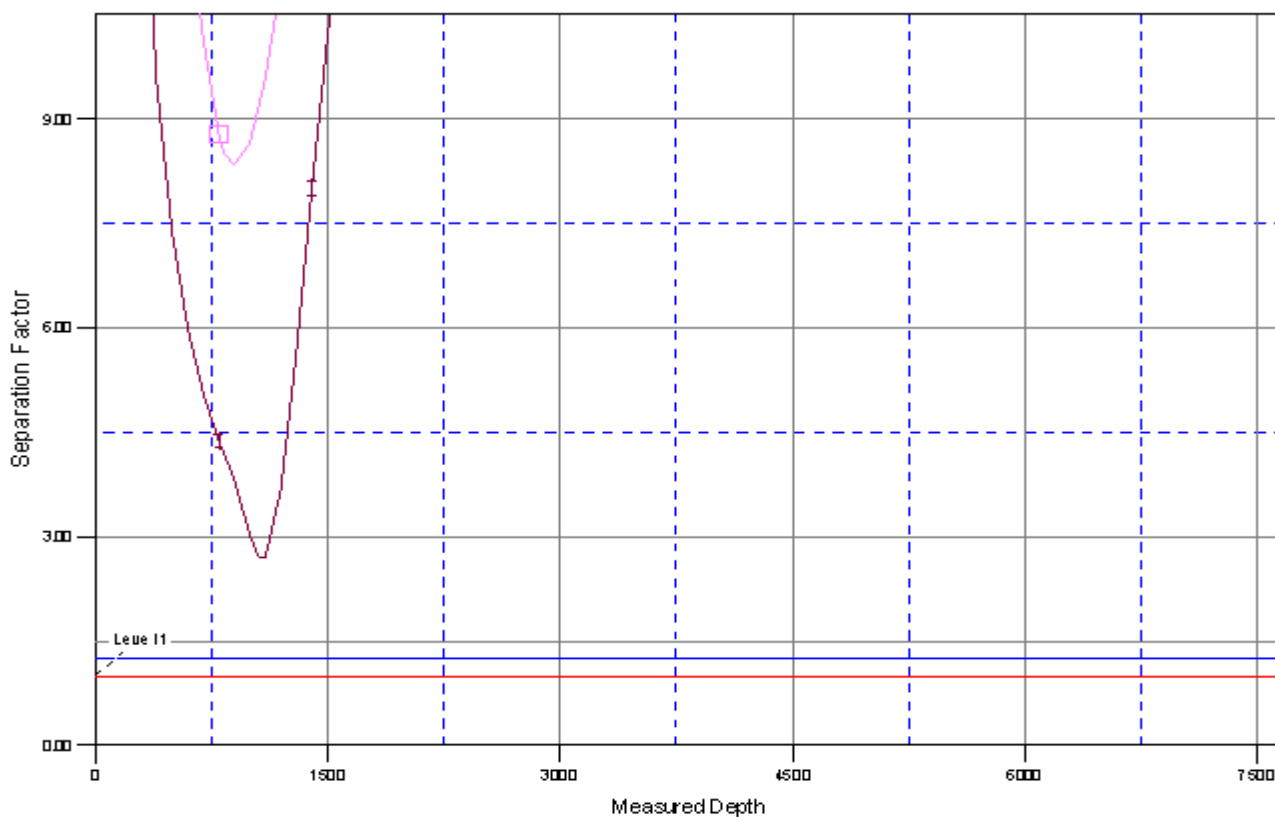
Reference Depths are relative to WELL @ 4680.00ft (Original Well Elev) Coordinates are relative to: P_CURTIS 15-25
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is 105° 30' 0.000 W ° Grid Convergence at Surface is: 0.50°





Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_CURTIS 15-25
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4680.00ft (Original Well Elev)
Reference Site:	WELD_CURTIS 4 PAD	MD Reference:	WELL @ 4680.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_CURTIS 15-25	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_CURTIS 15-25	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 12-29-09 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4680.00ft (Original Well Elev) Coordinates are relative to: P_CURTIS 15-25
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: 0.50°

Separation Factor Plot



LEGEND

TIS 23-25, P_CURTIS 23-25, PLAN#1 12-29-09 RHS \0  P_CURTIS 36-25, P_CURTIS 36-25, PLAN#1 12-29-09 RHS \0  P_CURTIS 37-25, P_CURTIS 37-25, PLAN#1 12-