



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Riverbend 25-12 PAD

P_Riverbend 10-12

P_Riverbend 10-12

Plan: PLAN #1 6-22-10 RHS

Standard Planning Report

22 June, 2010





Project: COLORADO NORTHERN ZONE - 83
 Site: WELD_Riverbend 25-12 PAD
 Well: P_Riverbend 10-12
 Wellbore: P_Riverbend 10-12
 Section: PLAN #1 6-22-10 RHS
 SHL: 2419 FSL 2091 FEL
 Design: PLAN #1 6-22-10 RHS
 Latitude: 40° 3' 53.881 N
 Longitude: 104° 50' 14.215 W
 GL: 4913.00
 KB: WELL @ 4928.00ft (Original Well Elev)



Weatherford®



Azimuths to True North
 Magnetic North: 9.00°
 Magnetic Field
 Strength: 53049.6snT
 Dip Angle: 66.80°
 Date: 6/22/2010
 Model: IGRF2010

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3279.00	3299.02	PARKMAN
4609.00	4639.59	SUSSEX
7141.00	7171.59	NIO
7488.00	7518.59	CODELL
7573.00	7603.59	GREENHORN
7923.00	7953.59	JSAND

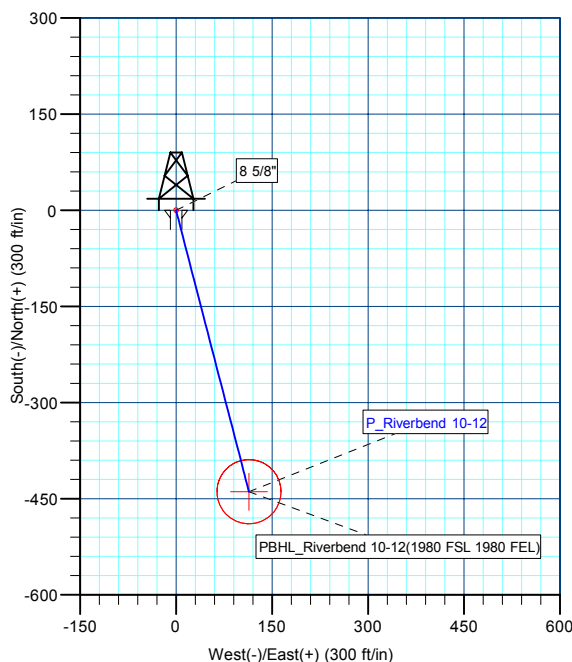
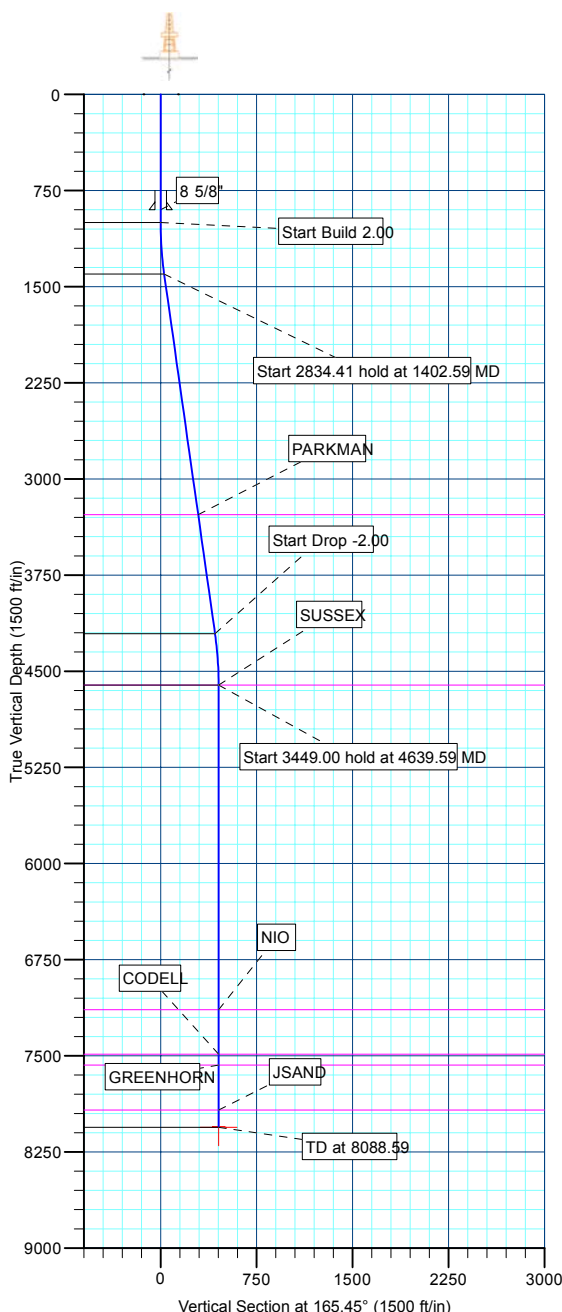
CASING DETAILS			
TVD	MD	Name	Size
900.00	900.00	8 5/8"	8.62

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1402.59	8.05	165.45	1401.27	-27.34	7.09	2.00	165.45	28.24	Start 2834.41 hold at 1402.59 MD
4237.00	8.05	165.45	4207.73	-411.62	106.82	0.00	0.00	425.25	Start Drop -2.00
4639.59	0.00	0.00	4609.00	-438.95	113.92	2.00	180.00	453.49	Start 3449.00 hold at 4639.59 MD
8088.59	0.00	0.00	8058.00	-438.95	113.92	0.00	0.00	453.49	TD at 8088.59

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	8058.00	-438.95	113.92	40° 3' 49.543 N	104° 50' 12.750 W	Circle (Radius: 50.00)

WELL DETAILS: P_Riverbend 10-12					
+N/-S	+E/-W	Northing	Ground Level: Easting	Latitude	Longitude
0.00	0.00	1267205.81	3185484.23	40° 3' 53.881 N	104° 50' 14.215 W

LEGEND	
—	JAMES N. MATHISEN UNIT B #2 EXISTING, JAMES N. MATHISEN UNIT B #2 EXISTING, JAMES N. MATHISEN UNIT B #2 EXISTING V0
—	P_Riverbend 22-12, P_Riverbend 22-12, PLAN #1 6-22-10 RHS V0
—	P_Riverbend 23-12, P_Riverbend 23-12, PLAN #1 6-22-10 RHS V0
—	P_Riverbend 25-12, P_Riverbend 25-12, PLAN #1 6-22-10 RHS V0
—	P_Riverbend 39-12, P_Riverbend 39-12, PLAN #1 6-22-10 RHS V0
—	P_Riverbend 9-12, P_Riverbend 9-12, PLAN #1 6-22-10 RHS V0
—	PLAN #1 6-22-10 RHS



Plan: PLAN #1 6-22-10 RHS (P_Riverbend 10-12/P_Riverbend 10-12)	
Created By: Robert H. Scott	Date: 9:37, June 22 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site:	WELD_Riverbend 25-12 PAD	North Reference:	True
Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Riverbend 10-12		
Design:	PLAN #1 6-22-10 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_Riverbend 25-12 PAD, PLAN #1 6-22-10 RHS			
Site Position:		Northing:	1,267,205.81 ft	Latitude: 40° 3' 53.881 N
From:	Lat/Long	Easting:	3,185,484.23 ft	Longitude: 104° 50' 14.215 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence: 0.43 °

Well	P_Riverbend 10-12			
Well Position	+N/-S	0.00 ft	Northing:	1,267,205.81 ft
	+E/-W	0.00 ft	Easting:	3,185,484.23 ft
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft
			Ground Level:	4,913.00 ft

Wellbore	P_Riverbend 10-12				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/22/2010	9.00	66.80	53,050

Design	PLAN #1 6-22-10 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	165.45

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	
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,402.59	8.05	165.45	1,401.27	-27.34	7.09	2.00	2.00	0.00	165.45	
4,237.00	8.05	165.45	4,207.73	-411.62	106.82	0.00	0.00	0.00	0.00	
4,639.59	0.00	0.00	4,609.00	-438.95	113.92	2.00	-2.00	0.00	180.00	
8,088.59	0.00	0.00	8,058.00	-438.95	113.92	0.00	0.00	0.00	0.00	PBHL_Riverbend 1

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site:	WELD_Riverbend 25-12 PAD	North Reference:	True
Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Riverbend 10-12		
Design:	PLAN #1 6-22-10 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									
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	2.00	165.45	1,099.98	-1.69	0.44	1.75	2.00	2.00	0.00
1,200.00	4.00	165.45	1,199.84	-6.75	1.75	6.98	2.00	2.00	0.00
1,300.00	6.00	165.45	1,299.45	-15.19	3.94	15.69	2.00	2.00	0.00
1,400.00	8.00	165.45	1,398.70	-26.99	7.00	27.88	2.00	2.00	0.00
Start 2834.41 hold at 1402.59 MD									
1,402.59	8.05	165.45	1,401.27	-27.34	7.09	28.24	2.00	2.00	0.00
1,500.00	8.05	165.45	1,497.72	-40.54	10.52	41.89	0.00	0.00	0.00
1,600.00	8.05	165.45	1,596.73	-54.10	14.04	55.89	0.00	0.00	0.00
1,700.00	8.05	165.45	1,695.74	-67.66	17.56	69.90	0.00	0.00	0.00
1,800.00	8.05	165.45	1,794.76	-81.22	21.08	83.91	0.00	0.00	0.00
1,900.00	8.05	165.45	1,893.77	-94.77	24.60	97.91	0.00	0.00	0.00
2,000.00	8.05	165.45	1,992.79	-108.33	28.11	111.92	0.00	0.00	0.00
2,100.00	8.05	165.45	2,091.80	-121.89	31.63	125.93	0.00	0.00	0.00
2,200.00	8.05	165.45	2,190.82	-135.45	35.15	139.93	0.00	0.00	0.00
2,300.00	8.05	165.45	2,289.83	-149.00	38.67	153.94	0.00	0.00	0.00
2,400.00	8.05	165.45	2,388.84	-162.56	42.19	167.95	0.00	0.00	0.00
2,500.00	8.05	165.45	2,487.86	-176.12	45.71	181.95	0.00	0.00	0.00
2,600.00	8.05	165.45	2,586.87	-189.68	49.22	195.96	0.00	0.00	0.00
2,700.00	8.05	165.45	2,685.89	-203.24	52.74	209.97	0.00	0.00	0.00
2,800.00	8.05	165.45	2,784.90	-216.79	56.26	223.97	0.00	0.00	0.00
2,900.00	8.05	165.45	2,883.91	-230.35	59.78	237.98	0.00	0.00	0.00
3,000.00	8.05	165.45	2,982.93	-243.91	63.30	251.99	0.00	0.00	0.00
3,100.00	8.05	165.45	3,081.94	-257.47	66.82	266.00	0.00	0.00	0.00
3,200.00	8.05	165.45	3,180.96	-271.02	70.34	280.00	0.00	0.00	0.00
PARKMAN									
3,299.02	8.05	165.45	3,279.00	-284.45	73.82	293.87	0.00	0.00	0.00
3,300.00	8.05	165.45	3,279.97	-284.58	73.85	294.01	0.00	0.00	0.00
3,400.00	8.05	165.45	3,378.99	-298.14	77.37	308.02	0.00	0.00	0.00
3,500.00	8.05	165.45	3,478.00	-311.70	80.89	322.02	0.00	0.00	0.00
3,600.00	8.05	165.45	3,577.01	-325.25	84.41	336.03	0.00	0.00	0.00
3,700.00	8.05	165.45	3,676.03	-338.81	87.93	350.04	0.00	0.00	0.00
3,800.00	8.05	165.45	3,775.04	-352.37	91.45	364.04	0.00	0.00	0.00
3,900.00	8.05	165.45	3,874.06	-365.93	94.96	378.05	0.00	0.00	0.00
4,000.00	8.05	165.45	3,973.07	-379.49	98.48	392.06	0.00	0.00	0.00
4,100.00	8.05	165.45	4,072.08	-393.04	102.00	406.06	0.00	0.00	0.00
4,200.00	8.05	165.45	4,171.10	-406.60	105.52	420.07	0.00	0.00	0.00
Start Drop -2.00									
4,237.00	8.05	165.45	4,207.73	-411.62	106.82	425.25	0.00	0.00	0.00
4,300.00	6.79	165.45	4,270.21	-419.49	108.87	433.39	2.00	-2.00	0.00
4,400.00	4.79	165.45	4,369.69	-429.26	111.40	443.48	2.00	-2.00	0.00
4,500.00	2.79	165.45	4,469.47	-435.66	113.06	450.09	2.00	-2.00	0.00
4,600.00	0.79	165.45	4,569.41	-438.69	113.85	453.22	2.00	-2.00	0.00
Start 3449.00 hold at 4639.59 MD - SUSSEX									
4,639.59	0.00	0.00	4,609.00	-438.95	113.92	453.49	2.00	-2.00	-417.92
4,700.00	0.00	0.00	4,669.41	-438.95	113.92	453.49	0.00	0.00	0.00
4,800.00	0.00	0.00	4,769.41	-438.95	113.92	453.49	0.00	0.00	0.00
4,900.00	0.00	0.00	4,869.41	-438.95	113.92	453.49	0.00	0.00	0.00
5,000.00	0.00	0.00	4,969.41	-438.95	113.92	453.49	0.00	0.00	0.00
5,100.00	0.00	0.00	5,069.41	-438.95	113.92	453.49	0.00	0.00	0.00
5,200.00	0.00	0.00	5,169.41	-438.95	113.92	453.49	0.00	0.00	0.00
5,300.00	0.00	0.00	5,269.41	-438.95	113.92	453.49	0.00	0.00	0.00
5,400.00	0.00	0.00	5,369.41	-438.95	113.92	453.49	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site:	WELD_Riverbend 25-12 PAD	North Reference:	True
Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Riverbend 10-12		
Design:	PLAN #1 6-22-10 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)
5,500.00	0.00	0.00	5,469.41	-438.95	113.92	453.49	0.00	0.00	0.00
5,600.00	0.00	0.00	5,569.41	-438.95	113.92	453.49	0.00	0.00	0.00
5,700.00	0.00	0.00	5,669.41	-438.95	113.92	453.49	0.00	0.00	0.00
5,800.00	0.00	0.00	5,769.41	-438.95	113.92	453.49	0.00	0.00	0.00
5,900.00	0.00	0.00	5,869.41	-438.95	113.92	453.49	0.00	0.00	0.00
6,000.00	0.00	0.00	5,969.41	-438.95	113.92	453.49	0.00	0.00	0.00
6,100.00	0.00	0.00	6,069.41	-438.95	113.92	453.49	0.00	0.00	0.00
6,200.00	0.00	0.00	6,169.41	-438.95	113.92	453.49	0.00	0.00	0.00
6,300.00	0.00	0.00	6,269.41	-438.95	113.92	453.49	0.00	0.00	0.00
6,400.00	0.00	0.00	6,369.41	-438.95	113.92	453.49	0.00	0.00	0.00
6,500.00	0.00	0.00	6,469.41	-438.95	113.92	453.49	0.00	0.00	0.00
6,600.00	0.00	0.00	6,569.41	-438.95	113.92	453.49	0.00	0.00	0.00
6,700.00	0.00	0.00	6,669.41	-438.95	113.92	453.49	0.00	0.00	0.00
6,800.00	0.00	0.00	6,769.41	-438.95	113.92	453.49	0.00	0.00	0.00
6,900.00	0.00	0.00	6,869.41	-438.95	113.92	453.49	0.00	0.00	0.00
7,000.00	0.00	0.00	6,969.41	-438.95	113.92	453.49	0.00	0.00	0.00
7,100.00	0.00	0.00	7,069.41	-438.95	113.92	453.49	0.00	0.00	0.00
NIO									
7,171.59	0.00	0.00	7,141.00	-438.95	113.92	453.49	0.00	0.00	0.00
7,200.00	0.00	0.00	7,169.41	-438.95	113.92	453.49	0.00	0.00	0.00
7,300.00	0.00	0.00	7,269.41	-438.95	113.92	453.49	0.00	0.00	0.00
7,400.00	0.00	0.00	7,369.41	-438.95	113.92	453.49	0.00	0.00	0.00
7,500.00	0.00	0.00	7,469.41	-438.95	113.92	453.49	0.00	0.00	0.00
CODELL									
7,518.59	0.00	0.00	7,488.00	-438.95	113.92	453.49	0.00	0.00	0.00
7,600.00	0.00	0.00	7,569.41	-438.95	113.92	453.49	0.00	0.00	0.00
GREENHORN									
7,603.59	0.00	0.00	7,573.00	-438.95	113.92	453.49	0.00	0.00	0.00
7,700.00	0.00	0.00	7,669.41	-438.95	113.92	453.49	0.00	0.00	0.00
7,800.00	0.00	0.00	7,769.41	-438.95	113.92	453.49	0.00	0.00	0.00
7,900.00	0.00	0.00	7,869.41	-438.95	113.92	453.49	0.00	0.00	0.00
JSAND									
7,953.59	0.00	0.00	7,923.00	-438.95	113.92	453.49	0.00	0.00	0.00
8,000.00	0.00	0.00	7,969.41	-438.95	113.92	453.49	0.00	0.00	0.00
PBHL_Riverbend 10-12(1980 FSL 1980 FEL)									
8,088.59	0.00	0.00	8,058.00	-438.95	113.92	453.49	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_Riverbend 10-12	0.00	0.00	8,058.00	-438.95	113.92	1,266,767.72	3,185,601.43	40° 3' 49.543 N	104° 50' 12.750 W
- plan hits target center									
- Circle (radius 50.00)									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Company:	US ROCKIES REGION PLANNING	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Project:	COLORADO NORTHERN ZONE - 83	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site:	WELD_Riverbend 25-12 PAD	North Reference:	True
Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Riverbend 10-12		
Design:	PLAN #1 6-22-10 RHS		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
900.00	900.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,299.02	3,279.00	PARKMAN				
4,639.59	4,609.00	SUSSEX				
7,171.59	7,141.00	NIO				
7,518.59	7,488.00	CODELL				
7,603.59	7,573.00	GREENHORN				
7,953.59	7,923.00	JSAND				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,000.00	1,000.00	0.00	0.00	Start Build 2.00	
1,402.59	1,401.27	-27.34	7.09	Start 2834.41 hold at 1402.59 MD	
4,237.00	4,207.73	-411.62	106.82	Start Drop -2.00	
4,639.59	4,609.00	-438.95	113.92	Start 3449.00 hold at 4639.59 MD	
8,088.59	8,058.00	-438.95	113.92	TD at 8088.59	



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_Riverbend 25-12 PAD
P_Riverbend 10-12**

**P_Riverbend 10-12
PLAN #1 6-22-10 RHS**

Anticollision Report

22 June, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Reference	PLAN #1 6-22-10 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 6/22/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.00	8,088.59	PLAN #1 6-22-10 RHS (P_Riverbend 10-1	UNKNOWN	Unknown survey

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_Riverbend 25-12 PAD						
JAMES N. MATHISEN UNIT B #2 EXISTING - JAMES N	8,088.59	8,048.32	960.06	570.26	2.463	CC, ES, SF
P_Riverbend 22-12 - P_Riverbend 22-12 - PLAN #1 6-22	1,000.00	1,000.00	47.86	8.04	1.202	Level 2, CC, ES, SF
P_Riverbend 23-12 - P_Riverbend 23-12 - PLAN #1 6-22	1,000.00	1,000.00	31.91	-7.91	0.801	Level 1, CC, ES, SF
P_Riverbend 25-12 - P_Riverbend 25-12 - PLAN #1 6-22	1,000.00	1,000.00	15.95	-23.86	0.401	Level 1, CC, ES, SF
P_Riverbend 39-12 - P_Riverbend 39-12 - PLAN #1 6-22	300.00	300.00	15.95	5.71	1.557	CC
P_Riverbend 39-12 - P_Riverbend 39-12 - PLAN #1 6-22	400.00	399.47	17.50	3.05	1.211	Level 2, ES
P_Riverbend 39-12 - P_Riverbend 39-12 - PLAN #1 6-22	500.00	498.70	22.31	3.66	1.196	Level 2, SF
P_Riverbend 9-12 - P_Riverbend 9-12 - PLAN #1 6-22-1	300.00	300.00	32.19	21.94	3.142	CC
P_Riverbend 9-12 - P_Riverbend 9-12 - PLAN #1 6-22-1	400.00	398.87	33.89	19.43	2.345	ES
P_Riverbend 9-12 - P_Riverbend 9-12 - PLAN #1 6-22-1	600.00	595.67	47.51	24.65	2.078	SF

WELD_Riverbend 25-12 PAD - JAMES N. MATHISEN UNIT B #2 EXISTING - JAMES N. MATHISEN U										Offset Site Error:		0.00 ft	
Survey Program: 0-UNKNOWN										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	130.52	-902.30	1,055.77	1,388.97				
100.00	100.00	93.76	93.75	1.70	1.88	130.49	-901.54	1,055.77	1,388.40	1,384.82	3.58	388.294	
200.00	200.00	210.42	210.37	5.70	6.43	130.40	-898.45	1,055.77	1,386.67	1,374.55	12.12	114.415	
300.00	300.00	310.36	310.25	9.70	10.44	130.29	-894.96	1,055.77	1,384.41	1,364.29	20.12	68.805	
400.00	400.00	410.30	410.13	13.70	14.46	130.18	-891.47	1,055.77	1,382.16	1,354.03	28.12	49.148	
500.00	500.00	510.24	510.01	17.70	18.47	130.07	-887.99	1,055.77	1,379.91	1,343.78	36.12	38.199	
600.00	600.00	610.18	609.89	21.70	22.48	129.96	-884.50	1,055.77	1,377.66	1,333.54	44.13	31.221	
700.00	700.00	710.12	709.77	25.70	26.50	129.84	-881.01	1,055.77	1,375.42	1,323.29	52.13	26.386	
800.00	800.00	810.06	809.64	29.70	30.51	129.73	-877.52	1,055.77	1,373.19	1,313.06	60.13	22.837	
900.00	900.00	910.00	909.52	33.70	34.53	129.62	-874.04	1,055.77	1,370.96	1,302.83	68.13	20.122	
1,000.00	1,000.00	1,009.93	1,009.40	37.70	38.54	129.51	-870.55	1,055.77	1,368.73	1,292.60	76.13	17.978	
1,100.00	1,099.98	1,109.79	1,109.20	37.77	42.55	-36.14	-867.06	1,055.77	1,365.11	1,284.92	80.19	17.024	
1,200.00	1,199.84	1,209.41	1,208.76	33.93	46.55	-36.46	-863.59	1,055.77	1,358.68	1,278.47	80.22	16.938	
1,300.00	1,299.45	1,308.67	1,307.96	30.17	50.54	-36.91	-860.12	1,055.77	1,349.49	1,269.28	80.21	16.825	
1,402.59	1,401.27	1,410.00	1,409.22	26.46	54.61	-37.50	-856.59	1,055.77	1,337.24	1,257.04	80.21	16.673	
1,500.00	1,497.72	1,505.93	1,505.10	23.15	58.46	-37.97	-853.24	1,055.77	1,324.32	1,243.74	80.59	16.434	
1,600.00	1,596.73	1,604.41	1,603.52	20.09	62.42	-38.46	-849.80	1,055.77	1,311.15	1,229.95	81.20	16.146	

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_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_Riverbend 25-12 PAD - JAMES N. MATHISEN UNIT B #2 EXISTING - JAMES N. MATHISEN U													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		
1,700.00	1,695.74	1,702.89	1,701.94	17.54	66.37	-38.96	-846.36	1,055.77	1,298.08	1,215.89	82.19	15.793		
1,800.00	1,794.76	1,801.37	1,800.36	15.74	70.33	-39.48	-842.93	1,055.77	1,285.11	1,201.32	83.79	15.337		
1,900.00	1,893.77	1,899.85	1,898.78	14.97	74.29	-40.00	-839.49	1,055.77	1,272.24	1,185.90	86.34	14.735		
2,000.00	1,992.79	1,998.34	1,997.20	15.40	78.24	-40.53	-836.05	1,055.77	1,259.49	1,169.32	90.16	13.969		
2,100.00	2,091.80	2,096.82	2,095.62	16.92	82.20	-41.08	-832.62	1,055.77	1,246.84	1,151.55	95.29	13.084		
2,200.00	2,190.82	2,195.30	2,194.04	19.28	86.15	-41.63	-829.18	1,055.77	1,234.31	1,132.87	101.44	12.168		
2,300.00	2,289.83	2,293.78	2,292.46	22.21	90.11	-42.20	-825.74	1,055.77	1,221.90	1,113.63	108.26	11.286		
2,400.00	2,388.84	2,392.26	2,390.88	25.52	94.06	-42.78	-822.31	1,055.77	1,209.61	1,094.10	115.50	10.473		
2,500.00	2,487.86	2,490.74	2,489.30	29.08	98.02	-43.37	-818.87	1,055.77	1,197.44	1,074.44	123.00	9.735		
2,600.00	2,586.87	2,589.22	2,587.72	32.81	101.98	-43.97	-815.43	1,055.77	1,185.41	1,054.74	130.67	9.072		
2,700.00	2,685.89	2,687.70	2,686.14	36.65	105.93	-44.58	-811.99	1,055.77	1,173.50	1,035.05	138.45	8.476		
2,800.00	2,784.90	2,786.18	2,784.57	40.58	109.89	-45.21	-808.56	1,055.77	1,161.74	1,015.42	146.32	7.940		
2,900.00	2,883.91	2,884.66	2,882.99	44.56	113.84	-45.85	-805.12	1,055.77	1,150.12	995.86	154.25	7.456		
3,000.00	2,982.93	2,983.14	2,981.41	48.60	117.80	-46.50	-801.68	1,055.77	1,138.64	976.41	162.23	7.019		
3,100.00	3,081.94	3,081.62	3,079.83	52.67	121.75	-47.16	-798.25	1,055.77	1,127.31	957.07	170.25	6.622		
3,200.00	3,180.96	3,180.10	3,178.25	56.77	125.71	-47.84	-794.81	1,055.77	1,116.14	937.84	178.30	6.260		
3,300.00	3,279.97	3,278.58	3,276.67	60.89	129.66	-48.53	-791.37	1,055.77	1,105.13	918.76	186.38	5.930		
3,400.00	3,378.99	3,377.07	3,375.09	65.02	133.62	-49.24	-787.94	1,055.77	1,094.29	899.81	194.48	5.627		
3,500.00	3,478.00	3,475.55	3,473.51	69.18	137.58	-49.95	-784.50	1,055.77	1,083.61	881.01	202.60	5.348		
3,600.00	3,577.01	3,574.03	3,571.93	73.34	141.53	-50.68	-781.06	1,055.77	1,073.11	862.36	210.74	5.092		
3,700.00	3,676.03	3,672.51	3,670.35	77.52	145.49	-51.43	-777.63	1,055.77	1,062.79	843.88	218.91	4.855		
3,800.00	3,775.04	3,770.99	3,768.77	81.70	149.44	-52.19	-774.19	1,055.77	1,052.65	825.57	227.08	4.636		
3,900.00	3,874.06	3,869.47	3,867.19	85.90	153.40	-52.96	-770.75	1,055.77	1,042.71	807.43	235.28	4.432		
4,000.00	3,973.07	3,967.95	3,965.61	90.09	157.35	-53.75	-767.31	1,055.77	1,032.96	789.47	243.48	4.242		
4,100.00	4,072.08	4,066.43	4,064.03	94.30	161.31	-54.56	-763.88	1,055.77	1,023.41	771.70	251.71	4.066		
4,200.00	4,171.10	4,164.91	4,162.46	98.51	165.27	-55.38	-760.44	1,055.77	1,014.07	754.13	259.94	3.901		
4,237.00	4,207.73	4,201.35	4,198.87	100.07	166.73	-55.68	-759.17	1,055.77	1,010.67	747.67	262.99	3.843		
4,300.00	4,270.21	4,263.51	4,260.99	102.69	169.23	-56.09	-757.00	1,055.77	1,005.33	737.06	268.27	3.747		
4,400.00	4,369.69	4,362.59	4,360.01	106.73	173.21	-56.64	-753.54	1,055.77	998.56	722.09	276.47	3.612		
4,500.00	4,469.47	4,462.08	4,459.44	110.62	177.20	-57.06	-750.07	1,055.77	993.82	709.35	284.47	3.494		
4,600.00	4,569.41	4,561.86	4,559.16	114.37	181.21	-57.36	-746.59	1,055.77	991.03	698.76	292.27	3.391		
4,639.59	4,609.00	4,601.42	4,598.69	114.42	182.80	108.01	-745.21	1,055.77	990.45	696.59	293.86	3.370		
4,700.00	4,669.41	4,661.79	4,659.03	112.36	185.22	107.90	-743.10	1,055.77	989.80	695.61	294.20	3.364		
4,800.00	4,769.41	4,761.73	4,758.91	108.99	189.24	107.70	-739.61	1,055.77	988.74	693.96	294.78	3.354		
4,900.00	4,869.41	4,861.67	4,858.79	105.66	193.25	107.51	-736.12	1,055.77	987.68	692.28	295.40	3.344		
5,000.00	4,969.41	4,961.61	4,958.67	102.38	197.27	107.32	-732.64	1,055.77	986.64	690.57	296.06	3.333		
5,100.00	5,069.41	5,061.55	5,058.54	99.15	201.28	107.12	-729.15	1,055.77	985.60	688.82	296.78	3.321		
5,200.00	5,169.41	5,161.49	5,158.42	95.98	205.29	106.93	-725.66	1,055.77	984.58	687.03	297.55	3.309		
5,300.00	5,269.41	5,261.42	5,258.30	92.88	209.31	106.74	-722.17	1,055.77	983.57	685.19	298.38	3.296		
5,400.00	5,369.41	5,361.36	5,358.18	89.84	213.32	106.54	-718.69	1,055.77	982.57	683.28	299.28	3.283		
5,500.00	5,469.41	5,461.30	5,458.06	86.89	217.34	106.35	-715.20	1,055.77	981.58	681.32	300.26	3.269		
5,600.00	5,569.41	5,561.24	5,557.94	84.02	221.35	106.15	-711.71	1,055.77	980.60	679.28	301.32	3.254		
5,700.00	5,669.41	5,661.18	5,657.81	81.24	225.37	105.95	-708.22	1,055.77	979.64	677.16	302.47	3.239		
5,800.00	5,769.41	5,761.12	5,757.69	78.58	229.38	105.76	-704.73	1,055.77	978.68	674.95	303.73	3.222		
5,900.00	5,869.41	5,861.06	5,857.57	76.03	233.39	105.56	-701.25	1,055.77	977.74	672.63	305.11	3.205		
6,000.00	5,969.41	5,961.00	5,957.45	73.60	237.41	105.36	-697.76	1,055.77	976.81	670.19	306.61	3.186		
6,100.00	6,069.41	6,060.94	6,057.33	71.32	241.42	105.17	-694.27	1,055.77	975.89	667.62	308.27	3.166		
6,200.00	6,169.41	6,160.88	6,157.20	69.20	245.44	104.97	-690.78	1,055.77	974.98	664.90	310.08	3.144		
6,300.00	6,269.41	6,260.82	6,257.08	67.25	249.45	104.77	-687.29	1,055.77	974.09	662.02	312.07	3.121		
6,400.00	6,369.41	6,360.75	6,356.96	65.48	253.47	104.57	-683.81	1,055.77	973.20	658.95	314.25	3.097		
6,500.00	6,469.41	6,460.69	6,456.84	63.92	257.48	104.37	-680.32	1,055.77	972.33	655.68	316.65	3.071		
6,600.00	6,569.41	6,560.63	6,556.72	62.57	261.49	104.17	-676.83	1,055.77	971.47	652.19	319.28	3.043		

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_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_Riverbend 25-12 PAD - JAMES N. MATHISEN UNIT B #2 EXISTING - JAMES N. MATHISEN U													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	
6,700.00	6,669.41	6,660.57	6,656.60	61.45	265.51	103.97	-673.34	1,055.77	970.62	648.46	322.15	3.013	
6,800.00	6,769.41	6,760.51	6,756.47	60.58	269.52	103.77	-669.86	1,055.77	969.78	644.49	325.30	2.981	
6,900.00	6,869.41	6,860.45	6,856.35	59.97	273.54	103.57	-666.37	1,055.77	968.96	640.24	328.71	2.948	
7,000.00	6,969.41	6,960.39	6,956.23	59.61	277.55	103.37	-662.88	1,055.77	968.14	635.73	332.41	2.912	
7,100.00	7,069.41	7,060.33	7,056.11	59.52	281.56	103.17	-659.39	1,055.77	967.34	630.94	336.40	2.876	
7,200.00	7,169.41	7,160.27	7,155.99	59.71	285.58	102.97	-655.90	1,055.77	966.55	625.86	340.69	2.837	
7,300.00	7,269.41	7,260.21	7,255.86	60.15	289.59	102.77	-652.42	1,055.77	965.77	620.52	345.25	2.797	
7,400.00	7,369.41	7,360.15	7,355.74	60.86	293.61	102.57	-648.93	1,055.77	965.01	614.91	350.10	2.756	
7,500.00	7,469.41	7,460.08	7,455.62	61.82	297.62	102.37	-645.44	1,055.77	964.25	609.04	355.21	2.715	
7,600.00	7,569.41	7,560.02	7,555.50	63.02	301.64	102.16	-641.95	1,055.77	963.51	602.94	360.57	2.672	
7,700.00	7,669.41	7,659.96	7,655.38	64.44	305.65	101.96	-638.47	1,055.77	962.78	596.61	366.17	2.629	
7,800.00	7,769.41	7,759.90	7,755.26	66.08	309.66	101.76	-634.98	1,055.77	962.06	590.08	371.98	2.586	
7,900.00	7,869.41	7,859.84	7,855.13	67.91	313.68	101.55	-631.49	1,055.77	961.36	583.37	377.99	2.543	
8,000.00	7,969.41	7,959.78	7,955.01	69.93	317.69	101.35	-628.00	1,055.77	960.67	576.48	384.18	2.501	
8,088.59	8,058.00	8,048.32	8,043.49	71.85	321.25	101.17	-624.91	1,055.77	960.06	570.26	389.80	2.463 CC, ES, SF	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_Riverbend 25-12 PAD - P_Riverbend 22-12 - P_Riverbend 22-12 - PLAN #1 6-22-10 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	-90.45	-0.38	-47.86	47.86				
100.00	100.00	100.00	100.00	1.70	0.10	-90.45	-0.38	-47.86	47.86	46.07	1.80	26.656	
200.00	200.00	200.00	200.00	5.70	0.32	-90.45	-0.38	-47.86	47.86	41.84	6.02	7.950	
300.00	300.00	300.00	300.00	9.70	0.55	-90.45	-0.38	-47.86	47.86	37.62	10.25	4.672	
400.00	400.00	400.00	400.00	13.70	0.77	-90.45	-0.38	-47.86	47.86	33.39	14.47	3.308	
500.00	500.00	500.00	500.00	17.70	0.99	-90.45	-0.38	-47.86	47.86	29.17	18.69	2.560	
600.00	600.00	600.00	600.00	21.70	1.22	-90.45	-0.38	-47.86	47.86	24.94	22.92	2.088	
700.00	700.00	700.00	700.00	25.70	1.44	-90.45	-0.38	-47.86	47.86	20.72	27.14	1.763	
800.00	800.00	800.00	800.00	29.70	1.67	-90.45	-0.38	-47.86	47.86	16.49	31.37	1.526	
900.00	900.00	900.00	900.00	33.70	1.89	-90.45	-0.38	-47.86	47.86	12.27	35.59	1.345 Level 3	
1,000.00	1,000.00	1,000.00	1,000.00	37.70	2.12	-90.45	-0.38	-47.86	47.86	8.04	39.82	1.202 Level 2, CC, ES, SF	
1,100.00	1,099.98	1,098.29	1,098.27	37.77	2.33	106.16	-0.22	-49.54	50.03	9.94	40.09	1.248 Level 2	
1,200.00	1,199.84	1,196.10	1,195.95	33.93	2.53	111.33	0.24	-54.54	56.86	20.42	36.44	1.560	
1,300.00	1,299.45	1,292.99	1,292.48	30.17	2.75	117.52	1.00	-62.77	69.00	36.16	32.84	2.101	
1,402.59	1,401.27	1,390.97	1,389.75	26.46	2.98	123.24	2.08	-74.38	87.39	58.15	29.24	2.989	
1,500.00	1,497.72	1,482.58	1,480.30	23.15	3.23	127.21	3.36	-88.24	109.47	83.45	26.02	4.207	
1,600.00	1,596.73	1,575.31	1,571.45	20.09	3.52	129.43	4.93	-105.19	135.42	112.44	22.98	5.892	
1,700.00	1,695.74	1,666.54	1,660.55	17.54	3.84	130.53	6.74	-124.72	164.37	144.01	20.36	8.072	
1,800.00	1,794.76	1,756.13	1,747.38	15.74	4.20	130.96	8.77	-146.65	196.15	177.75	18.40	10.661	
1,900.00	1,893.77	1,843.95	1,831.79	14.97	4.60	131.00	11.00	-170.75	230.63	213.21	17.42	13.241	
2,000.00	1,992.79	1,929.89	1,913.64	15.40	5.03	130.80	13.42	-196.82	267.73	250.04	17.69	15.133	
2,100.00	2,091.80	2,013.86	1,992.82	16.92	5.51	130.46	15.99	-224.64	307.38	288.17	19.21	15.998	
2,200.00	2,190.82	2,100.00	2,073.17	19.28	6.05	130.02	18.86	-255.57	349.53	327.81	21.72	16.091	
2,300.00	2,289.83	2,175.62	2,142.90	22.21	6.59	129.58	21.56	-284.70	394.01	369.16	24.85	15.856	
2,400.00	2,388.84	2,255.08	2,215.33	25.52	7.18	129.09	24.57	-317.24	440.81	412.41	28.40	15.521	
2,500.00	2,487.86	2,342.95	2,295.08	29.08	7.88	128.61	27.97	-353.97	488.42	456.18	32.24	15.148	
2,600.00	2,586.87	2,430.82	2,374.83	32.81	8.59	128.22	31.37	-390.70	536.06	499.81	36.25	14.788	
2,700.00	2,685.89	2,518.69	2,454.59	36.65	9.31	127.89	34.77	-427.43	583.71	543.34	40.37	14.460	
2,800.00	2,784.90	2,606.56	2,534.34	40.58	10.04	127.61	38.17	-464.16	631.37	586.80	44.57	14.167	
2,900.00	2,883.91	2,694.43	2,614.09	44.56	10.78	127.37	41.58	-500.89	679.04	630.22	48.82	13.909	
3,000.00	2,982.93	2,782.31	2,693.85	48.60	11.53	127.16	44.98	-537.62	726.73	673.60	53.12	13.680	
3,100.00	3,081.94	2,870.18	2,773.60	52.67	12.28	126.98	48.38	-574.35	774.41	716.96	57.46	13.479	
3,200.00	3,180.96	2,958.05	2,853.35	56.77	13.03	126.81	51.78	-611.09	822.11	760.29	61.81	13.300	
3,300.00	3,279.97	3,045.92	2,933.11	60.89	13.79	126.67	55.18	-647.82	869.81	803.61	66.20	13.140	
3,400.00	3,378.99	3,133.79	3,012.86	65.02	14.55	126.54	58.58	-684.55	917.51	846.91	70.59	12.997	
3,500.00	3,478.00	3,221.66	3,092.61	69.18	15.32	126.42	61.98	-721.28	965.21	890.21	75.01	12.868	
3,600.00	3,577.01	3,309.53	3,172.37	73.34	16.08	126.32	65.39	-758.01	1,012.92	933.49	79.43	12.752	
3,700.00	3,676.03	3,397.40	3,252.12	77.52	16.85	126.22	68.79	-794.74	1,060.63	976.77	83.86	12.647	
3,800.00	3,775.04	3,485.28	3,331.87	81.70	17.62	126.13	72.19	-831.47	1,108.35	1,020.04	88.31	12.551	
3,900.00	3,874.06	3,573.15	3,411.63	85.90	18.39	126.05	75.59	-868.20	1,156.06	1,063.30	92.76	12.463	
4,000.00	3,973.07	3,661.02	3,491.38	90.09	19.16	125.98	78.99	-904.94	1,203.78	1,106.56	97.21	12.383	
4,100.00	4,072.08	3,748.89	3,571.13	94.30	19.93	125.91	82.39	-941.67	1,251.49	1,149.82	101.68	12.309	
4,200.00	4,171.10	3,836.76	3,650.89	98.51	20.70	125.85	85.79	-978.40	1,299.21	1,193.07	106.14	12.240	
4,237.00	4,207.73	3,869.27	3,680.40	100.07	20.99	125.82	87.05	-991.99	1,316.87	1,209.07	107.80	12.216	
4,300.00	4,270.21	3,924.81	3,730.81	102.69	21.48	126.31	89.20	-1,015.21	1,346.57	1,235.99	110.58	12.177	
4,400.00	4,369.69	4,013.67	3,811.45	106.73	22.26	126.93	92.64	-1,052.35	1,392.24	1,277.33	114.90	12.117	
4,500.00	4,469.47	4,103.29	3,892.79	110.62	23.06	127.39	96.11	-1,089.81	1,436.05	1,316.96	119.09	12.058	
4,600.00	4,569.41	4,193.55	3,974.72	114.37	23.85	127.71	99.61	-1,127.54	1,478.00	1,354.84	123.16	12.001	
4,639.59	4,609.00	4,229.44	4,007.29	114.42	24.17	-66.74	101.00	-1,142.55	1,494.09	1,370.80	123.28	12.119	
4,700.00	4,669.41	4,284.27	4,057.06	112.36	24.65	-67.04	103.12	-1,165.47	1,518.43	1,397.05	121.38	12.509	
4,800.00	4,769.41	4,375.04	4,139.43	108.99	25.46	-67.50	106.63	-1,203.40	1,558.80	1,440.54	118.27	13.180	
4,900.00	4,869.41	4,465.80	4,221.81	105.66	26.26	-67.94	110.14	-1,241.34	1,599.26	1,484.07	115.18	13.884	

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_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design		WELD_Riverbend 25-12 PAD - P_Riverbend 22-12 - P_Riverbend 22-12 - PLAN #1 6-22-10 RHS										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	4,969.41	4,556.56	4,304.19	102.38	27.06	-68.36	113.66	-1,279.28	1,639.79	1,527.64	112.15	14.622		
5,100.00	5,069.41	4,647.32	4,386.57	99.15	27.87	-68.76	117.17	-1,317.22	1,680.39	1,571.24	109.15	15.395		
5,200.00	5,169.41	4,738.08	4,468.94	95.98	28.67	-69.15	120.68	-1,355.16	1,721.06	1,614.85	106.21	16.204		
5,300.00	5,269.41	4,828.84	4,551.32	92.88	29.48	-69.51	124.20	-1,393.10	1,761.79	1,658.46	103.33	17.050		
5,400.00	5,369.41	4,919.61	4,633.70	89.84	30.28	-69.86	127.71	-1,431.04	1,802.58	1,702.06	100.51	17.934		
5,500.00	5,469.41	5,010.37	4,716.07	86.89	31.09	-70.19	131.22	-1,468.98	1,843.42	1,745.65	97.77	18.855		
5,600.00	5,569.41	5,101.13	4,798.45	84.02	31.89	-70.51	134.74	-1,506.92	1,884.31	1,789.20	95.11	19.813		
5,700.00	5,669.41	5,191.89	4,880.83	81.24	32.70	-70.81	138.25	-1,544.86	1,925.25	1,832.71	92.53	20.806		
5,800.00	5,769.41	5,282.65	4,963.20	78.58	33.51	-71.11	141.76	-1,582.80	1,966.23	1,876.16	90.07	21.831		
5,900.00	5,869.41	5,369.47	5,045.10	76.03	34.34	-71.41	145.27	-1,620.74	2,007.17	1,917.03	87.61	22.866		
6,000.00	5,969.41	5,456.23	5,126.49	73.60	35.16	-71.71	148.78	-1,658.68	2,048.11	1,957.89	85.15	23.901		
6,100.00	6,069.41	5,543.00	5,207.88	71.27	35.97	-72.01	152.29	-1,696.62	2,088.55	1,998.75	82.69	24.936		
6,200.00	6,169.41	5,629.76	5,289.27	69.04	36.78	-72.31	155.80	-1,734.56	2,129.41	2,039.61	80.23	25.971		
6,300.00	6,269.41	5,716.52	5,370.66	66.81	37.59	-72.61	159.31	-1,772.50	2,170.27	2,080.47	77.77	27.006		
6,400.00	6,369.41	5,803.28	5,452.05	64.58	38.40	-72.91	162.82	-1,810.44	2,211.13	2,121.33	75.31	28.041		
6,500.00	6,469.41	5,890.04	5,533.44	62.35	39.21	-73.21	166.33	-1,848.38	2,251.99	2,162.19	72.85	29.076		
6,600.00	6,569.41	5,976.80	5,614.83	60.12	40.02	-73.51	169.84	-1,886.32	2,292.85	2,203.05	70.39	30.111		
6,700.00	6,669.41	6,063.56	5,696.22	57.89	40.83	-73.81	173.35	-1,924.26	2,333.71	2,243.91	67.93	31.146		
6,800.00	6,769.41	6,150.32	5,777.61	55.66	41.64	-74.11	176.86	-1,962.20	2,374.57	2,284.77	65.47	32.181		
6,900.00	6,869.41	6,237.08	5,859.00	53.43	42.45	-74.41	180.37	-1,999.94	2,415.43	2,325.63	63.01	33.216		
7,000.00	6,969.41	6,323.84	5,940.39	51.20	43.26	-74.71	183.88	-2,037.88	2,456.29	2,366.49	60.55	34.251		
7,100.00	7,069.41	6,410.60	6,021.78	48.97	44.07	-75.01	187.39	-2,075.82	2,497.15	2,407.35	58.09	35.286		
7,200.00	7,169.41	6,497.36	6,103.17	46.74	44.88	-75.31	190.90	-2,113.76	2,538.01	2,448.21	55.63	36.321		
7,300.00	7,269.41	6,584.12	6,184.56	44.51	45.69	-75.61	194.41	-2,151.70	2,578.87	2,489.07	53.17	37.356		
7,400.00	7,369.41	6,670.88	6,265.95	42.28	46.50	-75.91	197.92	-2,189.64	2,619.73	2,529.93	50.71	38.391		
7,500.00	7,469.41	6,757.64	6,347.34	40.05	47.31	-76.21	201.43	-2,227.58	2,660.59	2,570.79	48.25	39.426		
7,600.00	7,569.41	6,844.40	6,428.73	37.82	48.12	-76.51	204.94	-2,265.52	2,701.45	2,611.65	45.79	40.461		
7,700.00	7,669.41	6,931.16	6,510.12	35.59	48.93	-76.81	208.45	-2,303.46	2,742.31	2,652.51	43.33	41.496		
7,800.00	7,769.41	7,017.92	6,591.51	33.36	49.74	-77.11	211.96	-2,341.40	2,783.17	2,693.37	40.87	42.531		
7,900.00	7,869.41	7,104.68	6,672.90	31.13	50.55	-77.41	215.47	-2,379.34	2,824.03	2,734.23	38.41	43.566		
8,000.00	7,969.41	7,191.44	6,754.29	28.90	51.36	-77.71	218.98	-2,417.28	2,864.89	2,775.09	35.95	44.601		
8,088.59	8,058.00	8,415.93	8,058.00	71.85	39.88	-72.85	166.18	-1,846.40	2,051.59	1,962.62	88.98	23.058		

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 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	-90.02	-0.01	-31.91	31.91				
100.00	100.00	100.00	100.00	1.70	0.10	-90.02	-0.01	-31.91	31.91	30.11	1.80	17.770	
200.00	200.00	200.00	200.00	5.70	0.32	-90.02	-0.01	-31.91	31.91	25.89	6.02	5.300	
300.00	300.00	300.00	300.00	9.70	0.55	-90.02	-0.01	-31.91	31.91	21.66	10.25	3.114	
400.00	400.00	400.00	400.00	13.70	0.77	-90.02	-0.01	-31.91	31.91	17.44	14.47	2.205	
500.00	500.00	500.00	500.00	17.70	0.99	-90.02	-0.01	-31.91	31.91	13.21	18.69	1.707	
600.00	600.00	600.00	600.00	21.70	1.22	-90.02	-0.01	-31.91	31.91	8.99	22.92	1.392 Level 3	
700.00	700.00	700.00	700.00	25.70	1.44	-90.02	-0.01	-31.91	31.91	4.76	27.14	1.175 Level 2	
800.00	800.00	800.00	800.00	29.70	1.67	-90.02	-0.01	-31.91	31.91	0.54	31.37	1.017 Level 2	
900.00	900.00	900.00	900.00	33.70	1.89	-90.02	-0.01	-31.91	31.91	-3.69	35.59	0.896 Level 1	
1,000.00	1,000.00	1,000.00	1,000.00	37.70	2.12	-90.02	-0.01	-31.91	31.91	-7.91	39.82	0.801 Level 1, CC, ES, SF	
1,100.00	1,099.98	1,099.50	1,099.48	37.77	2.32	104.72	-1.57	-32.66	33.11	-6.98	40.08	0.826 Level 1	
1,200.00	1,199.84	1,198.91	1,198.76	33.93	2.49	105.23	-6.22	-34.93	36.70	0.28	36.42	1.008 Level 2	
1,300.00	1,299.45	1,298.16	1,297.62	30.17	2.69	105.88	-13.95	-38.69	42.69	9.85	32.84	1.300 Level 3	
1,402.59	1,401.27	1,400.00	1,398.70	26.46	2.91	106.52	-25.08	-44.10	51.31	21.99	29.32	1.750	
1,500.00	1,497.72	1,495.83	1,493.36	23.15	3.15	105.76	-38.50	-50.63	61.34	35.10	26.24	2.338	
1,600.00	1,596.73	1,594.07	1,589.82	20.09	3.44	102.81	-55.20	-58.75	73.13	49.69	23.44	3.119	
1,700.00	1,695.74	1,691.64	1,684.94	17.54	3.78	98.75	-74.73	-68.25	86.78	65.58	21.20	4.094	
1,800.00	1,794.76	1,788.35	1,778.43	15.74	4.16	94.28	-96.94	-79.06	102.67	82.94	19.73	5.205	
1,900.00	1,893.77	1,886.54	1,872.95	14.97	4.60	90.36	-120.89	-90.70	120.04	100.75	19.29	6.223	
2,000.00	1,992.79	1,984.73	1,967.46	15.40	5.06	87.43	-144.83	-102.35	137.82	117.80	20.02	6.883	
2,100.00	2,091.80	2,082.92	2,061.97	16.92	5.53	85.17	-168.78	-114.00	155.87	134.03	21.84	7.137	
2,200.00	2,190.82	2,181.12	2,156.49	19.28	6.02	83.39	-192.72	-125.65	174.11	149.62	24.50	7.108	
2,300.00	2,289.83	2,279.31	2,251.00	22.21	6.52	81.94	-216.67	-137.30	192.48	164.76	27.73	6.942	
2,400.00	2,388.84	2,377.50	2,345.51	25.52	7.03	80.75	-240.61	-148.94	210.95	179.61	31.34	6.731	
2,500.00	2,487.86	2,475.70	2,440.03	29.08	7.55	79.74	-264.56	-160.59	229.49	194.29	35.20	6.519	
2,600.00	2,586.87	2,573.89	2,534.54	32.81	8.07	78.89	-288.51	-172.24	248.10	208.86	39.24	6.323	
2,700.00	2,685.89	2,672.08	2,629.05	36.65	8.60	78.16	-312.45	-183.89	266.74	223.35	43.39	6.148	
2,800.00	2,784.90	2,770.27	2,723.57	40.58	9.12	77.52	-336.40	-195.53	285.43	237.80	47.63	5.993	
2,900.00	2,883.91	2,868.47	2,818.08	44.56	9.66	76.96	-360.34	-207.18	304.14	252.21	51.93	5.857	
3,000.00	2,982.93	2,966.66	2,912.59	48.60	10.19	76.47	-384.29	-218.83	322.88	266.60	56.28	5.737	
3,100.00	3,081.94	3,064.85	3,007.11	52.67	10.73	76.03	-408.23	-230.48	341.64	280.97	60.67	5.631	
3,200.00	3,180.96	3,163.04	3,101.62	56.77	11.27	75.63	-432.18	-242.13	360.41	295.33	65.08	5.538	
3,300.00	3,279.97	3,261.24	3,196.13	60.89	11.81	75.28	-456.12	-253.77	379.20	309.68	69.52	5.454	
3,400.00	3,378.99	3,359.43	3,290.65	65.02	12.35	74.95	-480.07	-265.42	398.01	324.03	73.98	5.380	
3,500.00	3,478.00	3,457.62	3,385.16	69.18	12.89	74.66	-504.02	-277.07	416.82	338.37	78.46	5.313	
3,600.00	3,577.01	3,555.82	3,479.67	73.34	13.44	74.39	-527.96	-288.72	435.65	352.71	82.94	5.252	
3,700.00	3,676.03	3,654.01	3,574.19	77.52	13.98	74.15	-551.91	-300.37	454.48	367.04	87.44	5.198	
3,800.00	3,775.04	3,752.20	3,668.70	81.70	14.53	73.92	-575.85	-312.01	473.32	381.37	91.95	5.148	
3,900.00	3,874.06	3,850.39	3,763.21	85.90	15.07	73.71	-599.80	-323.66	492.17	395.70	96.46	5.102	
4,000.00	3,973.07	3,948.59	3,857.73	90.09	15.62	73.52	-623.74	-335.31	511.02	410.04	100.99	5.060	
4,100.00	4,072.08	4,046.78	3,952.24	94.30	16.17	73.34	-647.69	-346.96	529.88	424.36	105.51	5.022	
4,200.00	4,171.10	4,144.97	4,046.75	98.51	16.72	73.17	-671.63	-358.60	548.74	438.69	110.05	4.986	
4,237.00	4,207.73	4,181.30	4,081.72	100.07	16.92	73.12	-680.49	-362.91	555.72	444.00	111.73	4.974	
4,300.00	4,270.21	4,243.11	4,141.21	102.69	17.26	73.19	-695.57	-370.25	567.81	453.23	114.58	4.956	
4,400.00	4,369.69	4,340.95	4,235.39	106.73	17.81	73.06	-719.43	-381.85	587.82	468.88	118.94	4.942	
4,500.00	4,469.47	4,438.35	4,329.14	110.62	18.36	72.67	-743.18	-393.41	608.91	485.82	123.08	4.947	
4,600.00	4,569.41	4,535.20	4,422.35	114.37	18.90	72.06	-766.80	-404.89	631.17	504.14	127.03	4.969	
4,639.59	4,609.00	4,573.36	4,459.09	114.42	19.11	-122.79	-776.10	-409.42	640.33	513.20	127.13	5.037	
4,700.00	4,669.41	4,631.50	4,515.05	112.36	19.44	-123.53	-790.28	-416.32	654.53	529.44	125.09	5.233	
4,800.00	4,769.41	4,727.76	4,607.70	108.99	19.98	-124.68	-813.75	-427.74	678.24	556.51	121.74	5.571	
4,900.00	4,869.41	4,824.01	4,700.34	105.66	20.52	-125.76	-837.23	-439.15	702.20	583.78	118.43	5.929	

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_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 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	4,969.41	4,920.26	4,792.99	102.38	21.06	-126.76	-860.70	-450.57	726.39	611.22	115.16	6.307	
5,100.00	5,069.41	5,016.52	4,885.64	99.15	21.60	-127.71	-884.17	-461.99	750.77	638.82	111.95	6.706	
5,200.00	5,169.41	5,112.77	4,978.28	95.98	22.14	-128.59	-907.64	-473.41	775.34	666.55	108.79	7.127	
5,300.00	5,269.41	5,209.02	5,070.93	92.88	22.68	-129.42	-931.12	-484.82	800.07	694.37	105.69	7.570	
5,400.00	5,369.41	5,305.27	5,163.57	89.84	23.22	-130.20	-954.59	-496.24	824.95	722.28	102.66	8.035	
5,500.00	5,469.41	5,401.53	5,256.22	86.89	23.76	-130.94	-978.06	-507.66	849.97	750.26	99.71	8.524	
5,600.00	5,569.41	5,497.78	5,348.87	84.02	24.30	-131.63	-1,001.53	-519.08	875.11	778.27	96.84	9.037	
5,700.00	5,669.41	5,627.35	5,474.17	81.24	24.89	-132.45	-1,031.17	-533.49	898.88	804.83	94.05	9.557	
5,800.00	5,769.41	5,766.36	5,610.09	78.58	25.35	-133.13	-1,057.31	-546.21	918.43	827.06	91.37	10.052	
5,900.00	5,869.41	5,907.95	5,749.82	76.03	25.75	-133.63	-1,077.80	-556.18	933.52	844.68	88.84	10.508	
6,000.00	5,969.41	6,051.50	5,892.46	73.60	26.06	-133.97	-1,092.22	-563.19	944.01	857.55	86.46	10.919	
6,100.00	6,069.41	6,196.32	6,036.98	71.32	26.30	-134.16	-1,100.23	-567.09	949.79	865.55	84.25	11.274	
6,200.00	6,169.41	6,328.77	6,169.41	69.20	26.46	-134.20	-1,101.93	-567.92	951.02	868.80	82.21	11.567	
6,300.00	6,269.41	6,428.77	6,269.41	67.25	26.56	-134.20	-1,101.93	-567.92	951.02	870.71	80.31	11.841	
6,400.00	6,369.41	6,528.77	6,369.41	65.48	26.65	-134.20	-1,101.93	-567.92	951.02	872.42	78.60	12.100	
6,500.00	6,469.41	6,628.77	6,469.41	63.92	26.74	-134.20	-1,101.93	-567.92	951.02	873.92	77.09	12.336	
6,600.00	6,569.41	6,728.77	6,569.41	62.57	26.84	-134.20	-1,101.93	-567.92	951.02	875.20	75.82	12.543	
6,700.00	6,669.41	6,828.77	6,669.41	61.45	26.94	-134.20	-1,101.93	-567.92	951.02	876.22	74.80	12.715	
6,800.00	6,769.41	6,928.77	6,769.41	60.58	27.04	-134.20	-1,101.93	-567.92	951.02	876.98	74.03	12.846	
6,900.00	6,869.41	7,028.77	6,869.41	59.97	27.14	-134.20	-1,101.93	-567.92	951.02	877.47	73.55	12.931	
7,000.00	6,969.41	7,128.77	6,969.41	59.61	27.24	-134.20	-1,101.93	-567.92	951.02	877.67	73.35	12.966	
7,100.00	7,069.41	7,228.77	7,069.41	59.52	27.34	-134.20	-1,101.93	-567.92	951.02	877.58	73.44	12.950	
7,200.00	7,169.41	7,328.77	7,169.41	59.71	27.45	-134.20	-1,101.93	-567.92	951.02	877.20	73.82	12.883	
7,300.00	7,269.41	7,428.77	7,269.41	60.15	27.56	-134.20	-1,101.93	-567.92	951.02	876.53	74.49	12.767	
7,400.00	7,369.41	7,528.77	7,369.41	60.86	27.66	-134.20	-1,101.93	-567.92	951.02	875.57	75.44	12.606	
7,500.00	7,469.41	7,628.77	7,469.41	61.82	27.77	-134.20	-1,101.93	-567.92	951.02	874.35	76.66	12.405	
7,600.00	7,569.41	7,728.77	7,569.41	63.02	27.88	-134.20	-1,101.93	-567.92	951.02	872.88	78.14	12.171	
7,700.00	7,669.41	7,828.77	7,669.41	64.44	28.00	-134.20	-1,101.93	-567.92	951.02	871.17	79.85	11.910	
7,800.00	7,769.41	7,928.77	7,769.41	66.08	28.11	-134.20	-1,101.93	-567.92	951.02	869.23	81.79	11.628	
7,900.00	7,869.41	8,028.77	7,869.41	67.91	28.22	-134.20	-1,101.93	-567.92	951.02	867.10	83.92	11.332	
8,000.00	7,969.41	8,128.77	7,969.41	69.93	28.34	-134.20	-1,101.93	-567.92	951.02	864.78	86.24	11.028	
8,088.59	8,058.00	8,217.36	8,058.00	71.85	28.44	-134.20	-1,101.93	-567.92	951.02	862.58	88.43	10.754	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_Riverbend 25-12 PAD - P_Riverbend 25-12 - P_Riverbend 25-12 - PLAN #1 6-22-10 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	-90.05	-0.01	-15.95	15.95				
100.00	100.00	100.00	100.00	1.70	0.10	-90.05	-0.01	-15.95	15.95	14.16	1.80	8.885	
200.00	200.00	200.00	200.00	5.70	0.32	-90.05	-0.01	-15.95	15.95	9.93	6.02	2.650	
300.00	300.00	300.00	300.00	9.70	0.55	-90.05	-0.01	-15.95	15.95	5.71	10.25	1.557	
400.00	400.00	400.00	400.00	13.70	0.77	-90.05	-0.01	-15.95	15.95	1.48	14.47	1.103	Level 2
500.00	500.00	500.00	500.00	17.70	0.99	-90.05	-0.01	-15.95	15.95	-2.74	18.69	0.853	Level 1
600.00	600.00	600.00	600.00	21.70	1.22	-90.05	-0.01	-15.95	15.95	-6.97	22.92	0.696	Level 1
700.00	700.00	700.00	700.00	25.70	1.44	-90.05	-0.01	-15.95	15.95	-11.19	27.14	0.588	Level 1
800.00	800.00	800.00	800.00	29.70	1.67	-90.05	-0.01	-15.95	15.95	-15.42	31.37	0.509	Level 1
900.00	900.00	900.00	900.00	33.70	1.89	-90.05	-0.01	-15.95	15.95	-19.64	35.59	0.448	Level 1
1,000.00	1,000.00	1,000.00	1,000.00	37.70	2.12	-90.05	-0.01	-15.95	15.95	-23.86	39.82	0.401	Level 1, CC, ES, SF
1,100.00	1,099.98	1,099.40	1,099.38	37.77	2.34	112.22	0.75	-17.50	18.11	-21.98	40.10	0.452	Level 1
1,200.00	1,199.84	1,198.21	1,198.06	33.93	2.55	126.53	3.02	-22.10	25.84	-10.60	36.44	0.709	Level 1
1,300.00	1,299.45	1,295.85	1,295.33	30.17	2.77	137.10	6.73	-29.65	40.32	7.54	32.79	1.230	Level 2
1,402.59	1,401.27	1,395.75	1,394.61	26.46	3.01	143.60	11.62	-39.58	61.16	32.08	29.08	2.103	
1,500.00	1,497.72	1,490.59	1,488.85	23.15	3.26	147.46	16.32	-49.11	82.87	57.08	25.79	3.213	
1,600.00	1,596.73	1,587.96	1,585.61	20.09	3.51	149.76	21.13	-58.90	105.37	82.77	22.60	4.662	
1,700.00	1,695.74	1,685.33	1,682.36	17.54	3.77	151.25	25.95	-68.68	127.98	108.26	19.73	6.488	
1,800.00	1,794.76	1,782.69	1,779.12	15.74	4.04	152.29	30.77	-78.47	150.65	133.29	17.36	8.677	
1,900.00	1,893.77	1,880.06	1,875.87	14.97	4.31	153.06	35.59	-88.25	173.35	157.50	15.85	10.939	
2,000.00	1,992.79	1,977.43	1,972.62	15.40	4.58	153.65	40.41	-98.04	196.07	180.49	15.58	12.586	
2,100.00	2,091.80	2,074.79	2,069.38	16.92	4.86	154.12	45.22	-107.82	218.81	202.10	16.71	13.095	
2,200.00	2,190.82	2,172.16	2,166.13	19.28	5.14	154.50	50.04	-117.60	241.56	222.58	18.98	12.730	
2,300.00	2,289.83	2,269.53	2,262.88	22.21	5.42	154.82	54.86	-127.39	264.31	242.34	21.98	12.028	
2,400.00	2,388.84	2,366.89	2,359.64	25.52	5.71	155.08	59.68	-137.17	287.08	261.67	25.41	11.298	
2,500.00	2,487.86	2,464.26	2,456.39	29.08	5.99	155.31	64.50	-146.96	309.85	280.75	29.10	10.647	
2,600.00	2,586.87	2,561.62	2,553.15	32.81	6.28	155.50	69.32	-156.74	332.62	299.67	32.95	10.093	
2,700.00	2,685.89	2,658.99	2,649.90	36.65	6.57	155.67	74.13	-166.53	355.40	318.49	36.91	9.628	
2,800.00	2,784.90	2,756.36	2,746.65	40.58	6.86	155.82	78.95	-176.31	378.18	337.24	40.94	9.237	
2,900.00	2,883.91	2,853.72	2,843.41	44.56	7.14	155.95	83.77	-186.10	400.96	355.94	45.02	8.906	
3,000.00	2,982.93	2,951.09	2,940.16	48.60	7.43	156.07	88.59	-195.88	423.74	374.60	49.14	8.624	
3,100.00	3,081.94	3,048.46	3,036.91	52.67	7.73	156.18	93.41	-205.66	446.53	393.24	53.28	8.380	
3,200.00	3,180.96	3,145.82	3,133.67	56.77	8.02	156.27	98.22	-215.45	469.31	411.86	57.45	8.169	
3,300.00	3,279.97	3,243.19	3,230.42	60.89	8.31	156.36	103.04	-225.23	492.10	430.47	61.63	7.985	
3,400.00	3,378.99	3,340.56	3,327.18	65.02	8.60	156.44	107.86	-235.02	514.89	449.06	65.82	7.822	
3,500.00	3,478.00	3,437.92	3,423.93	69.18	8.89	156.51	112.68	-244.80	537.67	467.64	70.03	7.678	
3,600.00	3,577.01	3,535.29	3,520.68	73.34	9.19	156.58	117.50	-254.59	560.46	486.22	74.25	7.549	
3,700.00	3,676.03	3,632.66	3,617.44	77.52	9.48	156.64	122.31	-264.37	583.25	504.79	78.47	7.433	
3,800.00	3,775.04	3,730.02	3,714.19	81.70	9.78	156.70	127.13	-274.16	606.05	523.35	82.70	7.329	
3,900.00	3,874.06	3,827.39	3,810.95	85.90	10.07	156.75	131.95	-283.94	628.84	541.91	86.93	7.234	
4,000.00	3,973.07	3,924.76	3,907.70	90.09	10.36	156.80	136.77	-293.72	651.63	560.46	91.17	7.148	
4,100.00	4,072.08	4,022.12	4,004.45	94.30	10.66	156.85	141.59	-303.51	674.42	579.01	95.41	7.069	
4,200.00	4,171.10	4,119.49	4,101.21	98.51	10.95	156.89	146.40	-313.29	697.21	597.56	99.66	6.996	
4,237.00	4,207.73	4,155.52	4,137.01	100.07	11.06	156.90	148.19	-316.91	705.65	604.42	101.23	6.971	
4,300.00	4,270.21	4,217.00	4,198.10	102.69	11.25	157.02	151.23	-323.09	719.38	615.57	103.82	6.929	
4,400.00	4,369.69	4,315.12	4,295.60	106.73	11.55	157.09	156.09	-332.95	738.63	630.79	107.83	6.850	
4,500.00	4,469.47	4,413.78	4,393.65	110.62	11.85	157.03	160.97	-342.87	754.71	642.97	111.74	6.754	
4,600.00	4,569.41	4,512.87	4,492.11	114.37	12.15	156.85	165.87	-352.83	767.63	652.10	115.53	6.644	
4,639.59	4,609.00	4,552.19	4,531.18	114.42	12.27	-37.80	167.82	-356.78	771.87	656.38	115.49	6.683	
4,700.00	4,669.41	4,612.22	4,590.84	112.36	12.45	-38.02	170.79	-362.81	777.96	664.52	113.44	6.858	
4,800.00	4,769.41	4,711.59	4,689.58	108.99	12.75	-38.37	175.70	-372.79	788.08	678.01	110.06	7.160	
4,900.00	4,869.41	4,810.96	4,788.33	105.66	13.05	-38.72	180.62	-382.78	798.22	691.50	106.72	7.480	

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_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_Riverbend 25-12 PAD - P_Riverbend 25-12 - P_Riverbend 25-12 - PLAN #1 6-22-10 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
5,000.00	4,969.41	4,910.33	4,887.07	102.38	13.36	-39.05	185.54	-392.77	808.39	704.99	103.40	7.818	
5,100.00	5,069.41	5,009.70	4,985.82	99.15	13.66	-39.38	190.46	-402.75	818.59	718.47	100.12	8.176	
5,200.00	5,169.41	5,109.07	5,084.56	95.98	13.96	-39.70	195.37	-412.74	828.82	731.93	96.89	8.554	
5,300.00	5,269.41	5,208.44	5,183.31	92.88	14.27	-40.01	200.29	-422.72	839.06	745.37	93.70	8.955	
5,400.00	5,369.41	5,307.82	5,282.05	89.84	14.57	-40.32	205.21	-432.71	849.34	758.78	90.56	9.379	
5,500.00	5,469.41	5,407.19	5,380.80	86.89	14.87	-40.61	210.13	-442.70	859.64	772.15	87.48	9.826	
5,600.00	5,569.41	5,506.56	5,479.54	84.02	15.17	-40.90	215.04	-452.68	869.95	785.48	84.47	10.298	
5,700.00	5,669.41	5,605.93	5,578.29	81.24	15.48	-41.19	219.96	-462.67	880.29	798.75	81.54	10.795	
5,800.00	5,769.41	5,705.30	5,677.03	78.58	15.78	-41.46	224.88	-472.65	890.66	811.95	78.70	11.317	
5,900.00	5,869.41	5,804.67	5,775.78	76.03	16.08	-41.73	229.79	-482.64	901.04	825.07	75.96	11.862	
6,000.00	5,969.41	5,935.43	5,905.92	73.60	16.41	-42.04	235.40	-494.02	910.15	836.77	73.38	12.403	
6,100.00	6,069.41	6,077.33	6,047.62	71.32	16.67	-42.20	238.56	-500.43	914.83	843.96	70.87	12.908	
6,200.00	6,169.41	6,199.13	6,169.41	69.20	16.86	-42.22	238.97	-501.27	915.44	847.00	68.45	13.375	
6,300.00	6,269.41	6,299.13	6,269.41	67.25	17.03	-42.22	238.97	-501.27	915.44	849.26	66.18	13.832	
6,400.00	6,369.41	6,399.13	6,369.41	65.48	17.21	-42.22	238.97	-501.27	915.44	851.33	64.12	14.278	
6,500.00	6,469.41	6,499.13	6,469.41	63.92	17.39	-42.22	238.97	-501.27	915.44	853.16	62.29	14.697	
6,600.00	6,569.41	6,599.13	6,569.41	62.57	17.57	-42.22	238.97	-501.27	915.44	854.73	60.72	15.077	
6,700.00	6,669.41	6,699.13	6,669.41	61.45	17.74	-42.22	238.97	-501.27	915.44	856.00	59.44	15.400	
6,800.00	6,769.41	6,799.13	6,769.41	60.58	17.93	-42.22	238.97	-501.27	915.44	856.95	58.49	15.650	
6,900.00	6,869.41	6,899.13	6,869.41	59.97	18.11	-42.22	238.97	-501.27	915.44	857.55	57.90	15.812	
7,000.00	6,969.41	6,999.13	6,969.41	59.61	18.29	-42.22	238.97	-501.27	915.44	857.78	57.67	15.874	
7,100.00	7,069.41	7,099.13	7,069.41	59.52	18.47	-42.22	238.97	-501.27	915.44	857.62	57.83	15.831	
7,200.00	7,169.41	7,199.13	7,169.41	59.71	18.66	-42.22	238.97	-501.27	915.44	857.08	58.37	15.684	
7,300.00	7,269.41	7,299.13	7,269.41	60.15	18.84	-42.22	238.97	-501.27	915.44	856.16	59.28	15.442	
7,400.00	7,369.41	7,399.13	7,369.41	60.86	19.03	-42.22	238.97	-501.27	915.44	854.89	60.56	15.117	
7,500.00	7,469.41	7,499.13	7,469.41	61.82	19.21	-42.22	238.97	-501.27	915.44	853.28	62.16	14.727	
7,600.00	7,569.41	7,599.13	7,569.41	63.02	19.40	-42.22	238.97	-501.27	915.44	851.37	64.07	14.288	
7,700.00	7,669.41	7,699.13	7,669.41	64.44	19.59	-42.22	238.97	-501.27	915.44	849.20	66.25	13.818	
7,800.00	7,769.41	7,799.13	7,769.41	66.08	19.78	-42.22	238.97	-501.27	915.44	846.78	68.67	13.332	
7,900.00	7,869.41	7,899.13	7,869.41	67.91	19.97	-42.22	238.97	-501.27	915.44	844.15	71.29	12.841	
8,000.00	7,969.41	7,999.13	7,969.41	69.93	20.16	-42.22	238.97	-501.27	915.44	841.35	74.10	12.354	
8,050.45	8,019.86	8,049.58	8,019.86	71.02	20.26	-42.22	238.97	-501.27	915.44	839.85	75.59	12.110	
8,088.59	8,058.00	8,067.72	8,038.00	71.85	20.29	-42.22	238.97	-501.27	915.66	838.98	76.68	11.942	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_Riverbend 25-12 PAD - P_Riverbend 39-12 - P_Riverbend 39-12 - PLAN #1 6-22-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWMD												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	90.03	-0.01	15.95	15.95				
100.00	100.00	100.00	100.00	1.70	0.10	90.03	-0.01	15.95	15.95	14.16	1.80	8.885	
200.00	200.00	200.00	200.00	5.70	0.32	90.03	-0.01	15.95	15.95	9.93	6.02	2.650	
300.00	300.00	300.00	300.00	9.70	0.55	90.03	-0.01	15.95	15.95	5.71	10.25	1.557 CC	
400.00	400.00	399.47	399.45	13.70	0.75	92.70	-0.82	17.48	17.50	3.05	14.45	1.211 Level 2, ES	
500.00	500.00	498.70	498.54	17.70	0.96	98.42	-3.26	22.03	22.31	3.66	18.65	1.196 Level 2, SF	
600.00	600.00	597.46	596.93	21.70	1.20	103.86	-7.29	29.55	30.60	7.74	22.86	1.338 Level 3	
700.00	700.00	695.51	694.26	25.70	1.47	107.86	-12.88	39.98	42.40	15.32	27.08	1.566	
800.00	800.00	792.64	790.22	29.70	1.78	110.57	-19.96	53.20	57.66	26.35	31.31	1.842	
900.00	900.00	888.64	884.51	33.70	2.14	112.40	-28.47	69.07	76.30	40.75	35.55	2.147	
1,000.00	1,000.00	983.32	976.86	37.70	2.54	113.66	-38.31	87.45	98.24	58.44	39.79	2.469	
1,100.00	1,099.98	1,076.78	1,067.30	37.77	3.00	-51.14	-49.44	108.22	122.33	82.27	40.06	3.054	
1,200.00	1,199.84	1,169.22	1,155.95	33.93	3.51	-51.52	-61.80	131.30	147.44	110.99	36.45	4.045	
1,300.00	1,299.45	1,260.57	1,242.67	30.17	4.07	-52.44	-75.35	156.58	173.61	140.71	32.91	5.276	
1,402.59	1,401.27	1,353.08	1,329.53	26.46	4.69	-53.69	-90.39	184.65	201.62	172.21	29.40	6.857	
1,500.00	1,497.72	1,439.58	1,409.76	23.15	5.33	-55.16	-105.64	213.12	230.26	203.93	26.33	8.744	
1,600.00	1,596.73	1,526.71	1,489.56	20.09	6.02	-56.22	-122.15	243.95	262.63	239.15	23.48	11.187	
1,700.00	1,695.74	1,618.36	1,572.67	17.54	6.80	-57.02	-140.40	278.01	297.11	276.02	21.10	14.083	
1,800.00	1,794.76	1,712.11	1,657.64	15.74	7.61	-57.66	-159.11	312.94	331.74	312.31	19.43	17.070	
1,900.00	1,893.77	1,805.87	1,742.61	14.97	8.43	-58.19	-177.82	347.87	366.40	347.62	18.78	19.506	
2,000.00	1,992.79	1,899.62	1,827.58	15.40	9.25	-58.62	-196.54	382.79	401.09	381.72	19.36	20.715	
2,100.00	2,091.80	1,993.38	1,912.55	16.92	10.07	-58.98	-215.25	417.72	435.79	414.67	21.12	20.634	
2,200.00	2,190.82	2,087.13	1,997.52	19.28	10.90	-59.29	-233.96	452.64	470.50	446.71	23.79	19.781	
2,300.00	2,289.83	2,180.88	2,082.49	22.21	11.72	-59.56	-252.67	487.57	505.22	478.16	27.06	18.669	
2,400.00	2,388.84	2,274.64	2,167.46	25.52	12.56	-59.79	-271.38	522.50	539.95	509.22	30.73	17.570	
2,500.00	2,487.86	2,368.39	2,252.43	29.08	13.39	-60.00	-290.09	557.42	574.69	540.04	34.65	16.584	
2,600.00	2,586.87	2,462.15	2,337.40	32.81	14.22	-60.18	-308.80	592.35	609.43	570.69	38.74	15.731	
2,700.00	2,685.89	2,555.90	2,422.37	36.65	15.05	-60.34	-327.51	627.27	644.18	601.24	42.95	15.000	
2,800.00	2,784.90	2,649.65	2,507.34	40.58	15.89	-60.48	-346.22	662.20	678.94	631.71	47.23	14.375	
2,900.00	2,883.91	2,743.41	2,592.31	44.56	16.73	-60.62	-364.93	697.12	713.69	662.12	51.57	13.838	
3,000.00	2,982.93	2,837.16	2,677.28	48.60	17.56	-60.73	-383.64	732.05	748.45	692.49	55.96	13.374	
3,100.00	3,081.94	2,930.91	2,762.25	52.67	18.40	-60.84	-402.36	766.98	783.21	722.83	60.38	12.971	
3,200.00	3,180.96	3,024.67	2,847.22	56.77	19.24	-60.94	-421.07	801.90	817.98	753.14	64.83	12.617	
3,300.00	3,279.97	3,118.42	2,932.19	60.89	20.07	-61.03	-439.78	836.83	852.74	783.44	69.30	12.305	
3,400.00	3,378.99	3,212.18	3,017.16	65.02	20.91	-61.12	-458.49	871.75	887.51	813.72	73.79	12.028	
3,500.00	3,478.00	3,305.93	3,102.12	69.18	21.75	-61.20	-477.20	906.68	922.28	843.99	78.29	11.781	
3,600.00	3,577.01	3,399.68	3,187.09	73.34	22.59	-61.27	-495.91	941.60	957.05	874.25	82.80	11.559	
3,700.00	3,676.03	3,493.44	3,272.06	77.52	23.43	-61.33	-514.62	976.53	991.82	904.51	87.32	11.359	
3,800.00	3,775.04	3,587.19	3,357.03	81.70	24.27	-61.40	-533.33	1,011.46	1,026.59	934.75	91.84	11.178	
3,900.00	3,874.06	3,680.95	3,442.00	85.90	25.11	-61.45	-552.04	1,046.38	1,061.37	964.99	96.38	11.013	
4,000.00	3,973.07	3,774.70	3,526.97	90.09	25.95	-61.51	-570.75	1,081.31	1,096.14	995.23	100.92	10.862	
4,100.00	4,072.08	3,868.45	3,611.94	94.30	26.79	-61.56	-589.46	1,116.23	1,130.92	1,025.46	105.46	10.724	
4,200.00	4,171.10	3,962.21	3,696.91	98.51	27.63	-61.61	-608.18	1,151.16	1,165.70	1,055.69	110.01	10.597	
4,237.00	4,207.73	3,996.89	3,728.35	100.07	27.94	-61.63	-615.10	1,164.08	1,178.56	1,066.87	111.69	10.552	
4,300.00	4,270.21	4,055.85	3,781.78	102.69	28.47	-62.04	-626.86	1,186.04	1,200.78	1,086.20	114.58	10.480	
4,400.00	4,369.69	4,148.90	3,866.12	106.73	29.30	-62.61	-645.44	1,220.71	1,237.29	1,118.27	119.02	10.396	
4,500.00	4,469.47	4,241.23	3,949.79	110.62	30.13	-63.07	-663.86	1,255.10	1,275.30	1,152.02	123.28	10.344	
4,600.00	4,569.41	4,332.71	4,032.70	114.37	30.95	-63.44	-682.12	1,289.18	1,314.81	1,187.41	127.40	10.320	
4,639.59	4,609.00	4,368.66	4,065.29	114.42	31.27	-63.49	-689.29	1,302.58	1,330.87	1,203.29	127.57	10.432	
4,700.00	4,669.41	4,423.41	4,114.91	112.36	31.76	-62.19	-700.22	1,322.97	1,355.56	1,229.98	125.58	10.795	
4,800.00	4,769.41	4,514.05	4,197.05	108.99	32.57	-62.67	-718.31	1,356.73	1,396.51	1,274.20	122.31	11.418	
4,900.00	4,869.41	4,604.68	4,279.19	105.66	33.39	-63.12	-736.40	1,390.50	1,437.53	1,318.45	119.08	12.072	

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_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_Riverbend 25-12 PAD - P_Riverbend 39-12 - P_Riverbend 39-12 - PLAN #1 6-22-10 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
5,000.00	4,969.41	4,695.31	4,361.33	102.38	34.20	103.54	-754.48	1,424.26	1,478.62	1,362.73	115.89	12.759	
5,100.00	5,069.41	4,785.94	4,443.47	99.15	35.01	103.94	-772.57	1,458.02	1,519.78	1,407.02	112.76	13.478	
5,200.00	5,169.41	4,876.57	4,525.61	95.98	35.82	104.32	-790.66	1,491.78	1,560.99	1,451.31	109.68	14.232	
5,300.00	5,269.41	4,967.20	4,607.75	92.88	36.64	104.68	-808.75	1,525.55	1,602.26	1,495.60	106.66	15.022	
5,400.00	5,369.41	5,057.83	4,689.89	89.84	37.45	105.02	-826.83	1,559.31	1,643.58	1,539.88	103.71	15.848	
5,500.00	5,469.41	5,148.46	4,772.03	86.89	38.26	105.35	-844.92	1,593.07	1,684.95	1,584.12	100.83	16.711	
5,600.00	5,569.41	5,239.09	4,854.16	84.02	39.08	105.66	-863.01	1,626.83	1,726.36	1,628.33	98.03	17.610	
5,700.00	5,669.41	5,329.72	4,936.30	81.24	39.89	105.95	-881.10	1,660.60	1,767.81	1,672.49	95.32	18.545	
5,800.00	5,769.41	5,420.35	5,018.44	78.58	40.70	106.24	-899.18	1,694.36	1,809.30	1,716.58	92.72	19.514	
5,900.00	5,869.41	5,510.98	5,100.58	76.03	41.52	106.51	-917.27	1,728.12	1,850.82	1,760.59	90.23	20.513	
6,000.00	5,969.41	5,601.61	5,182.72	73.60	42.33	106.76	-935.36	1,761.88	1,892.38	1,804.52	87.86	21.538	
6,100.00	6,069.41	5,692.25	5,264.86	71.32	43.14	107.01	-953.45	1,795.65	1,933.96	1,848.33	85.64	22.583	
6,200.00	6,169.41	5,782.88	5,346.66	69.20	44.56	107.47	-989.41	1,862.78	1,974.44	1,890.71	83.74	23.579	
6,300.00	6,269.41	5,873.51	5,428.46	67.25	46.20	108.01	-1,035.78	1,949.33	2,006.79	1,924.61	82.17	24.421	
6,400.00	6,369.41	5,964.14	5,510.26	65.48	47.42	108.37	-1,069.52	2,012.30	2,028.91	1,948.12	80.79	25.114	
6,500.00	6,469.41	6,054.77	5,591.96	63.92	48.10	108.55	-1,087.09	2,045.10	2,040.00	1,960.45	79.55	25.645	
6,600.00	6,569.41	6,145.40	5,673.76	62.57	48.28	108.57	-1,089.11	2,048.86	2,041.25	1,962.93	78.33	26.060	
6,700.00	6,669.41	6,236.03	5,755.56	61.45	48.34	108.57	-1,089.11	2,048.86	2,041.25	1,964.03	77.22	26.434	
6,800.00	6,769.41	6,326.66	5,837.36	60.58	48.40	108.57	-1,089.11	2,048.86	2,041.25	1,964.87	76.38	26.724	
6,900.00	6,869.41	6,417.29	5,919.16	59.97	48.46	108.57	-1,089.11	2,048.86	2,041.25	1,965.42	75.83	26.919	
7,000.00	6,969.41	6,507.92	6,000.96	59.61	48.53	108.57	-1,089.11	2,048.86	2,041.25	1,965.68	75.57	27.011	
7,100.00	7,069.41	6,598.55	6,082.76	59.52	48.59	108.57	-1,089.11	2,048.86	2,041.25	1,965.64	75.61	26.996	
7,200.00	7,169.41	6,689.18	6,164.56	59.71	48.66	108.57	-1,089.11	2,048.86	2,041.25	1,965.30	75.96	26.874	
7,300.00	7,269.41	6,779.81	6,246.36	60.15	48.73	108.57	-1,089.11	2,048.86	2,041.25	1,964.65	76.60	26.648	
7,400.00	7,369.41	6,870.44	6,328.16	60.86	48.79	108.57	-1,089.11	2,048.86	2,041.25	1,963.72	77.53	26.328	
7,500.00	7,469.41	6,961.07	6,409.96	61.82	48.86	108.57	-1,089.11	2,048.86	2,041.25	1,962.51	78.74	25.923	
7,600.00	7,569.41	7,051.70	6,491.76	63.02	48.93	108.57	-1,089.11	2,048.86	2,041.25	1,961.04	80.21	25.447	
7,700.00	7,669.41	7,142.33	6,573.56	64.44	49.00	108.57	-1,089.11	2,048.86	2,041.25	1,959.32	81.93	24.914	
7,800.00	7,769.41	7,232.96	6,655.36	66.08	49.07	108.57	-1,089.11	2,048.86	2,041.25	1,957.38	83.87	24.338	
7,900.00	7,869.41	7,323.59	6,737.16	67.91	49.15	108.57	-1,089.11	2,048.86	2,041.25	1,955.24	86.02	23.731	
8,000.00	7,969.41	7,414.22	6,818.96	69.93	49.22	108.57	-1,089.11	2,048.86	2,041.25	1,952.90	88.35	23.104	
8,050.45	8,019.86	8,490.71	8,019.86	71.02	49.26	108.57	-1,089.11	2,048.86	2,041.25	1,951.65	89.61	22.780	
8,088.59	8,058.00	8,508.85	8,038.00	71.85	49.27	108.57	-1,089.11	2,048.86	2,041.35	1,950.82	90.53	22.549	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_Riverbend 25-12 PAD - P_Riverbend 9-12 - P_Riverbend 9-12 - PLAN #1 6-22-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-MWMD												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	90.02	-0.01	32.19	32.19				
100.00	100.00	100.00	100.00	1.70	0.10	90.02	-0.01	32.19	32.19	30.39	1.80	17.926	
200.00	200.00	200.00	200.00	5.70	0.32	90.02	-0.01	32.19	32.19	26.17	6.02	5.346	
300.00	300.00	300.00	300.00	9.70	0.55	90.02	-0.01	32.19	32.19	21.94	10.25	3.142 CC	
400.00	400.00	398.87	398.85	13.70	0.75	90.54	-0.32	33.87	33.89	19.43	14.45	2.345 ES	
500.00	500.00	497.50	497.34	17.70	0.97	91.81	-1.23	38.88	38.99	20.34	18.66	2.090	
600.00	600.00	595.67	595.14	21.70	1.20	93.32	-2.74	47.19	47.51	24.65	22.87	2.078 SF	
700.00	700.00	693.14	691.91	25.70	1.47	94.70	-4.82	58.69	59.44	32.35	27.09	2.194	
800.00	800.00	789.71	787.33	29.70	1.78	95.82	-7.47	73.27	74.73	43.41	31.32	2.386	
900.00	900.00	885.16	881.10	33.70	2.13	96.69	-10.65	90.78	93.34	57.78	35.56	2.625	
1,000.00	1,000.00	979.32	972.97	37.70	2.53	97.35	-14.33	111.06	115.20	75.39	39.81	2.894	
1,100.00	1,099.98	1,072.17	1,062.86	37.77	2.98	-67.78	-18.49	133.96	139.60	99.53	40.07	3.484	
1,200.00	1,199.84	1,163.74	1,150.71	33.93	3.48	-68.42	-23.10	159.33	165.87	129.40	36.47	4.548	
1,300.00	1,299.45	1,253.89	1,236.36	30.17	4.02	-69.58	-28.12	187.00	194.06	161.10	32.95	5.889	
1,402.59	1,401.27	1,344.78	1,321.77	26.46	4.63	-71.01	-33.67	217.57	225.07	195.57	29.50	7.630	
1,500.00	1,497.72	1,429.46	1,400.42	23.15	5.24	-72.75	-39.27	248.43	257.04	230.57	26.47	9.712	
1,600.00	1,596.73	1,514.61	1,478.55	20.09	5.91	-74.04	-45.32	281.76	292.77	269.09	23.68	12.362	
1,700.00	1,695.74	1,603.29	1,559.01	17.54	6.66	-75.02	-51.98	318.44	330.86	309.43	21.43	15.438	
1,800.00	1,794.76	1,695.51	1,642.59	15.74	7.45	-75.83	-58.95	356.78	369.26	349.30	19.95	18.506	
1,900.00	1,893.77	1,787.73	1,726.17	14.97	8.25	-76.48	-65.91	395.13	407.70	388.19	19.52	20.891	
2,000.00	1,992.79	1,879.96	1,809.76	15.40	9.06	-77.02	-72.87	433.48	446.18	425.91	20.28	22.002	
2,100.00	2,091.80	1,972.18	1,893.34	16.92	9.87	-77.48	-79.83	471.83	484.70	462.54	22.16	21.875	
2,200.00	2,190.82	2,064.41	1,976.92	19.28	10.68	-77.87	-86.80	510.18	523.23	498.34	24.89	21.022	
2,300.00	2,289.83	2,156.63	2,060.51	22.21	11.49	-78.20	-93.76	548.53	561.78	533.58	28.20	19.919	
2,400.00	2,388.84	2,248.85	2,144.09	25.52	12.31	-78.49	-100.72	586.88	600.34	568.45	31.90	18.821	
2,500.00	2,487.86	2,341.08	2,227.67	29.08	13.13	-78.75	-107.68	625.22	638.92	603.08	35.84	17.827	
2,600.00	2,586.87	2,433.30	2,311.25	32.81	13.95	-78.98	-114.65	663.57	677.51	637.55	39.95	16.957	
2,700.00	2,685.89	2,525.53	2,394.84	36.65	14.77	-79.18	-121.61	701.92	716.10	671.92	44.18	16.207	
2,800.00	2,784.90	2,617.75	2,478.42	40.58	15.59	-79.36	-128.57	740.27	754.70	706.21	48.50	15.562	
2,900.00	2,883.91	2,709.97	2,562.00	44.56	16.41	-79.53	-135.53	778.62	793.31	740.44	52.87	15.004	
3,000.00	2,982.93	2,802.20	2,645.59	48.60	17.24	-79.68	-142.50	816.97	831.92	774.63	57.30	14.520	
3,100.00	3,081.94	2,894.42	2,729.17	52.67	18.06	-79.81	-149.46	855.32	870.54	808.79	61.75	14.097	
3,200.00	3,180.96	2,986.64	2,812.75	56.77	18.89	-79.94	-156.42	893.66	909.16	842.92	66.24	13.726	
3,300.00	3,279.97	3,078.87	2,896.34	60.89	19.71	-80.05	-163.38	932.01	947.79	877.04	70.75	13.397	
3,400.00	3,378.99	3,171.09	2,979.92	65.02	20.54	-80.16	-170.35	970.36	986.41	911.14	75.27	13.105	
3,500.00	3,478.00	3,263.32	3,063.50	69.18	21.36	-80.26	-177.31	1,008.71	1,025.04	945.23	79.81	12.844	
3,600.00	3,577.01	3,355.54	3,147.09	73.34	22.19	-80.35	-184.27	1,047.06	1,063.68	979.31	84.36	12.608	
3,700.00	3,676.03	3,447.76	3,230.67	77.52	23.01	-80.43	-191.23	1,085.41	1,102.31	1,013.39	88.92	12.396	
3,800.00	3,775.04	3,539.99	3,314.25	81.70	23.84	-80.51	-198.20	1,123.76	1,140.95	1,047.45	93.49	12.203	
3,900.00	3,874.06	3,632.21	3,397.84	85.90	24.66	-80.58	-205.16	1,162.10	1,179.58	1,081.51	98.07	12.028	
4,000.00	3,973.07	3,724.44	3,481.42	90.09	25.49	-80.65	-212.12	1,200.45	1,218.22	1,115.57	102.65	11.867	
4,100.00	4,072.08	3,816.66	3,565.00	94.30	26.32	-80.71	-219.09	1,238.80	1,256.86	1,149.62	107.24	11.720	
4,200.00	4,171.10	3,908.88	3,648.59	98.51	27.14	-80.77	-226.05	1,277.15	1,295.51	1,183.67	111.84	11.584	
4,237.00	4,207.73	3,943.01	3,679.51	100.07	27.45	-80.80	-228.62	1,291.34	1,309.80	1,196.27	113.54	11.537	
4,300.00	4,270.21	4,001.07	3,732.14	102.69	27.97	-81.32	-233.01	1,315.48	1,334.25	1,217.73	116.52	11.451	
4,400.00	4,369.69	4,163.99	3,881.50	106.73	29.17	-81.95	-244.62	1,379.45	1,371.26	1,249.98	121.28	11.306	
4,500.00	4,469.47	4,340.08	4,046.81	110.62	30.20	-82.33	-255.45	1,439.08	1,403.37	1,277.58	125.79	11.157	
4,600.00	4,569.41	4,522.55	4,221.68	114.37	31.09	-82.46	-264.73	1,490.21	1,430.23	1,300.20	130.03	11.000	
4,639.59	4,609.00	4,596.37	4,293.31	114.42	31.40	83.00	-267.92	1,507.76	1,439.35	1,309.12	130.23	11.052	
4,700.00	4,669.41	4,710.64	4,405.03	112.36	31.82	83.29	-272.20	1,531.34	1,451.48	1,323.16	128.32	11.312	
4,800.00	4,769.41	4,903.57	4,595.53	108.99	32.37	83.64	-277.61	1,561.14	1,466.53	1,341.31	125.22	11.712	
4,900.00	4,869.41	5,099.79	4,790.93	105.66	32.73	83.83	-280.75	1,578.44	1,475.13	1,352.99	122.14	12.077	

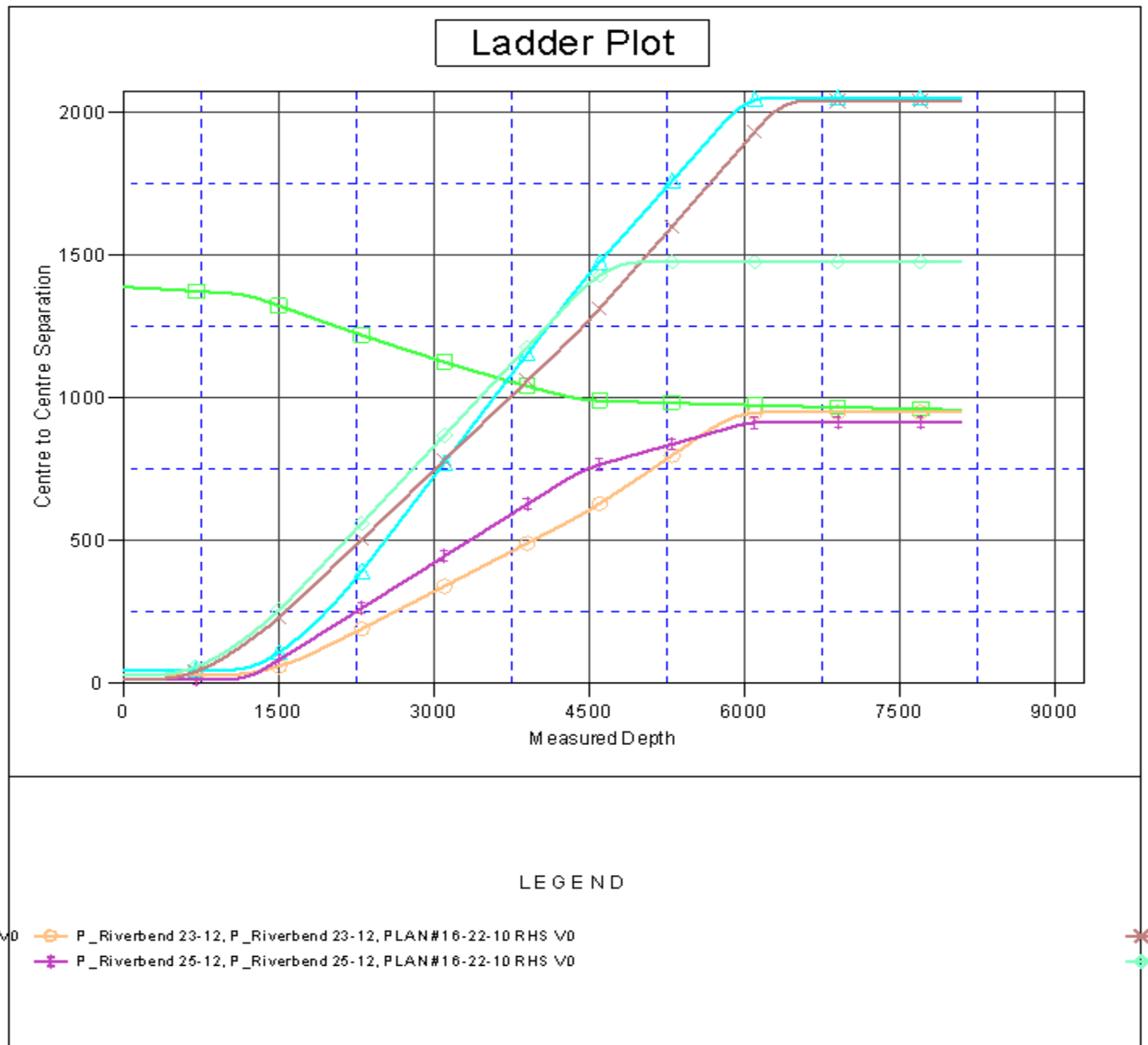
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Offset Design WELD_Riverbend 25-12 PAD - P_Riverbend 9-12 - P_Riverbend 9-12 - PLAN #1 6-22-10 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
5,000.00	4,969.41	5,278.35	4,969.41	102.38	32.90	83.88	-281.54	1,582.78	1,477.27	1,358.21	119.06	12.407	
5,100.00	5,069.41	5,378.35	5,069.41	99.15	32.97	83.88	-281.54	1,582.78	1,477.27	1,361.33	115.95	12.741	
5,200.00	5,169.41	5,478.35	5,169.41	95.98	33.04	83.88	-281.54	1,582.78	1,477.27	1,364.38	112.89	13.086	
5,300.00	5,269.41	5,578.35	5,269.41	92.88	33.11	83.88	-281.54	1,582.78	1,477.27	1,367.37	109.90	13.442	
5,400.00	5,369.41	5,678.35	5,369.41	89.84	33.19	83.88	-281.54	1,582.78	1,477.27	1,370.29	106.98	13.809	
5,500.00	5,469.41	5,778.35	5,469.41	86.89	33.26	83.88	-281.54	1,582.78	1,477.27	1,373.13	104.14	14.185	
5,600.00	5,569.41	5,878.35	5,569.41	84.02	33.34	83.88	-281.54	1,582.78	1,477.27	1,375.88	101.39	14.570	
5,700.00	5,669.41	5,978.35	5,669.41	81.24	33.42	83.88	-281.54	1,582.78	1,477.27	1,378.54	98.74	14.962	
5,800.00	5,769.41	6,078.35	5,769.41	78.58	33.50	83.88	-281.54	1,582.78	1,477.27	1,381.09	96.19	15.358	
5,900.00	5,869.41	6,178.35	5,869.41	76.03	33.58	83.88	-281.54	1,582.78	1,477.27	1,383.52	93.76	15.756	
6,000.00	5,969.41	6,278.35	5,969.41	73.60	33.66	83.88	-281.54	1,582.78	1,477.27	1,385.81	91.46	16.152	
6,100.00	6,069.41	6,378.35	6,069.41	71.32	33.75	83.88	-281.54	1,582.78	1,477.27	1,387.97	89.31	16.542	
6,200.00	6,169.41	6,478.35	6,169.41	69.20	33.83	83.88	-281.54	1,582.78	1,477.27	1,389.96	87.31	16.920	
6,300.00	6,269.41	6,578.35	6,269.41	67.25	33.92	83.88	-281.54	1,582.78	1,477.27	1,391.79	85.49	17.281	
6,400.00	6,369.41	6,678.35	6,369.41	65.48	34.01	83.88	-281.54	1,582.78	1,477.27	1,393.42	83.85	17.618	
6,500.00	6,469.41	6,778.35	6,469.41	63.92	34.09	83.88	-281.54	1,582.78	1,477.27	1,394.85	82.42	17.924	
6,600.00	6,569.41	6,878.35	6,569.41	62.57	34.18	83.88	-281.54	1,582.78	1,477.27	1,396.07	81.21	18.191	
6,700.00	6,669.41	6,978.35	6,669.41	61.45	34.28	83.88	-281.54	1,582.78	1,477.27	1,397.04	80.23	18.413	
6,800.00	6,769.41	7,078.35	6,769.41	60.58	34.37	83.88	-281.54	1,582.78	1,477.27	1,397.77	79.50	18.582	
6,900.00	6,869.41	7,178.35	6,869.41	59.97	34.46	83.88	-281.54	1,582.78	1,477.27	1,398.25	79.03	18.693	
7,000.00	6,969.41	7,278.35	6,969.41	59.61	34.56	83.88	-281.54	1,582.78	1,477.27	1,398.45	78.82	18.742	
7,100.00	7,069.41	7,378.35	7,069.41	59.52	34.65	83.88	-281.54	1,582.78	1,477.27	1,398.39	78.89	18.726	
7,200.00	7,169.41	7,478.35	7,169.41	59.71	34.75	83.88	-281.54	1,582.78	1,477.27	1,398.05	79.23	18.646	
7,300.00	7,269.41	7,578.35	7,269.41	60.15	34.85	83.88	-281.54	1,582.78	1,477.27	1,397.44	79.83	18.505	
7,400.00	7,369.41	7,678.35	7,369.41	60.86	34.95	83.88	-281.54	1,582.78	1,477.27	1,396.57	80.70	18.305	
7,500.00	7,469.41	7,778.35	7,469.41	61.82	35.05	83.88	-281.54	1,582.78	1,477.27	1,395.45	81.83	18.053	
7,600.00	7,569.41	7,878.35	7,569.41	63.02	35.15	83.88	-281.54	1,582.78	1,477.27	1,394.08	83.20	17.757	
7,700.00	7,669.41	7,978.35	7,669.41	64.44	35.25	83.88	-281.54	1,582.78	1,477.27	1,392.48	84.79	17.422	
7,800.00	7,769.41	8,078.35	7,769.41	66.08	35.36	83.88	-281.54	1,582.78	1,477.27	1,390.67	86.60	17.058	
7,900.00	7,869.41	8,178.35	7,869.41	67.91	35.46	83.88	-281.54	1,582.78	1,477.27	1,388.66	88.61	16.671	
8,000.00	7,969.41	8,278.35	7,969.41	69.93	35.57	83.88	-281.54	1,582.78	1,477.27	1,386.47	90.80	16.269	
8,047.45	8,016.86	8,325.80	8,016.86	70.96	35.62	83.88	-281.54	1,582.78	1,477.27	1,385.36	91.92	16.071	
8,088.59	8,058.00	8,341.94	8,033.00	71.85	35.64	83.88	-281.54	1,582.78	1,477.49	1,384.64	92.84	15.914	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4928.00ft (Original Well Elev) Coordinates are relative to: P_Riverbend 10-12
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: 0.43°



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 10-12
Project:	COLORADO NORTHERN ZONE - 83	TVD Reference:	WELL @ 4928.00ft (Original Well Elev)
Reference Site:	WELD_Riverbend 25-12 PAD	MD Reference:	WELL @ 4928.00ft (Original Well Elev)
Site Error:	0.00ft	North Reference:	True
Reference Well:	P_Riverbend 10-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 10-12	Database:	EDM 2003.21 Single User Db
Reference Design:	PLAN #1 6-22-10 RHS	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4928.00ft (Original Well Elev) Coordinates are relative to: P_Riverbend 10-12
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: 0.43°

