



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Riverbend 25-12 PAD

P_Riverbend 39-12

P_Riverbend 39-12

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 39-12
 Wellbore: P_Riverbend 39-12
 Section: PLAN #1 6-22-10 RHS
 SHL: 2419 FSL 2075 FEL
 Design: PLAN #1 6-22-10 RHS
 Latitude: 40° 3' 53.881 N
 Longitude: 104° 50' 14.010 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
3259.00	3479.02	PARKMAN
4589.00	4946.51	SUSSEX
7121.00	7591.85	NIO
7468.00	7938.85	CODELL
7553.00	8023.85	GREENHORN
7903.00	8373.85	JSAND

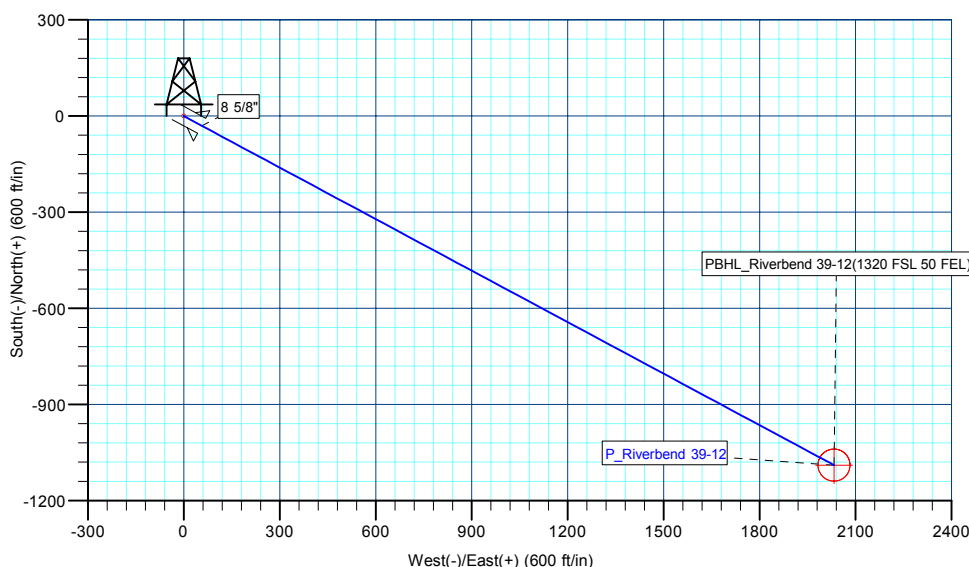
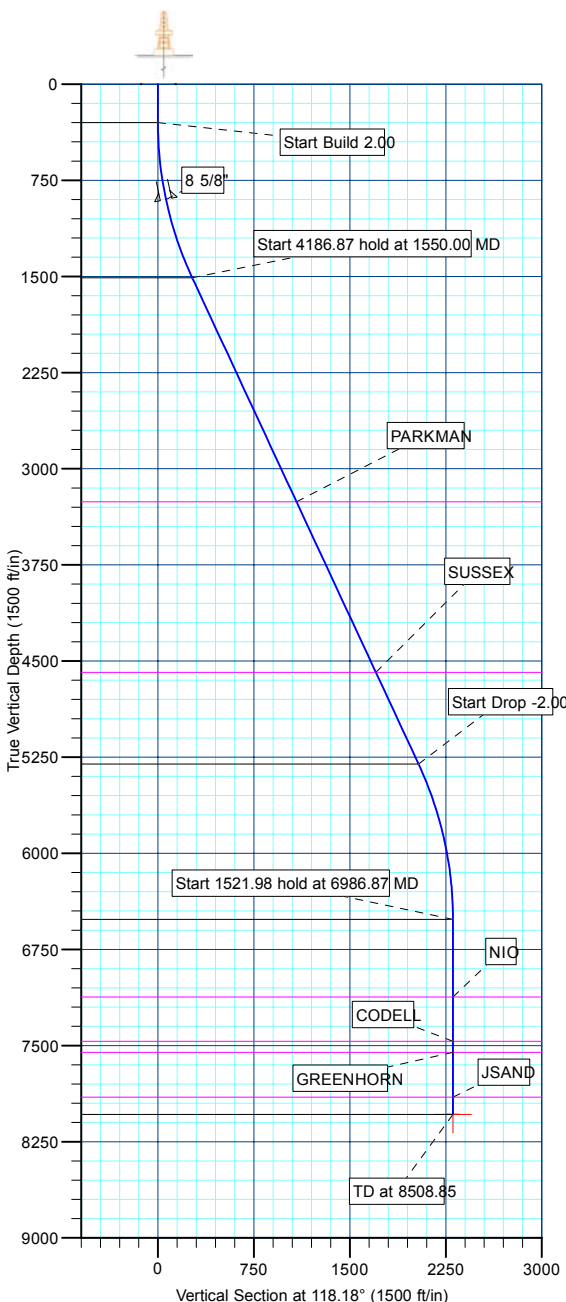
CASING DETAILS			
TVD	MD	Name	Size
900.00	904.48	8 5/8"	8.62

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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1550.00	25.00	118.18	1510.71	-126.75	236.59	2.00	118.18	268.41	Start 4186.87 hold at 1550.00 MD
5736.87	25.00	118.18	5305.31	-962.35	1796.32	0.00	0.00	2037.86	Start Drop -2.00
6986.87	0.00	0.00	6516.02	-1089.10	2032.91	2.00	180.00	2306.26	Start 1521.98 hold at 6986.87 MD
8508.85	0.00	0.00	8038.00	-1089.10	2032.91	0.00	0.00	2306.26	TD at 8508.85

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	8038.00	-1089.10	2032.91	40° 3' 43.117 N	104° 49' 47.863 W	Circle (Radius: 50.00)

WELL DETAILS: P_Riverbend 39-12					
+N/-S	+E/-W	Northing	Ground Level: Easting	4913.00 Latitude	Slot
0.00	0.00	1267205.92	3185500.19	40° 3' 53.881 N	104° 50' 14.010 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 10-12, P_Riverbend 10-12, PLAN #1 6-22-10 RHS 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 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 39-12/P_Riverbend 39-12)	
Created By: Robert H. Scott	Date: 9:59, June 22 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_Riverbend 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Riverbend 39-12		
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 39-12			
Well Position	+N/-S	-0.01 ft	Northing:	1,267,205.92 ft
	+E/-W	15.95 ft	Easting:	3,185,500.19 ft
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft
			Ground Level:	4,913.00 ft

Wellbore	P_Riverbend 39-12				
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	118.18

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	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,550.00	25.00	118.18	1,510.71	-126.75	236.59	2.00	2.00	0.00	118.18	
5,736.87	25.00	118.18	5,305.31	-962.35	1,796.32	0.00	0.00	0.00	0.00	
6,986.87	0.00	0.00	6,516.02	-1,089.10	2,032.91	2.00	-2.00	0.00	180.00	
8,508.85	0.00	0.00	8,038.00	-1,089.10	2,032.91	0.00	0.00	0.00	0.00	PBHL_Riverbend 3

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_Riverbend 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Riverbend 39-12		
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									
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	2.00	118.18	399.98	-0.82	1.54	1.75	2.00	2.00	0.00
500.00	4.00	118.18	499.84	-3.30	6.15	6.98	2.00	2.00	0.00
600.00	6.00	118.18	599.45	-7.41	13.83	15.69	2.00	2.00	0.00
700.00	8.00	118.18	698.70	-13.17	24.58	27.88	2.00	2.00	0.00
800.00	10.00	118.18	797.47	-20.55	38.36	43.52	2.00	2.00	0.00
900.00	12.00	118.18	895.62	-29.56	55.18	62.60	2.00	2.00	0.00
8 5/8"									
904.48	12.09	118.18	900.00	-30.00	56.01	63.54	2.00	2.00	0.00
1,000.00	14.00	118.18	993.06	-40.19	75.01	85.10	2.00	2.00	0.00
1,100.00	16.00	118.18	1,089.64	-52.41	97.82	110.98	2.00	2.00	0.00
1,200.00	18.00	118.18	1,185.27	-66.21	123.59	140.21	2.00	2.00	0.00
1,300.00	20.00	118.18	1,279.82	-81.59	152.29	172.77	2.00	2.00	0.00
1,400.00	22.00	118.18	1,373.17	-98.51	183.88	208.60	2.00	2.00	0.00
1,500.00	24.00	118.18	1,465.21	-116.96	218.32	247.67	2.00	2.00	0.00
Start 4186.87 hold at 1550.00 MD									
1,550.00	25.00	118.18	1,510.71	-126.75	236.59	268.41	2.00	2.00	0.00
1,600.00	25.00	118.18	1,556.03	-136.73	255.22	289.54	0.00	0.00	0.00
1,700.00	25.00	118.18	1,646.66	-156.69	292.47	331.80	0.00	0.00	0.00
1,800.00	25.00	118.18	1,737.29	-176.65	329.73	374.06	0.00	0.00	0.00
1,900.00	25.00	118.18	1,827.92	-196.60	366.98	416.32	0.00	0.00	0.00
2,000.00	25.00	118.18	1,918.55	-216.56	404.23	458.59	0.00	0.00	0.00
2,100.00	25.00	118.18	2,009.18	-236.52	441.48	500.85	0.00	0.00	0.00
2,200.00	25.00	118.18	2,099.81	-256.48	478.74	543.11	0.00	0.00	0.00
2,300.00	25.00	118.18	2,190.44	-276.43	515.99	585.37	0.00	0.00	0.00
2,400.00	25.00	118.18	2,281.07	-296.39	553.24	627.63	0.00	0.00	0.00
2,500.00	25.00	118.18	2,371.70	-316.35	590.50	669.90	0.00	0.00	0.00
2,600.00	25.00	118.18	2,462.34	-336.31	627.75	712.16	0.00	0.00	0.00
2,700.00	25.00	118.18	2,552.97	-356.26	665.00	754.42	0.00	0.00	0.00
2,800.00	25.00	118.18	2,643.60	-376.22	702.25	796.68	0.00	0.00	0.00
2,900.00	25.00	118.18	2,734.23	-396.18	739.51	838.94	0.00	0.00	0.00
3,000.00	25.00	118.18	2,824.86	-416.13	776.76	881.20	0.00	0.00	0.00
3,100.00	25.00	118.18	2,915.49	-436.09	814.01	923.47	0.00	0.00	0.00
3,200.00	25.00	118.18	3,006.12	-456.05	851.26	965.73	0.00	0.00	0.00
3,300.00	25.00	118.18	3,096.75	-476.01	888.52	1,007.99	0.00	0.00	0.00
3,400.00	25.00	118.18	3,187.38	-495.96	925.77	1,050.25	0.00	0.00	0.00
PARKMAN									
3,479.02	25.00	118.18	3,259.00	-511.74	955.21	1,083.65	0.00	0.00	0.00
3,500.00	25.00	118.18	3,278.01	-515.92	963.02	1,092.51	0.00	0.00	0.00
3,600.00	25.00	118.18	3,368.64	-535.88	1,000.27	1,134.78	0.00	0.00	0.00
3,700.00	25.00	118.18	3,459.27	-555.84	1,037.53	1,177.04	0.00	0.00	0.00
3,800.00	25.00	118.18	3,549.90	-575.79	1,074.78	1,219.30	0.00	0.00	0.00
3,900.00	25.00	118.18	3,640.54	-595.75	1,112.03	1,261.56	0.00	0.00	0.00
4,000.00	25.00	118.18	3,731.17	-615.71	1,149.29	1,303.82	0.00	0.00	0.00
4,100.00	25.00	118.18	3,821.80	-635.67	1,186.54	1,346.08	0.00	0.00	0.00
4,200.00	25.00	118.18	3,912.43	-655.62	1,223.79	1,388.35	0.00	0.00	0.00
4,300.00	25.00	118.18	4,003.06	-675.58	1,261.04	1,430.61	0.00	0.00	0.00
4,400.00	25.00	118.18	4,093.69	-695.54	1,298.30	1,472.87	0.00	0.00	0.00
4,500.00	25.00	118.18	4,184.32	-715.50	1,335.55	1,515.13	0.00	0.00	0.00
4,600.00	25.00	118.18	4,274.95	-735.45	1,372.80	1,557.39	0.00	0.00	0.00
4,700.00	25.00	118.18	4,365.58	-755.41	1,410.05	1,599.66	0.00	0.00	0.00
4,800.00	25.00	118.18	4,456.21	-775.37	1,447.31	1,641.92	0.00	0.00	0.00

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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 39-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Riverbend 39-12		
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)
4,900.00	25.00	118.18	4,546.84	-795.33	1,484.56	1,684.18	0.00	0.00	0.00
SUSSEX									
4,946.51	25.00	118.18	4,589.00	-804.61	1,501.89	1,703.84	0.00	0.00	0.00
5,000.00	25.00	118.18	4,637.47	-815.28	1,521.81	1,726.44	0.00	0.00	0.00
5,100.00	25.00	118.18	4,728.10	-835.24	1,559.06	1,768.70	0.00	0.00	0.00
5,200.00	25.00	118.18	4,818.74	-855.20	1,596.32	1,810.97	0.00	0.00	0.00
5,300.00	25.00	118.18	4,909.37	-875.16	1,633.57	1,853.23	0.00	0.00	0.00
5,400.00	25.00	118.18	5,000.00	-895.11	1,670.82	1,895.49	0.00	0.00	0.00
5,500.00	25.00	118.18	5,090.63	-915.07	1,708.08	1,937.75	0.00	0.00	0.00
5,600.00	25.00	118.18	5,181.26	-935.03	1,745.33	1,980.01	0.00	0.00	0.00
5,700.00	25.00	118.18	5,271.89	-954.99	1,782.58	2,022.27	0.00	0.00	0.00
Start Drop -2.00									
5,736.87	25.00	118.18	5,305.31	-962.35	1,796.32	2,037.86	0.00	0.00	0.00
5,800.00	23.74	118.18	5,362.81	-974.65	1,819.28	2,063.90	2.00	-2.00	0.00
5,900.00	21.74	118.18	5,455.03	-992.90	1,853.34	2,102.55	2.00	-2.00	0.00
6,000.00	19.74	118.18	5,548.55	-1,009.62	1,884.55	2,137.96	2.00	-2.00	0.00
6,100.00	17.74	118.18	5,643.25	-1,024.79	1,912.87	2,170.08	2.00	-2.00	0.00
6,200.00	15.74	118.18	5,739.00	-1,038.39	1,938.25	2,198.88	2.00	-2.00	0.00
6,300.00	13.74	118.18	5,835.71	-1,050.40	1,960.67	2,224.32	2.00	-2.00	0.00
6,400.00	11.74	118.18	5,933.24	-1,060.81	1,980.11	2,246.36	2.00	-2.00	0.00
6,500.00	9.74	118.18	6,031.49	-1,069.61	1,996.53	2,264.99	2.00	-2.00	0.00
6,600.00	7.74	118.18	6,130.32	-1,076.78	2,009.92	2,280.18	2.00	-2.00	0.00
6,700.00	5.74	118.18	6,229.63	-1,082.32	2,020.26	2,291.91	2.00	-2.00	0.00
6,800.00	3.74	118.18	6,329.28	-1,086.22	2,027.54	2,300.17	2.00	-2.00	0.00
6,900.00	1.74	118.18	6,429.16	-1,088.47	2,031.75	2,304.95	2.00	-2.00	0.00
Start 1521.98 hold at 6986.87 MD									
6,986.87	0.00	0.00	6,516.02	-1,089.10	2,032.91	2,306.26	2.00	-2.00	0.00
7,000.00	0.00	0.00	6,529.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
7,100.00	0.00	0.00	6,629.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
7,200.00	0.00	0.00	6,729.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
7,300.00	0.00	0.00	6,829.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
7,400.00	0.00	0.00	6,929.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
7,500.00	0.00	0.00	7,029.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
NIO									
7,591.85	0.00	0.00	7,121.00	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
7,600.00	0.00	0.00	7,129.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
7,700.00	0.00	0.00	7,229.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
7,800.00	0.00	0.00	7,329.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
7,900.00	0.00	0.00	7,429.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
CODELL									
7,938.85	0.00	0.00	7,468.00	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
8,000.00	0.00	0.00	7,529.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
GREENHORN									
8,023.85	0.00	0.00	7,553.00	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
8,100.00	0.00	0.00	7,629.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
8,200.00	0.00	0.00	7,729.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
8,300.00	0.00	0.00	7,829.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
JSAND									
8,373.85	0.00	0.00	7,903.00	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
8,400.00	0.00	0.00	7,929.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
8,500.00	0.00	0.00	8,029.15	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00
PBHL_Riverbend 39-12(1320 FSL 50 FEL)									
8,508.85	0.00	0.00	8,038.00	-1,089.10	2,032.91	2,306.26	0.00	0.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_Riverbend 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Riverbend 39-12		
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)

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 39-1	0.00	0.00	8,038.00	-1,089.10	2,032.91	1,266,132.05	3,187,541.18	40° 3' 43.117 N	104° 49' 47.863 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
904.48	900.00	8 5/8"	8.62	11.00	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,479.02	3,259.00	PARKMAN				
4,946.51	4,589.00	SUSSEX				
7,591.85	7,121.00	NIO				
7,938.85	7,468.00	CODELL				
8,023.85	7,553.00	GREENHORN				
8,373.85	7,903.00	JSAND				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.00	300.00	0.00	0.00	Start Build 2.00
1,550.00	1,510.71	-126.75	236.59	Start 4186.87 hold at 1550.00 MD
5,736.87	5,305.31	-962.35	1,796.32	Start Drop -2.00
6,986.87	6,516.02	-1,089.10	2,032.91	Start 1521.98 hold at 6986.87 MD
8,508.85	8,038.00	-1,089.10	2,032.91	TD at 8508.85



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_Riverbend 25-12 PAD
P_Riverbend 39-12**

**P_Riverbend 39-12
PLAN #1 6-22-10 RHS**

Anticollision Report

22 June, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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	8,508.85	PLAN #1 6-22-10 RHS (P_Riverbend 39-1	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
WELD_Riverbend 25-12 PAD						
JAMES N. MATHISEN UNIT B #2 EXISTING - JAMES N	3,980.71	3,700.61	194.03	17.28	1.098	Level 2, CC
JAMES N. MATHISEN UNIT B #2 EXISTING - JAMES N	4,000.00	3,717.95	194.21	16.68	1.094	Level 2, ES, SF
P_Riverbend 10-12 - P_Riverbend 10-12 - PLAN #1 6-22	300.00	300.00	15.95	5.71	1.557	CC
P_Riverbend 10-12 - P_Riverbend 10-12 - PLAN #1 6-22	400.00	399.98	17.51	3.07	1.212	Level 2, ES
P_Riverbend 10-12 - P_Riverbend 10-12 - PLAN #1 6-22	500.00	499.84	22.35	3.74	1.201	Level 2, SF
P_Riverbend 22-12 - P_Riverbend 22-12 - PLAN #1 6-22	300.00	300.00	63.82	62.73	58.540	CC, ES
P_Riverbend 22-12 - P_Riverbend 22-12 - PLAN #1 6-22	700.00	698.70	89.31	86.49	31.642	SF
P_Riverbend 23-12 - P_Riverbend 23-12 - PLAN #1 6-22	300.00	300.00	47.86	46.77	43.904	CC, ES
P_Riverbend 23-12 - P_Riverbend 23-12 - PLAN #1 6-22	700.00	698.70	73.62	70.80	26.114	SF
P_Riverbend 25-12 - P_Riverbend 25-12 - PLAN #1 6-22	300.00	300.00	31.91	30.82	29.270	CC, ES
P_Riverbend 25-12 - P_Riverbend 25-12 - PLAN #1 6-22	600.00	599.45	46.34	43.96	19.492	SF
P_Riverbend 9-12 - P_Riverbend 9-12 - PLAN #1 6-22-1	300.00	300.00	16.23	15.14	14.892	CC
P_Riverbend 9-12 - P_Riverbend 9-12 - PLAN #1 6-22-1	400.00	399.44	16.41	14.91	10.909	ES
P_Riverbend 9-12 - P_Riverbend 9-12 - PLAN #1 6-22-1	900.00	896.08	28.90	24.70	6.883	SF

Offset Design WELD_Riverbend 25-12 PAD - JAMES N. MATHISEN UNIT B #2 EXISTING - JAMES N. MATHISEN U											
Survey Program: 0-UNKNOWN											
Reference Offset Semi Major Axis											
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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)
0.00	0.00	0.00	0.00	0.00	0.00	130.95	-902.30	1,039.82	1,376.88		
100.00	100.00	93.76	93.75	0.10	1.88	130.93	-901.53	1,039.82	1,376.30	1,374.33	1.97
200.00	200.00	210.42	210.37	0.32	6.43	130.83	-898.44	1,039.82	1,374.56	1,367.82	6.74
300.00	300.00	310.36	310.25	0.55	10.44	130.72	-894.95	1,039.82	1,372.28	1,361.32	10.96
400.00	399.98	410.25	410.08	0.75	14.45	12.46	-891.47	1,039.82	1,368.30	1,353.13	15.17
500.00	499.84	509.96	509.73	0.96	18.46	12.43	-887.99	1,039.82	1,360.92	1,341.61	19.31
600.00	599.45	609.37	609.08	1.20	22.45	12.44	-884.52	1,039.82	1,350.15	1,326.74	23.41
700.00	698.70	708.36	708.01	1.48	26.43	12.50	-881.06	1,039.82	1,336.00	1,308.55	27.44
800.00	797.47	806.81	806.40	1.80	30.38	12.61	-877.63	1,039.82	1,318.48	1,287.09	31.39
900.00	895.62	904.59	904.12	2.18	34.31	12.77	-874.22	1,039.82	1,297.62	1,262.38	35.24
1,000.00	993.06	1,001.59	1,001.06	2.62	38.21	12.99	-870.83	1,039.82	1,273.45	1,234.48	38.97
1,100.00	1,089.64	1,097.69	1,097.11	3.12	42.07	13.27	-867.48	1,039.82	1,246.00	1,203.42	42.58
1,200.00	1,185.27	1,192.78	1,192.13	3.68	45.89	13.61	-864.16	1,039.82	1,215.30	1,169.26	46.04
1,300.00	1,279.82	1,286.73	1,286.03	4.32	49.66	14.03	-860.88	1,039.82	1,181.42	1,132.06	49.36

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 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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	
1,400.00	1,373.17	1,379.44	1,378.68	5.02	53.38	14.53	-857.64	1,039.82	1,144.39	1,091.87	52.52	21.789	
1,500.00	1,465.21	1,470.78	1,469.97	5.80	57.05	15.13	-854.46	1,039.82	1,104.28	1,048.75	55.52	19.889	
1,550.00	1,510.71	1,515.91	1,515.07	6.22	58.86	15.48	-852.88	1,039.82	1,083.09	1,026.12	56.96	19.014	
1,600.00	1,556.03	1,560.85	1,559.98	6.64	60.67	15.71	-851.31	1,039.82	1,061.53	1,002.71	58.82	18.048	
1,700.00	1,646.66	1,650.73	1,649.81	7.51	64.28	16.21	-848.18	1,039.82	1,018.46	955.92	62.54	16.285	
1,800.00	1,737.29	1,740.61	1,739.63	8.37	67.89	16.75	-845.04	1,039.82	975.46	909.18	66.29	14.716	
1,900.00	1,827.92	1,830.49	1,829.45	9.25	71.50	17.34	-841.90	1,039.82	932.54	862.49	70.06	13.311	
2,000.00	1,918.55	1,920.37	1,919.28	10.13	75.11	17.99	-838.77	1,039.82	889.71	815.86	73.85	12.047	
2,100.00	2,009.18	2,010.25	2,009.10	11.01	78.72	18.70	-835.63	1,039.82	846.98	769.30	77.68	10.904	
2,200.00	2,099.81	2,100.13	2,098.93	11.89	82.33	19.48	-832.49	1,039.82	804.37	722.83	81.54	9.864	
2,300.00	2,190.44	2,190.00	2,188.75	12.78	85.94	20.35	-829.36	1,039.82	761.90	676.45	85.45	8.916	
2,400.00	2,281.07	2,279.88	2,278.58	13.67	89.55	21.33	-826.22	1,039.82	719.60	630.19	89.41	8.049	
2,500.00	2,371.70	2,369.76	2,368.40	14.56	93.16	22.42	-823.08	1,039.82	677.48	584.06	93.42	7.252	
2,600.00	2,462.34	2,459.64	2,458.22	15.45	96.77	23.65	-819.95	1,039.82	635.61	538.09	97.52	6.518	
2,700.00	2,552.97	2,549.52	2,548.05	16.34	100.38	25.06	-816.81	1,039.82	594.01	492.31	101.70	5.841	
2,800.00	2,643.60	2,639.40	2,637.87	17.23	103.99	26.66	-813.67	1,039.82	552.76	446.76	106.01	5.214	
2,900.00	2,734.23	2,729.28	2,727.70	18.12	107.60	28.52	-810.54	1,039.82	511.95	401.49	110.46	4.635	
3,000.00	2,824.86	2,819.16	2,817.52	19.02	111.21	30.69	-807.40	1,039.82	471.67	356.57	115.10	4.098	
3,100.00	2,915.49	2,909.04	2,907.35	19.91	114.82	33.24	-804.26	1,039.82	432.09	312.11	119.98	3.601	
3,200.00	3,006.12	2,998.92	2,997.17	20.80	118.43	36.27	-801.13	1,039.82	393.42	268.26	125.16	3.143	
3,300.00	3,096.75	3,088.79	3,086.99	21.70	122.04	39.91	-797.99	1,039.82	355.94	225.21	130.72	2.723	
3,400.00	3,187.38	3,178.67	3,176.82	22.59	125.65	44.32	-794.85	1,039.82	320.08	183.31	136.77	2.340	
3,500.00	3,278.01	3,268.55	3,266.64	23.49	129.26	49.71	-791.72	1,039.82	286.45	143.09	143.36	1.998	
3,600.00	3,368.64	3,358.43	3,356.47	24.38	132.87	56.32	-788.58	1,039.82	255.93	105.39	150.53	1.700	
3,700.00	3,459.27	3,448.31	3,446.29	25.28	136.48	64.34	-785.44	1,039.82	229.76	71.62	158.14	1.453 Level 3	
3,800.00	3,549.90	3,538.19	3,536.12	26.17	140.09	73.87	-782.31	1,039.82	209.57	43.85	165.72	1.265 Level 3	
3,900.00	3,640.54	3,628.07	3,625.94	27.07	143.70	84.72	-779.17	1,039.82	197.22	24.74	172.49	1.143 Level 2	
3,980.71	3,713.68	3,700.61	3,698.43	27.79	146.62	94.02	-776.64	1,039.82	194.03	17.28	176.74	1.098 Level 2, CC	
4,000.00	3,731.17	3,717.95	3,715.76	27.97	147.31	96.27	-776.03	1,039.82	194.21	16.68	177.53	1.094 Level 2, ES, SF	
4,100.00	3,821.80	3,807.83	3,805.59	28.86	150.92	107.64	-772.90	1,039.82	200.95	20.50	180.45	1.114 Level 2	
4,200.00	3,912.43	3,897.71	3,895.41	29.76	154.53	118.03	-769.76	1,039.82	216.54	34.88	181.65	1.192 Level 2	
4,300.00	4,003.06	3,987.59	3,985.24	30.65	158.14	126.98	-766.62	1,039.82	239.25	57.28	181.97	1.315 Level 3	
4,400.00	4,093.69	4,077.46	4,075.06	31.55	161.75	134.44	-763.48	1,039.82	267.27	85.15	182.12	1.468 Level 3	
4,500.00	4,184.32	4,167.34	4,164.89	32.45	165.36	140.54	-760.35	1,039.82	299.12	116.57	182.54	1.639	
4,600.00	4,274.95	4,257.22	4,254.71	33.34	168.97	145.53	-757.21	1,039.82	333.69	150.31	183.38	1.820	
4,700.00	4,365.58	4,347.10	4,344.53	34.24	172.58	149.63	-754.07	1,039.82	370.24	185.57	184.67	2.005	
4,800.00	4,456.21	4,436.98	4,434.36	35.14	176.19	153.02	-750.94	1,039.82	408.22	221.88	186.34	2.191	
4,900.00	4,546.84	4,526.86	4,524.18	36.03	179.80	155.85	-747.80	1,039.82	447.28	258.92	188.35	2.375	
5,000.00	4,637.47	4,616.74	4,614.01	36.93	183.41	158.24	-744.66	1,039.82	487.15	296.51	190.64	2.555	
5,100.00	4,728.10	4,706.62	4,703.83	37.83	187.02	160.28	-741.53	1,039.82	527.64	334.50	193.14	2.732	
5,200.00	4,818.74	4,796.50	4,793.66	38.73	190.63	162.03	-738.39	1,039.82	568.64	372.82	195.82	2.904	
5,300.00	4,909.37	4,886.38	4,883.48	39.62	194.24	163.56	-735.25	1,039.82	610.03	411.38	198.65	3.071	
5,400.00	5,000.00	4,976.26	4,973.31	40.52	197.85	164.89	-732.12	1,039.82	651.74	450.14	201.60	3.233	
5,500.00	5,090.63	5,066.13	5,063.13	41.42	201.46	166.07	-728.98	1,039.82	693.71	489.08	204.64	3.390	
5,600.00	5,181.26	5,156.01	5,152.95	42.31	205.07	167.11	-725.84	1,039.82	735.90	528.15	207.76	3.542	
5,700.00	5,271.89	5,245.89	5,242.78	43.21	208.68	168.04	-722.71	1,039.82	778.28	567.33	210.94	3.690	
5,736.87	5,305.31	5,279.03	5,275.90	43.54	210.02	168.36	-721.55	1,039.82	793.94	581.81	212.13	3.743	
5,800.00	5,362.81	5,336.07	5,332.90	44.04	212.31	168.98	-719.56	1,039.82	820.18	604.26	215.92	3.799	
5,900.00	5,455.03	5,427.60	5,424.38	44.69	215.98	169.84	-716.37	1,039.82	859.29	637.39	221.91	3.872	
6,000.00	5,548.55	5,520.48	5,517.20	45.28	219.71	170.58	-713.12	1,039.82	895.32	667.45	227.87	3.929	
6,100.00	5,643.25	5,614.59	5,611.25	45.82	223.49	171.21	-709.84	1,039.82	928.18	694.43	233.75	3.971	
6,200.00	5,739.00	5,709.81	5,706.41	46.30	227.32	171.76	-706.52	1,039.82	957.84	718.32	239.52	3.999	

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 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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						
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
6,300.00	5,835.71	5,806.04	5,802.58	46.73	231.18	172.24	-703.16	1,039.82	984.22	738.92	245.31	4.012	
6,400.00	5,933.24	5,903.15	5,899.64	47.10	235.08	172.66	-699.77	1,039.82	1,007.30	756.34	250.96	4.014	
6,500.00	6,031.49	6,001.03	5,997.45	47.42	239.02	173.02	-696.35	1,039.82	1,027.03	770.62	256.41	4.005	
6,600.00	6,130.32	6,099.55	6,095.92	47.69	242.97	173.34	-692.92	1,039.82	1,043.37	781.75	261.62	3.988	
6,700.00	6,229.63	6,198.60	6,194.91	47.90	246.95	173.62	-689.46	1,039.82	1,056.31	789.72	266.59	3.962	
6,800.00	6,329.28	6,298.06	6,294.30	48.07	250.95	173.86	-685.99	1,039.82	1,065.82	794.55	271.27	3.929	
6,900.00	6,429.16	6,397.80	6,393.98	48.18	254.95	174.07	-682.51	1,039.82	1,071.89	796.22	275.66	3.888	
6,986.87	6,516.02	6,484.58	6,480.71	48.25	258.44	-67.59	-679.48	1,039.82	1,074.35	795.13	279.22	3.848	
7,000.00	6,529.15	6,497.70	6,493.83	48.25	258.97	-67.56	-679.02	1,039.82	1,074.52	794.76	279.76	3.841	
7,100.00	6,629.15	6,597.64	6,593.71	48.32	262.98	-67.39	-675.53	1,039.82	1,075.86	792.00	283.86	3.790	
7,200.00	6,729.15	6,697.58	6,693.58	48.38	266.99	-67.22	-672.04	1,039.82	1,077.21	789.24	287.97	3.741	
7,300.00	6,829.15	6,797.52	6,793.46	48.44	271.01	-67.05	-668.56	1,039.82	1,078.56	786.49	292.07	3.693	
7,400.00	6,929.15	6,897.46	6,893.34	48.50	275.02	-66.88	-665.07	1,039.82	1,079.93	783.75	296.18	3.646	
7,500.00	7,029.15	6,997.40	6,993.22	48.57	279.04	-66.71	-661.58	1,039.82	1,081.31	781.01	300.30	3.601	
7,600.00	7,129.15	7,097.34	7,093.10	48.63	283.05	-66.54	-658.09	1,039.82	1,082.69	778.28	304.41	3.557	
7,700.00	7,229.15	7,197.28	7,192.97	48.70	287.07	-66.37	-654.60	1,039.82	1,084.09	775.56	308.53	3.514	
7,800.00	7,329.15	7,297.22	7,292.85	48.77	291.08	-66.20	-651.12	1,039.82	1,085.49	772.84	312.65	3.472	
7,900.00	7,429.15	7,397.16	7,392.73	48.83	295.09	-66.03	-647.63	1,039.82	1,086.90	770.13	316.77	3.431	
8,000.00	7,529.15	7,497.09	7,492.61	48.90	299.11	-65.87	-644.14	1,039.82	1,088.33	767.43	320.90	3.392	
8,100.00	7,629.15	7,597.03	7,592.49	48.97	303.12	-65.70	-640.65	1,039.82	1,089.76	764.74	325.02	3.353	
8,200.00	7,729.15	7,696.97	7,692.37	49.04	307.14	-65.53	-637.17	1,039.82	1,091.20	762.05	329.15	3.315	
8,300.00	7,829.15	7,796.91	7,792.24	49.12	311.15	-65.36	-633.68	1,039.82	1,092.65	759.37	333.29	3.278	
8,400.00	7,929.15	7,896.85	7,892.12	49.19	315.16	-65.20	-630.19	1,039.82	1,094.11	756.69	337.42	3.243	
8,508.85	8,038.00	8,005.64	8,000.84	49.27	319.53	-65.02	-626.39	1,039.82	1,095.71	753.79	341.92	3.205	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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 10-12 - P_Riverbend 10-12 - PLAN #1 6-22-10 RHS												Offset Site Error:	0.00 ft
Survey Program: 0-UNKNOWN												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis			Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.00	0.00	0.00	0.00	-89.97	0.01	-15.95	15.95				
100.00	100.00	100.00	100.00	0.10	1.70	-89.97	0.01	-15.95	15.95	14.16	1.80	8.885	
200.00	200.00	200.00	200.00	0.32	5.70	-89.97	0.01	-15.95	15.95	9.93	6.02	2.650	
300.00	300.00	300.00	300.00	0.55	9.70	-89.97	0.01	-15.95	15.95	5.71	10.25	1.557 CC	
400.00	399.98	399.98	399.98	0.75	13.70	154.53	0.01	-15.95	17.51	3.07	14.44	1.212 Level 2, ES	
500.00	499.84	499.84	499.84	0.96	17.69	160.28	0.01	-15.95	22.35	3.74	18.61	1.201 Level 2, SF	
600.00	599.45	599.45	599.45	1.20	21.68	165.73	0.01	-15.95	30.70	7.96	22.73	1.350 Level 3	
700.00	698.70	698.70	698.70	1.48	25.65	169.73	0.01	-15.95	42.62	15.82	26.80	1.590	
800.00	797.47	797.47	797.47	1.80	29.60	172.44	0.01	-15.95	58.08	27.30	30.78	1.887	
900.00	895.62	895.62	895.62	2.18	33.52	174.27	0.01	-15.95	77.04	42.38	34.66	2.223	
1,000.00	993.06	993.06	993.06	2.62	37.42	175.53	0.01	-15.95	99.45	61.02	38.43	2.588	
1,100.00	1,089.64	1,092.16	1,092.15	3.12	37.76	175.89	-1.43	-15.58	124.36	85.69	38.67	3.216	
1,200.00	1,185.27	1,191.62	1,191.48	3.68	34.26	175.16	-6.19	-14.34	150.56	115.34	35.22	4.275	
1,300.00	1,279.82	1,291.17	1,290.67	4.32	30.50	173.82	-14.30	-12.24	178.09	146.51	31.58	5.639	
1,400.00	1,373.17	1,390.70	1,389.49	5.02	26.88	172.13	-25.74	-9.27	207.05	178.90	28.15	7.355	
1,500.00	1,465.21	1,486.05	1,483.91	5.80	23.62	170.57	-38.64	-5.92	238.26	213.10	25.16	9.472	
1,550.00	1,510.71	1,533.07	1,530.46	6.22	22.14	169.97	-45.02	-4.27	255.12	231.29	23.83	10.705	
1,600.00	1,556.03	1,579.95	1,576.88	6.64	20.70	169.51	-51.37	-2.62	272.40	249.67	22.73	11.982	
1,700.00	1,646.66	1,673.70	1,669.71	7.51	18.20	168.75	-64.08	0.68	307.00	286.10	20.90	14.688	
1,800.00	1,737.29	1,767.46	1,762.54	8.37	16.32	168.15	-76.80	3.98	341.64	321.97	19.67	17.370	
1,900.00	1,827.92	1,861.21	1,855.37	9.25	15.27	167.66	-89.51	7.28	376.31	357.07	19.24	19.556	
2,000.00	1,918.55	1,954.97	1,948.20	10.13	15.20	167.24	-102.22	10.58	411.00	391.24	19.76	20.799	
2,100.00	2,009.18	2,048.72	2,041.03	11.01	16.14	166.90	-114.93	13.87	445.70	424.48	21.22	21.000	
2,200.00	2,099.81	2,142.47	2,133.86	11.89	17.92	166.60	-127.64	17.17	480.42	457.03	23.39	20.539	
2,300.00	2,190.44	2,236.23	2,226.68	12.78	20.34	166.34	-140.35	20.47	515.14	488.97	26.17	19.681	
2,400.00	2,281.07	2,329.98	2,319.51	13.67	23.20	166.12	-153.06	23.77	549.87	520.53	29.34	18.740	
2,500.00	2,371.70	2,423.73	2,412.34	14.56	26.37	165.92	-165.77	27.07	584.61	551.84	32.77	17.838	
2,600.00	2,462.34	2,517.49	2,505.17	15.45	29.73	165.75	-178.48	30.37	619.36	582.98	36.38	17.023	
2,700.00	2,552.97	2,611.24	2,598.00	16.34	33.24	165.59	-191.19	33.67	654.11	613.99	40.12	16.305	
2,800.00	2,643.60	2,705.00	2,690.83	17.23	36.85	165.45	-203.90	36.97	688.86	644.92	43.94	15.677	
2,900.00	2,734.23	2,798.75	2,783.66	18.12	40.53	165.32	-216.62	40.26	723.62	675.79	47.83	15.129	
3,000.00	2,824.86	2,892.50	2,876.49	19.02	44.27	165.21	-229.33	43.56	758.38	706.61	51.77	14.649	
3,100.00	2,915.49	2,986.26	2,969.32	19.91	48.04	165.10	-242.04	46.86	793.14	737.40	55.75	14.228	
3,200.00	3,006.12	3,080.01	3,062.15	20.80	51.86	165.00	-254.75	50.16	827.91	768.15	59.75	13.856	
3,300.00	3,096.75	3,173.76	3,154.98	21.70	55.69	164.91	-267.46	53.46	862.67	798.89	63.78	13.525	
3,400.00	3,187.38	3,267.52	3,247.81	22.59	59.55	164.83	-280.17	56.76	897.44	829.61	67.83	13.231	
3,500.00	3,278.01	3,361.27	3,340.64	23.49	63.42	164.76	-292.88	60.06	932.21	860.32	71.89	12.967	
3,600.00	3,368.64	3,455.03	3,433.47	24.38	67.31	164.69	-305.59	63.35	966.98	891.01	75.97	12.728	
3,700.00	3,459.27	3,548.78	3,526.30	25.28	71.21	164.62	-318.30	66.65	1,001.75	921.70	80.06	12.513	
3,800.00	3,549.90	3,642.53	3,619.13	26.17	75.12	164.56	-331.01	69.95	1,036.53	952.37	84.15	12.317	
3,900.00	3,640.54	3,736.29	3,711.96	27.07	79.04	164.50	-343.72	73.25	1,071.30	983.04	88.26	12.138	
4,000.00	3,731.17	3,830.04	3,804.79	27.97	82.96	164.45	-356.43	76.55	1,106.08	1,013.71	92.37	11.974	
4,100.00	3,821.80	3,923.80	3,897.62	28.86	86.89	164.40	-369.15	79.85	1,140.85	1,044.36	96.49	11.824	
4,200.00	3,912.43	4,017.55	3,990.45	29.76	90.83	164.35	-381.86	83.15	1,175.63	1,075.02	100.61	11.685	
4,300.00	4,003.06	4,111.30	4,083.28	30.65	94.77	164.31	-394.57	86.45	1,210.41	1,105.67	104.74	11.556	
4,400.00	4,093.69	4,205.06	4,176.11	31.55	98.72	164.26	-407.28	89.74	1,245.18	1,136.31	108.87	11.437	
4,500.00	4,184.32	4,288.04	4,258.33	32.45	102.19	164.25	-418.09	92.55	1,280.22	1,167.67	112.55	11.374	
4,600.00	4,274.95	4,364.81	4,334.64	33.34	105.30	164.31	-426.20	94.65	1,316.38	1,200.51	115.87	11.360	
4,700.00	4,365.58	4,440.71	4,410.28	34.24	108.31	164.46	-432.27	96.23	1,353.72	1,234.66	119.06	11.370	
4,800.00	4,456.21	4,515.65	4,485.10	35.14	111.20	164.67	-436.35	97.29	1,392.23	1,270.13	122.11	11.402	
4,900.00	4,546.84	4,589.55	4,558.96	36.03	113.97	164.95	-438.52	97.85	1,431.93	1,306.91	125.01	11.454	
5,000.00	4,637.47	4,668.06	4,637.47	36.93	113.45	165.30	-438.95	97.96	1,472.75	1,347.89	124.85	11.796	

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 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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
WELD_Riverbend 25-12 PAD - P_Riverbend 10-12 - P_Riverbend 10-12 - PLAN #1 6-22-10 RHS												Offset Well Error:	0.00 ft
Survey Program: 0-UNKNOWN													
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	4,728.10	4,758.69	4,728.10	37.83	110.38	165.70	-438.95	97.96	1,513.89	1,391.57	122.33	12.376	
5,200.00	4,818.74	4,849.33	4,818.74	38.73	107.35	166.09	-438.95	97.96	1,555.10	1,435.27	119.83	12.977	
5,300.00	4,909.37	4,939.96	4,909.37	39.62	104.35	166.45	-438.95	97.96	1,596.36	1,478.99	117.37	13.601	
5,400.00	5,000.00	5,030.59	5,000.00	40.52	101.39	166.79	-438.95	97.96	1,637.67	1,522.72	114.95	14.247	
5,500.00	5,090.63	5,121.22	5,090.63	41.42	98.48	167.12	-438.95	97.96	1,679.04	1,566.47	112.57	14.916	
5,600.00	5,181.26	5,211.85	5,181.26	42.31	95.62	167.43	-438.95	97.96	1,720.44	1,610.21	110.23	15.608	
5,700.00	5,271.89	5,302.48	5,271.89	43.21	92.80	167.73	-438.95	97.96	1,761.88	1,653.94	107.94	16.323	
5,736.87	5,305.31	5,335.89	5,305.31	43.54	91.79	167.84	-438.95	97.96	1,777.17	1,670.06	107.12	16.591	
5,800.00	5,362.81	5,393.40	5,362.81	44.04	90.04	168.13	-438.95	97.96	1,802.75	1,696.71	106.04	17.001	
5,900.00	5,455.03	5,485.62	5,455.03	44.69	87.31	168.54	-438.95	97.96	1,840.71	1,736.55	104.16	17.671	
6,000.00	5,548.55	5,579.14	5,548.55	45.28	84.62	168.90	-438.95	97.96	1,875.52	1,773.41	102.11	18.367	
6,100.00	5,643.25	5,673.84	5,643.25	45.82	81.97	169.21	-438.95	97.96	1,907.12	1,807.21	99.90	19.090	
6,200.00	5,739.00	5,769.59	5,739.00	46.30	79.39	169.48	-438.95	97.96	1,935.46	1,837.90	97.56	19.839	
6,300.00	5,835.71	5,866.30	5,835.71	46.73	76.88	169.71	-438.95	97.96	1,960.50	1,865.39	95.11	20.613	
6,400.00	5,933.24	5,963.83	5,933.24	47.10	74.48	169.90	-438.95	97.96	1,982.22	1,889.52	92.70	21.383	
6,500.00	6,031.49	6,062.08	6,031.49	47.42	72.19	170.06	-438.95	97.96	2,000.57	1,910.27	90.30	22.155	
6,600.00	6,130.32	6,160.91	6,130.32	47.69	70.03	170.18	-438.95	97.96	2,015.54	1,927.66	87.88	22.934	
6,700.00	6,229.63	6,260.22	6,229.63	47.90	68.02	170.28	-438.95	97.96	2,027.11	1,941.62	85.49	23.713	
6,800.00	6,329.28	6,359.87	6,329.28	48.07	66.19	170.34	-438.95	97.96	2,035.25	1,952.10	83.14	24.479	
6,900.00	6,429.16	6,459.75	6,429.16	48.18	64.55	170.38	-438.95	97.96	2,039.96	1,959.06	80.89	25.218	
6,986.87	6,516.02	6,546.61	6,516.02	48.25	63.29	-71.43	-438.95	97.96	2,041.25	1,962.20	79.05	25.821	
7,000.00	6,529.15	6,559.74	6,529.15	48.25	63.11	-71.43	-438.95	97.96	2,041.25	1,962.38	78.87	25.880	
7,100.00	6,629.15	6,659.74	6,629.15	48.32	61.90	-71.43	-438.95	97.96	2,041.25	1,963.59	77.67	26.282	
7,200.00	6,729.15	6,759.74	6,729.15	48.38	60.93	-71.43	-438.95	97.96	2,041.25	1,964.53	76.72	26.606	
7,300.00	6,829.15	6,859.74	6,829.15	48.44	60.21	-71.43	-438.95	97.96	2,041.25	1,965.20	76.05	26.840	
7,400.00	6,929.15	6,959.74	6,929.15	48.50	59.75	-71.43	-438.95	97.96	2,041.25	1,965.58	75.68	26.974	
7,500.00	7,029.15	7,059.74	7,029.15	48.57	59.56	-71.43	-438.95	97.96	2,041.25	1,965.66	75.60	27.002	
7,600.00	7,129.15	7,159.74	7,129.15	48.63	59.63	-71.43	-438.95	97.96	2,041.25	1,965.44	75.82	26.923	
7,700.00	7,229.15	7,259.74	7,229.15	48.70	59.97	-71.43	-438.95	97.96	2,041.25	1,964.91	76.34	26.739	
7,800.00	7,329.15	7,359.74	7,329.15	48.77	60.57	-71.43	-438.95	97.96	2,041.25	1,964.10	77.16	26.456	
7,900.00	7,429.15	7,459.74	7,429.15	48.83	61.43	-71.43	-438.95	97.96	2,041.25	1,963.00	78.26	26.085	
8,000.00	7,529.15	7,559.74	7,529.15	48.90	62.53	-71.43	-438.95	97.96	2,041.25	1,961.63	79.62	25.637	
8,100.00	7,629.15	7,659.74	7,629.15	48.97	63.87	-71.43	-438.95	97.96	2,041.25	1,960.02	81.24	25.126	
8,200.00	7,729.15	7,759.74	7,729.15	49.04	65.42	-71.43	-438.95	97.96	2,041.25	1,958.16	83.09	24.567	
8,300.00	7,829.15	7,859.74	7,829.15	49.12	67.17	-71.43	-438.95	97.96	2,041.25	1,956.10	85.15	23.972	
8,400.00	7,929.15	7,959.74	7,929.15	49.19	69.11	-71.43	-438.95	97.96	2,041.25	1,953.84	87.41	23.352	
8,508.85	8,038.00	8,068.59	8,038.00	49.27	71.41	-71.43	-438.95	97.96	2,041.25	1,951.20	90.06	22.666	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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	
0.00	0.00	0.00	0.00	0.00	0.00	-90.33	-0.37	-63.81	63.82				
100.00	100.00	100.00	100.00	0.10	0.10	-90.33	-0.37	-63.81	63.82	63.62	0.19	334.022	
200.00	200.00	200.00	200.00	0.32	0.32	-90.33	-0.37	-63.81	63.82	63.17	0.64	99.621	
300.00	300.00	300.00	300.00	0.55	0.55	-90.33	-0.37	-63.81	63.82	62.73	1.09	58.540 CC, ES	
400.00	399.98	399.98	399.98	0.75	0.77	152.21	-0.37	-63.81	65.35	63.83	1.52	42.989	
500.00	499.84	499.84	499.84	0.96	0.99	154.16	-0.37	-63.81	70.03	68.08	1.94	36.015	
600.00	599.45	599.45	599.45	1.20	1.22	156.89	-0.37	-63.81	77.97	75.59	2.38	32.759	
700.00	698.70	698.70	698.70	1.48	1.44	159.88	-0.37	-63.81	89.31	86.49	2.82	31.642 SF	
800.00	797.47	797.47	797.47	1.80	1.66	162.75	-0.37	-63.81	104.15	100.88	3.27	31.865	
900.00	895.62	895.62	895.62	2.18	1.88	165.30	-0.37	-63.81	122.53	118.81	3.72	32.973	
1,000.00	993.06	993.06	993.06	2.62	2.10	167.46	-0.37	-63.81	144.42	140.26	4.16	34.687	
1,100.00	1,089.64	1,084.72	1,084.70	3.12	2.30	169.08	-0.25	-65.06	171.10	166.51	4.59	37.255	
1,200.00	1,185.27	1,173.38	1,173.28	3.68	2.48	170.17	0.12	-69.04	204.08	199.07	5.01	40.712	
1,300.00	1,279.82	1,258.93	1,258.58	4.32	2.67	170.87	0.71	-75.46	243.09	237.66	5.43	44.741	
1,400.00	1,373.17	1,340.97	1,340.17	5.02	2.86	171.29	1.50	-84.00	287.83	281.98	5.86	49.151	
1,500.00	1,465.21	1,419.21	1,417.71	5.80	3.06	171.51	2.45	-94.30	338.00	331.72	6.28	53.815	
1,550.00	1,510.71	1,456.82	1,454.89	6.22	3.16	171.57	2.98	-100.00	365.03	358.54	6.49	56.207	
1,600.00	1,556.03	1,493.61	1,491.17	6.64	3.26	171.68	3.54	-106.05	392.94	386.20	6.74	58.289	
1,700.00	1,646.66	1,565.38	1,561.72	7.51	3.49	171.81	4.76	-119.19	450.27	443.03	7.24	62.188	
1,800.00	1,737.29	1,634.76	1,629.58	8.37	3.72	171.85	6.09	-133.55	509.53	501.79	7.74	65.801	
1,900.00	1,827.92	1,700.00	1,693.06	9.25	3.96	171.82	7.48	-148.55	570.62	562.37	8.25	69.206	
2,000.00	1,918.55	1,766.50	1,757.38	10.13	4.24	171.75	9.03	-165.31	633.44	624.68	8.76	72.322	
2,100.00	2,009.18	1,828.96	1,817.44	11.01	4.52	171.65	10.61	-182.41	697.91	688.64	9.27	75.293	
2,200.00	2,099.81	1,889.24	1,875.03	11.89	4.82	171.53	12.26	-200.14	763.95	754.17	9.78	78.106	
2,300.00	2,190.44	1,947.38	1,930.21	12.78	5.13	171.41	13.95	-218.38	831.47	821.17	10.30	80.754	
2,400.00	2,281.07	2,000.00	1,979.82	13.67	5.42	171.28	15.56	-235.85	900.41	889.60	10.81	83.324	
2,500.00	2,371.70	2,057.55	2,033.70	14.56	5.79	171.13	17.43	-255.99	970.66	959.33	11.33	85.641	
2,600.00	2,462.34	2,100.00	2,073.17	15.45	6.05	171.02	18.87	-271.53	1,042.25	1,030.42	11.83	88.094	
2,700.00	2,552.97	2,160.01	2,128.57	16.34	6.48	170.85	20.99	-294.49	1,114.93	1,102.55	12.37	90.101	
2,800.00	2,643.60	2,208.51	2,172.99	17.23	6.82	170.71	22.79	-313.89	1,188.80	1,175.90	12.89	92.203	
2,900.00	2,734.23	2,261.35	2,221.02	18.12	7.23	170.56	24.82	-335.81	1,263.70	1,250.27	13.43	94.112	
3,000.00	2,824.86	2,327.27	2,280.85	19.02	7.75	170.39	27.37	-363.37	1,338.85	1,324.86	14.00	95.665	
3,100.00	2,915.49	2,393.18	2,340.67	19.91	8.28	170.23	29.92	-390.92	1,414.02	1,399.45	14.56	97.090	
3,200.00	3,006.12	2,459.09	2,400.49	20.80	8.82	170.09	32.47	-418.47	1,489.18	1,474.05	15.14	98.391	
3,300.00	3,096.75	2,525.01	2,460.32	21.70	9.36	169.97	35.03	-446.02	1,564.35	1,548.64	15.71	99.593	
3,400.00	3,187.38	2,590.92	2,520.14	22.59	9.91	169.85	37.58	-473.58	1,639.52	1,623.24	16.28	100.703	
3,500.00	3,278.01	2,656.83	2,579.97	23.49	10.47	169.75	40.13	-501.13	1,714.70	1,697.84	16.86	101.728	
3,600.00	3,368.64	2,722.75	2,639.79	24.38	11.02	169.65	42.68	-528.68	1,789.88	1,772.45	17.43	102.684	
3,700.00	3,459.27	2,788.66	2,699.61	25.28	11.58	169.56	45.23	-556.23	1,865.06	1,847.05	18.01	103.574	
3,800.00	3,549.90	2,854.57	2,759.44	26.17	12.15	169.48	47.78	-583.79	1,940.24	1,921.65	18.58	104.405	
3,900.00	3,640.54	2,920.49	2,819.26	27.07	12.71	169.41	50.33	-611.34	2,015.42	1,996.26	19.16	105.185	
4,000.00	3,731.17	2,986.40	2,879.09	27.97	13.28	169.34	52.89	-638.89	2,090.61	2,070.87	19.74	105.916	
4,100.00	3,821.80	3,052.31	2,938.91	28.86	13.85	169.27	55.44	-666.44	2,165.79	2,145.48	20.32	106.605	
4,200.00	3,912.43	3,118.23	2,998.73	29.76	14.42	169.21	57.99	-694.00	2,240.98	2,220.08	20.89	107.255	
4,300.00	4,003.06	3,184.14	3,058.56	30.65	14.99	169.15	60.54	-721.55	2,316.17	2,294.69	21.47	107.869	
4,400.00	4,093.69	3,250.05	3,118.38	31.55	15.56	169.10	63.09	-749.10	2,391.36	2,369.31	22.05	108.451	
4,500.00	4,184.32	3,315.97	3,178.21	32.45	16.14	169.05	65.64	-776.65	2,466.55	2,443.91	22.63	108.979	
4,600.00	4,274.95	3,381.88	3,238.03	33.34	16.71	169.00	68.19	-804.21	2,541.74	2,518.51	23.22	109.457	
4,700.00	4,365.58	3,447.79	3,297.85	34.24	17.29	168.96	70.75	-831.76	2,616.93	2,593.12	23.81	109.908	
4,800.00	4,456.21	3,513.71	3,357.68	35.14	17.87	168.92	73.30	-859.31	2,692.12	2,667.72	24.40	110.334	
4,900.00	4,546.84	3,579.62	3,417.50	36.03	18.44	168.88	75.85	-886.86	2,767.31	2,742.32	24.99	110.738	
5,000.00	4,637.47	3,645.53	3,477.33	36.93	19.02	168.84	78.40	-914.42	2,842.50	2,816.92	25.58	111.120	

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 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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	
5,100.00	4,728.10	3,711.45	3,537.15	37.83	19.60	168.80	80.95	-941.97	2,917.70	2,891.53	26.17	111.484	
5,200.00	4,818.74	3,777.36	3,596.97	38.73	20.18	168.77	83.50	-969.52	2,992.89	2,966.13	26.76	111.829	
5,300.00	4,909.37	3,843.27	3,656.80	39.62	20.76	168.74	86.06	-997.07	3,068.09	3,040.73	27.36	112.157	
5,400.00	5,000.00	3,909.19	3,716.62	40.52	21.34	168.71	88.61	-1,024.63	3,143.28	3,115.33	27.95	112.470	
5,500.00	5,090.63	3,975.10	3,776.45	41.42	21.92	168.68	91.16	-1,052.18	3,218.47	3,189.93	28.54	112.767	
5,600.00	5,181.26	4,041.01	3,836.27	42.31	22.51	168.65	93.71	-1,079.73	3,293.67	3,264.54	29.13	113.052	
5,700.00	5,271.89	4,106.93	3,896.09	43.21	23.09	168.62	96.26	-1,107.29	3,368.87	3,339.14	29.73	113.324	
5,736.87	5,305.31	4,131.23	3,918.15	43.54	23.30	168.61	97.20	-1,117.44	3,396.59	3,366.64	29.95	113.421	
5,800.00	5,362.81	4,173.35	3,956.38	44.04	23.67	168.87	98.83	-1,135.05	3,443.61	3,413.15	30.45	113.075	
5,900.00	5,455.03	4,242.10	4,018.78	44.69	24.28	169.23	101.49	-1,163.79	3,516.19	3,484.97	31.22	112.630	
6,000.00	5,548.55	4,313.29	4,083.39	45.28	24.91	169.54	104.25	-1,193.55	3,586.38	3,554.41	31.96	112.203	
6,100.00	5,643.25	4,386.81	4,150.12	45.82	25.56	169.80	107.10	-1,224.28	3,654.08	3,621.39	32.68	111.804	
6,200.00	5,739.00	4,462.59	4,218.90	46.30	26.23	170.02	110.03	-1,255.96	3,719.21	3,685.84	33.37	111.439	
6,300.00	5,835.71	4,540.52	4,289.63	46.73	26.92	170.21	113.05	-1,288.53	3,781.71	3,747.67	34.03	111.113	
6,400.00	5,933.24	4,620.52	4,362.24	47.10	27.63	170.37	116.14	-1,321.97	3,841.49	3,806.82	34.66	110.829	
6,500.00	6,031.49	4,702.48	4,436.63	47.42	28.36	170.49	119.31	-1,356.23	3,898.48	3,863.23	35.25	110.590	
6,600.00	6,130.32	4,786.31	4,512.71	47.69	29.10	170.59	122.56	-1,391.28	3,952.62	3,916.82	35.80	110.398	
6,700.00	6,229.63	4,871.90	4,590.40	47.90	29.86	170.67	125.87	-1,427.05	4,003.85	3,967.53	36.31	110.255	
6,800.00	6,329.28	4,959.16	4,669.59	48.07	30.63	170.73	129.25	-1,463.53	4,052.10	4,015.31	36.78	110.162	
6,900.00	6,429.16	5,048.09	4,749.16	48.18	31.43	169.67	132.63	-1,500.00	4,099.24	4,061.49	37.25	109.970	
6,986.87	6,516.02	5,135.94	4,836.02	48.25	32.20	168.50	136.00	-1,536.00	4,145.54	4,105.94	37.70	109.777	
7,000.00	6,529.15	5,150.07	4,850.15	48.25	32.51	168.44	139.31	-1,571.23	4,191.54	4,150.91	38.15	109.584	
7,100.00	6,629.15	5,250.07	4,950.15	48.32	33.29	168.38	142.63	-1,606.23	4,237.54	4,195.65	38.59	109.391	
7,200.00	6,729.15	5,350.07	5,050.15	48.38	34.06	168.32	145.95	-1,641.23	4,283.54	4,240.38	39.03	109.198	
7,300.00	6,829.15	5,450.07	5,150.15	48.44	34.83	168.26	149.27	-1,676.23	4,329.54	4,286.12	39.47	109.005	
7,400.00	6,929.15	5,550.07	5,250.15	48.50	35.60	168.20	152.59	-1,711.23	4,375.54	4,331.85	39.91	108.812	
7,500.00	7,029.15	5,650.07	5,350.15	48.57	36.37	168.14	155.91	-1,746.23	4,421.54	4,377.58	40.35	108.619	
7,600.00	7,129.15	5,750.07	5,450.15	48.63	37.14	168.08	159.23	-1,781.23	4,467.54	4,423.30	40.79	108.426	
7,700.00	7,229.15	5,850.07	5,550.15	48.70	37.91	168.02	162.55	-1,816.23	4,513.54	4,469.02	41.23	108.233	
7,800.00	7,329.15	5,950.07	5,650.15	48.77	38.68	167.96	165.87	-1,851.23	4,559.54	4,514.74	41.67	108.040	
7,900.00	7,429.15	6,050.07	5,750.15	48.83	39.45	167.90	169.19	-1,886.23	4,605.54	4,560.46	42.11	107.847	
8,000.00	7,529.15	6,150.07	5,850.15	48.90	40.22	167.84	172.51	-1,921.23	4,651.54	4,606.17	42.55	107.654	
8,100.00	7,629.15	6,250.07	5,950.15	48.97	41.00	167.78	175.83	-1,956.23	4,697.54	4,651.88	42.99	107.461	
8,200.00	7,729.15	6,350.07	6,050.15	49.04	41.77	167.72	179.15	-1,991.23	4,743.54	4,697.59	43.43	107.268	
8,300.00	7,829.15	6,450.07	6,150.15	49.12	42.54	167.66	182.47	-2,026.23	4,789.54	4,743.30	43.87	107.075	
8,400.00	7,929.15	6,550.07	6,250.15	49.19	43.31	167.60	185.79	-2,061.23	4,835.54	4,789.00	44.31	106.882	
8,508.85	8,038.00	6,659.93	6,359.00	49.27	44.08	167.54	189.11	-2,096.23	4,881.54	4,834.68	44.75	106.689	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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 23-12 - P_Riverbend 23-12 - 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
0.00	0.00	0.00	0.00	0.00	0.00	-90.00	0.00	-47.86	47.86				
100.00	100.00	100.00	100.00	0.10	0.10	-90.00	0.00	-47.86	47.86	47.67	0.19	250.512	
200.00	200.00	200.00	200.00	0.32	0.32	-90.00	0.00	-47.86	47.86	47.22	0.64	74.714	
300.00	300.00	300.00	300.00	0.55	0.55	-90.00	0.00	-47.86	47.86	46.77	1.09	43.904 CC, ES	
400.00	399.98	399.98	399.98	0.75	0.77	152.76	0.00	-47.86	49.41	47.89	1.52	32.499	
500.00	499.84	499.84	499.84	0.96	0.99	155.25	0.00	-47.86	54.11	52.17	1.94	27.833	
600.00	599.45	599.45	599.45	1.20	1.22	158.56	0.00	-47.86	62.14	59.76	2.38	26.121	
700.00	698.70	698.70	698.70	1.48	1.44	161.95	0.00	-47.86	73.62	70.80	2.82	26.114 SF	
800.00	797.47	797.47	797.47	1.80	1.66	165.01	0.00	-47.86	88.64	85.38	3.26	27.171	
900.00	895.62	895.62	895.62	2.18	1.88	167.56	0.00	-47.86	107.20	103.49	3.71	28.919	
1,000.00	993.06	993.06	993.06	2.62	2.10	169.63	0.00	-47.86	129.27	125.12	4.15	31.128	
1,100.00	1,089.64	1,089.10	1,089.08	3.12	2.29	170.73	-1.25	-48.47	154.98	150.40	4.58	33.848	
1,200.00	1,185.27	1,184.02	1,183.89	3.68	2.47	170.63	-5.32	-50.45	184.39	179.39	5.00	36.891	
1,300.00	1,279.82	1,277.56	1,277.13	4.32	2.65	169.82	-12.09	-53.74	217.45	212.01	5.44	39.955	
1,400.00	1,373.17	1,369.45	1,368.43	5.02	2.84	168.59	-21.40	-58.27	254.17	248.24	5.93	42.857	
1,500.00	1,465.21	1,459.41	1,457.45	5.80	3.06	167.16	-33.06	-63.94	294.57	288.09	6.47	45.505	
1,550.00	1,510.71	1,503.60	1,501.01	6.22	3.17	166.40	-39.71	-67.17	316.14	309.38	6.76	46.742	
1,600.00	1,556.03	1,547.40	1,544.08	6.64	3.30	165.73	-46.89	-70.67	338.26	331.15	7.11	47.603	
1,700.00	1,646.66	1,634.29	1,629.12	7.51	3.58	164.30	-62.89	-78.45	383.00	375.17	7.83	48.905	
1,800.00	1,737.29	1,720.11	1,712.55	8.37	3.89	162.80	-80.96	-87.24	428.52	419.90	8.62	49.697	
1,900.00	1,827.92	1,805.48	1,794.93	9.25	4.23	161.25	-101.11	-97.04	474.89	465.41	9.48	50.077	
2,000.00	1,918.55	1,893.16	1,879.32	10.13	4.63	159.85	-122.49	-107.44	521.73	511.33	10.40	50.164	
2,100.00	2,009.18	1,980.85	1,963.72	11.01	5.04	158.67	-143.88	-117.84	568.77	557.43	11.34	50.154	
2,200.00	2,099.81	2,068.53	2,048.12	11.89	5.46	157.67	-165.26	-128.25	615.97	603.67	12.30	50.092	
2,300.00	2,190.44	2,156.21	2,132.51	12.78	5.90	156.81	-186.64	-138.65	663.30	650.03	13.27	50.001	
2,400.00	2,281.07	2,243.89	2,216.91	13.67	6.34	156.07	-208.02	-149.05	710.73	696.49	14.24	49.896	
2,500.00	2,371.70	2,331.58	2,301.31	14.56	6.79	155.42	-229.41	-159.45	758.24	743.01	15.23	49.785	
2,600.00	2,462.34	2,419.26	2,385.71	15.45	7.25	154.84	-250.79	-169.85	805.82	789.60	16.22	49.673	
2,700.00	2,552.97	2,506.94	2,470.10	16.34	7.71	154.33	-272.17	-180.25	853.46	836.24	17.22	49.564	
2,800.00	2,643.60	2,594.62	2,554.50	17.23	8.18	153.87	-293.55	-190.65	901.14	882.92	18.22	49.459	
2,900.00	2,734.23	2,682.31	2,638.90	18.12	8.65	153.46	-314.94	-201.05	948.86	929.64	19.22	49.359	
3,000.00	2,824.86	2,769.99	2,723.29	19.02	9.12	153.09	-336.32	-211.45	996.62	976.39	20.23	49.266	
3,100.00	2,915.49	2,857.67	2,807.69	19.91	9.60	152.75	-357.70	-221.86	1,044.41	1,023.17	21.24	49.179	
3,200.00	3,006.12	2,945.35	2,892.09	20.80	10.07	152.44	-379.08	-232.26	1,092.22	1,069.97	22.25	49.097	
3,300.00	3,096.75	3,033.04	2,976.48	21.70	10.55	152.16	-400.47	-242.66	1,140.06	1,116.80	23.26	49.022	
3,400.00	3,187.38	3,120.72	3,060.88	22.59	11.03	151.89	-421.85	-253.06	1,187.91	1,163.64	24.27	48.952	
3,500.00	3,278.01	3,208.40	3,145.28	23.49	11.52	151.65	-443.23	-263.46	1,235.78	1,210.50	25.28	48.887	
3,600.00	3,368.64	3,296.08	3,229.67	24.38	12.00	151.43	-464.61	-273.86	1,283.67	1,257.38	26.29	48.827	
3,700.00	3,459.27	3,383.77	3,314.07	25.28	12.48	151.23	-486.00	-284.26	1,331.57	1,304.27	27.30	48.771	
3,800.00	3,549.90	3,471.45	3,398.47	26.17	12.97	151.03	-507.38	-294.66	1,379.49	1,351.17	28.31	48.720	
3,900.00	3,640.54	3,559.13	3,482.86	27.07	13.45	150.85	-528.76	-305.06	1,427.41	1,398.09	29.33	48.673	
4,000.00	3,731.17	3,646.81	3,567.26	27.97	13.94	150.69	-550.14	-315.47	1,475.35	1,445.01	30.34	48.629	
4,100.00	3,821.80	3,734.50	3,651.66	28.86	14.43	150.53	-571.53	-325.87	1,523.30	1,491.94	31.35	48.589	
4,200.00	3,912.43	3,822.18	3,736.05	29.76	14.92	150.38	-592.91	-336.27	1,571.25	1,538.89	32.36	48.552	
4,300.00	4,003.06	3,909.86	3,820.45	30.65	15.40	150.24	-614.29	-346.67	1,619.21	1,585.84	33.37	48.518	
4,400.00	4,093.69	3,997.54	3,904.85	31.55	15.89	150.11	-635.67	-357.07	1,667.18	1,632.79	34.38	48.486	
4,500.00	4,184.32	4,085.23	3,989.25	32.45	16.38	149.99	-657.06	-367.47	1,715.15	1,679.76	35.39	48.458	
4,600.00	4,274.95	4,172.91	4,073.64	33.34	16.87	149.87	-678.44	-377.87	1,763.13	1,726.73	36.40	48.431	
4,700.00	4,365.58	4,260.59	4,158.04	34.24	17.36	149.76	-699.82	-388.27	1,811.12	1,773.70	37.41	48.407	
4,800.00	4,456.21	4,348.27	4,242.44	35.14	17.85	149.66	-721.20	-398.67	1,859.11	1,820.68	38.42	48.385	
4,900.00	4,546.84	4,435.96	4,326.83	36.03	18.34	149.56	-742.59	-409.08	1,907.10	1,867.67	39.43	48.365	
5,000.00	4,637.47	4,523.64	4,411.23	36.93	18.83	149.46	-763.97	-419.48	1,955.10	1,914.66	40.44	48.347	

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 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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	
5,100.00	4,728.10	4,611.32	4,495.63	37.83	19.33	149.37	-785.35	-429.88	2,003.10	1,961.66	41.45	48.331	
5,200.00	4,818.74	4,699.00	4,580.02	38.73	19.82	149.28	-806.73	-440.28	2,051.11	2,008.66	42.45	48.316	
5,300.00	4,909.37	4,786.69	4,664.42	39.62	20.31	149.20	-828.12	-450.68	2,099.12	2,055.66	43.46	48.303	
5,400.00	5,000.00	4,874.37	4,748.82	40.52	20.80	149.12	-849.50	-461.08	2,147.13	2,102.67	44.46	48.291	
5,500.00	5,090.63	4,962.05	4,833.21	41.42	21.29	149.05	-870.88	-471.48	2,195.15	2,149.68	45.47	48.281	
5,600.00	5,181.26	5,049.73	4,917.61	42.31	21.79	148.98	-892.26	-481.88	2,243.17	2,196.70	46.47	48.272	
5,700.00	5,271.89	5,137.42	5,002.01	43.21	22.28	148.91	-913.65	-492.28	2,291.19	2,243.72	47.47	48.264	
5,736.87	5,305.31	5,169.75	5,033.13	43.54	22.46	148.88	-921.53	-496.12	2,308.90	2,261.06	47.84	48.261	
5,800.00	5,362.81	5,225.37	5,086.67	44.04	22.77	149.18	-935.09	-502.72	2,338.69	2,290.22	48.47	48.246	
5,900.00	5,455.03	5,314.55	5,172.50	44.69	23.27	149.58	-956.84	-513.30	2,383.72	2,334.31	49.41	48.245	
6,000.00	5,548.55	5,404.94	5,259.50	45.28	23.78	149.89	-978.88	-524.02	2,426.05	2,375.72	50.32	48.208	
6,100.00	5,643.25	5,496.42	5,347.56	45.82	24.30	150.12	-1,001.19	-534.87	2,465.65	2,414.43	51.22	48.140	
6,200.00	5,739.00	5,636.81	5,483.37	46.30	24.92	150.21	-1,033.13	-550.40	2,501.76	2,449.56	52.19	47.934	
6,300.00	5,835.71	5,792.90	5,636.19	46.73	25.43	150.32	-1,061.61	-564.26	2,532.83	2,479.83	53.00	47.791	
6,400.00	5,933.24	5,953.25	5,794.74	47.10	25.85	150.49	-1,083.04	-574.68	2,558.64	2,504.99	53.65	47.695	
6,500.00	6,031.49	6,116.82	5,957.59	47.42	26.18	150.73	-1,096.64	-581.30	2,579.03	2,524.90	54.13	47.645	
6,600.00	6,130.32	6,282.44	6,123.09	47.69	26.41	151.03	-1,101.87	-583.84	2,593.90	2,539.45	54.45	47.642	
6,700.00	6,229.63	6,388.98	6,229.63	47.90	26.52	151.27	-1,101.92	-583.87	2,604.20	2,549.57	54.63	47.668	
6,800.00	6,329.28	6,488.64	6,329.28	48.07	26.61	151.42	-1,101.92	-583.87	2,611.46	2,556.69	54.77	47.682	
6,900.00	6,429.16	6,588.52	6,429.16	48.18	26.71	151.51	-1,101.92	-583.87	2,615.65	2,560.78	54.87	47.671	
6,986.87	6,516.02	6,675.38	6,516.02	48.25	26.79	-90.28	-1,101.92	-583.87	2,616.81	2,561.87	54.94	47.632	
7,000.00	6,529.15	6,688.51	6,529.15	48.25	26.80	-90.28	-1,101.92	-583.87	2,616.81	2,561.85	54.96	47.610	
7,100.00	6,629.15	6,788.51	6,629.15	48.32	26.90	-90.28	-1,101.92	-583.87	2,616.81	2,561.66	55.15	47.446	
7,200.00	6,729.15	6,888.51	6,729.15	48.38	27.00	-90.28	-1,101.92	-583.87	2,616.81	2,561.46	55.35	47.281	
7,300.00	6,829.15	6,988.51	6,829.15	48.44	27.10	-90.28	-1,101.92	-583.87	2,616.81	2,561.27	55.54	47.115	
7,400.00	6,929.15	7,088.51	6,929.15	48.50	27.20	-90.28	-1,101.92	-583.87	2,616.81	2,561.07	55.74	46.947	
7,500.00	7,029.15	7,188.51	7,029.15	48.57	27.30	-90.28	-1,101.92	-583.87	2,616.81	2,560.87	55.94	46.777	
7,600.00	7,129.15	7,288.51	7,129.15	48.63	27.41	-90.28	-1,101.92	-583.87	2,616.81	2,560.66	56.15	46.607	
7,700.00	7,229.15	7,388.51	7,229.15	48.70	27.51	-90.28	-1,101.92	-583.87	2,616.81	2,560.46	56.35	46.436	
7,800.00	7,329.15	7,488.51	7,329.15	48.77	27.62	-90.28	-1,101.92	-583.87	2,616.81	2,560.25	56.56	46.263	
7,900.00	7,429.15	7,588.51	7,429.15	48.83	27.73	-90.28	-1,101.92	-583.87	2,616.81	2,560.03	56.78	46.089	
8,000.00	7,529.15	7,688.51	7,529.15	48.90	27.84	-90.28	-1,101.92	-583.87	2,616.81	2,559.82	56.99	45.915	
8,100.00	7,629.15	7,788.51	7,629.15	48.97	27.95	-90.28	-1,101.92	-583.87	2,616.81	2,559.60	57.21	45.739	
8,200.00	7,729.15	7,888.51	7,729.15	49.04	28.06	-90.28	-1,101.92	-583.87	2,616.81	2,559.38	57.43	45.563	
8,300.00	7,829.15	7,988.51	7,829.15	49.12	28.18	-90.28	-1,101.92	-583.87	2,616.81	2,559.15	57.66	45.386	
8,400.00	7,929.15	8,088.51	7,929.15	49.19	28.29	-90.28	-1,101.92	-583.87	2,616.81	2,558.93	57.88	45.209	
8,508.85	8,038.00	8,197.36	8,038.00	49.27	28.42	-90.28	-1,101.92	-583.87	2,616.81	2,558.68	58.13	45.014	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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	-90.01	0.00	-31.91	31.91				
100.00	100.00	100.00	100.00	0.10	0.10	-90.01	0.00	-31.91	31.91	31.72	0.19	167.008	
200.00	200.00	200.00	200.00	0.32	0.32	-90.01	0.00	-31.91	31.91	31.27	0.64	49.810	
300.00	300.00	300.00	300.00	0.55	0.55	-90.01	0.00	-31.91	31.91	30.82	1.09	29.270 CC, ES	
400.00	399.98	399.98	399.98	0.75	0.77	153.21	0.00	-31.91	33.46	31.94	1.52	22.007	
500.00	499.84	499.84	499.84	0.96	0.99	156.71	0.00	-31.91	38.20	36.26	1.94	19.652	
600.00	599.45	599.45	599.45	1.20	1.22	160.92	0.00	-31.91	46.34	43.96	2.38	19.492 SF	
700.00	698.70	698.70	698.70	1.48	1.44	164.80	0.00	-31.91	58.00	55.18	2.82	20.600	
800.00	797.47	797.47	797.47	1.80	1.66	167.94	0.00	-31.91	73.21	69.96	3.26	22.485	
900.00	895.62	895.62	895.62	2.18	1.88	170.36	0.00	-31.91	91.97	88.27	3.70	24.866	
1,000.00	993.06	993.06	993.06	2.62	2.10	172.19	0.00	-31.91	114.22	110.08	4.14	27.572	
1,100.00	1,089.64	1,085.45	1,085.44	3.12	2.30	173.55	0.56	-33.05	141.25	136.68	4.57	30.893	
1,200.00	1,185.27	1,174.75	1,174.64	3.68	2.50	174.62	2.35	-36.69	174.65	169.66	4.99	34.981	
1,300.00	1,279.82	1,260.72	1,260.36	4.32	2.69	175.42	5.23	-42.54	214.19	208.78	5.41	39.591	
1,400.00	1,373.17	1,344.94	1,344.11	5.02	2.89	176.04	9.12	-50.43	259.48	253.65	5.83	44.524	
1,500.00	1,465.21	1,432.03	1,430.66	5.80	3.11	176.53	13.43	-59.18	308.55	302.29	6.26	49.317	
1,550.00	1,510.71	1,474.92	1,473.28	6.22	3.22	176.73	15.55	-63.49	334.22	327.75	6.47	51.647	
1,600.00	1,556.03	1,517.58	1,515.68	6.64	3.33	176.94	17.66	-67.78	360.27	353.55	6.72	53.585	
1,700.00	1,646.66	1,602.91	1,600.47	7.51	3.55	177.27	21.88	-76.35	412.38	405.14	7.23	57.014	
1,800.00	1,737.29	1,688.24	1,685.26	8.37	3.78	177.53	26.10	-84.93	464.49	456.74	7.75	59.945	
1,900.00	1,827.92	1,773.57	1,770.05	9.25	4.01	177.74	30.33	-93.50	516.61	508.35	8.27	62.475	
2,000.00	1,918.55	1,858.90	1,854.84	10.13	4.25	177.90	34.55	-102.08	568.74	559.95	8.79	64.679	
2,100.00	2,009.18	1,944.23	1,939.64	11.01	4.49	178.04	38.77	-110.65	620.87	611.55	9.32	66.614	
2,200.00	2,099.81	2,029.56	2,024.43	11.89	4.73	178.16	42.99	-119.23	673.00	663.15	9.85	68.324	
2,300.00	2,190.44	2,114.89	2,109.22	12.78	4.98	178.27	47.22	-127.80	725.13	714.75	10.38	69.845	
2,400.00	2,281.07	2,200.22	2,194.01	13.67	5.22	178.35	51.44	-136.38	777.27	766.35	10.92	71.206	
2,500.00	2,371.70	2,285.55	2,278.81	14.56	5.47	178.43	55.66	-144.95	829.40	817.95	11.45	72.430	
2,600.00	2,462.34	2,370.88	2,363.60	15.45	5.72	178.50	59.88	-153.53	881.54	869.55	11.99	73.536	
2,700.00	2,552.97	2,456.21	2,448.39	16.34	5.97	178.56	64.11	-162.10	933.67	921.15	12.53	74.540	
2,800.00	2,643.60	2,541.53	2,533.18	17.23	6.22	178.61	68.33	-170.68	985.81	972.75	13.06	75.456	
2,900.00	2,734.23	2,626.86	2,617.97	18.12	6.47	178.66	72.55	-179.25	1,037.95	1,024.34	13.60	76.295	
3,000.00	2,824.86	2,712.19	2,702.77	19.02	6.72	178.70	76.77	-187.83	1,090.09	1,075.94	14.14	77.065	
3,100.00	2,915.49	2,797.52	2,787.56	19.91	6.98	178.74	81.00	-196.40	1,142.23	1,127.54	14.69	77.775	
3,200.00	3,006.12	2,882.85	2,872.35	20.80	7.23	178.78	85.22	-204.98	1,194.37	1,179.14	15.23	78.431	
3,300.00	3,096.75	2,968.18	2,957.14	21.70	7.49	178.81	89.44	-213.55	1,246.51	1,230.73	15.77	79.039	
3,400.00	3,187.38	3,053.51	3,041.94	22.59	7.74	178.85	93.66	-222.13	1,298.65	1,282.33	16.31	79.604	
3,500.00	3,278.01	3,138.84	3,126.73	23.49	8.00	178.87	97.89	-230.70	1,350.79	1,333.93	16.86	80.130	
3,600.00	3,368.64	3,224.17	3,211.52	24.38	8.25	178.90	102.11	-239.28	1,402.93	1,385.52	17.40	80.622	
3,700.00	3,459.27	3,309.50	3,296.31	25.28	8.51	178.92	106.33	-247.85	1,455.07	1,437.12	17.95	81.082	
3,800.00	3,549.90	3,394.83	3,381.10	26.17	8.76	178.95	110.55	-256.43	1,507.21	1,488.72	18.49	81.514	
3,900.00	3,640.54	3,480.16	3,465.90	27.07	9.02	178.97	114.78	-265.00	1,559.35	1,540.31	19.04	81.920	
4,000.00	3,731.17	3,565.49	3,550.69	27.97	9.28	178.99	119.00	-273.57	1,611.49	1,591.91	19.58	82.301	
4,100.00	3,821.80	3,650.82	3,635.48	28.86	9.54	179.01	123.22	-282.15	1,663.63	1,643.51	20.13	82.661	
4,200.00	3,912.43	3,736.14	3,720.27	29.76	9.79	179.02	127.44	-290.72	1,715.77	1,695.10	20.67	83.001	
4,300.00	4,003.06	3,821.47	3,805.07	30.65	10.05	179.04	131.67	-299.30	1,767.91	1,746.70	21.22	83.323	
4,400.00	4,093.69	3,906.80	3,889.86	31.55	10.31	179.06	135.89	-307.87	1,820.06	1,798.29	21.76	83.628	
4,500.00	4,184.32	3,992.13	3,974.65	32.45	10.57	179.07	140.11	-316.45	1,872.20	1,849.89	22.31	83.917	
4,600.00	4,274.95	4,077.46	4,059.44	33.34	10.83	179.08	144.33	-325.02	1,924.34	1,901.48	22.86	84.191	
4,700.00	4,365.58	4,162.79	4,144.24	34.24	11.09	179.10	148.56	-333.60	1,976.48	1,953.08	23.40	84.452	
4,800.00	4,456.21	4,248.12	4,229.03	35.14	11.34	179.11	152.78	-342.17	2,028.62	2,004.67	23.95	84.701	
4,900.00	4,546.84	4,333.45	4,313.82	36.03	11.60	179.12	157.00	-350.75	2,080.76	2,056.27	24.50	84.938	
5,000.00	4,637.47	4,418.78	4,398.61	36.93	11.86	179.13	161.22	-359.32	2,132.91	2,107.86	25.04	85.164	

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 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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
WELD_Riverbend 25-12 PAD - P_Riverbend 25-12 - P_Riverbend 25-12 - PLAN #1 6-22-10 RHS												Offset Well Error:	0.00 ft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.00	4,728.10	4,504.11	4,483.40	37.83	12.12	179.14	165.45	-367.90	2,185.05	2,159.46	25.59	85.380	
5,200.00	4,818.74	4,589.44	4,568.20	38.73	12.38	179.15	169.67	-376.47	2,237.19	2,211.05	26.14	85.587	
5,300.00	4,909.37	4,674.77	4,652.99	39.62	12.64	179.16	173.89	-385.05	2,289.33	2,262.65	26.69	85.785	
5,400.00	5,000.00	4,760.10	4,737.78	40.52	12.90	179.17	178.11	-393.62	2,341.48	2,314.24	27.23	85.974	
5,500.00	5,090.63	4,845.42	4,822.57	41.42	13.16	179.18	182.34	-402.20	2,393.62	2,365.84	27.78	86.156	
5,600.00	5,181.26	4,930.75	4,907.37	42.31	13.42	179.19	186.56	-410.77	2,445.76	2,417.43	28.33	86.330	
5,700.00	5,271.89	5,016.08	4,992.16	43.21	13.68	179.20	190.78	-419.35	2,497.90	2,469.02	28.88	86.498	
5,736.87	5,305.31	5,047.54	5,023.42	43.54	13.78	179.20	192.34	-422.51	2,517.13	2,488.05	29.08	86.558	
5,800.00	5,362.81	5,101.77	5,077.31	44.04	13.94	179.22	195.02	-427.96	2,549.45	2,519.91	29.54	86.295	
5,900.00	5,455.03	5,189.09	5,164.07	44.69	14.21	179.24	199.34	-436.73	2,598.18	2,567.95	30.23	85.951	
6,000.00	5,548.55	5,278.05	5,252.48	45.28	14.48	179.25	203.74	-445.67	2,643.83	2,612.96	30.87	85.639	
6,100.00	5,643.25	5,368.56	5,342.41	45.82	14.75	179.27	208.22	-454.77	2,686.36	2,654.88	31.47	85.359	
6,200.00	5,739.00	5,460.49	5,433.77	46.30	15.03	179.28	212.77	-464.01	2,725.69	2,693.67	32.03	85.111	
6,300.00	5,835.71	5,553.74	5,526.43	46.73	15.32	179.29	217.39	-473.38	2,761.80	2,729.27	32.53	84.894	
6,400.00	5,933.24	5,648.19	5,620.29	47.10	15.61	179.30	222.06	-482.87	2,794.63	2,761.64	32.99	84.709	
6,500.00	6,031.49	5,743.73	5,715.22	47.42	15.90	179.31	226.79	-492.47	2,824.14	2,790.74	33.40	84.557	
6,600.00	6,130.32	6,160.04	6,130.32	47.69	16.80	179.32	238.98	-517.23	2,849.16	2,814.83	34.33	83.002	
6,700.00	6,229.63	6,259.34	6,229.63	47.90	16.96	179.32	238.98	-517.23	2,860.89	2,826.28	34.61	82.672	
6,800.00	6,329.28	6,359.00	6,329.28	48.07	17.14	179.33	238.98	-517.23	2,869.14	2,834.31	34.83	82.368	
6,900.00	6,429.16	6,458.88	6,429.16	48.18	17.32	179.33	238.98	-517.23	2,873.92	2,838.92	35.00	82.102	
6,986.87	6,516.02	6,545.73	6,516.02	48.25	17.47	-62.49	238.98	-517.23	2,875.24	2,840.12	35.11	81.887	
7,000.00	6,529.15	6,558.86	6,529.15	48.25	17.49	-62.49	238.98	-517.23	2,875.24	2,840.08	35.16	81.784	
7,100.00	6,629.15	6,658.86	6,629.15	48.32	17.67	-62.49	238.98	-517.23	2,875.24	2,839.75	35.49	81.016	
7,200.00	6,729.15	6,758.86	6,729.15	48.38	17.85	-62.49	238.98	-517.23	2,875.24	2,839.41	35.83	80.258	
7,300.00	6,829.15	6,858.86	6,829.15	48.44	18.03	-62.49	238.98	-517.23	2,875.24	2,839.07	36.16	79.509	
7,400.00	6,929.15	6,958.86	6,929.15	48.50	18.22	-62.49	238.98	-517.23	2,875.24	2,838.73	36.50	78.769	
7,500.00	7,029.15	7,058.86	7,029.15	48.57	18.40	-62.49	238.98	-517.23	2,875.24	2,838.39	36.84	78.039	
7,600.00	7,129.15	7,158.86	7,129.15	48.63	18.58	-62.49	238.98	-517.23	2,875.24	2,838.05	37.19	77.318	
7,700.00	7,229.15	7,258.86	7,229.15	48.70	18.77	-62.49	238.98	-517.23	2,875.24	2,837.70	37.53	76.606	
7,800.00	7,329.15	7,358.86	7,329.15	48.77	18.95	-62.49	238.98	-517.23	2,875.24	2,837.36	37.88	75.904	
7,900.00	7,429.15	7,458.86	7,429.15	48.83	19.14	-62.49	238.98	-517.23	2,875.24	2,837.01	38.23	75.211	
8,000.00	7,529.15	7,558.86	7,529.15	48.90	19.33	-62.49	238.98	-517.23	2,875.24	2,836.66	38.58	74.526	
8,100.00	7,629.15	7,658.86	7,629.15	48.97	19.51	-62.49	238.98	-517.23	2,875.24	2,836.30	38.93	73.851	
8,200.00	7,729.15	7,758.86	7,729.15	49.04	19.70	-62.49	238.98	-517.23	2,875.24	2,835.95	39.29	73.185	
8,300.00	7,829.15	7,858.86	7,829.15	49.12	19.89	-62.49	238.98	-517.23	2,875.24	2,835.59	39.64	72.527	
8,400.00	7,929.15	7,958.86	7,929.15	49.19	20.08	-62.49	238.98	-517.23	2,875.24	2,835.24	40.00	71.878	
8,472.57	8,001.72	8,031.43	8,001.72	49.24	20.22	-62.49	238.98	-517.23	2,875.24	2,834.97	40.26	71.413	
8,508.85	8,038.00	8,067.72	8,038.00	49.27	20.29	-62.49	238.98	-517.23	2,875.24	2,834.84	40.39	71.182	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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
0.00	0.00	0.00	0.00	0.00	0.00	90.01	0.00	16.23	16.23				
100.00	100.00	100.00	100.00	0.10	0.10	90.01	0.00	16.23	16.23	16.04	0.19	84.969	
200.00	200.00	200.00	200.00	0.32	0.32	90.01	0.00	16.23	16.23	15.59	0.64	25.342	
300.00	300.00	300.00	300.00	0.55	0.55	90.01	0.00	16.23	16.23	15.14	1.09	14.892 CC	
400.00	399.98	399.44	399.42	0.75	0.75	-29.95	-0.31	17.93	16.41	14.91	1.50	10.909 ES	
500.00	499.84	498.87	498.71	0.96	0.97	-35.05	-1.24	23.02	17.03	15.12	1.91	8.910	
600.00	599.45	598.26	597.72	1.20	1.21	-42.66	-2.78	31.50	18.34	15.98	2.36	7.779	
700.00	698.70	697.60	696.33	1.48	1.48	-51.44	-4.93	43.34	20.63	17.76	2.87	7.196	
800.00	797.47	796.88	794.39	1.80	1.80	-59.99	-7.68	58.52	24.12	20.64	3.47	6.945	
900.00	895.62	896.08	891.78	2.18	2.17	-67.42	-11.04	77.03	28.90	24.70	4.20	6.883 SF	
1,000.00	993.06	995.17	988.37	2.62	2.60	-73.43	-15.00	98.82	34.97	29.92	5.05	6.920	
1,100.00	1,089.64	1,094.16	1,084.03	3.12	3.09	-78.12	-19.54	123.85	42.29	36.25	6.04	7.001	
1,200.00	1,185.27	1,193.02	1,178.63	3.68	3.64	-81.74	-24.67	152.08	50.81	43.65	7.16	7.095	
1,300.00	1,279.82	1,291.75	1,272.06	4.32	4.26	-84.52	-30.37	183.46	60.46	52.04	8.41	7.185	
1,400.00	1,373.17	1,390.32	1,364.19	5.02	4.95	-86.68	-36.62	217.93	71.20	61.40	9.80	7.263	
1,500.00	1,465.21	1,488.73	1,454.91	5.80	5.70	-88.36	-43.43	255.43	83.01	71.68	11.33	7.328	
1,550.00	1,510.71	1,537.88	1,499.71	6.22	6.10	-89.06	-47.04	275.31	89.29	77.15	12.14	7.356	
1,600.00	1,556.03	1,587.33	1,544.55	6.64	6.52	-89.69	-50.77	295.85	95.77	82.79	12.98	7.380	
1,700.00	1,646.66	1,686.47	1,634.40	7.51	7.37	-90.70	-58.26	337.07	108.76	94.08	14.67	7.411	
1,800.00	1,737.29	1,785.61	1,724.24	8.37	8.23	-91.50	-65.74	378.29	121.77	105.39	16.39	7.431	
1,900.00	1,827.92	1,884.74	1,814.09	9.25	9.10	-92.14	-73.22	419.52	134.81	116.70	18.11	7.444	
2,000.00	1,918.55	1,983.88	1,903.94	10.13	9.97	-92.67	-80.71	460.74	147.86	128.02	19.84	7.452	
2,100.00	2,009.18	2,083.02	1,993.79	11.01	10.84	-93.11	-88.19	501.96	160.92	139.34	21.58	7.458	
2,200.00	2,099.81	2,182.15	2,083.64	11.89	11.72	-93.49	-95.68	543.19	173.99	150.67	23.32	7.461	
2,300.00	2,190.44	2,281.29	2,173.49	12.78	12.60	-93.81	-103.16	584.41	187.06	162.00	25.06	7.463	
2,400.00	2,281.07	2,380.43	2,263.33	13.67	13.48	-94.09	-110.65	625.63	200.14	173.33	26.81	7.464	
2,500.00	2,371.70	2,479.56	2,353.18	14.56	14.36	-94.34	-118.13	666.86	213.22	184.66	28.56	7.465	
2,600.00	2,462.34	2,578.70	2,443.03	15.45	15.24	-94.56	-125.62	708.08	226.31	195.99	30.32	7.465	
2,700.00	2,552.97	2,677.84	2,532.88	16.34	16.13	-94.76	-133.10	749.30	239.40	207.33	32.07	7.465	
2,800.00	2,643.60	2,776.97	2,622.73	17.23	17.01	-94.93	-140.58	790.52	252.49	218.66	33.83	7.464	
2,900.00	2,734.23	2,876.11	2,712.57	18.12	17.90	-95.09	-148.07	831.75	265.58	230.00	35.58	7.464	
3,000.00	2,824.86	2,975.24	2,802.42	19.02	18.78	-95.23	-155.55	872.97	278.68	241.34	37.34	7.463	
3,100.00	2,915.49	3,074.38	2,892.27	19.91	19.67	-95.36	-163.04	914.19	291.78	252.68	39.10	7.462	
3,200.00	3,006.12	3,173.52	2,982.12	20.80	20.56	-95.48	-170.52	955.42	304.88	264.02	40.86	7.462	
3,300.00	3,096.75	3,272.65	3,071.97	21.70	21.44	-95.59	-178.01	996.64	317.98	275.36	42.62	7.461	
3,400.00	3,187.38	3,371.79	3,161.82	22.59	22.33	-95.69	-185.49	1,037.86	331.08	286.70	44.38	7.460	
3,500.00	3,278.01	3,470.93	3,251.66	23.49	23.22	-95.78	-192.98	1,079.08	344.18	298.04	46.14	7.459	
3,600.00	3,368.64	3,570.06	3,341.51	24.38	24.11	-95.87	-200.46	1,120.31	357.28	309.38	47.90	7.458	
3,700.00	3,459.27	3,669.20	3,431.36	25.28	25.00	-95.95	-207.94	1,161.53	370.39	320.72	49.67	7.458	
3,800.00	3,549.90	3,768.34	3,521.21	26.17	25.88	-96.02	-215.43	1,202.75	383.49	332.06	51.43	7.457	
3,900.00	3,640.54	3,867.47	3,611.06	27.07	26.77	-96.09	-222.91	1,243.98	396.59	343.40	53.19	7.456	
4,000.00	3,731.17	3,966.61	3,700.90	27.97	27.66	-96.15	-230.40	1,285.20	409.70	354.75	54.95	7.455	
4,100.00	3,821.80	4,067.24	3,792.35	28.86	28.50	-96.30	-237.90	1,326.51	422.71	366.04	56.66	7.460	
4,200.00	3,912.43	4,168.93	3,886.08	29.76	29.20	-96.86	-244.94	1,365.30	435.18	376.94	58.24	7.472	
4,300.00	4,003.06	4,270.35	3,980.91	30.65	29.81	-97.85	-251.37	1,400.71	447.16	387.43	59.73	7.486	
4,400.00	4,093.69	4,371.26	4,076.44	31.55	30.37	-99.22	-257.17	1,432.64	458.82	397.69	61.13	7.505	
4,500.00	4,184.32	4,471.40	4,172.33	32.45	30.86	-100.94	-262.32	1,461.03	470.38	407.95	62.43	7.535	
4,600.00	4,274.95	4,570.55	4,268.20	33.34	31.30	-102.96	-266.83	1,485.88	482.12	418.53	63.58	7.582	
4,700.00	4,365.58	4,668.48	4,363.70	34.24	31.67	-105.26	-270.70	1,507.20	494.35	429.78	64.58	7.655	
4,800.00	4,456.21	4,764.99	4,458.49	35.14	31.99	-107.77	-273.95	1,525.06	507.42	442.04	65.38	7.762	
4,900.00	4,546.84	4,859.90	4,552.25	36.03	32.26	-110.47	-276.58	1,539.55	521.68	455.72	65.97	7.908	
5,000.00	4,637.47	4,953.05	4,644.69	36.93	32.47	-113.30	-278.62	1,550.79	537.50	471.16	66.33	8.103	

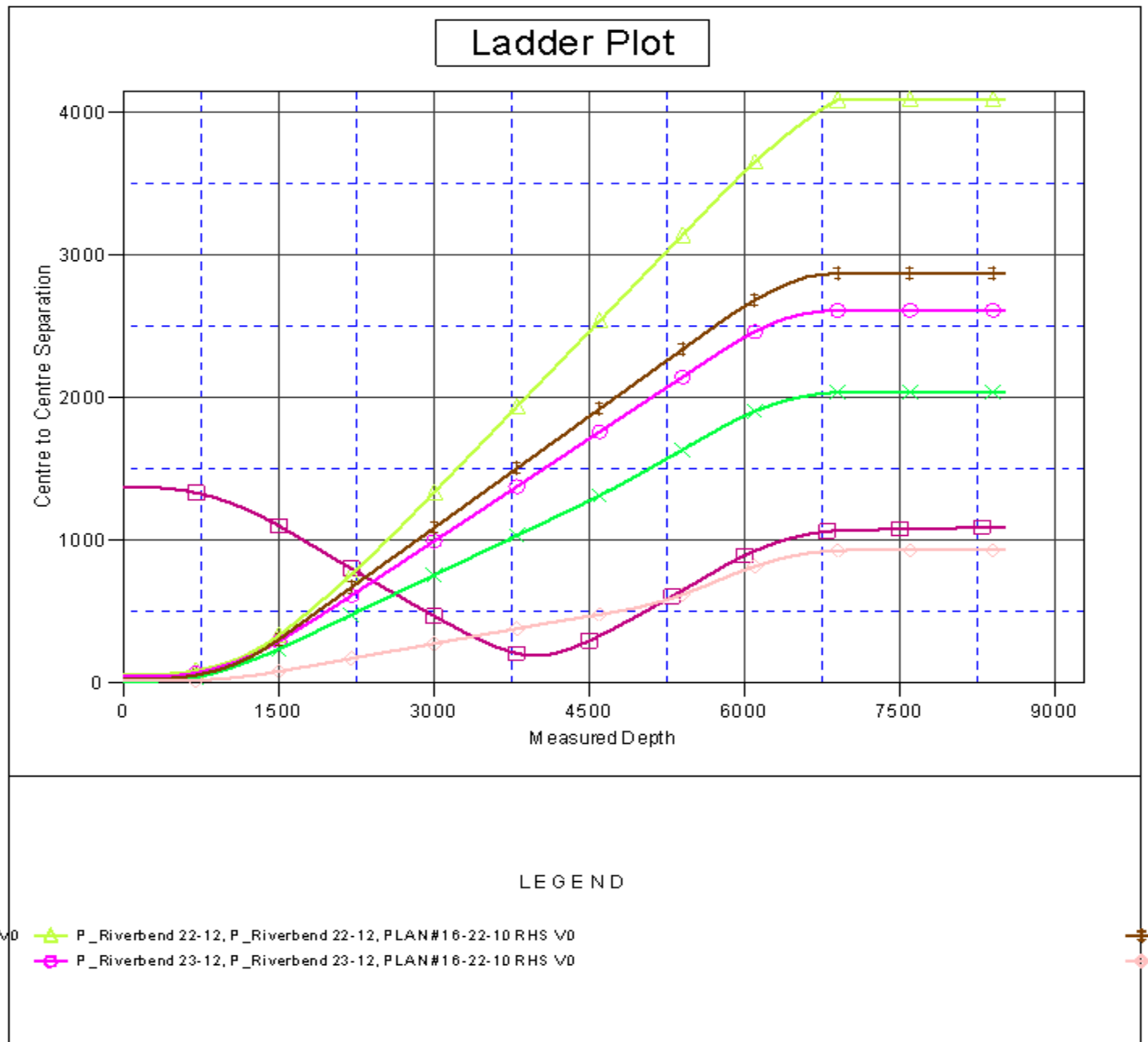
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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						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	
5,100.00	4,728.10	5,044.30	4,735.55	37.83	32.64	-116.21	-280.10	1,558.93	555.20	488.72	66.48	8.352	
5,200.00	4,818.74	5,133.51	4,824.61	38.73	32.77	-119.16	-281.04	1,564.13	575.09	508.69	66.40	8.661	
5,300.00	4,909.37	5,220.60	4,911.66	39.62	32.86	-122.11	-281.48	1,566.58	597.45	531.32	66.13	9.035	
5,400.00	5,000.00	5,308.94	5,000.00	40.52	32.92	-125.11	-281.53	1,566.83	622.34	556.70	65.64	9.481	
5,500.00	5,090.63	5,399.57	5,090.63	41.42	32.98	-127.99	-281.53	1,566.83	649.10	584.05	65.05	9.978	
5,600.00	5,181.26	5,490.20	5,181.26	42.31	33.05	-130.65	-281.53	1,566.83	677.44	613.01	64.43	10.514	
5,700.00	5,271.89	5,580.83	5,271.89	43.21	33.12	-133.13	-281.53	1,566.83	707.17	643.38	63.80	11.084	
5,736.87	5,305.31	5,614.25	5,305.31	43.54	33.14	-133.99	-281.53	1,566.83	718.45	654.89	63.57	11.302	
5,800.00	5,362.81	5,671.75	5,362.81	44.04	33.18	-135.67	-281.53	1,566.83	737.66	674.61	63.05	11.700	
5,900.00	5,455.03	5,763.98	5,455.03	44.69	33.25	-138.03	-281.53	1,566.83	766.90	704.66	62.24	12.322	
6,000.00	5,548.55	5,857.49	5,548.55	45.28	33.33	-140.06	-281.53	1,566.83	794.39	732.87	61.52	12.912	
6,100.00	5,643.25	5,952.19	5,643.25	45.82	33.40	-141.80	-281.53	1,566.83	819.86	758.95	60.91	13.460	
6,200.00	5,739.00	6,047.95	5,739.00	46.30	33.48	-143.28	-281.53	1,566.83	843.08	782.70	60.39	13.962	
6,300.00	5,835.71	6,144.65	5,835.71	46.73	33.55	-144.52	-281.53	1,566.83	863.87	803.93	59.95	14.411	
6,400.00	5,933.24	6,242.19	5,933.24	47.10	33.63	-145.56	-281.53	1,566.83	882.09	822.51	59.58	14.805	
6,500.00	6,031.49	6,340.43	6,031.49	47.42	33.72	-146.40	-281.53	1,566.83	897.61	838.33	59.29	15.140	
6,600.00	6,130.32	6,439.27	6,130.32	47.69	33.80	-147.07	-281.53	1,566.83	910.36	851.31	59.05	15.416	
6,700.00	6,229.63	6,538.57	6,229.63	47.90	33.88	-147.57	-281.53	1,566.83	920.25	861.38	58.88	15.630	
6,800.00	6,329.28	6,638.22	6,329.28	48.07	33.97	-147.92	-281.53	1,566.83	927.25	868.49	58.76	15.781	
6,900.00	6,429.16	6,738.10	6,429.16	48.18	34.06	-148.12	-281.53	1,566.83	931.30	872.61	58.69	15.868	
6,986.87	6,516.02	6,824.96	6,516.02	48.25	34.14	-149.99	-281.53	1,566.83	932.42	873.74	58.68	15.891	
7,000.00	6,529.15	6,838.09	6,529.15	48.25	34.15	-29.99	-281.53	1,566.83	932.42	873.72	58.70	15.884	
7,100.00	6,629.15	6,938.09	6,629.15	48.32	34.24	-29.99	-281.53	1,566.83	932.42	873.52	58.90	15.831	
7,200.00	6,729.15	7,038.09	6,729.15	48.38	34.33	-29.99	-281.53	1,566.83	932.42	873.32	59.10	15.777	
7,300.00	6,829.15	7,138.09	6,829.15	48.44	34.42	-29.99	-281.53	1,566.83	932.42	873.11	59.30	15.723	
7,400.00	6,929.15	7,238.09	6,929.15	48.50	34.52	-29.99	-281.53	1,566.83	932.42	872.91	59.51	15.669	
7,500.00	7,029.15	7,338.09	7,029.15	48.57	34.61	-29.99	-281.53	1,566.83	932.42	872.70	59.72	15.614	
7,600.00	7,129.15	7,438.09	7,129.15	48.63	34.71	-29.99	-281.53	1,566.83	932.42	872.49	59.93	15.559	
7,700.00	7,229.15	7,538.09	7,229.15	48.70	34.81	-29.99	-281.53	1,566.83	932.42	872.28	60.14	15.504	
7,800.00	7,329.15	7,638.09	7,329.15	48.77	34.91	-29.99	-281.53	1,566.83	932.42	872.06	60.36	15.448	
7,900.00	7,429.15	7,738.09	7,429.15	48.83	35.01	-29.99	-281.53	1,566.83	932.42	871.84	60.58	15.393	
8,000.00	7,529.15	7,838.09	7,529.15	48.90	35.11	-29.99	-281.53	1,566.83	932.42	871.62	60.80	15.337	
8,100.00	7,629.15	7,938.09	7,629.15	48.97	35.21	-29.99	-281.53	1,566.83	932.42	871.40	61.02	15.280	
8,200.00	7,729.15	8,038.09	7,729.15	49.04	35.32	-29.99	-281.53	1,566.83	932.42	871.17	61.25	15.224	
8,300.00	7,829.15	8,138.09	7,829.15	49.12	35.42	-29.99	-281.53	1,566.83	932.42	870.94	61.48	15.167	
8,400.00	7,929.15	8,238.09	7,929.15	49.19	35.53	-29.99	-281.53	1,566.83	932.42	870.71	61.71	15.110	
8,470.82	7,999.97	8,308.91	7,999.97	49.24	35.60	-29.99	-281.53	1,566.83	932.42	870.54	61.87	15.070	
8,508.85	8,038.00	8,341.94	8,038.00	49.27	35.64	-29.99	-281.53	1,566.83	932.43	870.47	61.96	15.050	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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 39-12
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 39-12
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 39-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 39-12	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 39-12
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°

