



US ROCKIES REGION PLANNING

COLORADO NORTHERN ZONE - 83

WELD_Riverbend 25-12 PAD

P_Riverbend 22-12

P_Riverbend 22-12

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 22-12
 Wellbore: P_Riverbend 22-12
 Section: PLAN #1 6-22-10 RHS
 SHL: 2419 FSL 2139 FEL
 Design: PLAN #1 6-22-10 RHS
 Latitude: 40° 3' 53.877 N
 Longitude: 104° 50' 14.831 W
 GL: 4913.00
 KB: WELL @ 4928.00ft (Original Well Elev)



Weatherford®



Azimuths to True North
 Magnetic North: 9.00°
 Magnetic Field
 Strength: 53049.5snT
 Dip Angle: 66.80°
 Date: 6/22/2010
 Model: IGRF2010

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3304.00	3454.56	PARKMAN
4634.00	4919.94	SUSSEX
7166.00	7523.93	NIO
7513.00	7870.93	CODELL
7598.00	7955.93	GREENHORN
7948.00	8305.93	JSAND

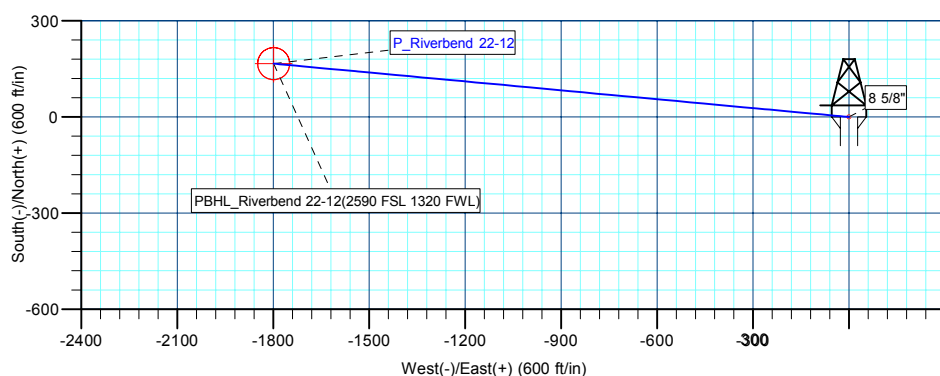
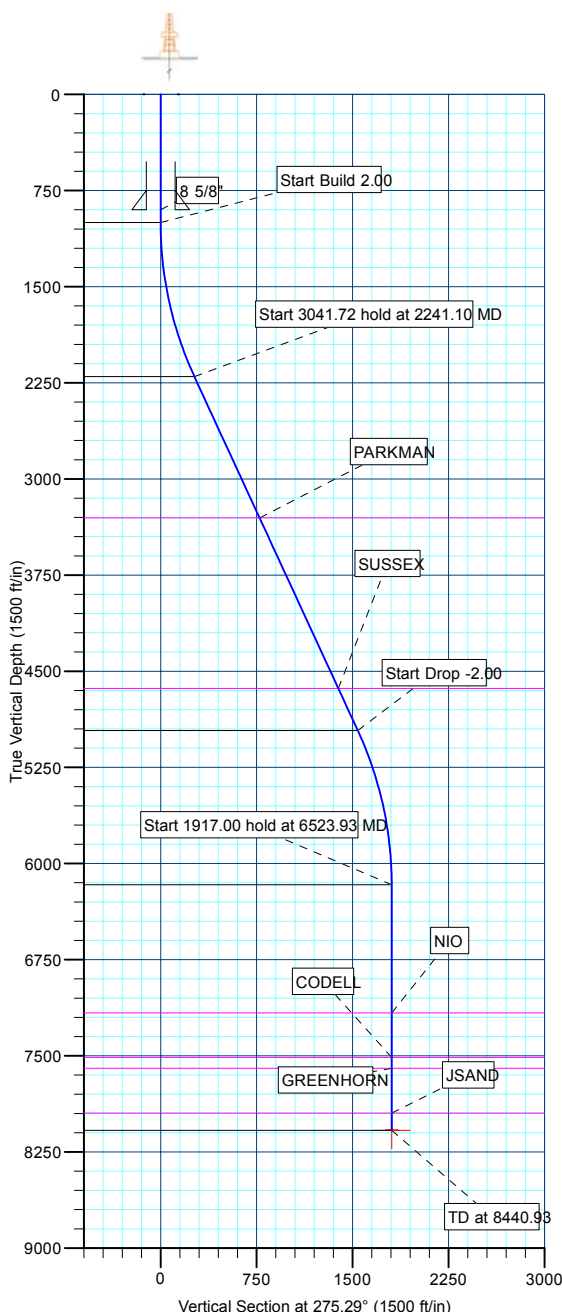
CASING DETAILS			
TVD	MD	Name	Size
900.00	900.00	8 5/8"	8.62

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
2241.10	24.82	275.29	2202.64	24.40	-263.53	2.00	275.29	264.66	Start 3041.72 hold at 2241.10 MD
5282.82	24.82	275.29	4963.36	142.15	-1535.01	0.00	0.00	1541.58	Start Drop -2.00
6523.93	0.00	0.00	6166.00	166.55	-1798.54	2.00	180.00	1806.24	Start 1917.00 hold at 6523.93 MD
8440.93	0.00	0.00	8083.00	166.55	-1798.54	0.00	0.00	1806.24	TD at 8440.93

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL	8083.00	166.55	-1798.54	40° 3' 55.523 N	104° 50' 37.964 W	Circle (Radius: 50.00)

WELL DETAILS: P_Riverbend 22-12						
+N/-S	+E/-W	Northing	Ground Level: Easting	4913.00 Latitude	Longitude	Slot
0.00	0.00	1267205.08	3185436.38	40° 3' 53.877 N	104° 50' 14.831 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 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 22-12/P_Riverbend 22-12)	
Created By: Robert H. Scott	Date: 9:44, June 22 2010

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_Riverbend 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Riverbend 22-12		
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 22-12			
Well Position	+N/-S	-0.38 ft	Northing:	1,267,205.08 ft
	+E/-W	-47.86 ft	Easting:	3,185,436.38 ft
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft
			Ground Level:	4,913.00 ft

Wellbore	P_Riverbend 22-12				
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	275.29

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	
2,241.10	24.82	275.29	2,202.64	24.40	-263.53	2.00	2.00	0.00	275.29	
5,282.82	24.82	275.29	4,963.36	142.15	-1,535.01	0.00	0.00	0.00	0.00	
6,523.93	0.00	0.00	6,166.00	166.55	-1,798.54	2.00	-2.00	0.00	180.00	
8,440.93	0.00	0.00	8,083.00	166.55	-1,798.54	0.00	0.00	0.00	0.00	PBHL_Riverbend 2

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_Riverbend 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Riverbend 22-12		
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	275.29	1,099.98	0.16	-1.74	1.75	2.00	2.00	0.00
1,200.00	4.00	275.29	1,199.84	0.64	-6.95	6.98	2.00	2.00	0.00
1,300.00	6.00	275.29	1,299.45	1.45	-15.63	15.69	2.00	2.00	0.00
1,400.00	8.00	275.29	1,398.70	2.57	-27.76	27.88	2.00	2.00	0.00
1,500.00	10.00	275.29	1,497.47	4.01	-43.34	43.52	2.00	2.00	0.00
1,600.00	12.00	275.29	1,595.62	5.77	-62.34	62.60	2.00	2.00	0.00
1,700.00	14.00	275.29	1,693.06	7.85	-84.73	85.10	2.00	2.00	0.00
1,800.00	16.00	275.29	1,789.64	10.23	-110.50	110.98	2.00	2.00	0.00
1,900.00	18.00	275.29	1,885.27	12.93	-139.62	140.21	2.00	2.00	0.00
2,000.00	20.00	275.29	1,979.82	15.93	-172.03	172.77	2.00	2.00	0.00
2,100.00	22.00	275.29	2,073.17	19.24	-207.71	208.60	2.00	2.00	0.00
2,200.00	24.00	275.29	2,165.21	22.84	-246.62	247.67	2.00	2.00	0.00
Start 3041.72 hold at 2241.10 MD									
2,241.10	24.82	275.29	2,202.64	24.40	-263.53	264.66	2.00	2.00	0.00
2,300.00	24.82	275.29	2,256.10	26.68	-288.15	289.39	0.00	0.00	0.00
2,400.00	24.82	275.29	2,346.86	30.56	-329.95	331.37	0.00	0.00	0.00
2,500.00	24.82	275.29	2,437.62	34.43	-371.76	373.35	0.00	0.00	0.00
2,600.00	24.82	275.29	2,528.38	38.30	-413.56	415.33	0.00	0.00	0.00
2,700.00	24.82	275.29	2,619.15	42.17	-455.36	457.31	0.00	0.00	0.00
2,800.00	24.82	275.29	2,709.91	46.04	-497.16	499.29	0.00	0.00	0.00
2,900.00	24.82	275.29	2,800.67	49.91	-538.96	541.27	0.00	0.00	0.00
3,000.00	24.82	275.29	2,891.43	53.78	-580.76	583.25	0.00	0.00	0.00
3,100.00	24.82	275.29	2,982.19	57.65	-622.56	625.23	0.00	0.00	0.00
3,200.00	24.82	275.29	3,072.95	61.52	-664.36	667.21	0.00	0.00	0.00
3,300.00	24.82	275.29	3,163.71	65.39	-706.17	709.19	0.00	0.00	0.00
3,400.00	24.82	275.29	3,254.48	69.26	-747.97	751.17	0.00	0.00	0.00
PARKMAN									
3,454.56	24.82	275.29	3,304.00	71.38	-770.78	774.07	0.00	0.00	0.00
3,500.00	24.82	275.29	3,345.24	73.14	-789.77	793.15	0.00	0.00	0.00
3,600.00	24.82	275.29	3,436.00	77.01	-831.57	835.13	0.00	0.00	0.00
3,700.00	24.82	275.29	3,526.76	80.88	-873.37	877.11	0.00	0.00	0.00
3,800.00	24.82	275.29	3,617.52	84.75	-915.17	919.09	0.00	0.00	0.00
3,900.00	24.82	275.29	3,708.28	88.62	-956.97	961.07	0.00	0.00	0.00
4,000.00	24.82	275.29	3,799.05	92.49	-998.77	1,003.05	0.00	0.00	0.00
4,100.00	24.82	275.29	3,889.81	96.36	-1,040.58	1,045.03	0.00	0.00	0.00
4,200.00	24.82	275.29	3,980.57	100.23	-1,082.38	1,087.01	0.00	0.00	0.00
4,300.00	24.82	275.29	4,071.33	104.10	-1,124.18	1,128.99	0.00	0.00	0.00
4,400.00	24.82	275.29	4,162.09	107.97	-1,165.98	1,170.97	0.00	0.00	0.00
4,500.00	24.82	275.29	4,252.85	111.85	-1,207.78	1,212.95	0.00	0.00	0.00
4,600.00	24.82	275.29	4,343.62	115.72	-1,249.58	1,254.93	0.00	0.00	0.00
4,700.00	24.82	275.29	4,434.38	119.59	-1,291.38	1,296.91	0.00	0.00	0.00
4,800.00	24.82	275.29	4,525.14	123.46	-1,333.18	1,338.89	0.00	0.00	0.00
4,900.00	24.82	275.29	4,615.90	127.33	-1,374.99	1,380.87	0.00	0.00	0.00
SUSSEX									
4,919.94	24.82	275.29	4,634.00	128.10	-1,383.32	1,389.24	0.00	0.00	0.00
5,000.00	24.82	275.29	4,706.66	131.20	-1,416.79	1,422.85	0.00	0.00	0.00
5,100.00	24.82	275.29	4,797.42	135.07	-1,458.59	1,464.83	0.00	0.00	0.00
5,200.00	24.82	275.29	4,888.19	138.94	-1,500.39	1,506.81	0.00	0.00	0.00
Start Drop -2.00									
5,282.82	24.82	275.29	4,963.36	142.15	-1,535.01	1,541.58	0.00	0.00	0.00
5,300.00	24.48	275.29	4,978.97	142.81	-1,542.14	1,548.74	2.00	-2.00	0.00
5,400.00	22.48	275.29	5,070.69	146.48	-1,581.81	1,588.58	2.00	-2.00	0.00

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_Riverbend 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Riverbend 22-12		
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	20.48	275.29	5,163.74	149.86	-1,618.27	1,625.19	2.00	-2.00	0.00
5,600.00	18.48	275.29	5,258.01	152.93	-1,651.47	1,658.54	2.00	-2.00	0.00
5,700.00	16.48	275.29	5,353.39	155.70	-1,681.38	1,688.57	2.00	-2.00	0.00
5,800.00	14.48	275.29	5,449.75	158.16	-1,707.95	1,715.26	2.00	-2.00	0.00
5,900.00	12.48	275.29	5,546.99	160.31	-1,731.16	1,738.56	2.00	-2.00	0.00
6,000.00	10.48	275.29	5,644.99	162.15	-1,750.97	1,758.46	2.00	-2.00	0.00
6,100.00	8.48	275.29	5,743.62	163.67	-1,767.37	1,774.93	2.00	-2.00	0.00
6,200.00	6.48	275.29	5,842.76	164.87	-1,780.33	1,787.94	2.00	-2.00	0.00
6,300.00	4.48	275.29	5,942.30	165.75	-1,789.83	1,797.49	2.00	-2.00	0.00
6,400.00	2.48	275.29	6,042.11	166.31	-1,795.87	1,803.56	2.00	-2.00	0.00
6,500.00	0.48	275.29	6,142.07	166.54	-1,798.44	1,806.14	2.00	-2.00	0.00
Start 1917.00 hold at 6523.93 MD									
6,523.93	0.00	0.00	6,166.00	166.55	-1,798.54	1,806.24	2.00	-2.00	0.00
6,600.00	0.00	0.00	6,242.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
6,700.00	0.00	0.00	6,342.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
6,800.00	0.00	0.00	6,442.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
6,900.00	0.00	0.00	6,542.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
7,000.00	0.00	0.00	6,642.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
7,100.00	0.00	0.00	6,742.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
7,200.00	0.00	0.00	6,842.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
7,300.00	0.00	0.00	6,942.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
7,400.00	0.00	0.00	7,042.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
7,500.00	0.00	0.00	7,142.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
NIO									
7,523.93	0.00	0.00	7,166.00	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
7,600.00	0.00	0.00	7,242.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
7,700.00	0.00	0.00	7,342.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
7,800.00	0.00	0.00	7,442.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
CODELL									
7,870.93	0.00	0.00	7,513.00	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
7,900.00	0.00	0.00	7,542.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
GREENHORN									
7,955.93	0.00	0.00	7,598.00	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
8,000.00	0.00	0.00	7,642.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
8,100.00	0.00	0.00	7,742.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
8,200.00	0.00	0.00	7,842.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
8,300.00	0.00	0.00	7,942.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
JSAND									
8,305.93	0.00	0.00	7,948.00	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
8,400.00	0.00	0.00	8,042.07	166.55	-1,798.54	1,806.24	0.00	0.00	0.00
PBHL_Riverbend 22-12(2590 FSL 1320 FWL)									
8,440.93	0.00	0.00	8,083.00	166.55	-1,798.54	1,806.24	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 22- - plan hits target center - Circle (radius 50.00)	0.00	0.00	8,083.00	166.55	-1,798.54	1,267,358.18	3,183,636.64	40° 3' 55.523 N	104° 50' 37.964 W

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well P_Riverbend 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Wellbore:	P_Riverbend 22-12		
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 (°)	
3,454.56	3,304.00	PARKMAN				
4,919.94	4,634.00	SUSSEX				
7,523.93	7,166.00	NIO				
7,870.93	7,513.00	CODELL				
7,955.93	7,598.00	GREENHORN				
8,305.93	7,948.00	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	
2,241.10	2,202.64	24.40	-263.53	Start 3041.72 hold at 2241.10 MD	
5,282.82	4,963.36	142.15	-1,535.01	Start Drop -2.00	
6,523.93	6,166.00	166.55	-1,798.54	Start 1917.00 hold at 6523.93 MD	
8,440.93	8,083.00	166.55	-1,798.54	TD at 8440.93	



US ROCKIES REGION PLANNING

**COLORADO NORTHERN ZONE - 83
WELD_Riverbend 25-12 PAD
P_Riverbend 22-12**

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

Anticollision Report

22 June, 2010



Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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	8,440.93	PLAN #1 6-22-10 RHS (P_Riverbend 22-1	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	1,073.55	1,083.42	1,404.95	1,361.24	32.142	CC
JAMES N. MATHISEN UNIT B #2 EXISTING - JAMES N	1,200.00	1,209.66	1,407.31	1,358.31	28.718	ES
JAMES N. MATHISEN UNIT B #2 EXISTING - JAMES N	8,440.93	8,078.00	3,007.81	2,663.97	8.747	SF
P_Riverbend 10-12 - P_Riverbend 10-12 - 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	15.96	11.72	3.766	CC, ES
P_Riverbend 23-12 - P_Riverbend 23-12 - PLAN #1 6-22	1,100.00	1,100.22	16.98	12.34	3.657	SF
P_Riverbend 25-12 - P_Riverbend 25-12 - PLAN #1 6-22	1,000.00	1,000.00	31.91	27.67	7.531	CC
P_Riverbend 25-12 - P_Riverbend 25-12 - PLAN #1 6-22	1,100.00	1,101.00	32.08	27.41	6.876	ES
P_Riverbend 25-12 - P_Riverbend 25-12 - PLAN #1 6-22	1,300.00	1,302.89	33.84	28.35	6.165	SF
P_Riverbend 39-12 - P_Riverbend 39-12 - PLAN #1 6-22	300.00	300.00	63.82	62.73	58.540	CC, ES
P_Riverbend 39-12 - P_Riverbend 39-12 - PLAN #1 6-22	800.00	785.69	103.16	99.77	30.371	SF
P_Riverbend 9-12 - P_Riverbend 9-12 - PLAN #1 6-22-1	300.00	300.00	80.05	78.96	73.431	CC, ES
P_Riverbend 9-12 - P_Riverbend 9-12 - PLAN #1 6-22-1	900.00	876.07	139.99	136.02	35.200	SF

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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	129.26	-901.93	1,103.64	1,425.46					
100.00	100.00	93.75	93.75	0.10	1.88	129.23	-901.16	1,103.64	1,424.89	1,422.92	1.97	722.940		
200.00	200.00	210.41	210.36	0.32	6.43	129.14	-898.07	1,103.64	1,423.21	1,416.47	6.74	211.186		
300.00	300.00	310.35	310.24	0.55	10.44	129.03	-894.58	1,103.64	1,421.01	1,410.05	10.96	129.600		
400.00	400.00	410.29	410.12	0.77	14.46	128.92	-891.10	1,103.64	1,418.81	1,403.62	15.19	93.404		
500.00	500.00	510.23	510.00	0.99	18.47	128.81	-887.61	1,103.64	1,416.62	1,397.21	19.42	72.963		
600.00	600.00	610.16	609.87	1.22	22.48	128.70	-884.12	1,103.64	1,414.44	1,390.80	23.64	59.829		
700.00	700.00	710.10	709.75	1.44	26.50	128.59	-880.63	1,103.64	1,412.26	1,384.39	27.87	50.679		
800.00	800.00	810.04	809.63	1.67	30.51	128.48	-877.15	1,103.64	1,410.08	1,377.99	32.09	43.939		
900.00	900.00	909.98	909.51	1.89	34.53	128.37	-873.66	1,103.64	1,407.91	1,371.60	36.32	38.767		
1,000.00	1,000.00	1,009.92	1,009.39	2.12	38.54	128.25	-870.17	1,103.64	1,405.75	1,365.21	40.54	34.673		
1,073.55	1,073.54	1,083.42	1,082.84	2.28	41.49	-147.15	-867.60	1,103.64	1,404.95	1,361.24	43.71	32.142	CC	
1,100.00	1,099.98	1,109.85	1,109.25	2.33	42.55	-147.19	-866.68	1,103.64	1,405.06	1,360.23	44.83	31.345		
1,200.00	1,199.84	1,209.66	1,209.00	2.54	46.56	-147.40	-863.20	1,103.64	1,407.31	1,358.31	49.00	28.718	ES	
1,300.00	1,299.45	1,309.24	1,308.52	2.76	50.56	-147.64	-859.72	1,103.64	1,412.54	1,359.41	53.13	26.585		

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

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Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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-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
1,400.00	1,398.70	1,408.47	1,407.69	3.01	54.55	-147.93	-856.26	1,103.64	1,420.76	1,363.56	57.20	24.840	
1,500.00	1,497.47	1,507.22	1,506.39	3.28	58.52	-148.25	-852.81	1,103.64	1,431.99	1,370.81	61.18	23.405	
1,600.00	1,595.62	1,605.38	1,604.49	3.60	62.46	-148.60	-849.39	1,103.64	1,446.26	1,381.18	65.08	22.223	
1,700.00	1,693.06	1,702.83	1,701.87	3.96	66.37	-148.98	-845.99	1,103.64	1,463.61	1,394.73	68.87	21.250	
1,800.00	1,789.64	1,799.44	1,798.42	4.38	70.25	-149.39	-842.62	1,103.64	1,484.04	1,411.48	72.55	20.454	
1,900.00	1,885.27	1,895.10	1,894.03	4.87	74.10	-149.81	-839.28	1,103.64	1,507.59	1,431.48	76.11	19.809	
2,000.00	1,979.82	1,989.70	1,988.56	5.42	77.89	-150.24	-835.98	1,103.64	1,534.26	1,454.74	79.52	19.295	
2,100.00	2,073.17	2,083.11	2,081.92	6.05	81.65	-150.67	-832.72	1,103.64	1,564.08	1,481.30	82.78	18.896	
2,200.00	2,165.21	2,175.22	2,173.98	6.76	85.35	-151.11	-829.50	1,103.64	1,597.05	1,511.18	85.87	18.599	
2,241.10	2,202.64	2,212.68	2,211.41	7.07	86.85	-151.28	-828.19	1,103.64	1,611.51	1,524.42	87.09	18.505	
2,300.00	2,256.10	2,266.19	2,264.89	7.54	89.00	-151.75	-826.33	1,103.64	1,632.66	1,543.35	89.31	18.280	
2,400.00	2,346.86	2,357.03	2,355.67	8.34	92.65	-152.51	-823.16	1,103.64	1,668.80	1,575.70	93.10	17.926	
2,500.00	2,437.62	2,447.87	2,446.46	9.16	96.30	-153.24	-819.99	1,103.64	1,705.19	1,608.32	96.87	17.602	
2,600.00	2,528.38	2,538.71	2,537.24	9.99	99.95	-153.94	-816.82	1,103.64	1,741.83	1,641.19	100.65	17.307	
2,700.00	2,619.15	2,629.55	2,628.03	10.83	103.60	-154.62	-813.65	1,103.64	1,778.70	1,674.29	104.41	17.035	
2,800.00	2,709.91	2,720.39	2,718.82	11.68	107.24	-155.27	-810.47	1,103.64	1,815.78	1,707.61	108.17	16.786	
2,900.00	2,800.67	2,811.23	2,809.60	12.54	110.89	-155.89	-807.30	1,103.64	1,853.06	1,741.13	111.93	16.556	
3,000.00	2,891.43	2,902.08	2,900.39	13.40	114.54	-156.49	-804.13	1,103.64	1,890.53	1,774.86	115.67	16.343	
3,100.00	2,982.19	2,992.92	2,991.18	14.26	118.19	-157.07	-800.96	1,103.64	1,928.18	1,808.76	119.42	16.147	
3,200.00	3,072.95	3,083.76	3,081.96	15.13	121.84	-157.62	-797.79	1,103.64	1,966.00	1,842.85	123.15	15.964	
3,300.00	3,163.71	3,174.60	3,172.75	16.00	125.49	-158.16	-794.62	1,103.64	2,003.97	1,877.09	126.88	15.794	
3,400.00	3,254.48	3,265.44	3,263.53	16.87	129.14	-158.67	-791.45	1,103.64	2,042.10	1,911.50	130.60	15.636	
3,500.00	3,345.24	3,356.28	3,354.32	17.75	132.79	-159.17	-788.28	1,103.64	2,080.37	1,946.05	134.32	15.488	
3,600.00	3,436.00	3,447.12	3,445.11	18.62	136.43	-159.65	-785.11	1,103.64	2,118.77	1,980.73	138.03	15.350	
3,700.00	3,526.76	3,537.97	3,535.89	19.50	140.08	-160.12	-781.94	1,103.64	2,157.29	2,015.55	141.74	15.220	
3,800.00	3,617.52	3,628.81	3,626.68	20.38	143.73	-160.57	-778.77	1,103.64	2,195.94	2,050.50	145.45	15.098	
3,900.00	3,708.28	3,719.65	3,717.46	21.26	147.38	-161.00	-775.60	1,103.64	2,234.70	2,085.56	149.15	14.983	
4,000.00	3,799.05	3,810.49	3,808.25	22.14	151.03	-161.42	-772.43	1,103.64	2,273.57	2,120.73	152.84	14.875	
4,100.00	3,889.81	3,901.33	3,899.04	23.03	154.68	-161.82	-769.26	1,103.64	2,312.54	2,156.01	156.53	14.773	
4,200.00	3,980.57	3,992.17	3,989.82	23.91	158.33	-162.21	-766.09	1,103.64	2,351.61	2,191.39	160.22	14.677	
4,300.00	4,071.33	4,083.01	4,080.61	24.79	161.98	-162.59	-762.92	1,103.64	2,390.77	2,226.86	163.91	14.586	
4,400.00	4,162.09	4,173.86	4,171.39	25.68	165.62	-162.96	-759.75	1,103.64	2,430.02	2,262.43	167.59	14.500	
4,500.00	4,252.85	4,264.70	4,262.18	26.56	169.27	-163.32	-756.58	1,103.64	2,469.36	2,298.08	171.27	14.418	
4,600.00	4,343.62	4,355.54	4,352.97	27.45	172.92	-163.66	-753.41	1,103.64	2,508.77	2,333.82	174.95	14.340	
4,700.00	4,434.38	4,446.38	4,443.75	28.34	176.57	-164.00	-750.24	1,103.64	2,548.26	2,369.63	178.63	14.266	
4,800.00	4,525.14	4,537.22	4,534.54	29.22	180.22	-164.32	-747.07	1,103.64	2,587.82	2,405.52	182.30	14.195	
4,900.00	4,615.90	4,628.06	4,625.32	30.11	183.87	-164.64	-743.90	1,103.64	2,627.46	2,441.48	185.97	14.128	
5,000.00	4,706.66	4,718.90	4,716.11	31.00	187.52	-164.94	-740.73	1,103.64	2,667.15	2,477.51	189.64	14.064	
5,100.00	4,797.42	4,809.75	4,806.90	31.88	191.17	-165.24	-737.56	1,103.64	2,706.92	2,513.61	193.31	14.003	
5,200.00	4,888.19	4,900.59	4,897.68	32.77	194.82	-165.53	-734.39	1,103.64	2,746.74	2,549.76	196.98	13.944	
5,282.82	4,963.36	4,975.83	4,972.88	33.51	197.84	-165.76	-731.76	1,103.64	2,779.77	2,579.75	200.02	13.898	
5,300.00	4,978.97	4,991.45	4,988.49	33.65	198.46	-165.85	-731.22	1,103.64	2,786.57	2,585.52	201.06	13.860	
5,400.00	5,070.69	5,083.24	5,080.22	34.32	202.15	-166.30	-728.01	1,103.64	2,824.41	2,617.35	207.06	13.641	
5,500.00	5,163.74	5,176.35	5,173.28	34.94	205.89	-166.71	-724.76	1,103.64	2,859.14	2,646.14	212.99	13.424	
5,600.00	5,258.01	5,270.67	5,267.54	35.51	209.68	-167.08	-721.47	1,103.64	2,890.70	2,671.87	218.83	13.210	
5,700.00	5,353.39	5,366.09	5,362.90	36.03	213.51	-167.41	-718.14	1,103.64	2,919.05	2,694.51	224.54	13.000	
5,800.00	5,449.75	5,462.48	5,459.24	36.48	217.38	-167.69	-714.78	1,103.64	2,944.14	2,714.04	230.11	12.795	
5,900.00	5,546.99	5,559.74	5,556.44	36.89	221.29	-167.95	-711.38	1,103.64	2,965.94	2,730.44	235.50	12.594	
6,000.00	5,644.99	5,657.74	5,654.37	37.24	225.23	-168.17	-707.96	1,103.64	2,984.43	2,743.70	240.72	12.398	
6,100.00	5,743.62	5,756.36	5,752.94	37.53	229.19	-168.36	-704.52	1,103.64	2,999.55	2,753.68	245.87	12.200	
6,200.00	5,842.76	5,855.49	5,852.00	37.78	233.17	-168.52	-701.06	1,103.64	3,011.31	2,760.52	250.79	12.007	
6,300.00	5,942.30	5,955.00	5,951.45	37.97	237.17	-168.65	-697.59	1,103.64	3,019.67	2,764.22	255.45	11.821	

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

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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	
6,400.00	6,042.11	6,054.77	6,051.16	38.12	241.17	-168.76	-694.11	1,103.64	3,024.63	2,764.80	259.83	11.641	
6,500.00	6,142.07	6,154.68	6,151.01	38.21	245.19	-168.84	-690.62	1,103.64	3,026.17	2,762.25	263.92	11.466	
6,523.93	6,166.00	6,178.59	6,174.90	38.23	246.15	106.44	-689.79	1,103.64	3,026.03	2,761.18	264.85	11.426	
6,600.00	6,242.07	6,254.61	6,250.89	38.28	249.20	106.39	-687.13	1,103.64	3,025.28	2,757.28	267.99	11.289	
6,700.00	6,342.07	6,354.55	6,350.76	38.36	253.22	106.33	-683.64	1,103.64	3,024.29	2,752.16	272.14	11.113	
6,800.00	6,442.07	6,454.49	6,450.64	38.44	257.23	106.26	-680.16	1,103.64	3,023.32	2,747.04	276.28	10.943	
6,900.00	6,542.07	6,554.43	6,550.52	38.52	261.24	106.20	-676.67	1,103.64	3,022.34	2,741.91	280.43	10.778	
7,000.00	6,642.07	6,654.37	6,650.40	38.61	265.26	106.14	-673.18	1,103.64	3,021.37	2,736.79	284.57	10.617	
7,100.00	6,742.07	6,754.31	6,750.28	38.69	269.27	106.07	-669.69	1,103.64	3,020.40	2,731.68	288.72	10.461	
7,200.00	6,842.07	6,854.25	6,850.15	38.77	273.29	106.01	-666.21	1,103.64	3,019.43	2,726.56	292.87	10.310	
7,300.00	6,942.07	6,954.19	6,950.03	38.86	277.30	105.95	-662.72	1,103.64	3,018.47	2,721.45	297.02	10.162	
7,400.00	7,042.07	7,054.13	7,049.91	38.94	281.32	105.88	-659.23	1,103.64	3,017.51	2,716.34	301.18	10.019	
7,500.00	7,142.07	7,154.07	7,149.79	39.03	285.33	105.82	-655.74	1,103.64	3,016.56	2,711.23	305.33	9.880	
7,600.00	7,242.07	7,254.01	7,249.67	39.12	289.34	105.76	-652.25	1,103.64	3,015.61	2,706.12	309.49	9.744	
7,700.00	7,342.07	7,353.94	7,349.55	39.21	293.36	105.69	-648.77	1,103.64	3,014.66	2,701.01	313.65	9.612	
7,800.00	7,442.07	7,453.88	7,449.42	39.30	297.37	105.63	-645.28	1,103.64	3,013.72	2,695.91	317.81	9.483	
7,900.00	7,542.07	7,553.82	7,549.30	39.39	301.39	105.56	-641.79	1,103.64	3,012.78	2,690.81	321.97	9.357	
8,000.00	7,642.07	7,653.76	7,649.18	39.48	305.40	105.50	-638.30	1,103.64	3,011.85	2,685.71	326.13	9.235	
8,100.00	7,742.07	7,753.70	7,749.06	39.58	309.41	105.44	-634.81	1,103.64	3,010.92	2,680.62	330.30	9.116	
8,200.00	7,842.07	7,853.64	7,848.94	39.67	313.43	105.37	-631.33	1,103.64	3,009.99	2,675.52	334.46	8.999	
8,300.00	7,942.07	7,953.58	7,948.81	39.77	317.44	105.31	-627.84	1,103.64	3,009.06	2,670.43	338.63	8.886	
8,400.00	8,042.07	8,053.52	8,048.69	39.87	321.46	105.24	-624.35	1,103.64	3,008.14	2,665.34	342.80	8.775	
8,440.93	8,083.00	8,078.00	8,073.16	39.91	322.44	105.23	-623.50	1,103.64	3,007.81	2,663.97	343.85	8.747 SF	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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	89.55	0.38	47.86	47.86				
100.00	100.00	100.00	100.00	0.10	1.70	89.55	0.38	47.86	47.86	46.07	1.80	26.656	
200.00	200.00	200.00	200.00	0.32	5.70	89.55	0.38	47.86	47.86	41.84	6.02	7.950	
300.00	300.00	300.00	300.00	0.55	9.70	89.55	0.38	47.86	47.86	37.62	10.25	4.672	
400.00	400.00	400.00	400.00	0.77	13.70	89.55	0.38	47.86	47.86	33.39	14.47	3.308	
500.00	500.00	500.00	500.00	0.99	17.70	89.55	0.38	47.86	47.86	29.17	18.69	2.560	
600.00	600.00	600.00	600.00	1.22	21.70	89.55	0.38	47.86	47.86	24.94	22.92	2.088	
700.00	700.00	700.00	700.00	1.44	25.70	89.55	0.38	47.86	47.86	20.72	27.14	1.763	
800.00	800.00	800.00	800.00	1.67	29.70	89.55	0.38	47.86	47.86	16.49	31.37	1.526	
900.00	900.00	900.00	900.00	1.89	33.70	89.55	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	2.12	37.70	89.55	0.38	47.86	47.86	8.04	39.82	1.202 Level 2, CC, ES, SF	
1,100.00	1,099.98	1,099.51	1,099.49	2.33	37.77	176.37	-1.30	48.29	50.06	9.98	40.08	1.249 Level 2	
1,200.00	1,199.84	1,198.55	1,198.39	2.54	33.99	-178.30	-6.28	49.59	56.98	20.53	36.45	1.563	
1,300.00	1,299.45	1,296.62	1,296.09	2.76	30.30	-171.90	-14.47	51.71	69.28	36.39	32.88	2.107	
1,400.00	1,398.70	1,393.29	1,392.06	3.01	26.79	-166.07	-25.71	54.63	87.37	57.87	29.50	2.962	
1,500.00	1,497.47	1,490.18	1,488.00	3.28	23.48	-161.85	-38.83	58.04	110.46	84.18	26.28	4.203	
1,600.00	1,595.62	1,586.47	1,583.33	3.60	20.50	-159.52	-51.89	61.42	137.09	113.77	23.31	5.880	
1,700.00	1,693.06	1,681.87	1,677.79	3.96	18.00	-158.31	-64.82	64.78	166.94	146.25	20.69	8.068	
1,800.00	1,789.64	1,776.27	1,771.27	4.38	16.16	-157.76	-77.62	68.10	199.89	181.33	18.56	10.770	
1,900.00	1,885.27	1,869.57	1,863.64	4.87	15.20	-157.61	-90.27	71.39	235.88	218.78	17.10	13.793	
2,000.00	1,979.82	1,961.63	1,954.80	5.42	15.23	-157.69	-102.75	74.62	274.87	258.38	16.49	16.669	
2,100.00	2,073.17	2,052.36	2,044.63	6.05	16.19	-157.90	-115.05	77.82	316.82	300.08	16.74	18.921	
2,200.00	2,165.21	2,141.65	2,133.04	6.76	17.90	-158.18	-127.16	80.96	361.72	343.76	17.96	20.144	
2,241.10	2,202.64	2,177.90	2,168.93	7.07	18.75	-158.30	-132.07	82.23	381.02	362.44	18.58	20.508	
2,300.00	2,256.10	2,229.65	2,220.17	7.54	20.15	-158.69	-139.09	84.05	409.04	389.15	19.89	20.565	
2,400.00	2,346.86	2,317.52	2,307.18	8.34	22.79	-159.24	-151.00	87.15	456.63	434.16	22.47	20.318	
2,500.00	2,437.62	2,405.39	2,394.18	9.16	25.71	-159.69	-162.92	90.24	504.25	478.87	25.38	19.866	
2,600.00	2,528.38	2,493.26	2,481.19	9.99	28.84	-160.06	-174.83	93.33	551.89	523.38	28.52	19.354	
2,700.00	2,619.15	2,581.14	2,568.19	10.83	32.10	-160.37	-186.74	96.42	599.55	567.76	31.79	18.862	
2,800.00	2,709.91	2,669.01	2,655.20	11.68	35.46	-160.64	-198.66	99.51	647.21	612.07	35.15	18.415	
2,900.00	2,800.67	2,756.88	2,742.20	12.54	38.88	-160.87	-210.57	102.61	694.89	656.32	38.57	18.017	
3,000.00	2,891.43	2,844.75	2,829.21	13.40	42.36	-161.07	-222.48	105.70	742.58	700.53	42.04	17.663	
3,100.00	2,982.19	2,932.62	2,916.21	14.26	45.88	-161.24	-234.40	108.79	790.27	744.71	45.55	17.349	
3,200.00	3,072.95	3,020.49	3,003.22	15.13	49.43	-161.40	-246.31	111.88	837.96	788.87	49.09	17.070	
3,300.00	3,163.71	3,108.36	3,090.22	16.00	53.01	-161.54	-258.22	114.97	885.66	833.01	52.65	16.822	
3,400.00	3,254.48	3,196.23	3,177.23	16.87	56.61	-161.66	-270.14	118.06	933.36	877.13	56.23	16.599	
3,500.00	3,345.24	3,284.11	3,264.23	17.75	60.23	-161.77	-282.05	121.16	981.07	921.25	59.83	16.399	
3,600.00	3,436.00	3,371.98	3,351.24	18.62	63.87	-161.88	-293.96	124.25	1,028.78	965.35	63.43	16.219	
3,700.00	3,526.76	3,459.85	3,438.24	19.50	67.51	-161.97	-305.88	127.34	1,076.49	1,009.44	67.05	16.055	
3,800.00	3,617.52	3,547.72	3,525.25	20.38	71.17	-162.05	-317.79	130.43	1,124.20	1,053.53	70.67	15.907	
3,900.00	3,708.28	3,635.59	3,612.25	21.26	74.83	-162.13	-329.70	133.52	1,171.92	1,097.61	74.31	15.772	
4,000.00	3,799.05	3,723.46	3,699.26	22.14	78.50	-162.20	-341.62	136.61	1,219.64	1,141.69	77.94	15.648	
4,100.00	3,889.81	3,811.33	3,786.26	23.03	82.18	-162.27	-353.53	139.71	1,267.35	1,185.77	81.59	15.534	
4,200.00	3,980.57	3,899.21	3,873.27	23.91	85.86	-162.33	-365.44	142.80	1,315.07	1,229.84	85.23	15.429	
4,300.00	4,071.33	3,987.08	3,960.27	24.79	89.55	-162.39	-377.36	145.89	1,362.79	1,273.91	88.89	15.332	
4,400.00	4,162.09	4,074.95	4,047.28	25.68	93.24	-162.44	-389.27	148.98	1,410.52	1,317.97	92.54	15.242	
4,500.00	4,252.85	4,162.82	4,134.28	26.56	96.94	-162.50	-401.18	152.07	1,458.24	1,362.04	96.20	15.158	
4,600.00	4,343.62	4,256.69	4,227.24	27.45	100.89	-162.55	-413.85	155.36	1,505.93	1,405.86	100.08	15.048	
4,700.00	4,434.38	4,384.96	4,354.71	28.34	106.12	-162.62	-427.63	158.94	1,552.17	1,447.03	105.14	14.763	
4,800.00	4,525.14	4,516.16	4,485.61	29.22	111.22	-163.11	-436.00	161.11	1,596.08	1,485.89	110.19	14.484	
4,900.00	4,615.90	4,646.49	4,615.90	30.11	114.18	-163.63	-438.58	161.78	1,637.65	1,524.32	113.33	14.450	
5,000.00	4,706.66	4,737.25	4,706.66	31.00	111.10	-164.03	-438.58	161.78	1,678.25	1,567.45	110.80	15.147	

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 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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						
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	4,797.42	4,828.01	4,797.42	31.88	108.06	-164.42	-438.58	161.78	1,718.91	1,610.62	108.29	15.873	
5,200.00	4,888.19	4,918.78	4,888.19	32.77	105.04	-164.78	-438.58	161.78	1,759.64	1,653.82	105.81	16.630	
5,282.82	4,963.36	4,993.95	4,963.36	33.51	102.58	-165.07	-438.58	161.78	1,793.41	1,689.63	103.79	17.280	
5,300.00	4,978.97	5,009.56	4,978.97	33.65	102.07	-165.17	-438.58	161.78	1,800.38	1,696.74	103.64	17.371	
5,400.00	5,070.69	5,101.27	5,070.69	34.32	99.11	-165.69	-438.58	161.78	1,839.13	1,736.49	102.64	17.919	
5,500.00	5,163.74	5,194.33	5,163.74	34.94	96.16	-166.15	-438.58	161.78	1,874.79	1,773.35	101.44	18.483	
5,600.00	5,258.01	5,288.60	5,258.01	35.51	93.23	-166.55	-438.58	161.78	1,907.29	1,807.24	100.05	19.063	
5,700.00	5,353.39	5,383.98	5,353.39	36.03	90.33	-166.90	-438.58	161.78	1,936.59	1,838.09	98.50	19.662	
5,800.00	5,449.75	5,480.34	5,449.75	36.48	87.47	-167.20	-438.58	161.78	1,962.64	1,865.85	96.79	20.277	
5,900.00	5,546.99	5,577.58	5,546.99	36.89	84.66	-167.45	-438.58	161.78	1,985.41	1,890.45	94.96	20.907	
6,000.00	5,644.99	5,675.58	5,644.99	37.24	81.92	-167.66	-438.58	161.78	2,004.86	1,911.83	93.03	21.550	
6,100.00	5,743.62	5,774.21	5,743.62	37.53	79.26	-167.82	-438.58	161.78	2,020.96	1,929.79	91.17	22.167	
6,200.00	5,842.76	5,873.35	5,842.76	37.78	76.70	-167.96	-438.58	161.78	2,033.69	1,944.42	89.28	22.780	
6,300.00	5,942.30	5,972.89	5,942.30	37.97	74.26	-168.05	-438.58	161.78	2,043.03	1,955.67	87.36	23.386	
6,400.00	6,042.11	6,072.70	6,042.11	38.12	71.95	-168.11	-438.58	161.78	2,048.97	1,963.52	85.45	23.978	
6,500.00	6,142.07	6,172.66	6,142.07	38.21	69.78	-168.13	-438.58	161.78	2,051.50	1,967.92	83.58	24.546	
6,523.93	6,166.00	6,196.59	6,166.00	38.23	69.27	107.15	-438.58	161.78	2,051.59	1,968.47	83.12	24.682	
6,600.00	6,242.07	6,272.66	6,242.07	38.28	67.78	107.15	-438.58	161.78	2,051.59	1,969.97	81.62	25.136	
6,700.00	6,342.07	6,372.66	6,342.07	38.36	65.96	107.15	-438.58	161.78	2,051.59	1,971.79	79.80	25.709	
6,800.00	6,442.07	6,472.66	6,442.07	38.44	64.34	107.15	-438.58	161.78	2,051.59	1,973.41	78.19	26.239	
6,900.00	6,542.07	6,572.66	6,542.07	38.52	62.94	107.15	-438.58	161.78	2,051.59	1,974.79	76.80	26.712	
7,000.00	6,642.07	6,672.66	6,642.07	38.61	61.76	107.15	-438.58	161.78	2,051.59	1,975.93	75.66	27.114	
7,100.00	6,742.07	6,772.66	6,742.07	38.69	60.82	107.15	-438.58	161.78	2,051.59	1,976.80	74.79	27.432	
7,200.00	6,842.07	6,872.66	6,842.07	38.77	60.13	107.15	-438.58	161.78	2,051.59	1,977.40	74.19	27.653	
7,300.00	6,942.07	6,972.66	6,942.07	38.86	59.71	107.15	-438.58	161.78	2,051.59	1,977.71	73.88	27.769	
7,400.00	7,042.07	7,072.66	7,042.07	38.94	59.55	107.15	-438.58	161.78	2,051.59	1,977.73	73.87	27.774	
7,500.00	7,142.07	7,172.66	7,142.07	39.03	59.66	107.15	-438.58	161.78	2,051.59	1,977.44	74.15	27.667	
7,600.00	7,242.07	7,272.66	7,242.07	39.12	60.03	107.15	-438.58	161.78	2,051.59	1,976.86	74.74	27.451	
7,700.00	7,342.07	7,372.66	7,342.07	39.21	60.67	107.15	-438.58	161.78	2,051.59	1,975.99	75.61	27.135	
7,800.00	7,442.07	7,472.66	7,442.07	39.30	61.56	107.15	-438.58	161.78	2,051.59	1,974.84	76.76	26.728	
7,900.00	7,542.07	7,572.66	7,542.07	39.39	62.69	107.15	-438.58	161.78	2,051.59	1,973.42	78.17	26.244	
8,000.00	7,642.07	7,672.66	7,642.07	39.48	64.05	107.15	-438.58	161.78	2,051.59	1,971.76	79.84	25.698	
8,100.00	7,742.07	7,772.66	7,742.07	39.58	65.63	107.15	-438.58	161.78	2,051.59	1,969.87	81.73	25.103	
8,200.00	7,842.07	7,872.66	7,842.07	39.67	67.41	107.15	-438.58	161.78	2,051.59	1,967.77	83.83	24.474	
8,300.00	7,942.07	7,972.66	7,942.07	39.77	69.37	107.15	-438.58	161.78	2,051.59	1,965.47	86.12	23.823	
8,400.00	8,042.07	8,072.66	8,042.07	39.87	71.50	107.15	-438.58	161.78	2,051.59	1,963.02	88.58	23.161	
8,405.87	8,047.94	8,078.53	8,047.94	39.87	71.63	107.15	-438.58	161.78	2,051.59	1,962.87	88.72	23.123	
8,440.93	8,083.00	8,088.59	8,058.00	39.91	71.85	107.15	-438.58	161.78	2,051.75	1,962.73	89.02	23.049	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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						
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	88.69	0.36	15.95	15.96				
100.00	100.00	100.00	100.00	0.10	0.10	88.69	0.36	15.95	15.96	15.77	0.19	83.526	
200.00	200.00	200.00	200.00	0.32	0.32	88.69	0.36	15.95	15.96	15.32	0.64	24.911	
300.00	300.00	300.00	300.00	0.55	0.55	88.69	0.36	15.95	15.96	14.87	1.09	14.639	
400.00	400.00	400.00	400.00	0.77	0.77	88.69	0.36	15.95	15.96	14.42	1.54	10.365	
500.00	500.00	500.00	500.00	0.99	0.99	88.69	0.36	15.95	15.96	13.97	1.99	8.022	
600.00	600.00	600.00	600.00	1.22	1.22	88.69	0.36	15.95	15.96	13.52	2.44	6.544	
700.00	700.00	700.00	700.00	1.44	1.44	88.69	0.36	15.95	15.96	13.07	2.89	5.525	
800.00	800.00	800.00	800.00	1.67	1.67	88.69	0.36	15.95	15.96	12.62	3.34	4.781	
900.00	900.00	900.00	900.00	1.89	1.89	88.69	0.36	15.95	15.96	12.17	3.79	4.213	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	88.69	0.36	15.95	15.96	11.72	4.24	3.766 CC, ES	
1,100.00	1,099.98	1,100.22	1,100.20	2.33	2.32	179.35	-1.21	15.19	16.98	12.34	4.64	3.657 SF	
1,200.00	1,199.84	1,200.19	1,200.03	2.54	2.50	-166.96	-5.92	12.90	20.90	15.89	5.02	4.166	
1,300.00	1,299.45	1,299.70	1,299.16	2.76	2.69	-153.62	-13.72	9.10	29.01	23.60	5.41	5.359	
1,400.00	1,398.70	1,398.51	1,397.23	3.01	2.91	-144.26	-24.52	3.85	41.66	35.81	5.84	7.128	
1,500.00	1,497.47	1,496.40	1,493.92	3.28	3.15	-138.27	-38.21	-2.81	58.63	52.31	6.32	9.277	
1,600.00	1,595.62	1,593.17	1,588.94	3.60	3.44	-134.38	-54.66	-10.81	79.70	72.84	6.85	11.631	
1,700.00	1,693.06	1,688.62	1,682.01	3.96	3.76	-131.72	-73.70	-20.08	104.66	97.21	7.45	14.044	
1,800.00	1,789.64	1,782.59	1,772.89	4.38	4.14	-129.80	-95.16	-30.51	133.37	125.24	8.13	16.407	
1,900.00	1,885.27	1,877.34	1,864.09	4.87	4.56	-128.76	-118.27	-41.75	165.04	156.15	8.89	18.571	
2,000.00	1,979.82	1,971.45	1,954.68	5.42	4.99	-128.68	-141.22	-52.92	198.79	189.08	9.70	20.483	
2,100.00	2,073.17	2,064.74	2,044.47	6.05	5.44	-129.13	-163.97	-63.98	234.62	224.04	10.58	22.177	
2,200.00	2,165.21	2,157.07	2,133.34	6.76	5.90	-129.87	-186.48	-74.93	272.59	261.09	11.50	23.693	
2,241.10	2,202.64	2,194.72	2,169.58	7.07	6.09	-130.22	-195.66	-79.40	288.84	276.94	11.90	24.275	
2,300.00	2,256.10	2,248.54	2,221.38	7.54	6.37	-131.06	-208.79	-85.78	312.42	299.92	12.50	25.002	
2,400.00	2,346.86	2,339.91	2,309.33	8.34	6.84	-132.24	-231.07	-96.62	352.56	339.04	13.52	26.072	
2,500.00	2,437.62	2,431.29	2,397.28	9.16	7.31	-133.18	-253.35	-107.46	392.80	378.24	14.56	26.970	
2,600.00	2,528.38	2,522.66	2,485.23	9.99	7.80	-133.94	-275.64	-118.30	433.12	417.50	15.62	27.733	
2,700.00	2,619.15	2,614.04	2,573.19	10.83	8.28	-134.57	-297.92	-129.14	473.49	456.81	16.68	28.387	
2,800.00	2,709.91	2,705.41	2,661.14	11.68	8.77	-135.11	-320.20	-139.98	513.90	496.15	17.75	28.954	
2,900.00	2,800.67	2,796.79	2,749.09	12.54	9.27	-135.56	-342.49	-150.82	554.34	535.51	18.82	29.448	
3,000.00	2,891.43	2,888.16	2,837.04	13.40	9.76	-135.96	-364.77	-161.66	594.80	574.90	19.90	29.884	
3,100.00	2,982.19	2,979.54	2,924.99	14.26	10.26	-136.30	-387.05	-172.50	635.29	614.30	20.99	30.270	
3,200.00	3,072.95	3,070.91	3,012.94	15.13	10.76	-136.60	-409.33	-183.34	675.79	653.72	22.07	30.615	
3,300.00	3,163.71	3,162.29	3,100.89	16.00	11.26	-136.87	-431.62	-194.18	716.31	693.15	23.16	30.925	
3,400.00	3,254.48	3,253.66	3,188.84	16.87	11.77	-137.11	-453.90	-205.01	756.84	732.59	24.25	31.205	
3,500.00	3,345.24	3,345.04	3,276.79	17.75	12.27	-137.33	-476.18	-215.85	797.38	772.03	25.35	31.459	
3,600.00	3,436.00	3,436.41	3,364.75	18.62	12.77	-137.52	-498.47	-226.69	837.93	811.49	26.44	31.691	
3,700.00	3,526.76	3,527.79	3,452.70	19.50	13.28	-137.70	-520.75	-237.53	878.48	850.95	27.54	31.903	
3,800.00	3,617.52	3,619.16	3,540.65	20.38	13.79	-137.86	-543.03	-248.37	919.04	890.41	28.63	32.099	
3,900.00	3,708.28	3,710.54	3,628.60	21.26	14.29	-138.01	-565.32	-259.21	959.61	929.88	29.73	32.279	
4,000.00	3,799.05	3,801.91	3,716.55	22.14	14.80	-138.14	-587.60	-270.05	1,000.18	969.36	30.83	32.446	
4,100.00	3,889.81	3,893.29	3,804.50	23.03	15.31	-138.27	-609.88	-280.89	1,040.76	1,008.84	31.92	32.602	
4,200.00	3,980.57	3,984.67	3,892.45	23.91	15.82	-138.38	-632.16	-291.73	1,081.34	1,048.32	33.02	32.747	
4,300.00	4,071.33	4,076.04	3,980.40	24.79	16.33	-138.49	-654.45	-302.57	1,121.92	1,087.80	34.12	32.882	
4,400.00	4,162.09	4,167.42	4,068.35	25.68	16.84	-138.59	-676.73	-313.41	1,162.51	1,127.29	35.22	33.010	
4,500.00	4,252.85	4,258.79	4,156.31	26.56	17.35	-138.68	-699.01	-324.25	1,203.10	1,166.78	36.32	33.129	
4,600.00	4,343.62	4,350.17	4,244.26	27.45	17.86	-138.77	-721.30	-335.08	1,243.69	1,206.28	37.41	33.242	
4,700.00	4,434.38	4,441.54	4,332.21	28.34	18.37	-138.85	-743.58	-345.92	1,284.29	1,245.77	38.51	33.349	
4,800.00	4,525.14	4,532.92	4,420.16	29.22	18.89	-138.93	-765.86	-356.76	1,324.88	1,285.27	39.61	33.450	
4,900.00	4,615.90	4,624.29	4,508.11	30.11	19.40	-139.00	-788.15	-367.60	1,365.48	1,324.77	40.71	33.546	
5,000.00	4,706.66	4,715.67	4,596.06	31.00	19.91	-139.07	-810.43	-378.44	1,406.08	1,364.28	41.80	33.637	

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 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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
5,100.00	4,797.42	4,807.04	4,684.01	31.88	20.42	-139.13	-832.71	-389.28	1,446.68	1,403.78	42.90	33.724	
5,200.00	4,888.19	4,898.42	4,771.96	32.77	20.94	-139.19	-854.99	-400.12	1,487.28	1,443.29	43.99	33.806	
5,282.82	4,963.36	4,974.10	4,844.81	33.51	21.36	-139.24	-873.45	-409.10	1,520.91	1,476.01	44.90	33.872	
5,300.00	4,978.97	4,989.81	4,859.93	33.65	21.45	-139.35	-877.28	-410.96	1,527.85	1,482.77	45.09	33.887	
5,400.00	5,070.69	5,081.90	4,948.57	34.32	21.97	-139.89	-899.74	-421.88	1,566.82	1,520.73	46.09	33.994	
5,500.00	5,163.74	5,174.96	5,038.15	34.94	22.49	-140.30	-922.43	-432.92	1,603.32	1,556.24	47.08	34.055	
5,600.00	5,258.01	5,268.89	5,128.55	35.51	23.02	-140.59	-945.34	-444.07	1,637.31	1,589.26	48.05	34.074	
5,700.00	5,353.39	5,363.57	5,219.68	36.03	23.55	-140.76	-968.43	-455.30	1,668.78	1,619.77	49.00	34.055	
5,800.00	5,449.75	5,458.88	5,311.42	36.48	24.09	-140.83	-991.67	-466.60	1,697.70	1,647.77	49.93	34.001	
5,900.00	5,546.99	5,563.99	5,412.71	36.89	24.63	-140.77	-1,016.92	-478.88	1,723.98	1,673.13	50.84	33.909	
6,000.00	5,644.99	5,683.23	5,528.64	37.24	25.09	-140.67	-1,042.01	-491.09	1,746.66	1,695.04	51.63	33.831	
6,100.00	5,743.62	5,804.45	5,647.57	37.53	25.47	-140.59	-1,063.05	-501.33	1,765.48	1,713.20	52.29	33.765	
6,200.00	5,842.76	5,927.30	5,768.99	37.78	25.79	-140.54	-1,079.74	-509.44	1,780.35	1,727.52	52.83	33.698	
6,300.00	5,942.30	6,051.39	5,892.35	37.97	26.06	-140.51	-1,091.83	-515.33	1,791.19	1,737.93	53.26	33.629	
6,400.00	6,042.11	6,176.33	6,017.01	38.12	26.27	-140.50	-1,099.14	-518.88	1,797.97	1,744.39	53.58	33.557	
6,500.00	6,142.07	6,301.43	6,142.07	38.21	26.43	-140.52	-1,101.56	-520.05	1,800.65	1,746.86	53.79	33.476	
6,523.93	6,166.00	6,325.36	6,166.00	38.23	26.45	134.77	-1,101.56	-520.05	1,800.73	1,746.91	53.82	33.458	
6,600.00	6,242.07	6,401.43	6,242.07	38.28	26.53	134.77	-1,101.56	-520.05	1,800.73	1,746.76	53.97	33.365	
6,700.00	6,342.07	6,501.43	6,342.07	38.36	26.62	134.77	-1,101.56	-520.05	1,800.73	1,746.56	54.17	33.243	
6,800.00	6,442.07	6,601.43	6,442.07	38.44	26.72	134.77	-1,101.56	-520.05	1,800.73	1,746.36	54.37	33.121	
6,900.00	6,542.07	6,701.43	6,542.07	38.52	26.81	134.77	-1,101.56	-520.05	1,800.73	1,746.16	54.57	32.997	
7,000.00	6,642.07	6,801.43	6,642.07	38.61	26.91	134.77	-1,101.56	-520.05	1,800.73	1,745.95	54.78	32.873	
7,100.00	6,742.07	6,901.43	6,742.07	38.69	27.01	134.77	-1,101.56	-520.05	1,800.73	1,745.74	54.99	32.748	
7,200.00	6,842.07	7,001.43	6,842.07	38.77	27.11	134.77	-1,101.56	-520.05	1,800.73	1,745.53	55.20	32.622	
7,300.00	6,942.07	7,101.43	6,942.07	38.86	27.21	134.77	-1,101.56	-520.05	1,800.73	1,745.32	55.41	32.496	
7,400.00	7,042.07	7,201.43	7,042.07	38.94	27.32	134.77	-1,101.56	-520.05	1,800.73	1,745.10	55.63	32.369	
7,500.00	7,142.07	7,301.43	7,142.07	39.03	27.42	134.77	-1,101.56	-520.05	1,800.73	1,744.88	55.85	32.241	
7,600.00	7,242.07	7,401.43	7,242.07	39.12	27.53	134.77	-1,101.56	-520.05	1,800.73	1,744.66	56.08	32.113	
7,700.00	7,342.07	7,501.43	7,342.07	39.21	27.63	134.77	-1,101.56	-520.05	1,800.73	1,744.43	56.30	31.984	
7,800.00	7,442.07	7,601.43	7,442.07	39.30	27.74	134.77	-1,101.56	-520.05	1,800.73	1,744.20	56.53	31.854	
7,900.00	7,542.07	7,701.43	7,542.07	39.39	27.85	134.77	-1,101.56	-520.05	1,800.73	1,743.97	56.76	31.724	
8,000.00	7,642.07	7,801.43	7,642.07	39.48	27.97	134.77	-1,101.56	-520.05	1,800.73	1,743.74	57.00	31.594	
8,100.00	7,742.07	7,901.43	7,742.07	39.58	28.08	134.77	-1,101.56	-520.05	1,800.73	1,743.50	57.23	31.464	
8,200.00	7,842.07	8,001.43	7,842.07	39.67	28.19	134.77	-1,101.56	-520.05	1,800.73	1,743.26	57.47	31.333	
8,300.00	7,942.07	8,101.43	7,942.07	39.77	28.31	134.77	-1,101.56	-520.05	1,800.73	1,743.02	57.71	31.202	
8,400.00	8,042.07	8,201.43	8,042.07	39.87	28.43	134.77	-1,101.56	-520.05	1,800.73	1,742.77	57.96	31.070	
8,405.87	8,047.94	8,207.30	8,047.94	39.87	28.43	134.77	-1,101.56	-520.05	1,800.73	1,742.76	57.97	31.062	
8,440.93	8,083.00	8,217.36	8,058.00	39.91	28.44	134.77	-1,101.56	-520.05	1,800.90	1,742.88	58.03	31.036	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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		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	89.35	0.36	31.91	31.91				
100.00	100.00	100.00	100.00	0.10	0.10	89.35	0.36	31.91	31.91	31.72	0.19	167.019	
200.00	200.00	200.00	200.00	0.32	0.32	89.35	0.36	31.91	31.91	31.27	0.64	49.813	
300.00	300.00	300.00	300.00	0.55	0.55	89.35	0.36	31.91	31.91	30.82	1.09	29.271	
400.00	400.00	400.00	400.00	0.77	0.77	89.35	0.36	31.91	31.91	30.37	1.54	20.725	
500.00	500.00	500.00	500.00	0.99	0.99	89.35	0.36	31.91	31.91	29.92	1.99	16.041	
600.00	600.00	600.00	600.00	1.22	1.22	89.35	0.36	31.91	31.91	29.47	2.44	13.084	
700.00	700.00	700.00	700.00	1.44	1.44	89.35	0.36	31.91	31.91	29.02	2.89	11.048	
800.00	800.00	800.00	800.00	1.67	1.67	89.35	0.36	31.91	31.91	28.57	3.34	9.560	
900.00	900.00	900.00	900.00	1.89	1.89	89.35	0.36	31.91	31.91	28.12	3.79	8.425	
1,000.00	1,000.00	1,000.00	1,000.00	2.12	2.12	89.35	0.36	31.91	31.91	27.67	4.24	7.531 CC	
1,100.00	1,099.98	1,101.00	1,100.98	2.33	2.34	172.94	1.15	30.31	32.08	27.41	4.67	6.876 ES	
1,200.00	1,199.84	1,201.97	1,201.81	2.54	2.56	169.69	3.51	25.52	32.66	27.58	5.07	6.436	
1,300.00	1,299.45	1,302.89	1,302.33	2.76	2.79	164.54	7.43	17.56	33.84	28.35	5.49	6.165 SF	
1,400.00	1,398.70	1,402.97	1,401.79	3.01	3.03	159.27	12.36	7.55	36.77	30.86	5.92	6.216	
1,500.00	1,497.47	1,502.75	1,500.94	3.28	3.29	156.71	17.29	-2.47	43.11	36.75	6.35	6.784	
1,600.00	1,595.62	1,602.29	1,599.85	3.60	3.55	156.38	22.22	-12.48	52.67	45.87	6.80	7.745	
1,700.00	1,693.06	1,701.46	1,698.39	3.96	3.82	157.34	27.13	-22.44	65.43	58.18	7.25	9.028	
1,800.00	1,789.64	1,800.15	1,796.46	4.38	4.09	158.87	32.01	-32.36	81.41	73.72	7.69	10.584	
1,900.00	1,885.27	1,898.23	1,893.93	4.87	4.36	160.53	36.86	-42.22	100.67	92.54	8.13	12.379	
2,000.00	1,979.82	1,995.59	1,990.67	5.42	4.64	162.12	41.68	-52.00	123.24	114.67	8.57	14.380	
2,100.00	2,073.17	2,092.10	2,086.58	6.05	4.91	163.56	46.46	-61.70	149.14	140.13	9.01	16.559	
2,200.00	2,165.21	2,187.66	2,181.53	6.76	5.19	164.83	51.19	-71.30	178.34	168.90	9.44	18.892	
2,241.10	2,202.64	2,226.63	2,220.26	7.07	5.30	165.30	53.11	-75.22	191.30	181.69	9.62	19.890	
2,300.00	2,256.10	2,282.33	2,275.61	7.54	5.46	165.99	55.87	-80.82	210.29	200.36	9.93	21.175	
2,400.00	2,346.86	2,376.92	2,369.60	8.34	5.74	166.92	60.55	-90.32	242.57	232.10	10.47	23.167	
2,500.00	2,437.62	2,471.50	2,463.59	9.16	6.01	167.62	65.23	-99.82	274.90	263.88	11.02	24.946	
2,600.00	2,528.38	2,566.08	2,557.57	9.99	6.29	168.18	69.91	-109.33	307.26	295.68	11.58	26.541	
2,700.00	2,619.15	2,660.66	2,651.56	10.83	6.57	168.64	74.59	-118.83	339.63	327.49	12.14	27.979	
2,800.00	2,709.91	2,755.25	2,745.55	11.68	6.85	169.01	79.27	-128.34	372.03	359.32	12.71	29.278	
2,900.00	2,800.67	2,849.83	2,839.54	12.54	7.13	169.32	83.95	-137.84	404.43	391.15	13.28	30.457	
3,000.00	2,891.43	2,944.41	2,933.52	13.40	7.41	169.59	88.63	-147.35	436.85	422.99	13.85	31.532	
3,100.00	2,982.19	3,039.00	3,027.51	14.26	7.70	169.82	93.31	-156.85	469.27	454.83	14.43	32.514	
3,200.00	3,072.95	3,133.58	3,121.50	15.13	7.98	170.02	97.99	-166.36	501.69	486.68	15.01	33.415	
3,300.00	3,163.71	3,228.16	3,215.49	16.00	8.26	170.20	102.68	-175.86	534.13	518.53	15.60	34.243	
3,400.00	3,254.48	3,322.74	3,309.47	16.87	8.55	170.35	107.36	-185.37	566.56	550.38	16.18	35.008	
3,500.00	3,345.24	3,417.33	3,403.46	17.75	8.83	170.49	112.04	-194.87	599.00	582.23	16.77	35.715	
3,600.00	3,436.00	3,511.91	3,497.45	18.62	9.12	170.62	116.72	-204.38	631.45	614.08	17.36	36.372	
3,700.00	3,526.76	3,606.49	3,591.44	19.50	9.40	170.73	121.40	-213.88	663.89	645.94	17.95	36.982	
3,800.00	3,617.52	3,701.07	3,685.42	20.38	9.69	170.83	126.08	-223.39	696.34	677.79	18.54	37.551	
3,900.00	3,708.28	3,795.66	3,779.41	21.26	9.97	170.93	130.76	-232.89	728.79	709.65	19.14	38.082	
4,000.00	3,799.05	3,890.24	3,873.40	22.14	10.26	171.01	135.44	-242.40	761.24	741.51	19.73	38.580	
4,100.00	3,889.81	3,984.82	3,967.39	23.03	10.55	171.09	140.12	-251.90	793.69	773.36	20.33	39.047	
4,200.00	3,980.57	4,079.40	4,061.37	23.91	10.83	171.16	144.80	-261.40	826.14	805.22	20.92	39.485	
4,300.00	4,071.33	4,173.99	4,155.36	24.79	11.12	171.23	149.48	-270.91	858.60	837.08	21.52	39.898	
4,400.00	4,162.09	4,268.57	4,249.35	25.68	11.41	171.29	154.16	-280.41	891.05	868.93	22.12	40.288	
4,500.00	4,252.85	4,363.15	4,343.34	26.56	11.69	171.35	158.84	-289.92	923.51	900.79	22.72	40.655	
4,600.00	4,343.62	4,457.73	4,437.32	27.45	11.98	171.40	163.52	-299.42	955.96	932.65	23.31	41.003	
4,700.00	4,434.38	4,552.32	4,531.31	28.34	12.27	171.45	168.20	-308.93	988.42	964.51	23.91	41.333	
4,800.00	4,525.14	4,646.90	4,625.30	29.22	12.56	171.50	172.88	-318.43	1,020.88	996.37	24.51	41.645	
4,900.00	4,615.90	4,741.48	4,719.28	30.11	12.84	171.54	177.56	-327.94	1,053.34	1,028.22	25.11	41.942	
5,000.00	4,706.66	4,836.06	4,813.27	31.00	13.13	171.58	182.24	-337.44	1,085.80	1,060.08	25.72	42.224	

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 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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	4,797.42	4,930.65	4,907.26	31.88	13.42	171.62	186.92	-346.95	1,118.26	1,091.94	26.32	42.493	
5,200.00	4,888.19	5,025.23	5,001.25	32.77	13.71	171.66	191.60	-356.45	1,150.72	1,123.80	26.92	42.749	
5,282.82	4,963.36	5,103.57	5,079.09	33.51	13.95	171.69	195.48	-364.32	1,177.60	1,150.19	27.42	42.952	
5,300.00	4,978.97	5,119.83	5,095.25	33.65	14.00	171.71	196.28	-365.96	1,183.13	1,155.58	27.54	42.954	
5,400.00	5,070.69	5,215.14	5,189.96	34.32	14.29	171.82	201.00	-375.54	1,213.38	1,185.13	28.25	42.949	
5,500.00	5,163.74	5,311.43	5,285.65	34.94	14.58	171.89	205.76	-385.21	1,240.33	1,211.41	28.92	42.883	
5,600.00	5,258.01	5,408.60	5,382.20	35.51	14.88	171.92	210.57	-394.98	1,263.93	1,234.37	29.56	42.760	
5,700.00	5,353.39	5,506.52	5,479.51	36.03	15.17	171.93	215.42	-404.82	1,284.16	1,254.01	30.15	42.586	
5,800.00	5,449.75	5,605.07	5,577.44	36.48	15.48	171.90	220.29	-414.72	1,301.00	1,270.29	30.71	42.365	
5,900.00	5,546.99	5,704.14	5,675.88	36.89	15.78	171.85	225.20	-424.68	1,314.43	1,283.20	31.22	42.101	
6,000.00	5,644.99	5,803.60	5,774.72	37.24	16.08	171.76	230.12	-434.67	1,324.42	1,292.73	31.69	41.794	
6,100.00	5,743.62	5,881.91	5,852.59	37.53	16.30	171.69	233.78	-442.11	1,331.58	1,299.54	32.04	41.564	
6,200.00	5,842.76	5,952.87	5,923.31	37.78	16.45	171.64	236.33	-447.29	1,337.38	1,305.10	32.28	41.425	
6,300.00	5,942.30	6,023.81	5,994.13	37.97	16.58	171.62	238.11	-450.89	1,341.90	1,309.43	32.47	41.331	
6,400.00	6,042.11	6,100.00	6,070.29	38.12	16.71	171.60	239.15	-453.01	1,345.13	1,312.54	32.60	41.267	
6,500.00	6,142.07	6,171.79	6,142.07	38.21	16.82	171.61	239.35	-453.41	1,347.00	1,314.34	32.66	41.244	
6,523.93	6,166.00	6,195.72	6,166.00	38.23	16.85	86.90	239.35	-453.41	1,347.10	1,314.42	32.68	41.219	
6,600.00	6,242.07	6,271.79	6,242.07	38.28	16.99	86.90	239.35	-453.41	1,347.10	1,314.16	32.94	40.899	
6,700.00	6,342.07	6,371.79	6,342.07	38.36	17.16	86.90	239.35	-453.41	1,347.10	1,313.82	33.28	40.476	
6,800.00	6,442.07	6,471.79	6,442.07	38.44	17.34	86.90	239.35	-453.41	1,347.10	1,313.47	33.63	40.060	
6,900.00	6,542.07	6,571.79	6,542.07	38.52	17.52	86.90	239.35	-453.41	1,347.10	1,313.12	33.98	39.649	
7,000.00	6,642.07	6,671.79	6,642.07	38.61	17.70	86.90	239.35	-453.41	1,347.10	1,312.77	34.33	39.244	
7,100.00	6,742.07	6,771.79	6,742.07	38.69	17.88	86.90	239.35	-453.41	1,347.10	1,312.42	34.68	38.845	
7,200.00	6,842.07	6,871.79	6,842.07	38.77	18.06	86.90	239.35	-453.41	1,347.10	1,312.07	35.03	38.451	
7,300.00	6,942.07	6,971.79	6,942.07	38.86	18.24	86.90	239.35	-453.41	1,347.10	1,311.71	35.39	38.064	
7,400.00	7,042.07	7,071.79	7,042.07	38.94	18.42	86.90	239.35	-453.41	1,347.10	1,311.35	35.75	37.682	
7,500.00	7,142.07	7,171.79	7,142.07	39.03	18.61	86.90	239.35	-453.41	1,347.10	1,310.99	36.11	37.305	
7,600.00	7,242.07	7,271.79	7,242.07	39.12	18.79	86.90	239.35	-453.41	1,347.10	1,310.63	36.47	36.934	
7,700.00	7,342.07	7,371.79	7,342.07	39.21	18.98	86.90	239.35	-453.41	1,347.10	1,310.26	36.84	36.569	
7,800.00	7,442.07	7,471.79	7,442.07	39.30	19.16	86.90	239.35	-453.41	1,347.10	1,309.90	37.20	36.209	
7,900.00	7,542.07	7,571.79	7,542.07	39.39	19.35	86.90	239.35	-453.41	1,347.10	1,309.53	37.57	35.855	
8,000.00	7,642.07	7,671.79	7,642.07	39.48	19.54	86.90	239.35	-453.41	1,347.10	1,309.16	37.94	35.505	
8,100.00	7,742.07	7,771.79	7,742.07	39.58	19.73	86.90	239.35	-453.41	1,347.10	1,308.79	38.31	35.161	
8,200.00	7,842.07	7,871.79	7,842.07	39.67	19.92	86.90	239.35	-453.41	1,347.10	1,308.41	38.68	34.823	
8,300.00	7,942.07	7,971.79	7,942.07	39.77	20.11	86.90	239.35	-453.41	1,347.10	1,308.04	39.06	34.489	
8,365.25	8,007.33	8,037.04	8,007.33	39.83	20.23	86.90	239.35	-453.41	1,347.10	1,307.80	39.30	34.274	
8,400.00	8,042.07	8,067.72	8,038.00	39.87	20.29	86.90	239.35	-453.41	1,347.11	1,307.68	39.43	34.168	
8,440.93	8,083.00	8,067.72	8,038.00	39.91	20.29	86.90	239.35	-453.41	1,347.85	1,308.36	39.50	34.127	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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						
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	89.67	0.37	63.81	63.82				
100.00	100.00	100.00	100.00	0.10	0.10	89.67	0.37	63.81	63.82	63.62	0.19	334.022	
200.00	200.00	200.00	200.00	0.32	0.32	89.67	0.37	63.81	63.82	63.17	0.64	99.621	
300.00	300.00	300.00	300.00	0.55	0.55	89.67	0.37	63.81	63.82	62.73	1.09	58.540 CC, ES	
400.00	400.00	398.04	398.02	0.77	0.75	90.37	-0.42	65.29	65.32	63.81	1.52	43.032	
500.00	500.00	495.85	495.70	0.99	0.95	92.29	-2.79	69.71	69.90	67.96	1.95	35.931	
600.00	600.00	593.21	592.70	1.22	1.19	94.98	-6.71	77.03	77.67	75.27	2.40	32.413	
700.00	700.00	689.90	688.69	1.44	1.45	97.93	-12.14	87.17	88.73	85.85	2.88	30.839	
800.00	800.00	785.69	783.37	1.67	1.76	100.77	-19.03	100.02	103.16	99.77	3.40	30.371 SF	
900.00	900.00	880.41	876.44	1.89	2.11	103.30	-27.30	115.46	120.96	117.00	3.96	30.538	
1,000.00	1,000.00	973.85	967.66	2.12	2.50	105.46	-36.88	133.35	142.09	137.52	4.57	31.071	
1,100.00	1,099.98	1,065.44	1,056.36	2.33	2.94	-168.05	-47.63	153.42	168.11	163.49	4.62	36.418	
1,200.00	1,199.84	1,154.36	1,141.75	2.54	3.42	-166.76	-59.35	175.28	200.45	195.42	5.03	39.813	
1,300.00	1,299.45	1,240.16	1,223.38	2.76	3.94	-165.84	-71.83	198.58	238.84	233.39	5.45	43.850	
1,400.00	1,398.70	1,322.47	1,300.90	3.01	4.48	-165.17	-84.89	222.95	282.97	277.12	5.85	48.378	
1,500.00	1,497.47	1,400.00	1,373.17	3.28	5.02	-164.67	-98.14	247.69	332.54	326.30	6.24	53.312	
1,600.00	1,595.62	1,475.42	1,442.72	3.60	5.61	-164.25	-111.92	273.40	387.24	380.61	6.62	58.466	
1,700.00	1,693.06	1,545.66	1,506.78	3.96	6.18	-163.89	-125.52	298.80	446.74	439.75	6.99	63.896	
1,800.00	1,789.64	1,622.46	1,576.38	4.38	6.84	-163.59	-140.84	327.40	509.97	502.59	7.38	69.091	
1,900.00	1,885.27	1,697.74	1,644.61	4.87	7.49	-163.35	-155.87	355.45	575.76	567.99	7.77	74.139	
2,000.00	1,979.82	1,770.75	1,710.78	5.42	8.12	-163.12	-170.44	382.65	644.03	635.89	8.15	79.035	
2,100.00	2,073.17	1,841.41	1,774.82	6.05	8.74	-162.91	-184.54	408.97	714.73	706.20	8.53	83.798	
2,200.00	2,165.21	1,909.62	1,836.64	6.76	9.33	-162.69	-198.15	434.38	787.75	778.84	8.91	88.405	
2,241.10	2,202.64	1,936.92	1,861.38	7.07	9.57	-162.59	-203.60	444.55	818.43	809.35	9.07	90.197	
2,300.00	2,256.10	1,975.75	1,896.57	7.54	9.91	-162.83	-211.35	459.01	862.66	853.27	9.39	91.860	
2,400.00	2,346.86	2,041.66	1,956.31	8.34	10.49	-163.20	-224.51	483.57	937.76	927.83	9.94	94.374	
2,500.00	2,437.62	2,107.57	2,016.04	9.16	11.08	-163.51	-237.66	508.12	1,012.89	1,002.40	10.49	96.564	
2,600.00	2,528.38	2,173.49	2,075.78	9.99	11.66	-163.77	-250.82	532.67	1,088.02	1,076.97	11.05	98.481	
2,700.00	2,619.15	2,239.40	2,135.52	10.83	12.24	-164.01	-263.97	557.23	1,163.16	1,151.55	11.61	100.177	
2,800.00	2,709.91	2,305.31	2,195.26	11.68	12.83	-164.21	-277.12	581.78	1,238.31	1,226.13	12.18	101.685	
2,900.00	2,800.67	2,371.23	2,255.00	12.54	13.41	-164.39	-290.28	606.34	1,313.47	1,300.72	12.75	103.034	
3,000.00	2,891.43	2,437.14	2,314.73	13.40	14.00	-164.55	-303.43	630.89	1,388.63	1,375.31	13.32	104.249	
3,100.00	2,982.19	2,503.05	2,374.47	14.26	14.58	-164.70	-316.59	655.45	1,463.79	1,449.90	13.89	105.349	
3,200.00	3,072.95	2,568.97	2,434.21	15.13	15.17	-164.83	-329.74	680.00	1,538.96	1,524.49	14.47	106.349	
3,300.00	3,163.71	2,634.88	2,493.95	16.00	15.76	-164.95	-342.90	704.56	1,614.13	1,599.08	15.05	107.264	
3,400.00	3,254.48	2,700.79	2,553.68	16.87	16.35	-165.05	-356.05	729.11	1,689.31	1,673.68	15.63	108.103	
3,500.00	3,345.24	2,766.71	2,613.42	17.75	16.93	-165.15	-369.21	753.66	1,764.48	1,748.28	16.21	108.877	
3,600.00	3,436.00	2,832.62	2,673.16	18.62	17.52	-165.24	-382.36	778.22	1,839.66	1,822.88	16.79	109.593	
3,700.00	3,526.76	2,898.53	2,732.90	19.50	18.11	-165.33	-395.52	802.77	1,914.84	1,897.48	17.37	110.258	
3,800.00	3,617.52	2,964.45	2,792.64	20.38	18.70	-165.40	-408.67	827.33	1,990.03	1,972.08	17.95	110.878	
3,900.00	3,708.28	3,030.36	2,852.37	21.26	19.29	-165.48	-421.83	851.88	2,065.21	2,046.68	18.53	111.457	
4,000.00	3,799.05	3,096.27	2,912.11	22.14	19.88	-165.54	-434.98	876.44	2,140.40	2,121.29	19.11	112.000	
4,100.00	3,889.81	3,162.19	2,971.85	23.03	20.47	-165.61	-448.13	900.99	2,215.58	2,195.89	19.69	112.511	
4,200.00	3,980.57	3,228.10	3,031.59	23.91	21.05	-165.66	-461.29	925.55	2,290.77	2,270.50	20.27	112.993	
4,300.00	4,071.33	3,294.01	3,091.32	24.79	21.64	-165.72	-474.44	950.10	2,365.96	2,345.10	20.86	113.448	
4,400.00	4,162.09	3,359.93	3,151.06	25.68	22.23	-165.77	-487.60	974.65	2,441.15	2,419.71	21.44	113.879	
4,500.00	4,252.85	3,425.84	3,210.80	26.56	22.82	-165.82	-500.75	999.21	2,516.34	2,494.32	22.02	114.289	
4,600.00	4,343.62	3,491.75	3,270.54	27.45	23.41	-165.86	-513.91	1,023.76	2,591.53	2,568.93	22.60	114.678	
4,700.00	4,434.38	3,557.67	3,330.28	28.34	24.00	-165.90	-527.06	1,048.32	2,666.72	2,643.53	23.19	114.998	
4,800.00	4,525.14	3,623.58	3,390.01	29.22	24.59	-165.94	-540.22	1,072.87	2,741.91	2,718.13	23.78	115.295	
4,900.00	4,615.90	3,689.49	3,449.75	30.11	25.18	-165.98	-553.37	1,097.43	2,817.11	2,792.73	24.37	115.576	
5,000.00	4,706.66	3,755.41	3,509.49	31.00	25.77	-166.02	-566.53	1,121.98	2,892.30	2,867.33	24.97	115.841	

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 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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 39-12 - P_Riverbend 39-12 - 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	4,797.42	3,821.32	3,569.23	31.88	26.36	-166.05	-579.68	1,146.54	2,967.49	2,941.93	25.56	116.093	
5,200.00	4,888.19	3,887.23	3,628.96	32.77	26.95	-166.09	-592.84	1,171.09	3,042.69	3,016.53	26.16	116.331	
5,282.82	4,963.36	3,941.83	3,678.44	33.51	27.44	-166.11	-603.73	1,191.43	3,104.97	3,078.32	26.65	116.519	
5,300.00	4,978.97	3,953.18	3,688.74	33.65	27.55	-166.21	-606.00	1,195.66	3,117.85	3,091.05	26.80	116.348	
5,400.00	5,070.69	4,020.80	3,750.01	34.32	28.15	-166.73	-619.49	1,220.85	3,191.52	3,163.88	27.64	115.477	
5,500.00	5,163.74	4,090.87	3,813.53	34.94	28.78	-167.19	-633.48	1,246.95	3,262.85	3,234.38	28.47	114.625	
5,600.00	5,258.01	4,163.33	3,879.19	35.51	29.43	-167.58	-647.94	1,273.94	3,331.75	3,302.48	29.27	113.809	
5,700.00	5,353.39	4,238.08	3,946.94	36.03	30.10	-167.91	-662.86	1,301.79	3,398.15	3,368.09	30.06	113.040	
5,800.00	5,449.75	4,315.03	4,016.68	36.48	30.79	-168.20	-678.21	1,330.46	3,461.96	3,431.13	30.82	112.323	
5,900.00	5,546.99	4,394.08	4,088.33	36.89	31.50	-168.45	-693.99	1,359.91	3,523.10	3,491.55	31.55	111.663	
6,000.00	5,644.99	4,475.15	4,161.80	37.24	32.22	-168.65	-710.17	1,390.11	3,581.50	3,549.25	32.25	111.060	
6,100.00	5,743.62	4,558.13	4,237.00	37.53	32.97	-168.82	-726.73	1,421.02	3,637.10	3,604.19	32.91	110.516	
6,200.00	5,842.76	4,642.92	4,313.85	37.78	33.73	-168.96	-743.65	1,452.60	3,689.83	3,656.29	33.53	110.031	
6,300.00	5,942.30	4,729.41	4,392.24	37.97	34.50	-169.07	-760.91	1,484.82	3,739.62	3,705.50	34.12	109.606	
6,400.00	6,042.11	4,817.51	4,472.08	38.12	35.29	-169.15	-778.50	1,517.64	3,786.43	3,751.77	34.66	109.239	
6,500.00	6,142.07	4,907.10	4,553.28	38.21	36.10	-169.21	-796.38	1,551.02	3,830.19	3,795.03	35.16	108.930	
6,523.93	6,166.00	4,928.75	4,572.90	38.23	36.29	106.07	-800.70	1,559.08	3,840.21	3,804.93	35.28	108.862	
6,600.00	6,242.07	4,997.69	4,635.38	38.28	36.91	106.17	-814.46	1,584.77	3,871.77	3,836.13	35.64	108.635	
6,700.00	6,342.07	5,088.32	4,717.52	38.36	37.72	106.30	-832.54	1,618.53	3,913.28	3,877.15	36.12	108.330	
6,800.00	6,442.07	5,178.95	4,799.66	38.44	38.54	106.42	-850.63	1,652.29	3,954.80	3,918.19	36.61	108.032	
6,900.00	6,542.07	5,269.58	4,881.80	38.52	39.35	106.55	-868.72	1,686.05	3,996.34	3,959.25	37.09	107.742	
7,000.00	6,642.07	5,360.21	4,963.94	38.61	40.16	106.67	-886.81	1,719.82	4,037.89	4,000.31	37.58	107.458	
7,100.00	6,742.07	5,450.85	5,046.08	38.69	40.98	106.79	-904.89	1,753.58	4,079.46	4,041.39	38.06	107.181	
7,200.00	6,842.07	5,541.93	5,128.22	38.77	41.80	106.91	-923.00	1,787.34	4,121.03	4,082.46	38.54	106.904	
7,300.00	6,942.07	5,633.06	5,210.36	38.86	42.62	107.03	-941.15	1,821.10	4,162.60	4,123.50	39.02	106.627	
7,400.00	7,042.07	5,724.19	5,292.50	38.94	43.44	107.15	-959.26	1,854.96	4,203.71	4,164.61	39.50	106.350	
7,500.00	7,142.07	5,815.32	5,374.64	39.03	44.26	107.27	-977.37	1,888.82	4,244.82	4,206.72	40.00	106.073	
7,600.00	7,242.07	5,906.45	5,456.78	39.12	45.08	107.39	-995.48	1,922.68	4,285.93	4,247.83	40.50	105.796	
7,700.00	7,342.07	6,000.00	5,538.92	39.21	45.90	107.51	-1,013.59	1,956.54	4,327.04	4,288.94	41.00	105.519	
7,800.00	7,442.07	6,093.55	5,621.06	39.30	46.72	107.63	-1,031.70	1,990.40	4,368.15	4,330.05	41.50	105.242	
7,900.00	7,542.07	6,187.10	5,703.20	39.39	47.54	107.75	-1,049.81	2,024.26	4,409.26	4,371.16	42.00	104.965	
8,000.00	7,642.07	6,280.65	5,785.34	39.48	48.36	107.87	-1,067.92	2,058.12	4,450.37	4,412.27	42.50	104.688	
8,100.00	7,742.07	6,374.20	5,867.48	39.58	49.18	107.99	-1,086.03	2,092.03	4,491.48	4,453.38	43.00	104.411	
8,200.00	7,842.07	6,467.75	5,949.62	39.67	50.00	108.11	-1,104.14	2,125.94	4,532.59	4,494.49	43.50	104.134	
8,300.00	7,942.07	6,561.30	6,031.76	39.77	50.82	108.23	-1,122.25	2,159.85	4,573.70	4,535.60	44.00	103.857	
8,365.25	8,007.33	6,612.93	6,073.90	39.83	51.64	108.35	-1,140.36	2,193.76	4,614.81	4,576.71	44.50	103.580	
8,400.00	8,042.07	6,706.48	6,156.04	39.87	52.46	108.47	-1,158.47	2,227.67	4,655.92	4,617.82	45.00	103.303	
8,440.93	8,083.00	6,758.11	6,198.18	39.91	53.28	108.59	-1,176.58	2,261.58	4,697.03	4,658.93	45.50	103.026	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Tooface (")	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	89.74	0.36	80.05	80.05				
100.00	100.00	100.00	100.00	0.10	0.10	89.74	0.36	80.05	80.05	79.86	0.19	418.990	
200.00	200.00	200.00	200.00	0.32	0.32	89.74	0.36	80.05	80.05	79.41	0.64	124.962	
300.00	300.00	300.00	300.00	0.55	0.55	89.74	0.36	80.05	80.05	78.96	1.09	73.431 CC, ES	
400.00	400.00	397.29	397.27	0.77	0.75	89.95	0.07	81.67	81.72	80.20	1.52	53.746	
500.00	500.00	494.35	494.21	0.99	0.96	90.54	-0.81	86.53	86.73	84.78	1.95	44.413	
600.00	600.00	590.97	590.47	1.22	1.19	91.38	-2.27	94.57	95.08	92.67	2.41	39.489	
700.00	700.00	686.94	685.76	1.44	1.45	92.33	-4.30	105.72	106.76	103.87	2.89	36.910	
800.00	800.00	782.03	779.76	1.67	1.76	93.28	-6.86	119.85	121.75	118.33	3.41	35.662	
900.00	900.00	876.07	872.19	1.89	2.10	94.16	-9.95	136.84	139.99	136.02	3.98	35.200 SF	
1,000.00	1,000.00	968.86	962.80	2.12	2.49	94.94	-13.52	156.53	161.45	156.87	4.59	35.212	
1,100.00	1,099.98	1,059.80	1,050.92	2.33	2.92	-179.69	-17.53	178.60	187.73	183.14	4.59	40.877	
1,200.00	1,199.84	1,148.04	1,135.71	2.54	3.39	-179.13	-21.90	202.65	220.34	215.34	5.01	44.025	
1,300.00	1,299.45	1,233.13	1,216.72	2.76	3.89	-178.69	-26.54	228.26	259.05	253.64	5.41	47.898	
1,400.00	1,398.70	1,314.66	1,293.58	3.01	4.41	-178.34	-31.40	255.00	303.58	297.78	5.80	52.344	
1,500.00	1,497.47	1,392.33	1,366.05	3.28	4.96	-178.06	-36.39	282.48	353.63	347.46	6.18	57.247	
1,600.00	1,595.62	1,465.88	1,433.97	3.60	5.52	-177.83	-41.43	310.27	408.89	402.35	6.54	62.519	
1,700.00	1,693.06	1,535.17	1,497.25	3.96	6.08	-177.64	-46.47	338.00	469.04	462.15	6.89	68.123	
1,800.00	1,789.64	1,609.38	1,564.53	4.38	6.71	-177.46	-52.07	368.83	533.22	525.98	7.24	73.668	
1,900.00	1,885.27	1,683.74	1,631.92	4.87	7.35	-177.31	-57.68	399.75	600.07	592.49	7.59	79.110	
2,000.00	1,979.82	1,755.72	1,697.16	5.42	7.97	-177.19	-63.12	429.68	669.48	661.56	7.92	84.523	
2,100.00	2,073.17	1,825.24	1,760.17	6.05	8.58	-177.08	-68.36	458.59	741.35	733.11	8.24	89.924	
2,200.00	2,165.21	1,892.22	1,820.86	6.76	9.17	-176.98	-73.42	486.44	815.61	807.05	8.56	95.315	
2,241.10	2,202.64	1,918.98	1,845.13	7.07	9.40	-176.94	-75.44	497.57	846.80	838.11	8.68	97.526	
2,300.00	2,256.10	1,957.02	1,879.60	7.54	9.73	-176.95	-78.31	513.39	891.76	882.81	8.96	99.581	
2,400.00	2,346.86	2,021.61	1,938.13	8.34	10.30	-176.97	-83.19	540.24	968.11	958.69	9.42	102.724	
2,500.00	2,437.62	2,086.19	1,996.67	9.16	10.87	-176.99	-88.06	567.10	1,044.46	1,034.56	9.90	105.486	
2,600.00	2,528.38	2,150.77	2,055.20	9.99	11.44	-177.01	-92.94	593.95	1,120.80	1,110.42	10.39	107.924	
2,700.00	2,619.15	2,215.36	2,113.73	10.83	12.01	-177.02	-97.82	620.81	1,197.15	1,186.28	10.87	110.093	
2,800.00	2,709.91	2,279.94	2,172.26	11.68	12.59	-177.04	-102.69	647.66	1,273.50	1,262.13	11.37	112.027	
2,900.00	2,800.67	2,344.53	2,230.80	12.54	13.16	-177.05	-107.57	674.52	1,349.85	1,337.98	11.87	113.760	
3,000.00	2,891.43	2,409.11	2,289.33	13.40	13.73	-177.06	-112.44	701.37	1,426.19	1,413.83	12.37	115.324	
3,100.00	2,982.19	2,473.69	2,347.86	14.26	14.31	-177.07	-117.32	728.23	1,502.54	1,489.67	12.87	116.736	
3,200.00	3,072.95	2,538.28	2,406.40	15.13	14.88	-177.07	-122.20	755.08	1,578.89	1,565.51	13.38	118.018	
3,300.00	3,163.71	2,602.86	2,464.93	16.00	15.46	-177.08	-127.07	781.94	1,655.23	1,641.35	13.89	119.188	
3,400.00	3,254.48	2,667.45	2,523.46	16.87	16.04	-177.09	-131.95	808.80	1,731.58	1,717.18	14.40	120.257	
3,500.00	3,345.24	2,732.03	2,582.00	17.75	16.61	-177.09	-136.82	835.65	1,807.93	1,793.02	14.91	121.237	
3,600.00	3,436.00	2,796.61	2,640.53	18.62	17.19	-177.10	-141.70	862.51	1,884.28	1,868.85	15.43	122.140	
3,700.00	3,526.76	2,861.20	2,699.06	19.50	17.76	-177.11	-146.57	889.36	1,960.62	1,944.68	15.94	122.973	
3,800.00	3,617.52	2,925.78	2,757.59	20.38	18.34	-177.11	-151.45	916.22	2,036.97	2,020.51	16.46	123.743	
3,900.00	3,708.28	2,990.37	2,816.13	21.26	18.92	-177.11	-156.33	943.07	2,113.32	2,096.34	16.98	124.459	
4,000.00	3,799.05	3,054.95	2,874.66	22.14	19.50	-177.12	-161.20	969.93	2,189.67	2,172.17	17.50	125.123	
4,100.00	3,889.81	3,119.53	2,933.19	23.03	20.07	-177.12	-166.08	996.78	2,266.01	2,247.99	18.02	125.743	
4,200.00	3,980.57	3,184.12	2,991.73	23.91	20.65	-177.13	-170.95	1,023.64	2,342.36	2,323.82	18.54	126.322	
4,300.00	4,071.33	3,248.70	3,050.26	24.79	21.23	-177.13	-175.83	1,050.49	2,418.71	2,399.64	19.07	126.863	
4,400.00	4,162.09	3,313.29	3,108.79	25.68	21.81	-177.13	-180.71	1,077.35	2,495.05	2,475.47	19.59	127.371	
4,500.00	4,252.85	3,377.87	3,167.32	26.56	22.39	-177.14	-185.58	1,104.20	2,571.40	2,551.29	20.11	127.848	
4,600.00	4,343.62	3,442.45	3,225.86	27.45	22.96	-177.14	-190.46	1,131.06	2,647.75	2,627.11	20.64	128.297	
4,700.00	4,434.38	3,507.04	3,284.39	28.34	23.54	-177.14	-195.33	1,157.91	2,724.10	2,702.93	21.16	128.720	
4,800.00	4,525.14	3,571.62	3,342.92	29.22	24.12	-177.14	-200.21	1,184.77	2,800.44	2,778.76	21.69	129.119	
4,900.00	4,615.90	3,636.20	3,401.46	30.11	24.70	-177.15	-205.08	1,211.62	2,876.79	2,854.58	22.22	129.497	
5,000.00	4,706.66	3,700.79	3,459.99	31.00	25.28	-177.15	-209.96	1,238.48	2,953.14	2,930.40	22.74	129.855	

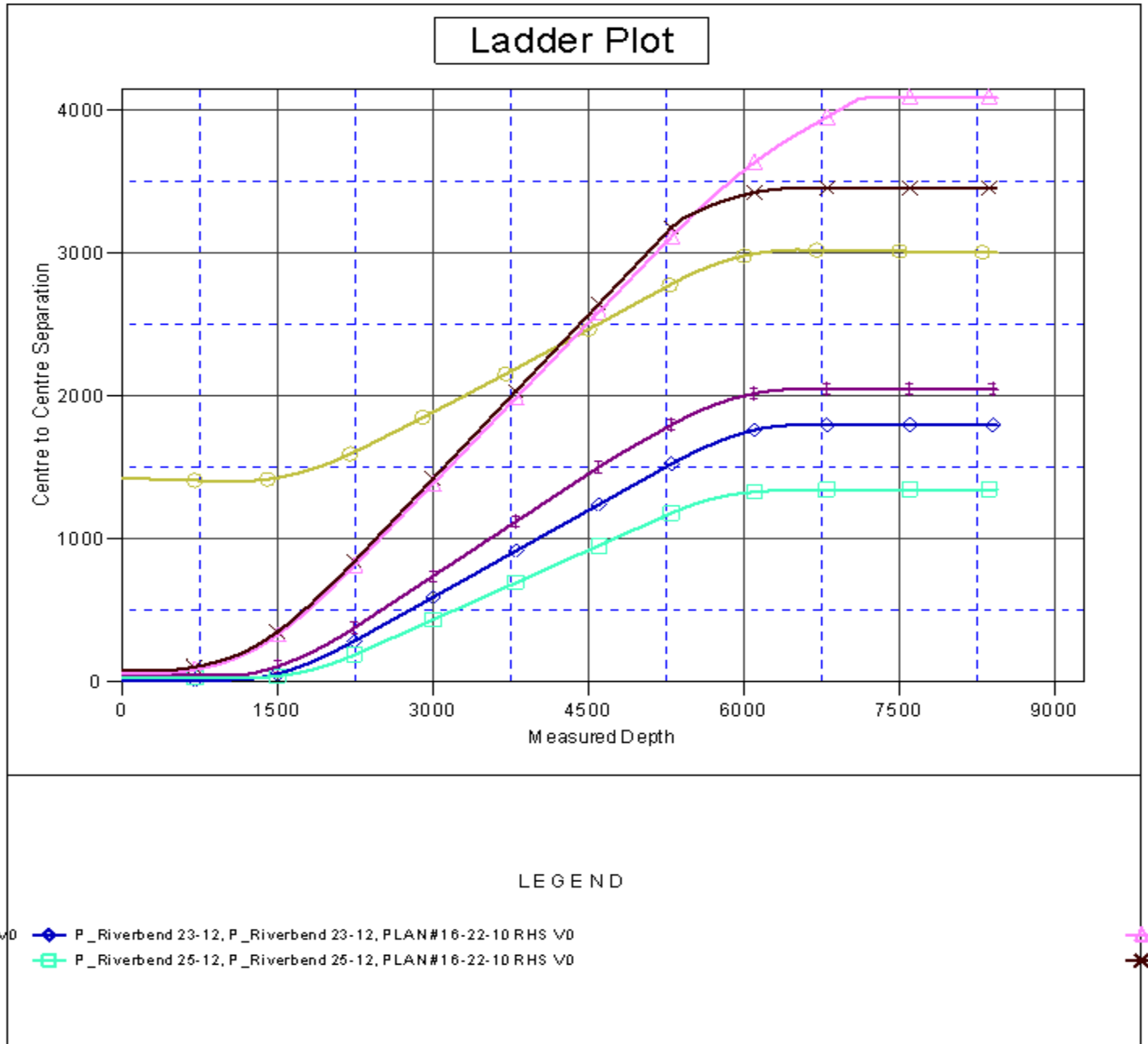
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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	4,797.42	3,765.37	3,518.52	31.88	25.86	-177.15	-214.84	1,265.34	3,029.49	3,006.22	23.27	130.193	
5,200.00	4,888.19	3,829.96	3,577.05	32.77	26.44	-177.15	-219.71	1,292.19	3,105.83	3,082.04	23.80	130.515	
5,282.82	4,963.36	3,883.45	3,625.53	33.51	26.92	-177.15	-223.75	1,314.43	3,169.07	3,144.83	24.23	130.769	
5,300.00	4,978.97	3,894.58	3,635.62	33.65	27.02	-177.18	-224.59	1,319.06	3,182.15	3,157.77	24.38	130.529	
5,400.00	5,070.69	5,379.63	5,070.69	34.32	32.97	-177.52	-281.16	1,630.64	3,240.79	3,212.92	27.87	116.284	
5,500.00	5,163.74	5,472.68	5,163.74	34.94	33.04	-177.58	-281.16	1,630.64	3,277.38	3,248.71	28.67	114.329	
5,600.00	5,258.01	5,566.95	5,258.01	35.51	33.11	-177.63	-281.16	1,630.64	3,310.69	3,281.27	29.42	112.533	
5,700.00	5,353.39	5,662.33	5,353.39	36.03	33.18	-177.68	-281.16	1,630.64	3,340.71	3,310.58	30.13	110.881	
5,800.00	5,449.75	5,758.70	5,449.75	36.48	33.25	-177.72	-281.16	1,630.64	3,367.37	3,336.58	30.79	109.361	
5,900.00	5,546.99	5,855.94	5,546.99	36.89	33.32	-177.76	-281.16	1,630.64	3,390.66	3,359.26	31.41	107.961	
6,000.00	5,644.99	5,953.93	5,644.99	37.24	33.40	-177.79	-281.16	1,630.64	3,410.55	3,378.57	31.97	106.674	
6,100.00	5,743.62	6,052.56	5,743.62	37.53	33.48	-177.81	-281.16	1,630.64	3,427.00	3,394.51	32.49	105.490	
6,200.00	5,842.76	6,151.71	5,842.76	37.78	33.56	-177.83	-281.16	1,630.64	3,440.01	3,407.06	32.95	104.402	
6,300.00	5,942.30	6,251.25	5,942.30	37.97	33.64	-177.84	-281.16	1,630.64	3,449.55	3,416.19	33.36	103.404	
6,400.00	6,042.11	6,351.06	6,042.11	38.12	33.72	-177.85	-281.16	1,630.64	3,455.61	3,421.89	33.72	102.490	
6,500.00	6,142.07	6,451.02	6,142.07	38.21	33.81	-177.85	-281.16	1,630.64	3,458.19	3,424.17	34.02	101.655	
6,523.93	6,166.00	6,474.94	6,166.00	38.23	33.83	97.44	-281.16	1,630.64	3,458.29	3,424.20	34.08	101.465	
6,600.00	6,242.07	6,551.02	6,242.07	38.28	33.89	97.44	-281.16	1,630.64	3,458.29	3,423.97	34.32	100.780	
6,700.00	6,342.07	6,651.02	6,342.07	38.36	33.98	97.44	-281.16	1,630.64	3,458.29	3,423.66	34.63	99.874	
6,800.00	6,442.07	6,751.02	6,442.07	38.44	34.07	97.44	-281.16	1,630.64	3,458.29	3,423.35	34.94	98.975	
6,900.00	6,542.07	6,851.02	6,542.07	38.52	34.16	97.44	-281.16	1,630.64	3,458.29	3,423.03	35.26	98.084	
7,000.00	6,642.07	6,951.02	6,642.07	38.61	34.25	97.44	-281.16	1,630.64	3,458.29	3,422.71	35.58	97.201	
7,100.00	6,742.07	7,051.02	6,742.07	38.69	34.34	97.44	-281.16	1,630.64	3,458.29	3,422.39	35.90	96.327	
7,200.00	6,842.07	7,151.02	6,842.07	38.77	34.44	97.44	-281.16	1,630.64	3,458.29	3,422.06	36.23	95.461	
7,300.00	6,942.07	7,251.02	6,942.07	38.86	34.53	97.44	-281.16	1,630.64	3,458.29	3,421.73	36.56	94.604	
7,400.00	7,042.07	7,351.02	7,042.07	38.94	34.63	97.44	-281.16	1,630.64	3,458.29	3,421.40	36.89	93.755	
7,500.00	7,142.07	7,451.02	7,142.07	39.03	34.72	97.44	-281.16	1,630.64	3,458.29	3,421.07	37.22	92.915	
7,600.00	7,242.07	7,551.02	7,242.07	39.12	34.82	97.44	-281.16	1,630.64	3,458.29	3,420.73	37.56	92.085	
7,700.00	7,342.07	7,651.02	7,342.07	39.21	34.92	97.44	-281.16	1,630.64	3,458.29	3,420.39	37.89	91.263	
7,800.00	7,442.07	7,751.02	7,442.07	39.30	35.02	97.44	-281.16	1,630.64	3,458.29	3,420.05	38.23	90.451	
7,900.00	7,542.07	7,851.02	7,542.07	39.39	35.12	97.44	-281.16	1,630.64	3,458.29	3,419.71	38.58	89.647	
8,000.00	7,642.07	7,951.02	7,642.07	39.48	35.23	97.44	-281.16	1,630.64	3,458.29	3,419.37	38.92	88.853	
8,100.00	7,742.07	8,051.02	7,742.07	39.58	35.33	97.44	-281.16	1,630.64	3,458.29	3,419.02	39.27	88.068	
8,200.00	7,842.07	8,151.02	7,842.07	39.67	35.44	97.44	-281.16	1,630.64	3,458.29	3,418.67	39.62	87.292	
8,300.00	7,942.07	8,251.02	7,942.07	39.77	35.54	97.44	-281.16	1,630.64	3,458.29	3,418.32	39.97	86.526	
8,363.34	8,005.41	8,314.36	8,005.41	39.83	35.61	97.44	-281.16	1,630.64	3,458.29	3,418.10	40.19	86.045	
8,400.00	8,042.07	8,341.94	8,033.00	39.87	35.64	97.44	-281.16	1,630.64	3,458.30	3,417.99	40.30	85.804	
8,440.93	8,083.00	8,341.94	8,033.00	39.91	35.64	97.44	-281.16	1,630.64	3,458.65	3,418.27	40.38	85.662	

Company:	US ROCKIES REGION PLANNING	Local Co-ordinate Reference:	Well P_Riverbend 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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 22-12
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 22-12
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 22-12	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00ft	Output errors are at	2.00 sigma
Reference Wellbore	P_Riverbend 22-12	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 22-12
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°

