

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_RIVERBEND 1-13 PAD**

**RIVERBEND 38-12**

**RIVERBEND 38-12**

**Plan: RIVERBEND 38-12 (wp01)**

## **Standard Planning Report**

**08 June, 2011**



**Weatherford®**

Project: COLORADO NORTHERN ZONE - 83  
Site: WELD\_RIVERBEND 1-13 PAD  
Well: RIVERBEND 38-12  
Wellbore: RIVERBEND 38-12  
Section:  
SHL:  
Design: RIVERBEND 38-12 (wp01)  
Latitude: 40.056794  
Longitude: -104.831482  
GL: 4913.00  
KB: 4913' GL + 15' RKB @ 4928.00ft

## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4028.00	4121.25	PK Depth
4594.00	4687.25	SX Depth
7126.00	7219.25	NIO Depth
7473.00	7566.25	CD Depth
7558.00	7651.25	GH Depth
7908.00	8001.25	J Depth



Azimuths to Grid North  
True North: -0.43°  
Magnetic North: 8.44°  
  
Magnetic Field  
Strength: 52944.6snT  
Dip Angle: 66.76°  
Date: 6/8/2011  
Model: IGRF2010

## WELL DETAILS: RIVERBEND 38-12

+N/-S	+E/-W	Northing	Ground Level: Easting	4913.00 Latitude	Longitude	Slot
0.00	0.00	1264240.84	3187129.97	40.056794	-104.831482	

## CASING DETAILS

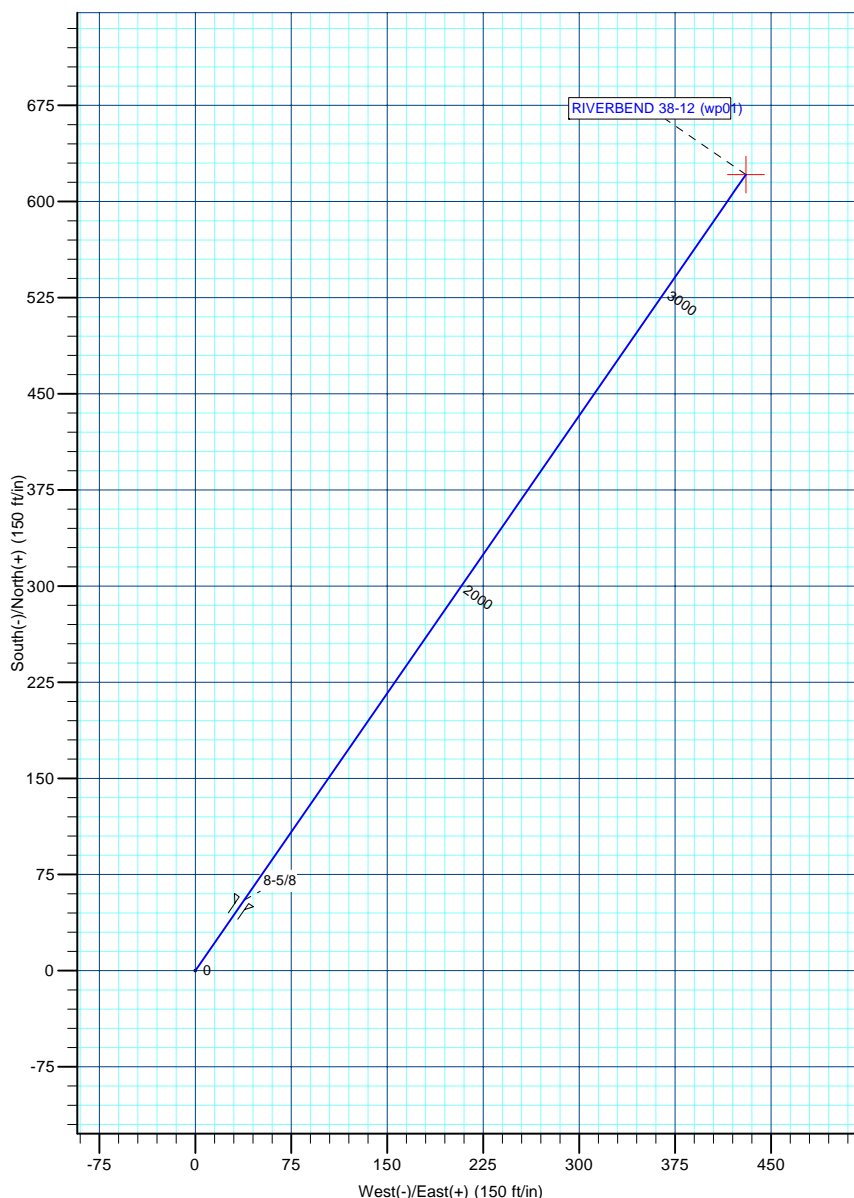
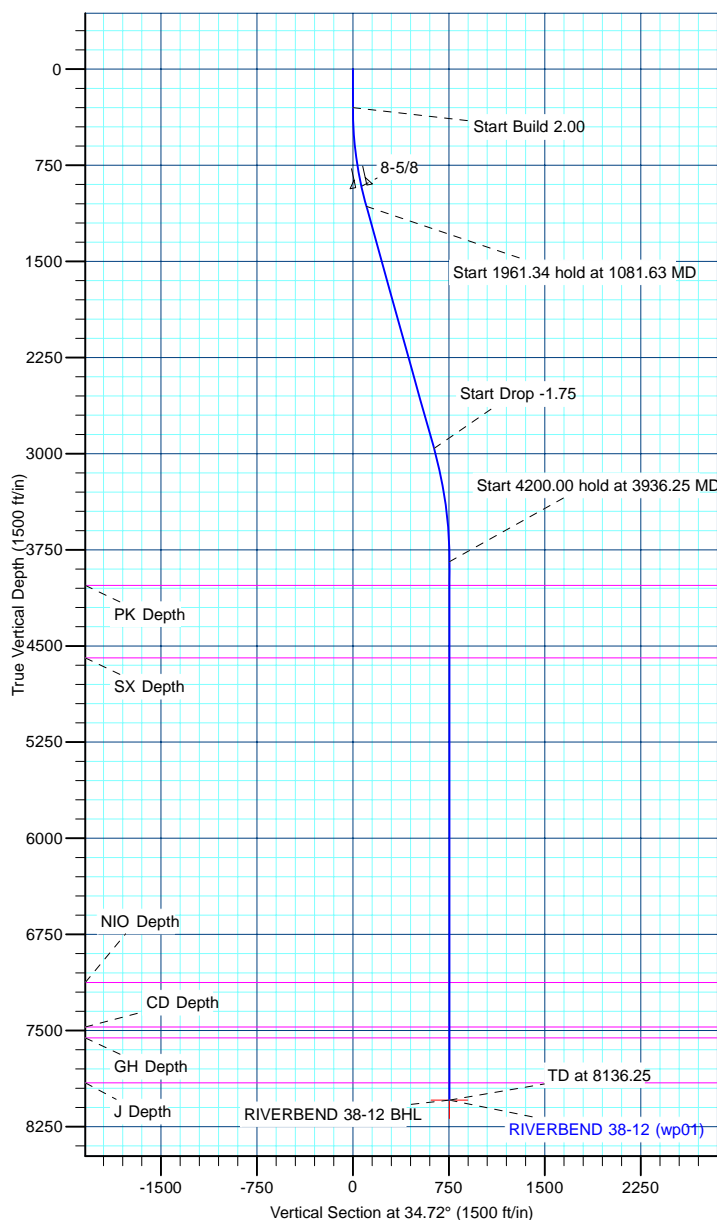
TVD	MD	Name	Size
915.00	919.82	8-5/8	8-5/8

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape Point
RIVERBEND 38-12 BHL	8043.00	621.09	430.32	1264861.93	3187560.29	40.058490	-104.829928	

## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
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
1081.63	15.63	34.72	1071.96	87.11	60.35	2.00	34.72	105.97
3042.97	15.63	34.72	2960.76	521.54	361.34	0.00	0.00	634.48
3936.25	0.00	0.00	3843.00	621.09	430.32	1.75	180.00	755.59
8136.25	0.00	0.00	8043.00	621.09	430.32	0.00	0.00	755.59



<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well RIVERBEND 38-12
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	4913' GL + 15' RKB @ 4928.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	4913' GL + 15' RKB @ 4928.00ft
<b>Site:</b>	WELD_RIVERBEND 1-13 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	RIVERBEND 38-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	RIVERBEND 38-12		
<b>Design:</b>	RIVERBEND 38-12 (wp01)		

<b>Project</b>	COLORADO NORTHERN ZONE - 83		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		WELD_RIVERBEND 1-13 PAD			
Site Position:		Northing:	1,264,240.73 ft	Latitude:	40.056794
From:	Lat/Long	Easting:	3,187,114.02 ft	Longitude:	-104.831539
Position Uncertainty:	0.00 ft	Slot Radius:	0 "	Grid Convergence:	0.43

Well	RIVERBEND 38-12					
Well Position	+N-S	0.11 ft	Northing:	1,264,240.84 ft	Latitude:	40.056794
	+E-W	15.96 ft	Easting:	3,187,129.98 ft	Longitude:	-104.831482
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,913.00 ft

<b>Wellbore</b>	RIVERBEND 38-12				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/8/2011	8.87	66.76	52,945

<b>Design</b>	RIVERBEND 38-12 (wp01)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	34.72

<b>Plan Sections</b>										
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	
1,081.63	15.63	34.72	1,071.96	87.11	60.35	2.00	2.00	0.00	34.72	
3,042.97	15.63	34.72	2,960.76	521.54	361.34	0.00	0.00	0.00	0.00	
3,936.25	0.00	0.00	3,843.00	621.09	430.32	1.75	-1.75	0.00	180.00	
8,136.25	0.00	0.00	8,043.00	621.09	430.32	0.00	0.00	0.00	0.00	RIVERBEND 38-12

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well RIVERBEND 38-12
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	4913' GL + 15' RKB @ 4928.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	4913' GL + 15' RKB @ 4928.00ft
<b>Site:</b>	WELD_RIVERBEND 1-13 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	RIVERBEND 38-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	RIVERBEND 38-12		
<b>Design:</b>	RIVERBEND 38-12 (wp01)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
400.00	2.00	34.72	399.98	1.43	0.99	1.75	2.00	2.00	0.00
500.00	4.00	34.72	499.84	5.74	3.97	6.98	2.00	2.00	0.00
600.00	6.00	34.72	599.45	12.90	8.94	15.69	2.00	2.00	0.00
700.00	8.00	34.72	698.70	22.92	15.88	27.88	2.00	2.00	0.00
800.00	10.00	34.72	797.47	35.77	24.79	43.52	2.00	2.00	0.00
900.00	12.00	34.72	895.62	51.46	35.65	62.60	2.00	2.00	0.00
919.82	12.40	34.72	915.00	54.90	38.04	66.79	2.00	2.00	0.00
<b>8-5/8</b>									
1,000.00	14.00	34.72	993.06	69.95	48.46	85.10	2.00	2.00	0.00
1,081.63	15.63	34.72	1,071.96	87.11	60.35	105.97	2.00	2.00	0.00
<b>Start 1961.34 hold at 1081.63 MD</b>									
1,100.00	15.63	34.72	1,089.66	91.18	63.17	110.92	0.00	0.00	0.00
1,200.00	15.63	34.72	1,185.96	113.32	78.52	137.87	0.00	0.00	0.00
1,300.00	15.63	34.72	1,282.26	135.47	93.86	164.81	0.00	0.00	0.00
1,400.00	15.63	34.72	1,378.56	157.62	109.21	191.76	0.00	0.00	0.00
1,500.00	15.63	34.72	1,474.86	179.77	124.56	218.71	0.00	0.00	0.00
1,600.00	15.63	34.72	1,571.16	201.92	139.90	245.65	0.00	0.00	0.00
1,700.00	15.63	34.72	1,667.46	224.07	155.25	272.60	0.00	0.00	0.00
1,800.00	15.63	34.72	1,763.77	246.22	170.59	299.55	0.00	0.00	0.00
1,900.00	15.63	34.72	1,860.07	268.37	185.94	326.49	0.00	0.00	0.00
2,000.00	15.63	34.72	1,956.37	290.52	201.29	353.44	0.00	0.00	0.00
2,100.00	15.63	34.72	2,052.67	312.67	216.63	380.39	0.00	0.00	0.00
2,200.00	15.63	34.72	2,148.97	334.82	231.98	407.33	0.00	0.00	0.00
2,300.00	15.63	34.72	2,245.27	356.97	247.33	434.28	0.00	0.00	0.00
2,400.00	15.63	34.72	2,341.57	379.12	262.67	461.23	0.00	0.00	0.00
2,500.00	15.63	34.72	2,437.87	401.27	278.02	488.17	0.00	0.00	0.00
2,600.00	15.63	34.72	2,534.17	423.42	293.36	515.12	0.00	0.00	0.00
2,700.00	15.63	34.72	2,630.47	445.57	308.71	542.07	0.00	0.00	0.00
2,800.00	15.63	34.72	2,726.78	467.72	324.06	569.01	0.00	0.00	0.00
2,900.00	15.63	34.72	2,823.08	489.87	339.40	595.96	0.00	0.00	0.00
3,000.00	15.63	34.72	2,919.38	512.02	354.75	622.91	0.00	0.00	0.00
3,042.97	15.63	34.72	2,960.76	521.54	361.34	634.48	0.00	0.00	0.00
<b>Start Drop -1.75</b>									
3,100.00	14.63	34.72	3,015.81	533.78	369.82	649.37	1.75	-1.75	0.00
3,200.00	12.88	34.72	3,112.94	553.33	383.37	673.16	1.75	-1.75	0.00
3,300.00	11.13	34.72	3,210.74	570.43	395.22	693.96	1.75	-1.75	0.00
3,400.00	9.38	34.72	3,309.14	585.07	405.36	711.77	1.75	-1.75	0.00
3,500.00	7.63	34.72	3,408.04	597.23	413.79	726.57	1.75	-1.75	0.00
3,600.00	5.88	34.72	3,507.34	606.91	420.49	738.34	1.75	-1.75	0.00
3,700.00	4.13	34.72	3,606.95	614.08	425.46	747.07	1.75	-1.75	0.00
3,800.00	2.38	34.72	3,706.79	618.76	428.70	752.76	1.75	-1.75	0.00
3,900.00	0.63	34.72	3,806.75	620.92	430.20	755.39	1.75	-1.75	0.00
3,936.25	0.00	0.00	3,843.00	621.09	430.32	755.59	1.75	-1.75	0.00
<b>Start 4200.00 hold at 3936.25 MD</b>									
4,000.00	0.00	0.00	3,906.75	621.09	430.32	755.59	0.00	0.00	0.00
4,100.00	0.00	0.00	4,006.75	621.09	430.32	755.59	0.00	0.00	0.00
4,121.25	0.00	0.00	4,028.00	621.09	430.32	755.59	0.00	0.00	0.00
<b>PK Depth</b>									

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well RIVERBEND 38-12
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	4913' GL + 15' RKB @ 4928.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	4913' GL + 15' RKB @ 4928.00ft
<b>Site:</b>	WELD_RIVERBEND 1-13 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	RIVERBEND 38-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	RIVERBEND 38-12		
<b>Design:</b>	RIVERBEND 38-12 (wp01)		

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)
4,200.00	0.00	0.00	4,106.75	621.09	430.32	755.59	0.00	0.00	0.00
4,300.00	0.00	0.00	4,206.75	621.09	430.32	755.59	0.00	0.00	0.00
4,400.00	0.00	0.00	4,306.75	621.09	430.32	755.59	0.00	0.00	0.00
4,500.00	0.00	0.00	4,406.75	621.09	430.32	755.59	0.00	0.00	0.00
4,600.00	0.00	0.00	4,506.75	621.09	430.32	755.59	0.00	0.00	0.00
4,687.25	0.00	0.00	4,594.00	621.09	430.32	755.59	0.00	0.00	0.00
<b>SX Depth</b>									
4,700.00	0.00	0.00	4,606.75	621.09	430.32	755.59	0.00	0.00	0.00
4,800.00	0.00	0.00	4,706.75	621.09	430.32	755.59	0.00	0.00	0.00
4,900.00	0.00	0.00	4,806.75	621.09	430.32	755.59	0.00	0.00	0.00
5,000.00	0.00	0.00	4,906.75	621.09	430.32	755.59	0.00	0.00	0.00
5,100.00	0.00	0.00	5,006.75	621.09	430.32	755.59	0.00	0.00	0.00
5,200.00	0.00	0.00	5,106.75	621.09	430.32	755.59	0.00	0.00	0.00
5,300.00	0.00	0.00	5,206.75	621.09	430.32	755.59	0.00	0.00	0.00
5,400.00	0.00	0.00	5,306.75	621.09	430.32	755.59	0.00	0.00	0.00
5,500.00	0.00	0.00	5,406.75	621.09	430.32	755.59	0.00	0.00	0.00
5,600.00	0.00	0.00	5,506.75	621.09	430.32	755.59	0.00	0.00	0.00
5,700.00	0.00	0.00	5,606.75	621.09	430.32	755.59	0.00	0.00	0.00
5,800.00	0.00	0.00	5,706.75	621.09	430.32	755.59	0.00	0.00	0.00
5,900.00	0.00	0.00	5,806.75	621.09	430.32	755.59	0.00	0.00	0.00
6,000.00	0.00	0.00	5,906.75	621.09	430.32	755.59	0.00	0.00	0.00
6,100.00	0.00	0.00	6,006.75	621.09	430.32	755.59	0.00	0.00	0.00
6,200.00	0.00	0.00	6,106.75	621.09	430.32	755.59	0.00	0.00	0.00
6,300.00	0.00	0.00	6,206.75	621.09	430.32	755.59	0.00	0.00	0.00
6,400.00	0.00	0.00	6,306.75	621.09	430.32	755.59	0.00	0.00	0.00
6,500.00	0.00	0.00	6,406.75	621.09	430.32	755.59	0.00	0.00	0.00
6,600.00	0.00	0.00	6,506.75	621.09	430.32	755.59	0.00	0.00	0.00
6,700.00	0.00	0.00	6,606.75	621.09	430.32	755.59	0.00	0.00	0.00
6,800.00	0.00	0.00	6,706.75	621.09	430.32	755.59	0.00	0.00	0.00
6,900.00	0.00	0.00	6,806.75	621.09	430.32	755.59	0.00	0.00	0.00
7,000.00	0.00	0.00	6,906.75	621.09	430.32	755.59	0.00	0.00	0.00
7,100.00	0.00	0.00	7,006.75	621.09	430.32	755.59	0.00	0.00	0.00
7,200.00	0.00	0.00	7,106.75	621.09	430.32	755.59	0.00	0.00	0.00
7,219.25	0.00	0.00	7,126.00	621.09	430.32	755.59	0.00	0.00	0.00
<b>NIO Depth</b>									
7,300.00	0.00	0.00	7,206.75	621.09	430.32	755.59	0.00	0.00	0.00
7,400.00	0.00	0.00	7,306.75	621.09	430.32	755.59	0.00	0.00	0.00
7,500.00	0.00	0.00	7,406.75	621.09	430.32	755.59	0.00	0.00	0.00
7,566.25	0.00	0.00	7,473.00	621.09	430.32	755.59	0.00	0.00	0.00
<b>CD Depth</b>									
7,600.00	0.00	0.00	7,506.75	621.09	430.32	755.59	0.00	0.00	0.00
7,651.25	0.00	0.00	7,558.00	621.09	430.32	755.59	0.00	0.00	0.00
<b>GH Depth</b>									
7,700.00	0.00	0.00	7,606.75	621.09	430.32	755.59	0.00	0.00	0.00
7,800.00	0.00	0.00	7,706.75	621.09	430.32	755.59	0.00	0.00	0.00
7,900.00	0.00	0.00	7,806.75	621.09	430.32	755.59	0.00	0.00	0.00
8,000.00	0.00	0.00	7,906.75	621.09	430.32	755.59	0.00	0.00	0.00
8,001.25	0.00	0.00	7,908.00	621.09	430.32	755.59	0.00	0.00	0.00
<b>J Depth</b>									
8,100.00	0.00	0.00	8,006.75	621.09	430.32	755.59	0.00	0.00	0.00
8,136.25	0.00	0.00	8,043.00	621.09	430.32	755.59	0.00	0.00	0.00
<b>TD at 8136.25 - RIVERBEND 38-12 BHL</b>									

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well RIVERBEND 38-12
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	4913' GL + 15' RKB @ 4928.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	4913' GL + 15' RKB @ 4928.00ft
<b>Site:</b>	WELD_RIVERBEND 1-13 PAD	<b>North Reference:</b>	Grid
<b>Well:</b>	RIVERBEND 38-12	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	RIVERBEND 38-12		
<b>Design:</b>	RIVERBEND 38-12 (wp01)		

Design Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
RIVERBEND 38-12 B	0.00	0.00	8,043.00	621.09	430.32	1,264,861.93	3,187,560.29	40.058490	-104.829928
- plan hits target center									
- Point									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(ft)	(ft)	Name	(")	(")
	919.82	915.00	8-5/8	8-5/8	11

Formations						
	Measured Depth	Vertical Depth			Dip	Dip Direction
	(ft)	(ft)	Name	Lithology	(°)	(°)
	4,121.25	4,028.00	PK Depth			
	4,687.25	4,594.00	SX Depth			
	7,219.25	7,126.00	NIO Depth			
	7,566.25	7,473.00	CD Depth			
	7,651.25	7,558.00	GH Depth			
	8,001.25	7,908.00	J Depth			

Plan Annotations					
	Measured Depth	Vertical Depth	Local Coordinates		
	(ft)	(ft)	+N/-S	+E/-W	Comment
	(ft)	(ft)	(ft)	(ft)	
	300.00	300.00	0.00	0.00	Start Build 2.00
	1,081.63	1,071.96	87.11	60.35	Start 1961.34 hold at 1081.63 MD
	3,042.97	2,960.76	521.54	361.34	Start Drop -1.75
	3,936.25	3,843.00	621.09	430.32	Start 4200.00 hold at 3936.25 MD
	8,136.25	8,043.00	621.09	430.32	TD at 8136.25