



# **ANADARKO PETROLEUM CORP.**

**ANADARKO COLORADO NORTHERN ZONE NAD 83**

**WELD\_RIVERBEND 2-24 PAD**

**RIVERBEND 21-24**

**RIVERBEND 21-24**

**Plan: RIVERBEND 21-24 (wp01)**

## **Standard Planning Report**

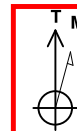
**19 October, 2010**



Project: ANADARKO COLORADO NORTHERN ZONE NAD 83  
Site: WELD\_RIVERBEND 2-24 PAD  
Well: RIVERBEND 21-24  
Wellbore: RIVERBEND 21-24  
Section:  
SHL:  
Design: RIVERBEND 21-24 (wp01)  
Latitude: 40° 2' 33.111 N  
Longitude: 104° 50' 15.119 W  
GL: 4923.0  
KB: WELL @ 4923.0ft (Original Well Elev)



**Weatherford**



Azimuths to True North  
Magnetic North: 8.92°  
Magnetic Field  
Strength: 52984.5nT  
Dip Angle: 66.78°  
Date: 10/19/2010  
Model: BGGM2010

#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3299.0	3408.0	PRKMN TOP
4629.0	4779.1	SX TOP
7161.0	7311.1	NIO TOP
7508.0	7658.1	CODELL TOP
7593.0	7743.1	GRNHRN TOP
7943.0	8093.1	JSND TOP

#### CASING DETAILS

TVD	MD	Name	Size
900.0	900.0	9 5/8"	9-5/8

#### SECTION DETAILS

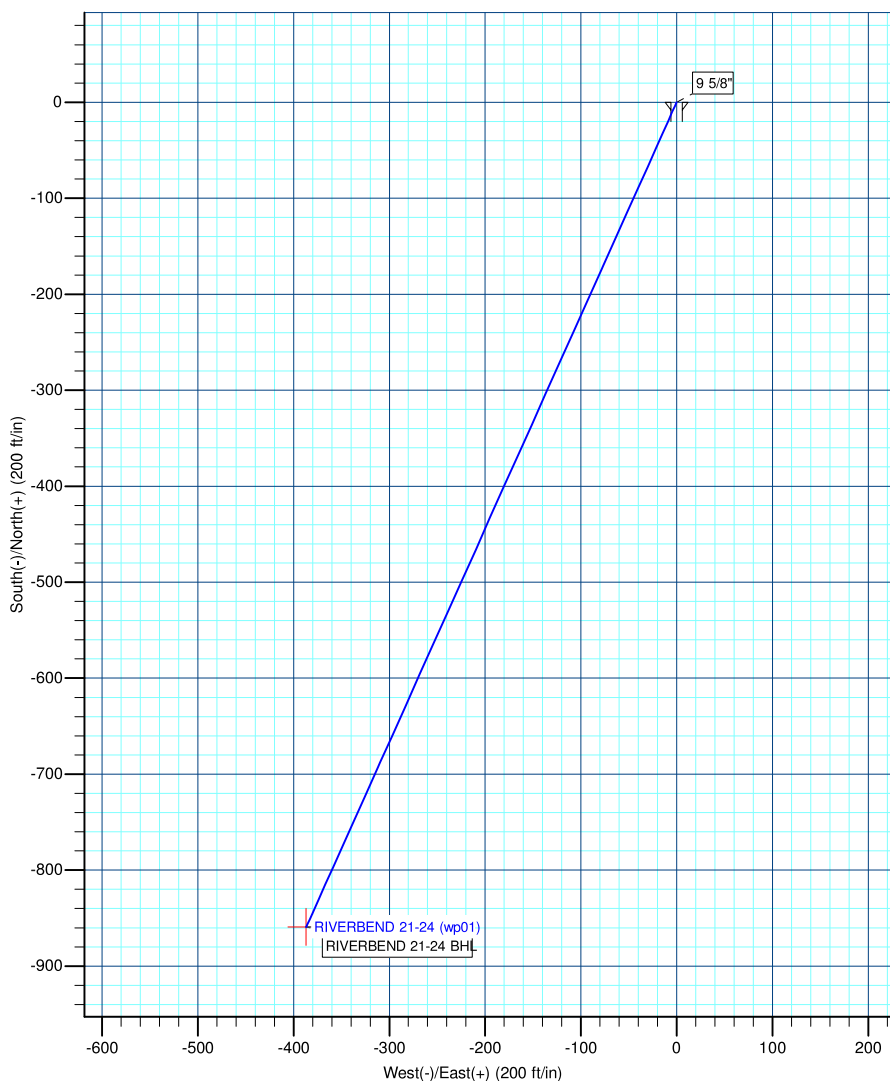
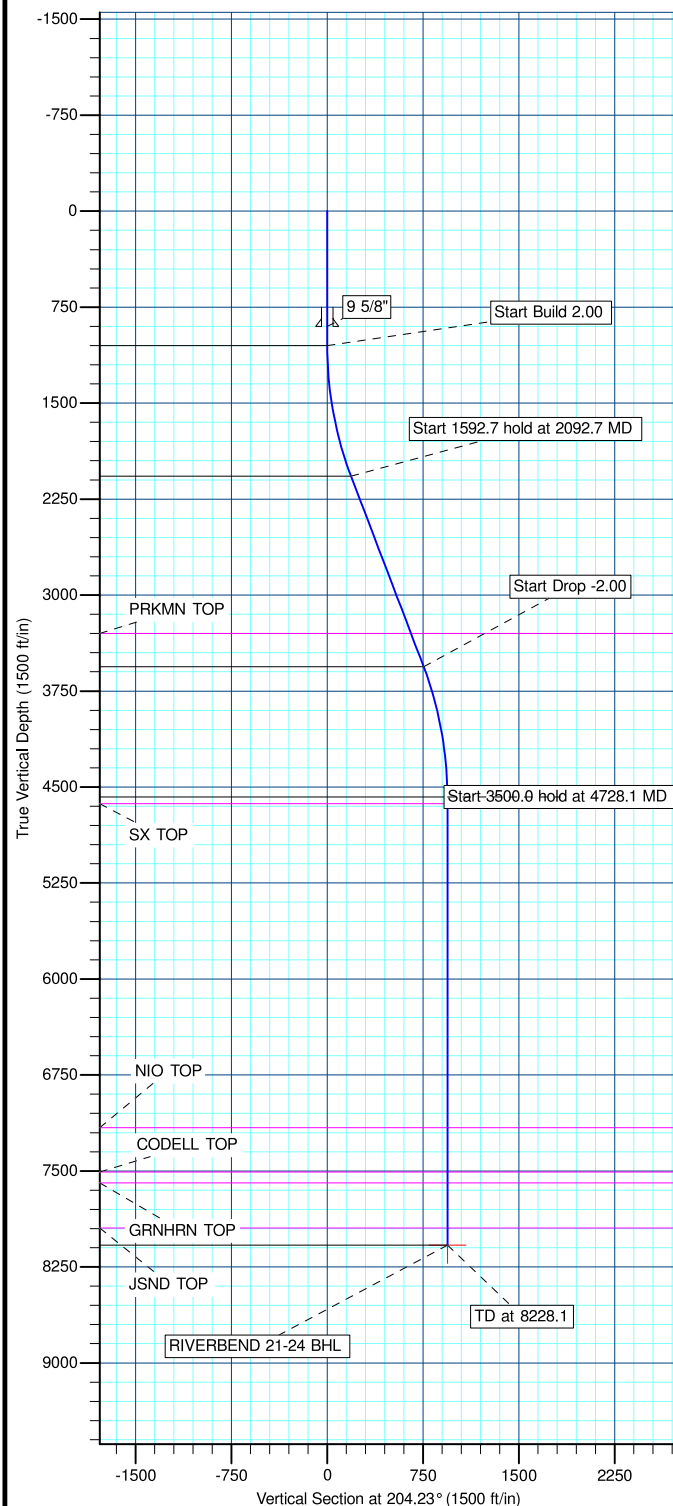
MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
1050.0	0.00	0.00	1050.0	0.0	0.0	0.00	0.00	0.0	Start Build 2.00
2092.7	20.85	204.23	2069.8	-171.1	-77.0	2.00	204.23	187.7	Start 1592.7 hold at 2092.7 MD
3685.4	20.85	204.23	3558.2	-686.2	-309.7	0.00	0.00	754.6	Start Drop -2.00
4728.1	0.00	0.00	4578.0	-859.3	-386.7	2.00	180.00	942.3	Start 3500.0 hold at 4728.1 MD
8228.1	0.00	0.00	8078.0	-859.3	-386.7	0.00	0.00	942.3	TD at 8228.1

#### WELL DETAILS: RIVERBEND 21-24

+N/-S	+E/-W	Northing	Ground Level: Easting	4923.0 Latitude	Longitude	Slot
0.0	0.0	1259032.61	3185475.04	40° 2' 33.111 N	104° 50' 15.119 W	

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

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
RIVERBEND 21-24 BHL	8078.0	-859.3	-386.7	40° 2' 24.619 N	104° 50' 20.090 W	Point



Plan: RIVERBEND 21-24 (wp01) (RIVERBEND 21-24/RIVERBEND 21-24)

Created By: Jason Daguitera Date: 15:14, October 19 2010



# Weatherford International Ltd.

## Planning Report

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well RIVERBEND 21-24
<b>Company:</b>	ANADARKO PETROLEUM CORP.	<b>TVD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Project:</b>	ANADARKO COLORADO NORTHERN ZONE NAD 83	<b>MD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Site:</b>	WELD_RIVERBEND 2-24 PAD	<b>North Reference:</b>	True
<b>Well:</b>	RIVERBEND 21-24	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	RIVERBEND 21-24		
<b>Design:</b>	RIVERBEND 21-24 (wp01)		

<b>Project</b>	ANADARKO COLORADO NORTHERN ZONE NAD 83, ROCKIES, ROCKIES		
<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 2-24 PAD			
Site Position:		Northing:	1,259,032.84ft	Latitude:	40° 2' 33.112 N
From:	Lat/Long	Easting:	3,185,505.00ft	Longitude:	104° 50' 14.734 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.43 °

Well	RIVERBEND 21-24					
Well Position	+N-S	0.0 ft	Northing:	1,259,032.61ft	Latitude:	40° 2' 33.111 N
	+E-W	-30.0 ft	Easting:	3,185,475.04 ft	Longitude:	104° 50' 15.119 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,923.0ft

<b>Wellbore</b>	RIVERBEND 21-24				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2010	10/19/2010	8.92	66.78	52,985

<b>Design</b>	RIVERBEND 21-24 (wp01)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	204.23

<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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,050.0	0.00	0.00	1,050.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,092.7	20.85	204.23	2,069.8	-171.1	-77.0	2.00	2.00	0.00	204.23	
3,685.4	20.85	204.23	3,558.2	-688.2	-309.7	0.00	0.00	0.00	0.00	
4,728.1	0.00	0.00	4,578.0	-859.3	-386.7	2.00	-2.00	0.00	180.00	
8,228.1	0.00	0.00	8,078.0	-859.3	-386.7	0.00	0.00	0.00	0.00	RIVERBEND 21-24

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well RIVERBEND 21-24
<b>Company:</b>	ANADARKO PETROLEUM CORP.	<b>TVD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Project:</b>	ANADARKO COLORADO NORTHERN ZONE NAD 83	<b>MD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Site:</b>	WELD_RIVERBEND 2-24 PAD	<b>North Reference:</b>	True
<b>Well:</b>	RIVERBEND 21-24	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	RIVERBEND 21-24		
<b>Design:</b>	RIVERBEND 21-24 (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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>9 5/8"</b>									
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>Start Build 2.00</b>									
1,050.0	0.00	0.00	1,050.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	1.00	204.23	1,100.0	-0.4	-0.2	0.4	2.00	2.00	0.00
1,200.0	3.00	204.23	1,199.9	-3.6	-1.6	3.9	2.00	2.00	0.00
1,300.0	5.00	204.23	1,299.7	-9.9	-4.5	10.9	2.00	2.00	0.00
1,400.0	7.00	204.23	1,399.1	-19.5	-8.8	21.4	2.00	2.00	0.00
1,500.0	9.00	204.23	1,498.2	-32.2	-14.5	35.3	2.00	2.00	0.00
1,600.0	11.00	204.23	1,596.6	-48.0	-21.6	52.6	2.00	2.00	0.00
1,700.0	13.00	204.23	1,694.4	-67.0	-30.1	73.4	2.00	2.00	0.00
1,800.0	15.00	204.23	1,791.5	-89.0	-40.1	97.6	2.00	2.00	0.00
1,900.0	17.00	204.23	1,887.6	-114.2	-51.4	125.2	2.00	2.00	0.00
2,000.0	19.00	204.23	1,982.7	-142.3	-64.0	156.1	2.00	2.00	0.00
<b>Start 1592.7 hold at 2092.7 MD</b>									
2,092.7	20.85	204.23	2,069.8	-171.1	-77.0	187.7	2.00	2.00	0.00
2,100.0	20.85	204.23	2,076.7	-173.5	-78.1	190.3	0.00	0.00	0.00
2,200.0	20.85	204.23	2,170.1	-206.0	-92.7	225.9	0.00	0.00	0.00
2,300.0	20.85	204.23	2,263.6	-238.4	-107.3	261.5	0.00	0.00	0.00
2,400.0	20.85	204.23	2,357.0	-270.9	-121.9	297.1	0.00	0.00	0.00
2,500.0	20.85	204.23	2,450.4	-303.4	-136.5	332.7	0.00	0.00	0.00
2,600.0	20.85	204.23	2,543.9	-335.8	-151.1	368.3	0.00	0.00	0.00
2,700.0	20.85	204.23	2,637.3	-368.3	-165.7	403.9	0.00	0.00	0.00
2,800.0	20.85	204.23	2,730.8	-400.8	-180.3	439.5	0.00	0.00	0.00
2,900.0	20.85	204.23	2,824.2	-433.2	-194.9	475.1	0.00	0.00	0.00
3,000.0	20.85	204.23	2,917.7	-465.7	-209.5	510.7	0.00	0.00	0.00
3,100.0	20.85	204.23	3,011.1	-498.1	-224.1	546.3	0.00	0.00	0.00
3,200.0	20.85	204.23	3,104.6	-530.6	-238.8	581.8	0.00	0.00	0.00
3,300.0	20.85	204.23	3,198.0	-563.1	-253.4	617.4	0.00	0.00	0.00
3,400.0	20.85	204.23	3,291.5	-595.5	-268.0	653.0	0.00	0.00	0.00
<b>PRKMN TOP</b>									
3,408.0	20.85	204.23	3,299.0	-598.1	-269.1	655.9	0.00	0.00	0.00
3,500.0	20.85	204.23	3,384.9	-628.0	-282.6	688.6	0.00	0.00	0.00
3,600.0	20.85	204.23	3,478.4	-660.5	-297.2	724.2	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
3,685.4	20.85	204.23	3,558.2	-688.2	-309.7	754.6	0.00	0.00	0.00
3,700.0	20.56	204.23	3,571.9	-692.9	-311.8	759.8	2.00	-2.00	0.00
3,800.0	18.56	204.23	3,666.1	-723.4	-325.5	793.3	2.00	-2.00	0.00
3,900.0	16.56	204.23	3,761.4	-750.9	-337.9	823.5	2.00	-2.00	0.00
4,000.0	14.56	204.23	3,857.7	-775.4	-348.9	850.3	2.00	-2.00	0.00
4,100.0	12.56	204.23	3,954.9	-796.8	-358.5	873.7	2.00	-2.00	0.00
4,200.0	10.56	204.23	4,052.9	-815.1	-366.8	893.8	2.00	-2.00	0.00
4,300.0	8.56	204.23	4,151.5	-830.2	-373.6	910.4	2.00	-2.00	0.00

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<b>Company:</b>	ANADARKO PETROLEUM CORP.	<b>TVD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Project:</b>	ANADARKO COLORADO NORTHERN ZONE NAD 83	<b>MD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Site:</b>	WELD_RIVERBEND 2-24 PAD	<b>North Reference:</b>	True
<b>Well:</b>	RIVERBEND 21-24	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	RIVERBEND 21-24		
<b>Design:</b>	RIVERBEND 21-24 (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)
4,400.0	6.56	204.23	4,250.6	-842.2	-379.0	923.5	2.00	-2.00	0.00
4,500.0	4.56	204.23	4,350.2	-851.0	-382.9	933.2	2.00	-2.00	0.00
4,600.0	2.56	204.23	4,450.0	-856.7	-385.5	939.4	2.00	-2.00	0.00
4,700.0	0.56	204.23	4,549.9	-859.2	-386.6	942.2	2.00	-2.00	0.00
<b>Start 3500.0 hold at 4728.1 MD</b>									
4,728.1	0.00	0.00	4,578.0	-859.3	-386.7	942.3	2.00	-2.00	0.00
<b>SX TOP</b>									
4,779.1	0.00	0.00	4,629.0	-859.3	-386.7	942.3	0.00	0.00	0.00
4,800.0	0.00	0.00	4,649.9	-859.3	-386.7	942.3	0.00	0.00	0.00
4,900.0	0.00	0.00	4,749.9	-859.3	-386.7	942.3	0.00	0.00	0.00
5,000.0	0.00	0.00	4,849.9	-859.3	-386.7	942.3	0.00	0.00	0.00
5,100.0	0.00	0.00	4,949.9	-859.3	-386.7	942.3	0.00	0.00	0.00
5,200.0	0.00	0.00	5,049.9	-859.3	-386.7	942.3	0.00	0.00	0.00
5,300.0	0.00	0.00	5,149.9	-859.3	-386.7	942.3	0.00	0.00	0.00
5,400.0	0.00	0.00	5,249.9	-859.3	-386.7	942.3	0.00	0.00	0.00
5,500.0	0.00	0.00	5,349.9	-859.3	-386.7	942.3	0.00	0.00	0.00
5,600.0	0.00	0.00	5,449.9	-859.3	-386.7	942.3	0.00	0.00	0.00
5,700.0	0.00	0.00	5,549.9	-859.3	-386.7	942.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,649.9	-859.3	-386.7	942.3	0.00	0.00	0.00
5,900.0	0.00	0.00	5,749.9	-859.3	-386.7	942.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,849.9	-859.3	-386.7	942.3	0.00	0.00	0.00
6,100.0	0.00	0.00	5,949.9	-859.3	-386.7	942.3	0.00	0.00	0.00
6,200.0	0.00	0.00	6,049.9	-859.3	-386.7	942.3	0.00	0.00	0.00
6,300.0	0.00	0.00	6,149.9	-859.3	-386.7	942.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,249.9	-859.3	-386.7	942.3	0.00	0.00	0.00
6,500.0	0.00	0.00	6,349.9	-859.3	-386.7	942.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,449.9	-859.3	-386.7	942.3	0.00	0.00	0.00
6,700.0	0.00	0.00	6,549.9	-859.3	-386.7	942.3	0.00	0.00	0.00
6,800.0	0.00	0.00	6,649.9	-859.3	-386.7	942.3	0.00	0.00	0.00
6,900.0	0.00	0.00	6,749.9	-859.3	-386.7	942.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,849.9	-859.3	-386.7	942.3	0.00	0.00	0.00
7,100.0	0.00	0.00	6,949.9	-859.3	-386.7	942.3	0.00	0.00	0.00
7,200.0	0.00	0.00	7,049.9	-859.3	-386.7	942.3	0.00	0.00	0.00
7,300.0	0.00	0.00	7,149.9	-859.3	-386.7	942.3	0.00	0.00	0.00
<b>NIO TOP</b>									
7,311.1	0.00	0.00	7,161.0	-859.3	-386.7	942.3	0.00	0.00	0.00
7,400.0	0.00	0.00	7,249.9	-859.3	-386.7	942.3	0.00	0.00	0.00
7,500.0	0.00	0.00	7,349.9	-859.3	-386.7	942.3	0.00	0.00	0.00
7,600.0	0.00	0.00	7,449.9	-859.3	-386.7	942.3	0.00	0.00	0.00
<b>CODELL TOP</b>									
7,658.1	0.00	0.00	7,508.0	-859.3	-386.7	942.3	0.00	0.00	0.00
7,700.0	0.00	0.00	7,549.9	-859.3	-386.7	942.3	0.00	0.00	0.00
<b>GRNHRN TOP</b>									
7,743.1	0.00	0.00	7,593.0	-859.3	-386.7	942.3	0.00	0.00	0.00
7,800.0	0.00	0.00	7,649.9	-859.3	-386.7	942.3	0.00	0.00	0.00
7,900.0	0.00	0.00	7,749.9	-859.3	-386.7	942.3	0.00	0.00	0.00
8,000.0	0.00	0.00	7,849.9	-859.3	-386.7	942.3	0.00	0.00	0.00
<b>JSND TOP</b>									
8,093.1	0.00	0.00	7,943.0	-859.3	-386.7	942.3	0.00	0.00	0.00
8,100.0	0.00	0.00	7,949.9	-859.3	-386.7	942.3	0.00	0.00	0.00
8,200.0	0.00	0.00	8,049.9	-859.3	-386.7	942.3	0.00	0.00	0.00
<b>TD at 8228.1</b>									



# Weatherford International Ltd.

## Planning Report

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well RIVERBEND 21-24
<b>Company:</b>	ANADARKO PETROLEUM CORP.	<b>TVD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Project:</b>	ANADARKO COLORADO NORTHERN ZONE NAD 83	<b>MD Reference:</b>	WELL @ 4923.0ft (Original Well Elev)
<b>Site:</b>	WELD_RIVERBEND 2-24 PAD	<b>North Reference:</b>	True
<b>Well:</b>	RIVERBEND 21-24	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	RIVERBEND 21-24		
<b>Design:</b>	RIVERBEND 21-24 (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)
8,228.1	0.00	0.00	8,078.0	-859.3	-386.7	942.3	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									
RIVERBEND 21-24 B	0.00	0.00	8,078.0	-859.3	-386.7	1,258,170.43	3,185,094.81	40° 2' 24.619 N	104° 50' 20.090 W
- plan hits target center									
- Point									

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
900.0	900.0	9 5/8"	9-5/8	12-1/4

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
8,093.1	7,943.0	JSND TOP			
7,743.1	7,593.0	GRNHRN TOP			
4,779.1	4,629.0	SX TOP			
3,408.0	3,299.0	PRKMN TOP			
7,311.1	7,161.0	NIO TOP			
7,658.1	7,508.0	CODELL TOP		0.00	

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
1,050.0	1,050.0	0.0	0.0	Start Build 2.00
2,092.7	2,069.8	-171.1	-77.0	Start 1592.7 hold at 2092.7 MD
3,685.4	3,558.2	-688.2	-309.7	Start Drop -2.00
4,728.1	4,578.0	-859.3	-386.7	Start 3500.0 hold at 4728.1 MD
8,228.1	8,078.0	-859.3	-386.7	TD at 8228.1