



### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0
1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0
2475.0	25.50	166.43	2433.3	-271.3	65.5	2.00	166.43	279.1
5450.1	25.50	166.43	5118.6	-1516.4	366.0	0.00	0.00	1559.9
7150.1	0.00	0.00	6763.1	-1878.1	453.3	1.50	180.00	1932.0
8307.1	0.00	0.00	7920.0	-1878.1	453.3	0.00	0.00	1932.0



Azimuths to Grid North  
True North: -0.44°  
Magnetic North: 8.65°

Magnetic Field  
Strength: 53247.2snT  
Dip Angle: 66.97°  
Date: 8/6/2009  
Model: IGRF200510

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_BARRON 10-18 PAD (3N66W)**

**P\_BARRON FEDERAL 37-18**

**P\_BARRON FEDERAL 37-18**

**Plan: Design #1 08-06-09 ZJRA6**

## **Standard Planning Report - Geographic**

**22 September, 2009**

# APC

## Planning Report - Geographic

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well P_BARRON FEDERAL 37-18
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4826.0ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4826.0ft (Original Well Elev)
<b>Site:</b>	WELD_BARRON 10-18 PAD (3N66W)	<b>North Reference:</b>	Grid
<b>Well:</b>	P_BARRON FEDERAL 37-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_BARRON FEDERAL 37-18		
<b>Design:</b>	Design #1 08-06-09 ZJRA6		

<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_BARRON 10-18 PAD (3N66W)							
Site Position: From: Position Uncertainty:			Lat/Long  0.0 ft			Northing:		403,803.72 m		Latitude:		40° 13' 22.76400 N	
						Easting:		972,567.49 m		Longitude:		104° 48' 59.72400 W	
						Slot Radius:		0.000 in		Grid Convergence:		0.44°	

Well	P_BARRON FEDERAL 37-18					
Well Position	+N/-S	0.0 ft	Northing:	403,803.76 m	Latitude:	40° 13' 22.76384 N
	+E/-W	0.0 ft	Easting:	972,572.60 m	Longitude:	104° 48' 59.50800 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	4,826.0 ft

<b>Wellbore</b>	P_BARRON FEDERAL 37-18				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	8/6/2009	9.09	66.97	53,247

<b>Design</b>	Design #1 08-06-09 ZJRA6				
<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	166.43	

<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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,475.0	25.50	166.43	2,433.3	-271.3	65.5	2.00	2.00	0.00	166.43	
5,450.1	25.50	166.43	5,118.6	-1,516.4	366.0	0.00	0.00	0.00	0.00	
7,150.1	0.00	0.00	6,763.1	-1,878.1	453.3	1.50	-1.50	0.00	180.00	
8,307.1	0.00	0.00	7,920.0	-1,878.1	453.3	0.00	0.00	0.00	0.00	PBHL_BARRON 37

# APC

## Planning Report - Geographic

<b>Database:</b>	edm5000p	<b>Local Co-ordinate Reference:</b>	Well P_BARRON FEDERAL 37-18
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	WELL @ 4826.0ft (Original Well Elev)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	WELL @ 4826.0ft (Original Well Elev)
<b>Site:</b>	WELD_BARRON 10-18 PAD (3N66W)	<b>North Reference:</b>	Grid
<b>Well:</b>	P_BARRON FEDERAL 37-18	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_BARRON FEDERAL 37-18		
<b>Design:</b>	Design #1 08-06-09 ZJRA6		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (m)	Map Easting (m)	Latitude		Longitude
0.0	0.00	0.00	0.0	0.0	0.0	403,803.76	972,572.60	40° 13' 22.76384 N		104° 48' 59.50800 W
800.0	0.00	0.00	800.0	0.0	0.0	403,803.76	972,572.60	40° 13' 22.76384 N		104° 48' 59.50800 W
<b>Surface Casing</b>										
1,200.0	0.00	0.00	1,200.0	0.0	0.0	403,803.76	972,572.60	40° 13' 22.76384 N		104° 48' 59.50800 W
2,475.0	25.50	166.43	2,433.3	-271.3	65.5	403,721.07	972,592.56	40° 13' 20.07802 N		104° 48' 58.69081 W
4,045.7	25.50	166.43	3,851.0	-928.6	224.1	403,520.72	972,640.92	40° 13' 13.57024 N		104° 48' 56.71082 W
<b>Parkman</b>										
4,528.7	25.50	166.43	4,287.0	-1,130.8	272.9	403,459.10	972,655.79	40° 13' 11.56880 N		104° 48' 56.10191 W
<b>Sussex</b>										
5,450.1	25.50	166.43	5,118.6	-1,516.4	366.0	403,341.57	972,684.16	40° 13' 7.75122 N		104° 48' 54.94048 W
7,150.1	0.00	0.00	6,763.1	-1,878.1	453.3	403,231.32	972,710.77	40° 13' 4.17012 N		104° 48' 53.85103 W
7,439.1	0.00	0.00	7,052.0	-1,878.1	453.3	403,231.32	972,710.77	40° 13' 4.17012 N		104° 48' 53.85103 W
<b>Niobrara "A"</b>										
7,719.1	0.00	0.00	7,332.0	-1,878.1	453.3	403,231.32	972,710.77	40° 13' 4.17012 N		104° 48' 53.85103 W
<b>Codell</b>										
8,157.1	0.00	0.00	7,770.0	-1,878.1	453.3	403,231.32	972,710.77	40° 13' 4.17012 N		104° 48' 53.85103 W
<b>JSand</b>										
8,307.1	0.00	0.00	7,920.0	-1,878.1	453.3	403,231.32	972,710.77	40° 13' 4.17012 N		104° 48' 53.85103 W

Design Targets										
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (m)	Easting (m)	Latitude	Longitude
PBHL_BARRON 37-1	- plan hits target center	0.00	0.00	7,920.0	-1,878.1	453.3	403,231.32	972,710.77	40° 13' 4.17012 N	04° 48' 53.85103 W
	- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
800.0	800.0	Surface Casing	8.625	12.250	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,045.7	3,851.0	Parkman		0.00		
4,528.7	4,287.0	Sussex		0.00		
7,439.1	7,052.0	Niobrara "A"		0.00		
7,719.1	7,332.0	Codell		0.00		
8,157.1	7,770.0	JSand		0.00		