

# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_POWERS 13-27HZ PAD**

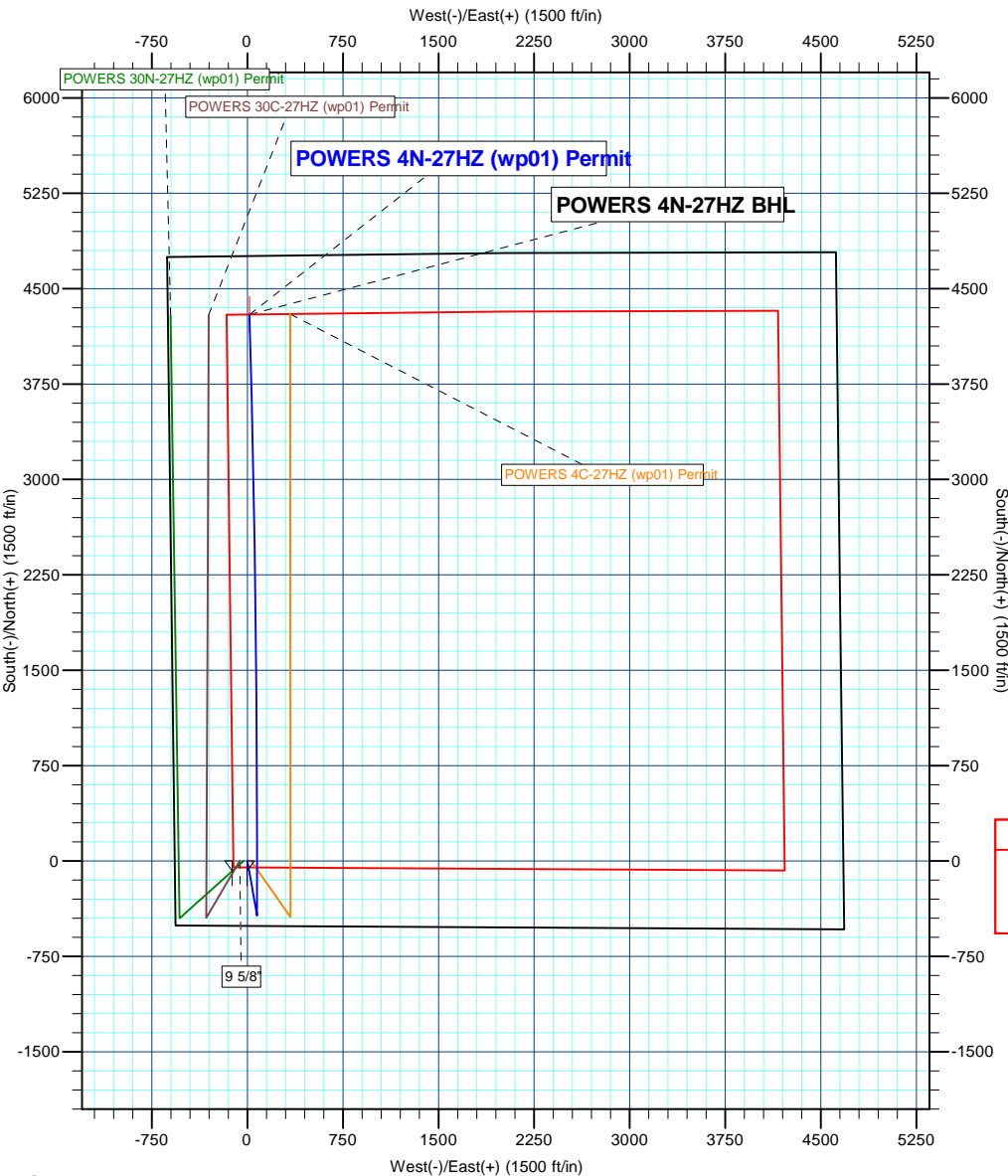
**POWERS 4N-27HZ**

**POWERS 4N-27HZ**

**Plan: POWERS 4N-27HZ (wp01) Permit**

## **Standard Planning Report**

**03 August, 2012**



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Azimuths to True North

Magnetic North: 8.63°

Magnetic Field

Strength: 52866.8snT

Dip Angle: 66.79°

Date: 8/2/2012

Model: IGRF2010



Project: COLORADO NORTHERN ZONE - 83

Site: WELD POWERS 13-27HZ PAD

Well: POWERS 4N-27HZ

Wellbore: POWERS 4N-27HZ

Section:

SHL:

Design: POWERS 4N-27HZ (wp01) Permit

Latitude: 40.103720

Longitude: -104.657238

GL: 4934.00

KB: 17' RKB + 4934' GL @ 4951.00ft

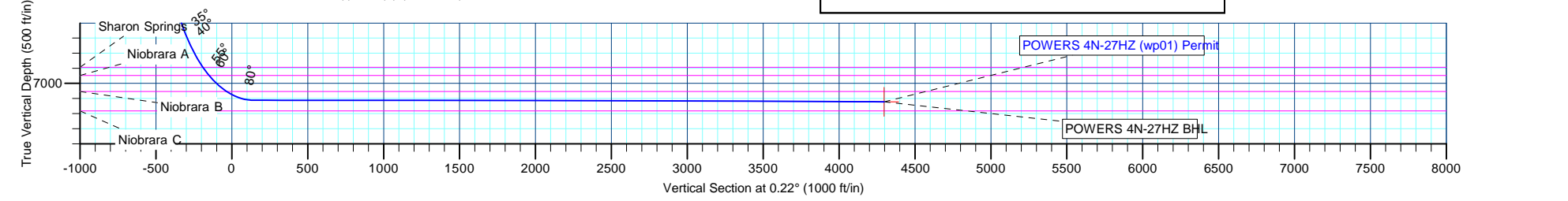
WELL DETAILS: POWERS 4N-27HZ						
+N/-S	+E/-W	Northing	Ground Level: Easting	4934.00 Latitude	Longitude	Slot
0.00	0.00	1281749.76	3235740.17	40.103720	-104.657238	

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
1467.00	0.00	0.00	1467.00	0.00	0.00	0.00	0.00	0.00
1967.00	10.00	170.00	1964.47	-42.86	7.56	2.00	170.00	-42.83
3967.00	10.00	170.00	3934.08	-384.88	67.87	0.00	0.00	-384.62
4467.00	0.00	170.00	4431.55	-427.74	75.42	2.00	180.00	-427.45
6518.49	0.00	170.00	6483.04	-427.74	75.42	0.00	170.00	-427.45
7418.49	90.00	0.00	7056.00	145.22	75.42	10.00	0.00	145.50
11570.16	89.86	358.37	7061.00	4296.32	16.50	0.04	-94.85	4296.35

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)						
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
POWERS 4N-27HZ BHL	7061.00	4296.32	16.50	40.115514	-104.657179	Point

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1391.00	1391.00	Fox Hills
5101.00	5136.45	Sussex
6947.00	7059.22	Sharon Springs
6974.00	7108.18	Niobrara A
7027.00	7235.43	Niobrara B

CASING DETAILS			
TVD	MD	Name	Size
1317.00	1317.00	9 5/8"	9-5/8



# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well POWERS 4N-27HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 4934' GL @ 4951.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 4934' GL @ 4951.00ft
<b>Site:</b>	WELD_POWERS 13-27HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	POWERS 4N-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	POWERS 4N-27HZ		
<b>Design:</b>	POWERS 4N-27HZ (wp01) Permit		

<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_POWERS 13-27HZ PAD			
Site Position:		Northing:	1,281,749.56 usft	Latitude:	40.103721
From:	Lat/Long	Easting:	3,235,680.31 usft	Longitude:	-104.657452
Position Uncertainty:	0.00 ft	Slot Radius:	13-3/16 "	Grid Convergence:	0.54 °

Well		POWERS 4N-27HZ				
Well Position	+N/-S	-0.37 ft	Northing:	1,281,749.76 usft	Latitude:	40.103720
	+E/-W	59.86 ft	Easting:	3,235,740.17 usft	Longitude:	-104.657238
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,934.00 ft

<b>Wellbore</b>	POWERS 4N-27HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	8/2/2012	8.63	66.79	52,867

<b>Design</b>	POWERS 4N-27HZ (wp01) Permit			
<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	0.22

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,467.00	0.00	0.00	1,467.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,967.00	10.00	170.00	1,964.47	-42.86	7.56	2.00	2.00	0.00	170.00	
3,967.00	10.00	170.00	3,934.08	-384.88	67.87	0.00	0.00	0.00	0.00	
4,467.00	0.00	170.00	4,431.55	-427.74	75.42	2.00	-2.00	0.00	180.00	
6,518.49	0.00	170.00	6,483.04	-427.74	75.42	0.00	0.00	0.00	170.00	
7,418.49	90.00	0.00	7,056.00	145.22	75.42	10.00	10.00	0.00	0.00	
11,570.16	89.86	358.37	7,061.00	4,296.32	16.50	0.04	0.00	-0.04	-94.85	POWERS 4N-27HZ B

# Anadarko Petroleum Corp

## Planning Report

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<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 4934' GL @ 4951.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 4934' GL @ 4951.00ft
<b>Site:</b>	WELD_POWERS 13-27HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	POWERS 4N-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	POWERS 4N-27HZ		
<b>Design:</b>	POWERS 4N-27HZ (wp01) Permit		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	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
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,317.00	0.00	0.00	1,317.00	0.00	0.00	0.00	0.00	0.00	0.00
9 5/8"									
1,391.00	0.00	0.00	1,391.00	0.00	0.00	0.00	0.00	0.00	0.00
Fox Hills									
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,467.00	0.00	0.00	1,467.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
1,500.00	0.66	170.00	1,500.00	-0.19	0.03	-0.19	2.00	2.00	0.00
1,600.00	2.66	170.00	1,599.95	-3.04	0.54	-3.04	2.00	2.00	0.00
1,700.00	4.66	170.00	1,699.74	-9.33	1.64	-9.32	2.00	2.00	0.00
1,800.00	6.66	170.00	1,799.25	-19.04	3.36	-19.03	2.00	2.00	0.00
1,900.00	8.66	170.00	1,898.35	-32.16	5.67	-32.14	2.00	2.00	0.00
1,967.00	10.00	170.00	1,964.47	-42.86	7.56	-42.83	2.00	2.00	0.00
Start 2000.00 hold at 1967.00 MD									
2,000.00	10.00	170.00	1,996.96	-48.50	8.55	-48.47	0.00	0.00	0.00
2,100.00	10.00	170.00	2,095.44	-65.61	11.57	-65.56	0.00	0.00	0.00
2,200.00	10.00	170.00	2,193.93	-82.71	14.58	-82.65	0.00	0.00	0.00
2,300.00	10.00	170.00	2,292.41	-99.81	17.60	-99.74	0.00	0.00	0.00
2,400.00	10.00	170.00	2,390.89	-116.91	20.61	-116.83	0.00	0.00	0.00
2,500.00	10.00	170.00	2,489.37	-134.01	23.63	-133.92	0.00	0.00	0.00
2,600.00	10.00	170.00	2,587.85	-151.11	26.64	-151.01	0.00	0.00	0.00
2,700.00	10.00	170.00	2,686.33	-168.21	29.66	-168.10	0.00	0.00	0.00
2,800.00	10.00	170.00	2,784.81	-185.31	32.68	-185.19	0.00	0.00	0.00
2,900.00	10.00	170.00	2,883.29	-202.41	35.69	-202.28	0.00	0.00	0.00
3,000.00	10.00	170.00	2,981.77	-219.51	38.71	-219.36	0.00	0.00	0.00
3,100.00	10.00	170.00	3,080.25	-236.62	41.72	-236.45	0.00	0.00	0.00
3,200.00	10.00	170.00	3,178.73	-253.72	44.74	-253.54	0.00	0.00	0.00
3,300.00	10.00	170.00	3,277.21	-270.82	47.75	-270.63	0.00	0.00	0.00
3,400.00	10.00	170.00	3,375.69	-287.92	50.77	-287.72	0.00	0.00	0.00
3,500.00	10.00	170.00	3,474.18	-305.02	53.78	-304.81	0.00	0.00	0.00
3,600.00	10.00	170.00	3,572.66	-322.12	56.80	-321.90	0.00	0.00	0.00
3,700.00	10.00	170.00	3,671.14	-339.22	59.81	-338.99	0.00	0.00	0.00
3,800.00	10.00	170.00	3,769.62	-356.32	62.83	-356.08	0.00	0.00	0.00
3,900.00	10.00	170.00	3,868.10	-373.42	65.84	-373.17	0.00	0.00	0.00
3,967.00	10.00	170.00	3,934.08	-384.88	67.87	-384.62	0.00	0.00	0.00
Start Drop -2.00									
4,000.00	9.34	170.00	3,966.61	-390.34	68.83	-390.07	2.00	-2.00	0.00
4,100.00	7.34	170.00	4,065.55	-404.62	71.35	-404.35	2.00	-2.00	0.00
4,200.00	5.34	170.00	4,164.93	-415.50	73.26	-415.21	2.00	-2.00	0.00
4,300.00	3.34	170.00	4,264.64	-422.95	74.58	-422.66	2.00	-2.00	0.00

# Anadarko Petroleum Corp

## Planning Report

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<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 4934' GL @ 4951.00ft
<b>Site:</b>	WELD_POWERS 13-27HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	POWERS 4N-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	POWERS 4N-27HZ		
<b>Design:</b>	POWERS 4N-27HZ (wp01) Permit		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,400.00	1.34	170.00	4,364.55	-426.97	75.29	-426.68	2.00	-2.00	0.00
4,467.00	0.00	170.00	4,431.55	-427.74	75.42	-427.45	2.00	-2.00	0.00
Start 2051.49 hold at 4467.00 MD									
4,500.00	0.00	170.00	4,464.55	-427.74	75.42	-427.45	0.00	0.00	0.00
4,600.00	0.00	170.00	4,564.55	-427.74	75.42	-427.45	0.00	0.00	0.00
4,700.00	0.00	170.00	4,664.55	-427.74	75.42	-427.45	0.00	0.00	0.00
4,800.00	0.00	170.00	4,764.55	-427.74	75.42	-427.45	0.00	0.00	0.00
4,900.00	0.00	170.00	4,864.55	-427.74	75.42	-427.45	0.00	0.00	0.00
5,000.00	0.00	170.00	4,964.55	-427.74	75.42	-427.45	0.00	0.00	0.00
5,100.00	0.00	170.00	5,064.55	-427.74	75.42	-427.45	0.00	0.00	0.00
5,136.45	0.00	170.00	5,101.00	-427.74	75.42	-427.45	0.00	0.00	0.00
Sussex									
5,200.00	0.00	170.00	5,164.55	-427.74	75.42	-427.45	0.00	0.00	0.00
5,300.00	0.00	170.00	5,264.55	-427.74	75.42	-427.45	0.00	0.00	0.00
5,400.00	0.00	170.00	5,364.55	-427.74	75.42	-427.45	0.00	0.00	0.00
5,500.00	0.00	170.00	5,464.55	-427.74	75.42	-427.45	0.00	0.00	0.00
5,600.00	0.00	170.00	5,564.55	-427.74	75.42	-427.45	0.00	0.00	0.00
5,700.00	0.00	170.00	5,664.55	-427.74	75.42	-427.45	0.00	0.00	0.00
5,800.00	0.00	170.00	5,764.55	-427.74	75.42	-427.45	0.00	0.00	0.00
5,900.00	0.00	170.00	5,864.55	-427.74	75.42	-427.45	0.00	0.00	0.00
6,000.00	0.00	170.00	5,964.55	-427.74	75.42	-427.45	0.00	0.00	0.00
6,100.00	0.00	170.00	6,064.55	-427.74	75.42	-427.45	0.00	0.00	0.00
6,200.00	0.00	170.00	6,164.55	-427.74	75.42	-427.45	0.00	0.00	0.00
6,300.00	0.00	170.00	6,264.55	-427.74	75.42	-427.45	0.00	0.00	0.00
6,400.00	0.00	170.00	6,364.55	-427.74	75.42	-427.45	0.00	0.00	0.00
6,500.00	0.00	170.00	6,464.55	-427.74	75.42	-427.45	0.00	0.00	0.00
6,518.49	0.00	170.00	6,483.04	-427.74	75.42	-427.45	0.00	0.00	0.00
Start Build 10.00									
6,550.00	3.15	0.00	6,514.53	-426.88	75.42	-426.58	10.00	10.00	0.00
6,600.00	8.15	0.00	6,564.27	-421.96	75.42	-421.66	10.00	10.00	0.00
6,650.00	13.15	0.00	6,613.39	-412.72	75.42	-412.42	10.00	10.00	0.00
6,700.00	18.15	0.00	6,661.53	-399.23	75.42	-398.94	10.00	10.00	0.00
6,750.00	23.15	0.00	6,708.30	-381.60	75.42	-381.31	10.00	10.00	0.00
6,800.00	28.15	0.00	6,753.36	-359.97	75.42	-359.68	10.00	10.00	0.00
6,850.00	33.15	0.00	6,796.36	-334.49	75.42	-334.19	10.00	10.00	0.00
6,900.00	38.15	0.00	6,836.97	-305.35	75.42	-305.06	10.00	10.00	0.00
6,950.00	43.15	0.00	6,874.90	-272.79	75.42	-272.50	10.00	10.00	0.00
7,000.00	48.15	0.00	6,909.84	-237.05	75.42	-236.76	10.00	10.00	0.00
7,050.00	53.15	0.00	6,941.53	-198.39	75.42	-198.10	10.00	10.00	0.00
7,059.22	54.07	0.00	6,947.00	-190.97	75.42	-190.68	10.00	10.00	0.00
Sharon Springs									
7,100.00	58.15	0.00	6,969.73	-157.13	75.42	-156.84	10.00	10.00	0.00
7,108.18	58.97	0.00	6,974.00	-150.15	75.42	-149.86	10.00	10.00	0.00
Niobrara A									
7,150.00	63.15	0.00	6,994.23	-113.56	75.42	-113.27	10.00	10.00	0.00
7,200.00	68.15	0.00	7,014.84	-68.02	75.42	-67.73	10.00	10.00	0.00
7,235.43	71.69	0.00	7,027.00	-34.75	75.42	-34.46	10.00	10.00	0.00
Niobrara B									
7,250.00	73.15	0.00	7,031.40	-20.86	75.42	-20.57	10.00	10.00	0.00
7,300.00	78.15	0.00	7,043.79	27.56	75.42	27.85	10.00	10.00	0.00
7,350.00	83.15	0.00	7,051.91	76.89	75.42	77.17	10.00	10.00	0.00
7,400.00	88.15	0.00	7,055.70	126.73	75.42	127.01	10.00	10.00	0.00
7,418.49	90.00	0.00	7,056.00	145.22	75.42	145.50	10.00	10.00	0.00

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well POWERS 4N-27HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 4934' GL @ 4951.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 4934' GL @ 4951.00ft
<b>Site:</b>	WELD_POWERS 13-27HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	POWERS 4N-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	POWERS 4N-27HZ		
<b>Design:</b>	POWERS 4N-27HZ (wp01) Permit		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>Start DLS 0.04 TFO -94.85</b>									
7,500.00	89.00	359.97	7,056.00	226.72	75.40	227.01	0.04	0.00	-0.04
7,600.00	89.99	359.93	7,056.01	326.72	75.31	327.01	0.04	0.00	-0.04
7,700.00	89.99	359.89	7,056.02	426.72	75.15	427.01	0.04	0.00	-0.04
7,800.00	89.99	359.85	7,056.04	526.72	74.93	527.01	0.04	0.00	-0.04
7,900.00	89.98	359.81	7,056.06	626.72	74.63	627.00	0.04	0.00	-0.04
8,000.00	89.98	359.77	7,056.10	726.72	74.27	727.00	0.04	0.00	-0.04
8,100.00	89.98	359.73	7,056.13	826.72	73.83	827.00	0.04	0.00	-0.04
8,200.00	89.97	359.69	7,056.17	926.72	73.33	926.99	0.04	0.00	-0.04
8,300.00	89.97	359.65	7,056.22	1,026.72	72.77	1,026.99	0.04	0.00	-0.04
8,400.00	89.97	359.62	7,056.28	1,126.71	72.13	1,126.98	0.04	0.00	-0.04
8,500.00	89.96	359.58	7,056.34	1,226.71	71.42	1,226.98	0.04	0.00	-0.04
8,600.00	89.96	359.54	7,056.40	1,326.71	70.65	1,326.97	0.04	0.00	-0.04
8,700.00	89.96	359.50	7,056.47	1,426.71	69.81	1,426.96	0.04	0.00	-0.04
8,800.00	89.95	359.46	7,056.55	1,526.70	68.90	1,526.95	0.04	0.00	-0.04
8,900.00	89.95	359.42	7,056.63	1,626.70	67.92	1,626.95	0.04	0.00	-0.04
9,000.00	89.95	359.38	7,056.72	1,726.69	66.87	1,726.94	0.04	0.00	-0.04
9,100.00	89.94	359.34	7,056.82	1,826.68	65.76	1,826.92	0.04	0.00	-0.04
9,200.00	89.94	359.30	7,056.92	1,926.68	64.57	1,926.91	0.04	0.00	-0.04
9,300.00	89.94	359.26	7,057.02	2,026.67	63.32	2,026.90	0.04	0.00	-0.04
9,400.00	89.93	359.22	7,057.14	2,126.66	62.00	2,126.88	0.04	0.00	-0.04
9,500.00	89.93	359.18	7,057.25	2,226.65	60.61	2,226.87	0.04	0.00	-0.04
9,600.00	89.93	359.15	7,057.38	2,326.64	59.15	2,326.85	0.04	0.00	-0.04
9,700.00	89.92	359.11	7,057.51	2,426.63	57.63	2,426.83	0.04	0.00	-0.04
9,800.00	89.92	359.07	7,057.64	2,526.62	56.03	2,526.81	0.04	0.00	-0.04
9,900.00	89.92	359.03	7,057.78	2,626.60	54.37	2,626.79	0.04	0.00	-0.04
10,000.00	89.91	358.99	7,057.93	2,726.59	52.64	2,726.77	0.04	0.00	-0.04
10,100.00	89.91	358.95	7,058.08	2,826.57	50.84	2,826.75	0.04	0.00	-0.04
10,200.00	89.91	358.91	7,058.24	2,926.55	48.97	2,926.72	0.04	0.00	-0.04
10,300.00	89.90	358.87	7,058.41	3,026.53	47.04	3,026.69	0.04	0.00	-0.04
10,400.00	89.90	358.83	7,058.58	3,126.51	45.03	3,126.66	0.04	0.00	-0.04
10,500.00	89.90	358.79	7,058.75	3,226.49	42.96	3,226.63	0.04	0.00	-0.04
10,600.00	89.89	358.75	7,058.94	3,326.47	40.82	3,326.60	0.04	0.00	-0.04
10,700.00	89.89	358.71	7,059.12	3,426.44	38.61	3,426.57	0.04	0.00	-0.04
10,800.00	89.89	358.68	7,059.32	3,526.42	36.33	3,526.53	0.04	0.00	-0.04
10,900.00	89.88	358.64	7,059.52	3,626.39	33.99	3,626.49	0.04	0.00	-0.04
11,000.00	89.88	358.60	7,059.72	3,726.36	31.57	3,726.46	0.04	0.00	-0.04
11,100.00	89.88	358.56	7,059.93	3,826.33	29.09	3,826.41	0.04	0.00	-0.04
11,200.00	89.87	358.52	7,060.15	3,926.30	26.54	3,926.37	0.04	0.00	-0.04
11,300.00	89.87	358.48	7,060.37	4,026.26	23.92	4,026.33	0.04	0.00	-0.04
11,400.00	89.87	358.44	7,060.60	4,126.23	21.23	4,126.28	0.04	0.00	-0.04
11,500.00	89.86	358.40	7,060.83	4,226.19	18.48	4,226.23	0.04	0.00	-0.04
11,570.16	89.86	358.37	7,061.00	4,296.32	16.50	4,296.35	0.04	0.00	-0.04
<b>TD at 11570.16 - POWERS 4N-27HZ BHL</b>									

# Anadarko Petroleum Corp

## Planning Report

<b>Database:</b>	edmp	<b>Local Co-ordinate Reference:</b>	Well POWERS 4N-27HZ
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	17' RKB + 4934' GL @ 4951.00ft
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	17' RKB + 4934' GL @ 4951.00ft
<b>Site:</b>	WELD_POWERS 13-27HZ PAD	<b>North Reference:</b>	True
<b>Well:</b>	POWERS 4N-27HZ	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	POWERS 4N-27HZ		
<b>Design:</b>	POWERS 4N-27HZ (wp01) Permit		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
POWERS 4N-27HZ BHL	0.00	0.00	7,061.00	4,296.32	16.50	1,286,046.03	3,235,715.84	40.115514	-104.657179
- plan hits target center									
- Point									

Casing Points				
Measured Depth	Vertical Depth	Name		
(ft)	(ft)			
		Casing Diameter	Hole Diameter	
		(")	(")	
1,317.00	1,317.00	9 5/8"	12-1/4	

Formations					
Measured Depth	Vertical Depth	Name		Lithology	Dip
(ft)	(ft)				(°)
					Dip Direction
					(°)
1,391.00	1,391.00	Fox Hills			
5,136.45	5,101.00	Sussex			
7,059.22	6,947.00	Sharon Springs			
7,108.18	6,974.00	Niobrara A			
7,235.43	7,027.00	Niobrara B			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W		
		(ft)	(ft)	Comment	
1,467.00	1,467.00	0.00	0.00	Start Build 2.00	
1,967.00	1,964.47	-42.86	7.56	Start 2000.00 hold at 1967.00 MD	
3,967.00	3,934.08	-384.88	67.87	Start Drop -2.00	
4,467.00	4,431.55	-427.74	75.42	Start 2051.49 hold at 4467.00 MD	
6,518.49	6,483.04	-427.74	75.42	Start Build 10.00	
7,418.49	7,056.00	145.22	75.42	Start DLS 0.04 TFO -94.85	
11,570.16	7,061.00	4,296.32	16.50	TD at 11570.16	